

Eulerian-Cycle- Decomposition In SuperHyperGraphs

Ideas | Approaches | Accessibility | Availability

Dr. Henry Garrett

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In this scientific research book, there are some scientific research chapters on "Extreme Eulerian-Type-Path-Decomposition In SuperHyperGraphs" and "Neutrosophic Eulerian-Type-Path-Decomposition In SuperHyperGraphs" about some scientific researches on Eulerian-Type-Path-Decomposition In SuperHyperGraphs by two (Extreme/Neutrosophic) notions, namely, Extreme Eulerian-Type-Path-Decomposition In SuperHyperGraphs and Neutrosophic Eulerian-Type-Path-Decomposition In SuperHyperGraphs. With scientific research on the basic scientific research properties, the scientific research book starts to make Extreme Eulerian-Type-Path-Decomposition In SuperHyperGraphs theory and Neutrosophic Eulerian-Type-Path-Decomposition In SuperHyperGraphs theory more (Extremely/Neutrosophically) understandable.

Some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in the following by Henry Garrett (2022) which is indexed by Google Scholar and has more than 4048 readers in Scribd. It's titled "Beyond Neutrosophic Graphs" and published by Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United State. This research book covers different types of notions and settings in neutrosophic graph theory and neutrosophic SuperHyperGraph theory.

[Ref] Henry Garrett, (2022), "Beyond Neutrosophic Graphs", Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United States. ISBN: 978-1-59973-725-6 (<http://fs.unm.edu/BeyondNeutrosophicGraphs.pdf>).

Also, some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in the following by Henry Garrett (2022) which is indexed by Google Scholar and has more than 5046 readers in Scribd. It's titled "Neutrosophic Duality" and published by Florida: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. This research book presents different types of notions SuperHyperResolving and Eulerian-Type-Path-Decomposition In SuperHyperGraphs in the setting of duality in neutrosophic graph theory and neutrosophic SuperHyperGraph theory. This research book has scrutiny on the complement of the intended set and the intended set, simultaneously. It's smart to consider a set but acting on its complement that what's done in this research book which is popular in the terms of high readers in Scribd.

[Ref] Henry Garrett, (2022), "Neutrosophic Duality", Florida: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. ISBN: 978-1-59973-743-0 (<http://fs.unm.edu/NeutrosophicDuality.pdf>).

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CHAPTER 1

ABSTRACT

In this scientific research book, there are some scientific research chapters on “Extreme Eulerian-Cycle-Decomposition In SuperHyperGraphs” and “Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs” about some scientific research on Eulerian-Cycle-Decomposition In SuperHyperGraphs by two (Extreme/Neutrosophic) notions, namely, Extreme Eulerian-Cycle-Decomposition In SuperHyperGraphs and Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs. With scientific research on the basic scientific research properties, the scientific research book starts to make Extreme Eulerian-Cycle-Decomposition In SuperHyperGraphs theory and Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs theory more (Extremely/Neutrosophicly) understandable.

In the some chapters, in some researches, new setting is introduced for new SuperHyperNotions, namely, a Eulerian-Cycle-Decomposition In SuperHyperGraphs and Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs . Two different types of SuperHyperDefinitions are debut for them but the scientific research goes further and the SuperHyperNotion, SuperHyperUniform, and SuperHyperClass based on that are well-defined and well-reviewed. The literature review is implemented in the whole of this research. For shining the elegance and the significancy of this research, the comparison between this SuperHyperNotion with other SuperHyperNotions and fundamental SuperHyperNumbers are featured. The definitions are followed by the examples and the instances thus the clarifications are driven with different tools. The applications are figured out to make sense about the theoretical aspect of this ongoing research. The “Cancer’s Recognition” are the under scientific research to figure out the challenges make sense about ongoing and upcoming research. The special case is up. The cells are viewed in the deemed ways. There are different types of them. Some of them are individuals and some of them are well-modeled by the group of cells. These types are all officially called “SuperHyperVertex” but the relations amid them all officially called “SuperHyperEdge”. The frameworks “SuperHyperGraph” and “Neutrosophic SuperHyperGraph” are chosen and elected to scientific research about “Cancer’s Recognition”. Thus these complex and dense SuperHyperModels open up some avenues to scientific research on theoretical segments and “Cancer’s Recognition”. Some avenues are posed to pursue this research. It’s also officially collected in the form of some questions and some problems. Assume a SuperHyperGraph. Then δ -Eulerian-Cycle-Decomposition In SuperHyperGraphs is a maximal of SuperHyperVertices with a maximum cardinality such that either of the following expressions hold for the (Neutrosophic) cardinalities of SuperHyperNeighbors of

$s \in S$: there are $|S \cap N(s)| > |S \cap (V \setminus N(s))| + \delta$; and $|S \cap N(s)| < |S \cap (V \setminus N(s))| + \delta$. The
 first Expression, holds if S is an δ -SuperHyperOffensive. And the second Expression, holds if
 S is an δ -SuperHyperDefensive; a Neutrosophic δ -Eulerian-Cycle-Decomposition In Super-
 HyperGraphs is a maximal Neutrosophic of SuperHyperVertices with maximum Neutrosophic
 cardinality such that either of the following expressions hold for the Neutrosophic cardinalities of
 SuperHyperNeighbors of $s \in S$ there are: $|S \cap N(s)|_{Neutrosophic} > |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta$;
 and $|S \cap N(s)|_{Neutrosophic} < |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta$. The first Expression, holds if S is a
 Neutrosophic δ -SuperHyperOffensive. And the second Expression, holds if S is a Neutrosophic
 δ -SuperHyperDefensive It's useful to define a "Neutrosophic" version of a Eulerian-Cycle-
 Decomposition In SuperHyperGraphs . Since there's more ways to get type-results to make
 a Eulerian-Cycle-Decomposition In SuperHyperGraphs more understandable. For the sake
 of having Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs, there's a need
 to "redefine" the notion of a "Eulerian-Cycle-Decomposition In SuperHyperGraphs ". The
 SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the
 alphabets. In this procedure, there's the usage of the position of labels to assign to the values.
 Assume a Eulerian-Cycle-Decomposition In SuperHyperGraphs . It's redefined a Neutrosophic
 Eulerian-Cycle-Decomposition In SuperHyperGraphs if the mentioned Table holds, concerning,
 "The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong
 to The Neutrosophic SuperHyperGraph" with the key points, "The Values of The Vertices
 & The Number of Position in Alphabet", "The Values of The SuperVertices&The maximum
 Values of Its Vertices", "The Values of The Edges&The maximum Values of Its Vertices",
 "The Values of The HyperEdges&The maximum Values of Its Vertices", "The Values of The
 SuperHyperEdges&The maximum Values of Its Endpoints". To get structural examples and
 instances, I'm going to introduce the next SuperHyperClass of SuperHyperGraph based on
 a Eulerian-Cycle-Decomposition In SuperHyperGraphs . It's the main. It'll be disciplinary
 to have the foundation of previous definition in the kind of SuperHyperClass. If there's a
 need to have all Eulerian-Cycle-Decomposition In SuperHyperGraphs until the Eulerian-Cycle-
 Decomposition In SuperHyperGraphs, then it's officially called a "Eulerian-Cycle-Decomposition
 In SuperHyperGraphs" but otherwise, it isn't a Eulerian-Cycle-Decomposition In SuperHy-
 perGraphs . There are some instances about the clarifications for the main definition titled a
 "Eulerian-Cycle-Decomposition In SuperHyperGraphs ". These two examples get more scrutiny
 and discernment since there are characterized in the disciplinary ways of the SuperHyperClass
 based on a Eulerian-Cycle-Decomposition In SuperHyperGraphs . For the sake of having a
 Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs, there's a need to "redefine"
 the notion of a "Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs" and a
 "Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs ". The SuperHyperVertices
 and the SuperHyperEdges are assigned by the labels from the letters of the alphabets. In
 this procedure, there's the usage of the position of labels to assign to the values. Assume
 a Neutrosophic SuperHyperGraph. It's redefined "Neutrosophic SuperHyperGraph" if the
 intended Table holds. And a Eulerian-Cycle-Decomposition In SuperHyperGraphs are redefined
 to a "Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs" if the intended Table
 holds. It's useful to define "Neutrosophic" version of SuperHyperClasses. Since there's more
 ways to get Neutrosophic type-results to make a Neutrosophic Eulerian-Cycle-Decomposition In
 SuperHyperGraphs more understandable. Assume a Neutrosophic SuperHyperGraph. There
 are some Neutrosophic SuperHyperClasses if the intended Table holds. Thus SuperHyperPath,
 Eulerian-Cycle-Decomposition In SuperHyperGraphs, SuperHyperStar, SuperHyperBipartite,

SuperHyperMultiPartite, and SuperHyperWheel, are “Neutrosophic SuperHyperPath”, “Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs”, “Neutrosophic SuperHyperStar”, “Neutrosophic SuperHyperBipartite”, “Neutrosophic SuperHyperMultiPartite”, and “Neutrosophic SuperHyperWheel” if the intended Table holds. A SuperHyperGraph has a “Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs” where it’s the strongest [the maximum Neutrosophic value from all the Eulerian-Cycle-Decomposition In SuperHyperGraphs amid the maximum value amid all SuperHyperVertices from a Eulerian-Cycle-Decomposition In SuperHyperGraphs .] Eulerian-Cycle-Decomposition In SuperHyperGraphs . A graph is a SuperHyperUniform if it’s a SuperHyperGraph and the number of elements of SuperHyperEdges are the same. Assume a Neutrosophic SuperHyperGraph. There are some SuperHyperClasses as follows. It’s SuperHyperPath if it’s only one SuperVertex as intersection amid two given SuperHyperEdges with two exceptions; it’s Eulerian-Cycle-Decomposition In SuperHyperGraphs if it’s only one SuperVertex as intersection amid two given SuperHyperEdges; it’s SuperHyperStar it’s only one SuperVertex as intersection amid all SuperHyperEdges; it’s SuperHyperBipartite it’s only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming two separate sets, has no SuperHyperEdge in common; it’s SuperHyperMultiPartite it’s only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming multi separate sets, has no SuperHyperEdge in common; it’s a SuperHyperWheel if it’s only one SuperVertex as intersection amid two given SuperHyperEdges and one SuperVertex has one SuperHyperEdge with any common SuperVertex. The SuperHyperModel proposes the specific designs and the specific architectures. The SuperHyperModel is officially called “SuperHyperGraph” and “Neutrosophic SuperHyperGraph”. In this SuperHyperModel, The “specific” cells and “specific group” of cells are SuperHyperModeled as “SuperHyperVertices” and the common and intended properties between “specific” cells and “specific group” of cells are SuperHyperModeled as “SuperHyperEdges”. Sometimes, it’s useful to have some degrees of determinacy, indeterminacy, and neutrality to have more precise SuperHyperModel which in this case the SuperHyperModel is called “Neutrosophic”. In the future research, the foundation will be based on the “Cancer’s Recognition” and the results and the definitions will be introduced in redeemed ways. The recognition of the cancer in the long-term function. The specific region has been assigned by the model [it’s called SuperHyperGraph] and the long cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn’t be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it’s said to be Neutrosophic SuperHyperGraph] to have convenient perception on what’s happened and what’s done. There are some specific models, which are well-known and they’ve got the names, and some SuperHyperGeneral SuperHyperModels. The moves and the traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by a Neutrosophic SuperHyperPath(-/Eulerian-Cycle-Decomposition In SuperHyperGraphs, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the longest Eulerian-Cycle-Decomposition In SuperHyperGraphs or the strongest Eulerian-Cycle-Decomposition In SuperHyperGraphs in those Neutrosophic SuperHyperModels. For the longest Eulerian-Cycle-Decomposition In SuperHyperGraphs, called Eulerian-Cycle-Decomposition In SuperHyperGraphs, and the strongest Eulerian-Cycle-Decomposition In SuperHyperGraphs, called Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs, some general results are introduced. Beyond that in SuperHyperStar, all possible SuperHyperPaths have only two SuperHyperEdges but it’s not enough since it’s essential to have at least three SuperHyperEdges

to form any style of a Eulerian-Cycle-Decomposition In SuperHyperGraphs. There isn't any
 formation of any Eulerian-Cycle-Decomposition In SuperHyperGraphs but literarily, it's the
 deformation of any Eulerian-Cycle-Decomposition In SuperHyperGraphs. It, literarily, deforms
 and it doesn't form. A basic familiarity with SuperHyperGraph theory and Neutrosophic
 SuperHyperGraph theory are proposed.

Keywords: SuperHyperGraph, (Neutrosophic) Eulerian-Cycle-Decomposition In SuperHy-

perGraphs, Cancer's Recognition

AMS Subject Classification: 05C17, 05C22, 05E45

In the some chapters, in some researches, new setting is introduced for new SuperHyper-
 Notion, namely, Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs . Two
 different types of SuperHyperDefinitions are debut for them but the scientific research goes
 further and the SuperHyperNotion, SuperHyperUniform, and SuperHyperClass based on that
 are well-defined and well-reviewed. The literature review is implemented in the whole of this
 research. For shining the elegancy and the significancy of this research, the comparison between
 this SuperHyperNotion with other SuperHyperNotions and fundamental SuperHyperNum-
 bers are featured. The definitions are followed by the examples and the instances thus the
 clarifications are driven with different tools. The applications are figured out to make sense
 about the theoretical aspect of this ongoing research. The "Cancer's Neutrosophic Recognition"
 are the under scientific research to figure out the challenges make sense about ongoing and
 upcoming research. The special case is up. The cells are viewed in the deemed ways. There are
 different types of them. Some of them are individuals and some of them are well-modeled by
 the group of cells. These types are all officially called "SuperHyperVertex" but the relations
 amid them all officially called "SuperHyperEdge". The frameworks "SuperHyperGraph" and
 "Neutrosophic SuperHyperGraph" are chosen and elected to scientific research about "Cancer's
 Neutrosophic Recognition". Thus these complex and dense SuperHyperModels open up some
 avenues to scientific research on theoretical segments and "Cancer's Neutrosophic Recognition".
 Some avenues are posed to pursue this research. It's also officially collected in the form of
 some questions and some problems. Assume a SuperHyperGraph. Then an " δ -Eulerian-
 Cycle-Decomposition In SuperHyperGraphs" is a maximal Eulerian-Cycle-Decomposition In
 SuperHyperGraphs of SuperHyperVertices with maximum cardinality such that either of the
 following expressions hold for the (Neutrosophic) cardinalities of SuperHyperNeighbors of
 $s \in S$: $|S \cap N(s)| > |S \cap (V \setminus N(s))| + \delta$, $|S \cap N(s)| < |S \cap (V \setminus N(s))| + \delta$. The first
 Expression, holds if S is an " δ -SuperHyperOffensive". And the second Expression, holds
 if S is an " δ -SuperHyperDefensive"; a "Neutrosophic δ -Eulerian-Cycle-Decomposition In
 SuperHyperGraphs" is a maximal Neutrosophic Eulerian-Cycle-Decomposition In SuperHy-
 perGraphs of SuperHyperVertices with maximum Neutrosophic cardinality such that either
 of the following expressions hold for the Neutrosophic cardinalities of SuperHyperNeighbors
 of $s \in S$: $|S \cap N(s)|_{Neutrosophic} > |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta$, $|S \cap N(s)|_{Neutrosophic} <$
 $|S \cap (V \setminus N(s))|_{Neutrosophic} + \delta$. The first Expression, holds if S is a "Neutrosophic
 δ -SuperHyperOffensive". And the second Expression, holds if S is a "Neutrosophic
 δ -SuperHyperDefensive". It's useful to define "Neutrosophic" version of Eulerian-Cycle-
 Decomposition In SuperHyperGraphs . Since there's more ways to get type-results to make
 Eulerian-Cycle-Decomposition In SuperHyperGraphs more understandable. For the sake of
 having Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs, there's a need

to “redefine” the notion of “Eulerian-Cycle-Decomposition In SuperHyperGraphs ”. The 171
SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the 172
alphabets. In this procedure, there’s the usage of the position of labels to assign to the values. 173
Assume a Eulerian-Cycle-Decomposition In SuperHyperGraphs . It’s redefined Neutrosophic 174
Eulerian-Cycle-Decomposition In SuperHyperGraphs if the mentioned Table holds, concerning, 175
“The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong 176
to The Neutrosophic SuperHyperGraph” with the key points, “The Values of The Vertices 177
& The Number of Position in Alphabet”, “The Values of The SuperVertices&The maximum 178
Values of Its Vertices”, “The Values of The Edges&The maximum Values of Its Vertices”, 179
“The Values of The HyperEdges&The maximum Values of Its Vertices”, “The Values of The 180
SuperHyperEdges&The maximum Values of Its Endpoints”. To get structural examples and 181
instances, I’m going to introduce the next SuperHyperClass of SuperHyperGraph based on 182
Eulerian-Cycle-Decomposition In SuperHyperGraphs . It’s the main. It’ll be disciplinary 183
to have the foundation of previous definition in the kind of SuperHyperClass. If there’s a 184
need to have all Eulerian-Cycle-Decomposition In SuperHyperGraphs until the Eulerian-Cycle- 185
Decomposition In SuperHyperGraphs, then it’s officially called “Eulerian-Cycle-Decomposition 186
In SuperHyperGraphs” but otherwise, it isn’t Eulerian-Cycle-Decomposition In SuperHyper- 187
Graphs . There are some instances about the clarifications for the main definition titled 188
“Eulerian-Cycle-Decomposition In SuperHyperGraphs ”. These two examples get more scrutiny 189
and discernment since there are characterized in the disciplinary ways of the SuperHyperClass 190
based on Eulerian-Cycle-Decomposition In SuperHyperGraphs . For the sake of having 191
Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs, there’s a need to “redefine” 192
the notion of “Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs” and “Neut- 193
rosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs ”. The SuperHyperVertices 194
and the SuperHyperEdges are assigned by the labels from the letters of the alphabets. In 195
this procedure, there’s the usage of the position of labels to assign to the values. Assume 196
a Neutrosophic SuperHyperGraph. It’s redefined “Neutrosophic SuperHyperGraph” if the 197
intended Table holds. And Eulerian-Cycle-Decomposition In SuperHyperGraphs are redefined 198
“Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs” if the intended Table 199
holds. It’s useful to define “Neutrosophic” version of SuperHyperClasses. Since there’s more 200
ways to get Neutrosophic type-results to make Neutrosophic Eulerian-Cycle-Decomposition In 201
SuperHyperGraphs more understandable. Assume a Neutrosophic SuperHyperGraph. There 202
are some Neutrosophic SuperHyperClasses if the intended Table holds. Thus SuperHyperPath, 203
Eulerian-Cycle-Decomposition In SuperHyperGraphs, SuperHyperStar, SuperHyperBipart- 204
ite, SuperHyperMultiPartite, and SuperHyperWheel, are “Neutrosophic SuperHyperPath”, 205
“Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs”, “Neutrosophic Super- 206
HyperStar”, “Neutrosophic SuperHyperBipartite”, “Neutrosophic SuperHyperMultiPartite”, 207
and “Neutrosophic SuperHyperWheel” if the intended Table holds. A SuperHyperGraph has 208
“Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs” where it’s the strongest 209
[the maximum Neutrosophic value from all Eulerian-Cycle-Decomposition In SuperHyperGraphs 210
amid the maximum value amid all SuperHyperVertices from a Eulerian-Cycle-Decomposition 211
In SuperHyperGraphs .] Eulerian-Cycle-Decomposition In SuperHyperGraphs . A graph is 212
SuperHyperUniform if it’s SuperHyperGraph and the number of elements of SuperHyperEdges 213
are the same. Assume a Neutrosophic SuperHyperGraph. There are some SuperHyperClasses as 214
follows. It’s SuperHyperPath if it’s only one SuperVertex as intersection amid two given Super- 215
HyperEdges with two exceptions; it’s Eulerian-Cycle-Decomposition In SuperHyperGraphs if it’s 216

only one SuperVertex as intersection amid two given SuperHyperEdges; it's SuperHyperStar it's 217
 only one SuperVertex as intersection amid all SuperHyperEdges; it's SuperHyperBipartite it's 218
 only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, 219
 forming two separate sets, has no SuperHyperEdge in common; it's SuperHyperMultiPartite it's 220
 only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, 221
 forming multi separate sets, has no SuperHyperEdge in common; it's SuperHyperWheel if it's 222
 only one SuperVertex as intersection amid two given SuperHyperEdges and one SuperVertex 223
 has one SuperHyperEdge with any common SuperVertex. The SuperHyperModel proposes 224
 the specific designs and the specific architectures. The SuperHyperModel is officially called 225
 "SuperHyperGraph" and "Neutrosophic SuperHyperGraph". In this SuperHyperModel, The 226
 "specific" cells and "specific group" of cells are SuperHyperModeled as "SuperHyperVertices" 227
 and the common and intended properties between "specific" cells and "specific group" of cells 228
 are SuperHyperModeled as "SuperHyperEdges". Sometimes, it's useful to have some degrees of 229
 determinacy, indeterminacy, and neutrality to have more precise SuperHyperModel which in this 230
 case the SuperHyperModel is called "Neutrosophic". In the future research, the foundation will 231
 be based on the "Cancer's Neutrosophic Recognition" and the results and the definitions will 232
 be introduced in redeemed ways. The Neutrosophic recognition of the cancer in the long-term 233
 function. The specific region has been assigned by the model [it's called SuperHyperGraph] 234
 and the long cycle of the move from the cancer is identified by this research. Sometimes the 235
 move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy 236
 and neutrality about the moves and the effects of the cancer on that region; this event leads us 237
 to choose another model [it's said to be Neutrosophic SuperHyperGraph] to have convenient 238
 perception on what's happened and what's done. There are some specific models, which are 239
 well-known and they've got the names, and some SuperHyperGeneral SuperHyperModels. The 240
 moves and the traces of the cancer on the complex tracks and between complicated groups of 241
 cells could be fantasized by a Neutrosophic SuperHyperPath(-/Eulerian-Cycle-Decomposition 242
 In SuperHyperGraphs, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). 243
 The aim is to find either the longest Eulerian-Cycle-Decomposition In 244
 SuperHyperGraphs or the strongest Eulerian-Cycle-Decomposition In SuperHyperGraphs 245
 in those Neutrosophic SuperHyperModels. For the longest Eulerian-Cycle-Decomposition 246
 In SuperHyperGraphs, called Eulerian-Cycle-Decomposition In SuperHyperGraphs, and the 247
 strongest Eulerian-Cycle-Decomposition In SuperHyperGraphs, called Neutrosophic Eulerian- 248
 Cycle-Decomposition In SuperHyperGraphs, some general results are introduced. Beyond 249
 that in SuperHyperStar, all possible SuperHyperPaths have only two SuperHyperEdges but 250
 it's not enough since it's essential to have at least three SuperHyperEdges to form any style 251
 of a Eulerian-Cycle-Decomposition In SuperHyperGraphs. There isn't any formation of any 252
 Eulerian-Cycle-Decomposition In SuperHyperGraphs but literarily, it's the deformation of any 253
 Eulerian-Cycle-Decomposition In SuperHyperGraphs. It, literarily, deforms and it doesn't form. 254
 A basic familiarity with SuperHyperGraph theory and Neutrosophic SuperHyperGraph theory 255
 are proposed. 256

Keywords: Neutrosophic SuperHyperGraph, Neutrosophic Eulerian-Cycle-Decomposition In 257

SuperHyperGraphs, Cancer's Neutrosophic Recognition 258

AMS Subject Classification: 05C17, 05C22, 05E45 259

Some scientific studies and scientific researches about neutrosophic graphs, are proposed 260



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Beyond Neutrosophic Graphs

Uploaded by Henry Garrett on Feb 27, 2022

Henry Garrett, (2022). "Beyond Neutrosophic Graphs", Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United States. ISBN: 978-1-59973-735-6 (<http://...> [Full description](#))



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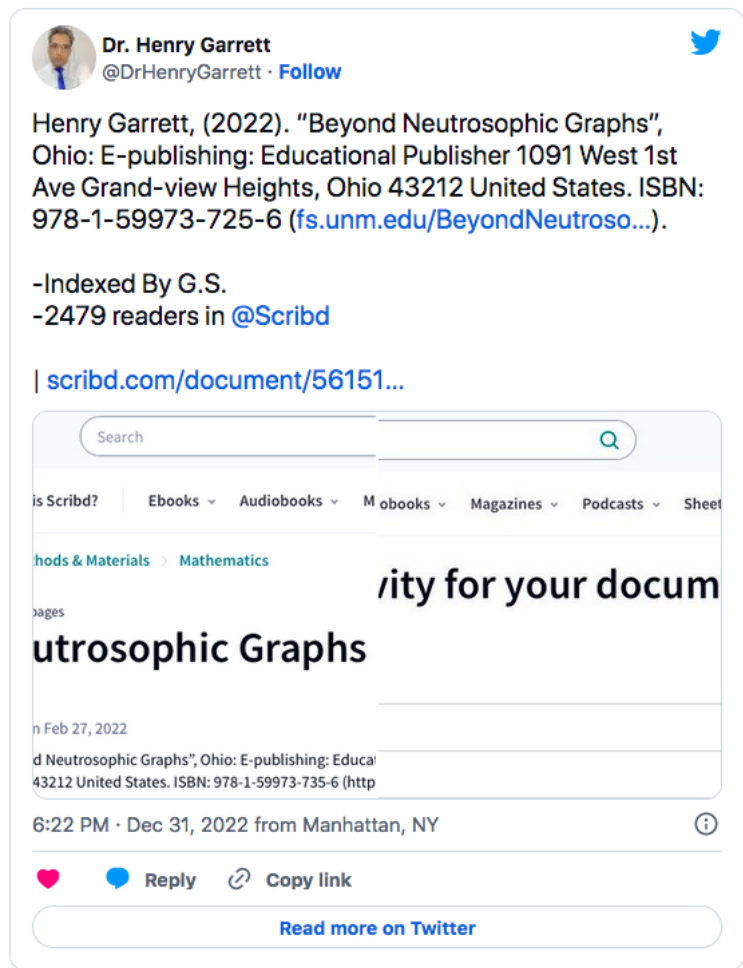
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as book in the following by Henry Garrett (2022) which is indexed by Google Scholar and has more than 3181 readers in Scribd. It's titled "Beyond Neutrosophic Graphs" and published by Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United State. This research book covers different types of notions and settings in neutrosophic graph theory and neutrosophic SuperHyperGraph theory.

[Ref] Henry Garrett, (2022). "*Beyond Neutrosophic Graphs*", Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United States. ISBN: 978-1-59973-725-6 (<http://fs.unm.edu/BeyondNeutrosophicGraphs.pdf>).

[Ref] Henry Garrett, (2022). "*Beyond Neutrosophic Graphs*", Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United States. ISBN: 978-1-59973-725-6 (<http://fs.unm.edu/BeyondNeutrosophicGraphs.pdf>).

Also, some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in the following by Henry Garrett (2022) which is indexed by Google Scholar and has more than 4060 readers in Scribd. It's titled "Neutrosophic Duality" and published by Florida: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. This research book presents different types of notions SuperHyperResolving and Eulerian-Cycle-Decomposition In SuperHyperGraphs in the setting of duality in neutrosophic graph theory and neutrosophic SuperHyperGraph theory. This research book has scrutiny on the complement of the intended set and the intended set, simultaneously. It's smart to consider a set but acting on its complement that what's done in this research book which is popular in the terms of high readers in Scribd.



[Ref] Henry Garrett, (2022). "*Neutrosophic Duality*", Florida: GLOBAL KNOWLEDGE 286
- Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. ISBN: 287
978-1-59973-743-0 ([http://fs.unm.edu/NeutrosophicDuality.pdf](\"http://fs.unm.edu/NeutrosophicDuality.pdf\")). 288
[Ref] Henry Garrett, (2022). "*Neutrosophic Duality*", Florida: GLOBAL KNOWLEDGE 289
- Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. ISBN: 290
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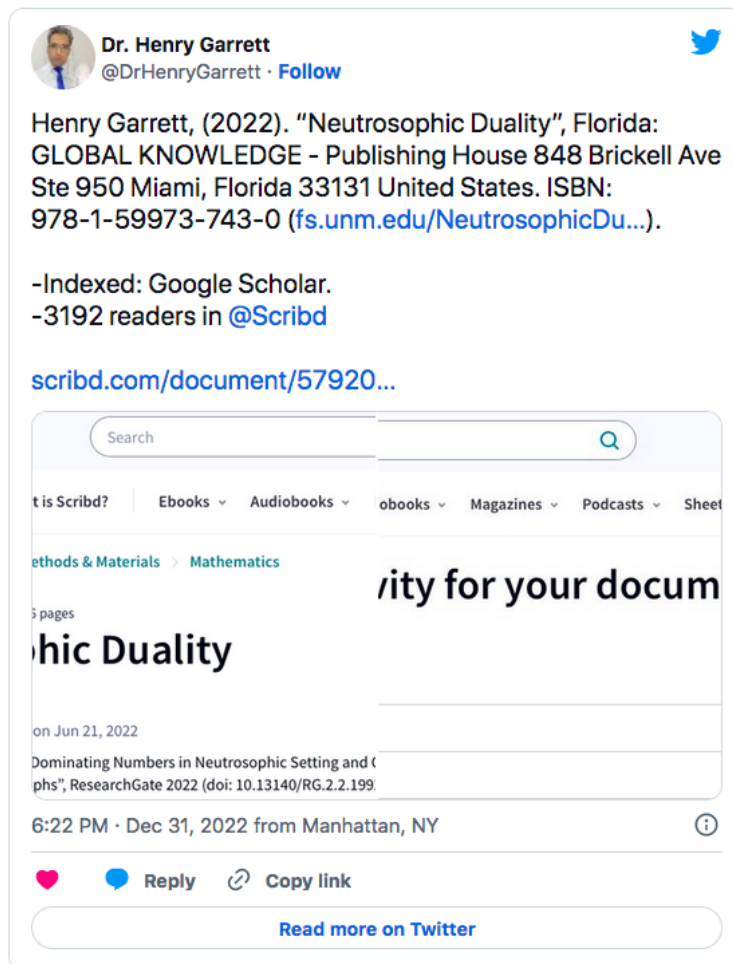
[Ref1] Henry Garrett, "Dual-Dominating Numbers in Neutrosophic Setting and Crisp Setting Obtained From Classes of Neutrosophic Graphs", ResearchGate 2022 (doi: 10.13140/RG.2.2.19925.91361). ... [Full description](#)



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Dr. Henry Garrett

CHAPTER 2

292

Background

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There are some scientific researches covering the topic of this research. In what follows, there are some discussion and literature reviews about them. 294
The seminal paper and groundbreaking article is titled “*Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes*” in **Ref. [HG1]** by Henry Garrett (2022). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental SuperHyperNumber and using neutrosophic SuperHyperClasses of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “*Journal of Mathematical Techniques and Computational Mathematics(JMTCM)*” with ISO abbreviation “*J Math Techniques Comput Math*” in volume 1 and issue 3 with pages 242-263. 295
The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers. 296
The seminal paper and groundbreaking article is titled “*Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer’s Treatments*” in **Ref. [HG2]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental notions and using vital tools in Cancer’s Treatments. It’s published in prestigious and fancy journal is entitled “*Journal of Mathematical Techniques and Computational Mathematics(JMTCM)*” with ISO abbreviation “*J Math Techniques Comput Math*” in volume 2 and issue 1 with pages 35-47. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers. 297
The seminal paper and groundbreaking article is titled “*A Research on Cancer’s Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations*” in **Ref. [HG3]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental notions and using vital tools in Cancer’s Recognition. It’s published in prestigious and fancy journal is entitled “*Journal of Mathematical Techniques and Computational Mathematics(JMTCM)*” with ISO abbreviation “*J Math Techniques Comput Math*” in volume 2 and issue 3 with pages 136-148. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers. 298
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The seminal paper and groundbreaking article is titled “*neutrosophic co-degree and neutrosophic degree alongside chromatic numbers in the setting of some classes related to neutrosophic hypergraphs*” in **Ref. [HG93]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on general forms without using neutrosophic classes of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “*Journal of Current Trends in Computer Science Research (JCTCSR)*” with ISO abbreviation “*J Curr Trends Comp Sci Res*” in volume 2 and issue 1 with pages 16-24. The research article studies deeply with choosing neutrosophic hypergraphs instead of neutrosophic SuperHyperGraph. It’s the breakthrough toward independent results based on initial background. In some articles are titled “*0039 / Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph*” in **Ref. [HG4]** by Henry Garrett (2022), “*0049 / (Failed)1-Zero-Forcing Number in Neutrosophic Graphs*” in **Ref. [HG5]** by Henry Garrett (2022), “*Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG6]** by Henry Garrett (2022), “*Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition*” in **Ref. [HG7]** by Henry Garrett (2022), “*Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs*” in **Ref. [HG8]** by Henry Garrett (2022), “*The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph*” in **Ref. [HG9]** by Henry Garrett (2022), “*Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG10]** by Henry Garrett (2022), “*Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs*” in **Ref. [HG11]** by Henry Garrett (2022), “*Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG12]** by Henry Garrett (2022), “*(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG13]** by Henry Garrett (2022), “*Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints*” in **Ref. [HG14]** by Henry Garrett (2022), “*Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond*” in **Ref. [HG15]** by Henry Garrett (2022), “*(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG16]** by Henry Garrett (2022), “*Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints*” in **Ref. [HG12]** by Henry Garrett (2022), “*Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG17]** by Henry Garrett (2022), “*Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints*” in **Ref. [HG18]** by Henry Garrett (2022), “*(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances*” in

Ref. [HG19] by Henry Garrett (2022), “*(Neutrosophic) SuperHyperAlliances With SuperHyper-Defensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses*” in **Ref. [HG20]** by Henry Garrett (2022), “*SuperHyperGirth on SuperHyper-Graph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions*” in **Ref. [HG21]** by Henry Garrett (2022), “*Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments*” in **Ref. [HG22]** by Henry Garrett (2022), “*SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses*” in **Ref. [HG23]** by Henry Garrett (2022), “*SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer’s Recognition In Neutrosophic SuperHyperGraphs*” in **Ref. [HG24]** by Henry Garrett (2023), “*The Focus on The Partitions Obtained By Parallel Moves In The Cancer’s Extreme Recognition With Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG25]** by Henry Garrett (2023), “*Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyper-Models Named (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG26]** by Henry Garrett (2023), “*Indeterminacy On The All Possible Connections of Cells In Front of Cancer’s Attacks In The Terms of Neutrosophic Failed SuperHyperClique on Cancer’s Recognition called Neutrosophic SuperHyperGraphs*” in **Ref. [HG27]** by Henry Garrett (2023), “*Perfect Directions Toward Idealism in Cancer’s Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs*” in **Ref. [HG28]** by Henry Garrett (2023), “*Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in the Terms of Cancer’s Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) SuperHyperClique*” in **Ref. [HG29]** by Henry Garrett (2023), “*Different Neutrosophic Types of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer’s Neutrosophic Recognition modeled in the Form of Neutrosophic SuperHyperGraphs*” in **Ref. [HG30]** by Henry Garrett (2023), “*Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG31]** by Henry Garrett (2023), “*Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints*” in **Ref. [HG32]** by Henry Garrett (2023), “*(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG33]** by Henry Garrett (2023), “*Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond*” in **Ref. [HG34]** by Henry Garrett (2022), “*(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG35]** by Henry Garrett (2022), “*Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs*” in **Ref. [HG36]** by Henry Garrett (2022), “*Basic Neutrosophic Notions Concerning SuperHyperDominating and Neutrosophic SuperHyperResolving in SuperHyperGraph*” in **Ref. [HG37]** by Henry Garrett (2022), “*Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyperGraph (NSHG)*” in **Ref. [HG38]** by Henry Garrett (2022), and **[HG4; HG5; HG6; HG7; HG8; HG9; HG10; HG11; HG12; HG13; HG14; HG15; HG16; HG17; HG18; HG19; HG20; HG21; HG22; HG23; HG24; HG25; HG26; HG27; HG28; HG29; HG30; HG31; HG32; HG33; HG34; HG35; HG36; HG37;**

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HG152b; HG153b; HG154b; HG155b; HG156b; HG157b; HG158b; HG159b;
HG160b; HG161b; HG162b; HG163b; HG164b; HG165b; HG166b]. Two popular
 scientific research books in Scribd in the terms of high readers, 4190 and 5189 respectively, on
 neutrosophic science is on [**HG32b; HG44b].**
 Some scientific studies and scientific researches about neutrosophic graphs, are proposed as
 book in **Ref. [HG71b]** by Henry Garrett (2023) which is indexed by Google Scholar and has
 more than 4331 readers in Scribd. It's titled "*Beyond Neutrosophic Graphs*" and published
 by Dr. Henry Garrett. This research book covers different types of notions and settings in
 neutrosophic graph theory and neutrosophic SuperHyperGraph theory.
 Also, some scientific studies and scientific researches about neutrosophic graphs, are proposed
 as book in **Ref. [HG70b]** by Henry Garrett (2023) which is indexed by Google Scholar and
 has more than 5327 readers in Scribd. It's titled "*Neutrosophic Duality*" and published by Dr.
 Henry Garrett. This research book presents different types of notions SuperHyperResolving and
 SuperHyperDominating in the setting of duality in neutrosophic graph theory and neutrosophic
 SuperHyperGraph theory. This research book has scrutiny on the complement of the intended set
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HG166b]. Two popular scientific research books in Scribd in the terms of high readers, 496
4331 and 5327 respectively, on neutrosophic science is on [HG32b; HG44b]. 497

Bibliography

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HG1	[1]	Henry Garrett, “ <i>Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes</i> ”, J Math Techniques Comput Math 1(3) (2022) 242-263. (doi: 10.33140/JMTCM.01.03.09)	499 500 501 502
HG2	[2]	Henry Garrett, “ <i>Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer’s Treatments</i> ”, J Math Techniques Comput Math 2(1) (2023) 35-47. (https://www.opastpublishers.com/open-access-articles/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a.pdf)	503 504 505 506 507 508
HG3	[3]	Henry Garrett, “ <i>A Research on Cancer’s Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations</i> ”, J Math Techniques Comput Math 2(3) (2023) 136-148. (https://www.opastpublishers.com/open-access-articles/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-.pdf)	509 510 511 512 513 514
HG93	[4]	Henry Garrett, “ <i>Neutrosophic Co-degree and Neutrosophic Degree alongside Chromatic Numbers in the Setting of Some Classes Related to Neutrosophic Hypergraphs</i> ”, J Curr Trends Comp Sci Res 2(1) (2023) 16-24. (https://www.opastpublishers.com/open-access-articles/neutrosophic-codegree-and-neutrosophic-degree-alongside-chromatic-numbers-in-the-setting-of-some-classes-related-to-neut.pdf)	515 516 517 518 519
HG4	[5]	Garrett, Henry. “ <i>0039 / Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph.</i> ” CERN European Organization for Nuclear Research - Zenodo, Nov. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.5281/zenodo.6319942 . https://oa.mg/work/10.5281/zenodo.6319942	520 521 522 523 524
HG5	[6]	Garrett, Henry. “ <i>0049 / (Failed)1-Zero-Forcing Number in Neutrosophic Graphs.</i> ” CERN European Organization for Nuclear Research - Zenodo, Feb. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.13140/rg.2.2.35241.26724 . https://oa.mg/work/10.13140/rg.2.2.35241.26724	525 526 527 528

HG6	[7]	Henry Garrett, “ <i>Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010308 (doi: 10.20944/preprints202301.0308.v1).	529 530 531
HG7	[8]	Henry Garrett, “ <i>Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition</i> ”, Preprints 2023, 2023010282 (doi: 10.20944/preprints202301.0282.v1).	532 533 534 535
HG8	[9]	Henry Garrett, “ <i>Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs</i> ”, Preprints 2023, 2023010267 (doi: 10.20944/preprints202301.0267.v1).	536 537 538
HG9	[10]	Henry Garrett, “ <i>The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph</i> ”, Preprints 2023, 2023010265 (doi: 10.20944/preprints202301.0265.v1).	539 540 541 542 543
HG10	[11]	Henry Garrett, “ <i>Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010262,(doi: 10.20944/preprints202301.0262.v1).	544 545 546 547
HG11	[12]	Henry Garrett, “ <i>Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs</i> ”, Preprints 2023, 2023010240 (doi: 10.20944/preprints202301.0240.v1).	548 549 550
HG12	[13]	Henry Garrett, “ <i>Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010224, (doi: 10.20944/preprints202301.0224.v1).	551 552 553
HG13	[14]	Henry Garrett, “ <i>(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	554 555 556
HG14	[15]	Henry Garrett, “ <i>Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints</i> ”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	557 558 559
HG15	[16]	Henry Garrett, “ <i>Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond</i> ”, Preprints 2023, 2023010044	560 561 562
HG16	[17]	Henry Garrett, “ <i>(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1).	563 564 565
HG17	[18]	Henry Garrett, “ <i>Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	566 567 568

HG18	[19]	Henry Garrett, “ <i>Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints</i> ”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	569 570 571
HG19	[20]	Henry Garrett, “ <i>(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances</i> ”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).	572 573 574
HG20	[21]	Henry Garrett, “ <i>(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses</i> ”, Preprints 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).	575 576 577 578
HG21	[22]	Henry Garrett, “ <i>SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions</i> ”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).	579 580 581
HG22	[23]	Henry Garrett, “ <i>Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments</i> ”, Preprints 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).	582 583 584
HG23	[24]	Henry Garrett, “ <i>SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses</i> ”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).	585 586 587
HG253	[25]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Cut As Hyper Eulogy On Super EULA</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7853867).	588 589 590
HG252	[26]	Henry Garrett, “ <i>New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7853922).	591 592 593
HG251	[27]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7851519).	594 595 596
HG250	[28]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Type-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7851550).	597 598 599
HG249	[29]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Decomposition As Hyper Decompress On Super Decomensation</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7839333).	600 601 602
HG248	[30]	Henry Garrett, “ <i>New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Type-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7840206).	603 604 605

HG247	[31]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Cut As Hyper Eulogy On Super EULA</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7834229).	606 607 608
HG246	[32]	Henry Garrett, “ <i>New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Type-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7834261).	609 610 611
HG245	[33]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7824560).	612 613 614
HG244	[34]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7824623).	615 616 617
HG243	[35]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Decomposition As Hyper Decompress On Super Decomensation</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7819531).	618 619 620
HG242	[36]	Henry Garrett, “ <i>New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7819579).	621 622 623
HG241	[37]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7812236).	624 625
HG240	[38]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By initial Eulerian-Path-Cut As Hyper initial Eulogy On Super initial EULA</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7809365).	626 627 628
HG239	[39]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Cut As Hyper Eulogy-Path-Cut On Super EULA-Path-Cut</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7809358).	629 630 631
HG238	[40]	Henry Garrett, “ <i>New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7809219).	632 633 634
HG237	[41]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyper-Graph By Eulerian-Path-Cut As Hyper Eulogy On Super EULA</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7809328).	635 636 637
HG236	[42]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7806767).	638 639 640
HG235	[43]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Type-Cycle-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7806838).	641 642 643

HG234	[44]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Decomposition As Hyper Decompress On Super Decompensation</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7804238).	644 645 646
HG233	[45]	Henry Garrett, “ <i>New Ideas On Super Decompensation By Hyper Decompress Of Hamiltonian-Type-Cycle-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7804228).	647 648 649
HG232	[46]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Cut As Hyper Hamper On Super Hammy</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7799902).	650 651 652
HG231	[47]	Henry Garrett, “ <i>New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Type-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7804218).	653 654 655
HG230	[48]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7796334).	656 657 658
HG228	[49]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Decomposition As Hyper Decompress On Super Decompensation</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7793372).	659 660 661
HG226	[50]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Cut As Hyper Hamper On Super Hammy</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7791952).	662 663 664
HG225	[51]	Henry Garrett, “ <i>New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7791982).	665 666 667
HG224	[52]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7790026).	668 669 670
HG223	[53]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7790052).	671 672 673
HG222	[54]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Decomposition As Hyper Decompress On Super Decompensation</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7787066).	674 675 676
HG221	[55]	Henry Garrett, “ <i>New Ideas On Super Decompensation By Hyper Decompress Of Hamiltonian-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7787094).	677 678 679
HG220	[56]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cut As Hyper Hamper On Super Hammy</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7781476).	680 681 682

HG219	[57]	Henry Garrett, “ <i>New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7783082).	683 684 685
HG218	[58]	Henry Garrett, “ <i>New Ideas In Recognition of Cancer And Neutrosophic SuperHyper-Graph By Trace-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7777857).	686 687 688
HG217	[59]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Trace-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7779286).	689 690 691
HG215	[60]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Decomposition As Hyper Decompress On Super Decomensation</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7771831).	692 693 694
HG214	[61]	Henry Garrett, “ <i>New Ideas On Super Decomensation By Hyper Decompress Of Trace-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7772468).	695 696 697
HG213	[62]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Cut As Hyper Nebbish On Super Nebulous</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20913.25446).	698 699 700
HG212	[63]	Henry Garrett, “ <i>New Ideas On Super Tract By Hyper Track Of Trace-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, Zenodo 2023, (doi: 10.5281/zenodo.7764916).	701 702 703
HG211	[64]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11770.98247).	704 705 706
HG210	[65]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Edge-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12400.12808).	707 708 709
HG209	[66]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Decomposition As Hyper Decompress On Super Decomensation</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.22545.10089).	710 711 712
HG208	[67]	Henry Garrett, “ <i>New Ideas On Super Decomensation By Hyper Decompress Of Edge-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29544.34564).	713 714 715
HG207	[68]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Edge-Cut As Hyper Edify On Super Eddy</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11377.76644).	716 717 718
HG206	[69]	Henry Garrett, “ <i>New Ideas On Super Eddy By Hyper Edify Of Edge-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23750.96329).	719 720 721

HG205	[70]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31366.24641).	722 723 724
HG204	[71]	Henry Garrett, “ <i>New Ideas On Super Nebulous By Hyper Nebbish Of Vertex-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34721.68960).	725 726 727
HG203	[72]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Decomposition As Hyper Decompress On Super Decomensation</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30212.81289).	728 729 730
HG202	[73]	Henry Garrett, “ <i>New Ideas On Super Decomensation By Hyper Decompress Of Vertex-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18468.76169).	731 732 733
HG201	[74]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Vertex-Cut As Hyper Vertu On Super Vertigo</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.24288.35842).	734 735 736
HG200	[75]	Henry Garrett, “ <i>New Ideas On Super Vertigo By Hyper Vertu Of Vertex-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32467.25124).	737 738 739
HG199	[76]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Neighbor As Hyper Nebbish On Super Nebulous</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31025.45925).	740 741 742
HG198	[77]	Henry Garrett, “ <i>New Ideas On Super Nebulizer By Hyper Nub Of Stable-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17184.25602).	743 744 745
HG197	[78]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Decompositions As Hyper Stain On Super Stagy</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23423.28327).	746 747 748
HG196	[79]	Henry Garrett, “ <i>New Ideas On Super Stale By Hyper Stalk Of Stable-Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28456.44805).	749 750 751
HG195	[80]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Stable-Cut As Hyper Stain On Super Stagy</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23525.68320).	752 753 754
HG194	[81]	Henry Garrett, “ <i>New Ideas On Super Stale By Hyper Stalk Of Stable-Cut In Can- cer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20170.24000).	755 756 757
HG193	[82]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Neighbors As Hyper Nebbish On Super Nebulous</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.36475.59683).	758 759 760

HG192	[83]	Henry Garrett, “ <i>New Ideas On Super Nebulizer By Hyper Nub Of Clique-Neighbors In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29764.71046).	761 762 763
HG191	[84]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Decompositions As Hyper Decompile On Super Decommission</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18780.87683).	764 765 766
HG190	[85]	Henry Garrett, “ <i>New Ideas On Super Decompensation By Hyper Decompress Of Clique- Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27169.48487).	767 768 769
HG189	[86]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Clique-Cut As Hyper Click On Super Cliche</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26134.01603).	770 771 772
HG188	[87]	Henry Garrett, “ <i>New Ideas On Super Cliff By Hyper Cling Of Clique-Cut In Can- cer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27392.30721).	773 774 775
HG187	[88]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHy- perGraph By Space As Hyper Spin On Super Spacy</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33028.40321).	776 777 778
HG186	[89]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper- Graph By List- Coloring As Hyper List On Super Lisle</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21389.20966).	779 780 781
HG185	[90]	Henry Garrett, “ <i>New Ideas On Super Lith By Hyper Lite Of List-Coloring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16356.04489).	782 783 784
HG184	[91]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHy- perGraph By Space As Hyper Sparse On Super Spark</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21756.21129).	785 786 787
HG183	[92]	Henry Garrett, “ <i>New Ideas On Super Solidarity By Hyper Soul Of Space In Cancer’s Recognition With (Extreme) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30983.68009).	788 789 790
HG182	[93]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Connectivity As Hyper Disclosure On Super Closure</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28552.29445).	791 792 793
HG181	[94]	Henry Garrett, “ <i>New Ideas On Super Uniform By Hyper Deformation Of Edge-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.10936.21761).	794 795 796
HG180	[95]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Connectivity As Hyper Leak On Super Structure</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35105.89447).	797 798 799

HG179	[96]	Henry Garrett, “ <i>New Ideas On Super System By Hyper Explosions Of Vertex-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30072.72960).	800 801 802
HG178	[97]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Tree-Decomposition As Hyper Forward On Super Returns</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31147.52003).	803 804 805
HG177	[98]	Henry Garrett, “ <i>New Ideas On Super Nodes By Hyper Moves Of Tree-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32825.24163).	806 807 808
HG176	[99]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Chord As Hyper Excellence On Super Excess</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13059.58401).	809 810 811
HG175	[100]	Henry Garrett, “ <i>New Ideas On Super Gap By Hyper Navigations Of Chord In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11172.14720).	812 813 814
HG174	[101]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyper(i,j)-Domination As Hyper Controller On Super Waves</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.22011.80165).	815 816 817
HG173	[102]	Henry Garrett, “ <i>New Ideas On Super Coincidence By Hyper Routes Of SuperHyper(i,j)-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30819.84003).	818 819 820
HG172	[103]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperEdge-Domination As Hyper Reversion On Super Indirection</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.10493.84962).	821 822 823
HG171	[104]	Henry Garrett, “ <i>New Ideas On Super Obstacles By Hyper Model Of SuperHyperEdge-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13849.29280).	824 825 826
HG170	[105]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Domination As Hyper k-Actions On Super Patterns</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19944.14086).	827 828 829
HG169	[106]	Henry Garrett, “ <i>New Ideas On Super Harmony By Hyper k-Function Of SuperHyperK-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23299.58404).	830 831 832
HG168	[107]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Number As Hyper k-Partition On Super Layers</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33103.76968).	833 834 835
HG167	[108]	Henry Garrett, “ <i>New Ideas On Super Gradient By Hyper k-Class Of SuperHyperK-Number In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23037.44003).	836 837 838

HG166	[109] Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperOrder As Hyper Enumerations On Super Landmarks</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35646.56641).	839 840 841
HG165	[110] Henry Garrett, “ <i>New Ideas On Super Analogous By Hyper Visions Of SuperHyperOrder In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18030.48967).	842 843 844
HG164	[111] Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperColoring As Hyper Categories On Super Neighbors</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13973.81121).	845 846 847
HG163	[112] Henry Garrett, “ <i>New Ideas On Super Relations By Hyper Identifications Of SuperHyperColoring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34106.47047).	848 849 850
HG162	[113] Henry Garrett, “ <i>New Ideas On Super Contradiction By Hyper Detection of SuperHyperDefensive In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13397.09446).	851 852 853
HG161	[114] Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDimension As Hyper Distinguishing On Super Distances</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31956.88961).	854 855 856
HG160	[115] Henry Garrett, “ <i>New Ideas On Super Locations By Hyper Differing Of SuperHyperDimension In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15179.67361).	857 858 859
HG159	[116] Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDominating As Hyper Closing On Super Messy</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21510.45125).	860 861 862
HG158	[117] Henry Garrett, “ <i>New Ideas On Super Missing By Hyper Searching Of SuperHyperDominating In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13121.84321).	863 864 865
HG157	[118] Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperConnected As Hyper Group On Super Surge</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11758.69441).	866 867 868
HG156	[119] Henry Garrett, “ <i>New Ideas On Super Outbreak By Hyper Collections Of SuperHyperConnected In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31891.35367).	869 870 871
HG155	[120] Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperTotal As Hyper Covering On Super Infections</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19360.87048).	872 873 874
HG154	[121] Henry Garrett, “ <i>New Ideas On Super Extremism By Hyper Treatments Of SuperHyperTotal In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32363.21286).	875 876 877

HG153	[122]	Henry Garrett, “ <i>New Ideas On Super Isolation By Hyper Perfectness Of SuperHyperPerfect In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23266.81602).	878 879 880
HG152	[123]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperPerfect As Hyper Idealism On Super Vacancy</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19911.37285).	881 882 883
HG151	[124]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperJoin As Hyper Separations On Super Sorts</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11050.90569).	884 885 886
HG150	[125]	Henry Garrett, “ <i>New Ideas On Super connections By Hyper disconnections Of SuperHyperJoin In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17761.79206).	887 888 889
HG149	[126]	Henry Garrett, “ <i>New Ideas On Super Mixed-Devastations By Hyper Decisions Of SuperHyperDuality In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34953.52320).	890 891 892
HG148	[127]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By SuperHyperDuality As Hyper Imaginations On Super Mixed-Illustrations</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33275.80161).	893 894 895
HG147	[128]	Henry Garrett, “ <i>New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By Path SuperHyperColoring As Hyper Correction On Super Faults</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30182.50241).	896 897 898
HG146	[129]	Henry Garrett, “ <i>New Ideas On Super Reflections By Hyper Rotations Of Path SuperHyperColoring In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33459.30243).	899 900 901
HG145	[130]	Henry Garrett, “ <i>New Ideas As Hyper Deformations On Super Chains In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph By SuperHyperDensity</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13444.60806).	902 903 904
HG144	[131]	Henry Garrett, “ <i>New Ideas As Hyper Ignorance By SuperHyperDensity On Super Resistances In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph</i> ”, ResearchGate 2023, (doi:10.13140/RG.2.2.16800.05123).	905 906 907
HG143	[132]	Henry Garrett, “ <i>New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-VI</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29913.80482).	908 909 910
HG142	[133]	Henry Garrett, “ <i>New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-V</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33269.24809).	911 912 913
HG141	[134]	Henry Garrett, “ <i>New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-IV</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34946.96960).	914 915 916

HG140	[135] Henry Garrett, “ <i>A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-III</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.14814.31040).	917 918 919
HG139	[136] Henry Garrett, “ <i>A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-II</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15653.17125).	920 921 922
HG138	[137] Henry Garrett, “ <i>A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-I</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.25719.50089).	923 924 925
HG137	[138] Henry Garrett, “ <i>New Ideas On Super Disruptions In Cancer’s Extreme Recognition As Neutrosophic SuperHyperGraph By Hyper Plans Called SuperHyperConnectivities</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29441.94562).	926 927 928
HG136	[139] Henry Garrett, “ <i>Cancer’s Neutrosophic Recognition As Neutrosophic SuperHyperGraph By SuperHyperConnectivities As Hyper Diagnosis On Super Mechanism</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17252.24968).	929 930 931
HG135	[140] Henry Garrett, “ <i>Cancer’s Recognition and (Neutrosophic) SuperHyperGraph By the Criteria of Eulerian and Hamiltonian Type-Sets As Hyper Modified Cycles On Super Mess</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16652.59525).	932 933 934
HG134	[141] Henry Garrett, “ <i>Eulerian and Hamiltonian In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph On Super Interactions By Hyper Extensions of Cycles</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34583.24485).	935 936 937
HG132	[142] Henry Garrett, “ <i>SuperHyperGirth Type-Results on extreme SuperHyperGirth theory and (Neutrosophic) SuperHyperGraphs Toward Cancer’s extreme Recognition</i> ”, Preprints 2023, 2023010396 (doi: 10.20944/preprints202301.0396.v1).	938 939 940
HG131	[143] Henry Garrett, “ <i>Neutrosophic SuperHyperGraphs Warns Hyper Landmark of neutrosophic SuperHyperGirth In Super Type-Versions of Cancer’s neutrosophic Recognition</i> ”, Preprints 2023, 2023010395 (doi: 10.20944/preprints202301.0395.v1).	941 942 943
HG130	[144] Henry Garrett, “ <i>The Constructions of (Neutrosophic) SuperHyperGraphs on the Cancer’s Recognition in The Confrontation With Super Attacks In Hyper Situations By Implementing (Neutrosophic) 1-Failed SuperHyperForcing in The Technical Approaches to Neutralize SuperHyperViews</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26240.51204).	944 945 946 947
HG129	[145] Henry Garrett, “ <i>(Neutrosophic) 1-Failed SuperHyperForcing As the Entrepreneurs on Cancer’s Recognitions To Fail Forcing Style As the Super Classes With Hyper Effects In The Background of the Framework is So-Called (Neutrosophic) SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12818.73925).	948 949 950 951
HG128	[146] Henry Garrett, “ <i>Super Actions On The Types of Hyper Levels In The Sensible Neutrosophic SuperHyperGirth On Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyper-Graph</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26836.88960).	952 953 954

HG127	[147] Henry Garrett, “ <i>SuperHyperGirth Approaches on the Super Challenges on the Cancer’s Recognition In the Hyper Model of (Neutrosophic) SuperHyperGraph</i> ”, ResearchGate 2023,(doi: 10.13140/RG.2.2.36745.93289).	955 956 957
HG126	[148] Henry Garrett, “ <i>Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010308 (doi: 10.20944/preprints202301.0308.v1).	958 959 960
HG125	[149] Henry Garrett, “ <i>Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition</i> ”, Preprints 2023, 2023010282 (doi: 10.20944/preprints202301.0282.v1).	961 962 963 964
HG124	[150] Henry Garrett, “ <i>Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs</i> ”, Preprints 2023, 2023010267 (doi: 10.20944/preprints202301.0267.v1).	965 966 967
HG123	[151] Henry Garrett, “ <i>The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph</i> ”, Preprints 2023, 2023010265 (doi: 10.20944/preprints202301.0265.v1).	968 969 970 971 972
HG122	[152] Henry Garrett, “ <i>Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010262,(doi: 10.20944/preprints202301.0262.v1).	973 974 975 976
HG121	[153] Henry Garrett, “ <i>Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs</i> ”, Preprints 2023, 2023010240 (doi: 10.20944/preprints202301.0240.v1).	977 978 979
HG120	[154] Henry Garrett, “ <i>Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010224, (doi: 10.20944/preprints202301.0224.v1).	980 981 982
HG24	[155] Henry Garrett, “ <i>SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer’s Recognition In Neutrosophic SuperHyperGraphs</i> ”, ResearchGate 2023,(doi: 10.13140/RG.2.2.35061.65767).	983 984 985
HG25	[156] Henry Garrett, “ <i>The Focus on The Partitions Obtained By Parallel Moves In The Cancer’s Extreme Recognition With Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18494.15680).	986 987 988 989
HG26	[157] Henry Garrett, “ <i>Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32530.73922).	990 991 992 993

HG27	[158] Henry Garrett, “ <i>Indeterminacy On The All Possible Connections of Cells In Front of Cancer’s Attacks In The Terms of Neutrosophic Failed SuperHyperClique on Cancer’s Recognition called Neutrosophic SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15897.70243).	994 995 996 997
HG116	[159] Henry Garrett, “ <i>Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32530.73922).	998 999 1000 1001
HG115	[160] Henry Garrett, “ <i>(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	1002 1003 1004
HG28	[161] Henry Garrett, “ <i>Perfect Directions Toward Idealism in Cancer’s Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30092.80004).	1005 1006 1007
HG29	[162] Henry Garrett, “ <i>Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in the Terms of Cancer’s Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) SuperHyperClique</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23172.19849).	1008 1009 1010 1011
HG112	[163] Henry Garrett, “ <i>Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	1012 1013 1014
HG111	[164] Henry Garrett, “ <i>Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints</i> ”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	1015 1016 1017
HG30	[165] Henry Garrett, “ <i>Different Neutrosophic Types of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer’s Neutrosophic Recognition modeled in the Form of Neutrosophic SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17385.36968).	1018 1019 1020 1021
HG107	[166] Henry Garrett, “ <i>Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond</i> ”, Preprints 2023, 2023010044	1022 1023 1024
HG106	[167] Henry Garrett, “ <i>(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs</i> ”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1).	1025 1026 1027
HG31	[168] Henry Garrett, “ <i>Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28945.92007).	1028 1029 1030
HG32	[169] Henry Garrett, “ <i>Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints</i> ”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11447.80803).	1031 1032 1033

HG33	[170]	Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35774.77123).	1034 1035 1036
HG34	[171]	Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, ResearchGate 2022, (doi: 10.13140/RG.2.2.36141.77287).	1037 1038 1039
HG35	[172]	Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, ResearchGate 2022, (doi: 10.13140/RG.2.2.29430.88642).	1040 1041 1042
HG36	[173]	Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, ResearchGate 2022, (doi: 10.13140/RG.2.2.11369.16487).	1043 1044 1045
HG982	[174]	Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).	1046 1047 1048
HG98	[175]	Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, ResearchGate 2022, (doi: 10.13140/RG.2.2.19380.94084).	1049 1050 1051
HG972	[176]	Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, Preprints 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).	1052 1053 1054 1055
HG97	[177]	Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, ResearchGate 2022, (doi: 10.13140/RG.2.2.14426.41923).	1056 1057 1058 1059
HG962	[178]	Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).	1060 1061 1062
HG96	[179]	Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, ResearchGate 2022 (doi: 10.13140/RG.2.2.20993.12640).	1063 1064 1065
HG952	[180]	Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, Preprints 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).	1066 1067 1068
HG95	[181]	Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs And SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23123.04641).	1069 1070 1071

HG942	[182] Henry Garrett, “ <i>SuperHyperDominating and SuperHyperResolving on Neutrosophic Super-HyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses</i> ”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).	1072 1073 1074
HG94	[183] Henry Garrett, “ <i>SuperHyperDominating and SuperHyperResolving on Neutrosophic Super-HyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses</i> ”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23324.56966).	1075 1076 1077
HG37	[184] Henry Garrett, “ <i>Basic Neutrosophic Notions Concerning SuperHyperDominating and Neutrosophic SuperHyperResolving in SuperHyperGraph</i> ”, ResearchGate 2022 (doi: 10.13140/RG.2.2.29173.86244).	1078 1079 1080
HG38	[185] Henry Garrett, “ <i>Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyper-Graph (NSHG)</i> ”, ResearchGate 2022 (doi: 10.13140/RG.2.2.25385.88160).	1081 1082 1083
HG166b	[186] Henry Garrett, “ <i>Eulerian-Cycle-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7856329).	1084 1085
HG165b	[187] Henry Garrett, “ <i>Eulerian-Cycle-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7854561).	1086 1087
HG164b	[188] Henry Garrett, “ <i>Eulerian-Type-Path-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7851893).	1088 1089
HG163b	[189] Henry Garrett, “ <i>Eulerian-Type-Path-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7848019).	1090 1091
HG162b	[190] Henry Garrett, “ <i>Eulerian-Type-Path-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7835063).	1092 1093
HG161b	[191] Henry Garrett, “ <i>Eulerian-Path-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7826705).	1094 1095
HG160b	[192] Henry Garrett, “ <i>Eulerian-Path-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7820680).	1096 1097
HG159b	[193] Henry Garrett, “ <i>Eulerian-Path-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812750).	1098 1099
HG158b	[194] Henry Garrett, “ <i>Hamiltonian-Type-Cycle-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812142).	1100 1101
HG157b	[195] Henry Garrett, “ <i>Hamiltonian-Type-Cycle-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7810394).	1102 1103
HG156b	[196] Henry Garrett, “ <i>Hamiltonian-Type-Cycle-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7807782).	1104 1105
HG155b	[197] Henry Garrett, “ <i>Hamiltonian-Cycle-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7804449).	1106 1107

HG154b	[198] Henry Garrett, “ <i>Hamiltonian-Cycle-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7793875). 1108 1109
HG153b	[199] Henry Garrett, “ <i>Hamiltonian-Cycle-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7792307). 1110 1111
HG152b	[200] Henry Garrett, “ <i>Hamiltonian-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7790728). 1112 1113
HG151b	[201] Henry Garrett, “ <i>Hamiltonian-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7787712). 1114 1115
HG150b	[202] Henry Garrett, “ <i>Hamiltonian-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7783791). 1116 1117
HG149b	[203] Henry Garrett, “ <i>Trace-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7780123). 1118 1119
HG148b	[204] Henry Garrett, “ <i>Trace-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7773119). 1120 1121
HG147b	[205] Henry Garrett, “ <i>SuperHyperDuality</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7637762). 1122 1123
HG146b	[206] Henry Garrett, “ <i>Trace-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7766174). 1124 1125
HG145b	[207] Henry Garrett, “ <i>Edge-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7762232). 1126 1127
HG144b	[208] Henry Garrett, “ <i>Edge-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7758601). 1128 1129
HG143b	[209] Henry Garrett, “ <i>Edge-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7754661). 1130 1131
HG142b	[210] Henry Garrett, “ <i>Vertex-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7750995) . 1132 1133
HG141b	[211] Henry Garrett, “ <i>Vertex-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7749875). 1134 1135
HG140b	[212] Henry Garrett, “ <i>Vertex-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7747236). 1136 1137
HG139b	[213] Henry Garrett, “ <i>Stable-Neighbor In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7742587). 1138 1139
HG138b	[214] Henry Garrett, “ <i>Stable-Decompositions In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7738635). 1140 1141
HG137b	[215] Henry Garrett, “ <i>Stable-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7734719). 1142 1143

HG136b	[216] Henry Garrett, “ <i>Clique-Neighbors In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730484). 1144 1145
HG135b	[217] Henry Garrett, “ <i>Clique-Decompositions In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730469). 1146 1147
HG134b	[218] Henry Garrett, “ <i>Clique-Cut In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7722865). 1148 1149
HG133b	[219] Henry Garrett, “ <i>Space In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7713563). 1150 1151
HG132b	[220] Henry Garrett, “ <i>Space In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7709116). 1152 1153
HG131b	[221] Henry Garrett, “ <i>Edge-Connectivity In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706415). 1154 1155
HG130b	[222] Henry Garrett, “ <i>Vertex-Connectivity In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706063). 1156 1157
HG129b	[223] Henry Garrett, “ <i>Tree-Decomposition In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7701906). 1158 1159
HG128b	[224] Henry Garrett, “ <i>Chord In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7700205). 1160 1161
HG127b	[225] Henry Garrett, “ <i>(i,j)-Domination In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7694876). 1162 1163
HG126b	[226] Henry Garrett, “ <i>Edge-Domination In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7679410). 1164 1165
HG125b	[227] Henry Garrett, “ <i>K-Domination In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7675982). 1166 1167
HG124b	[228] Henry Garrett, “ <i>K-Number In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7672388). 1168 1169
HG123b	[229] Henry Garrett, “ <i>Order In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7668648). 1170 1171
HG122b	[230] Henry Garrett, “ <i>Coloring In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7662810). 1172 1173
HG121b	[231] Henry Garrett, “ <i>Dimension In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7659162). 1174 1175
HG120b	[232] Henry Garrett, “ <i>Cancer In SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653233). 1176 1177
HG119b	[233] Henry Garrett, “ <i>SuperHyperWheel</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653204). 1178 1179

HG118b	[234] Henry Garrett, “ <i>SuperHyperMultipartite</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653142).	1180 1181
HG117b	[235] Henry Garrett, “ <i>SuperHyperBipartite</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653117).	1182 1183
HG116b	[236] Henry Garrett, “ <i>SuperHyperStar</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653089).	1184
HG115b	[237] Henry Garrett, “ <i>SuperHyperCycle</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651687).	1185 1186
HG114b	[238] Henry Garrett, “ <i>SuperHyperPath</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651619).	1187 1188
HG113b	[239] Henry Garrett, “ <i>SuperHyperDomination</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651439).	1189 1190
HG112b	[240] Henry Garrett, “ <i>SuperHyperDominating</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7650729).	1191 1192
HG111b	[241] Henry Garrett, “ <i>SuperHyperConnected</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647868).	1193 1194
HG110b	[242] Henry Garrett, “ <i>SuperHyperTotal</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647017).	1195 1196
HG109b	[243] Henry Garrett, “ <i>SuperHyperPerfect</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7644894).	1197 1198
HG108b	[244] Henry Garrett, “ <i>SuperHyperJoin</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7641880).	1199
HG107b	[245] Henry Garrett, “ <i>Path SuperHyperColoring</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7632923).	1200 1201
HG106b	[246] Henry Garrett, “ <i>SuperHyperDensity</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7623459).	1202 1203
HG105b	[247] Henry Garrett, “ <i>Neutrosophic SuperHyperConnectivities</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416).	1204 1205
HG104b	[248] Henry Garrett, “ <i>Extreme SuperHyperConnectivities</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416).	1206 1207
HG103b	[249] Henry Garrett, “ <i>SuperHyperConnectivities</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606404).	1208 1209
HG102b	[250] Henry Garrett, “ <i>Neutrosophic SuperHyperCycle</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	1210 1211
HG101b	[251] Henry Garrett, “ <i>Extreme SuperHyperCycle</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	1212 1213

HG100b	[252] Henry Garrett, “ <i>Extreme SuperHyperCycle</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	1214 1215
HG99b	[253] Henry Garrett, “ <i>SuperHyperCycle</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7579929).	1216 1217
HG98b	[254] Henry Garrett, “ <i>Neutrosophic SuperHyperGirth</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563170).	1218 1219
HG97b	[255] Henry Garrett, “ <i>Extreme SuperHyperGirth</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563164).	1220 1221
HG96b	[256] Henry Garrett, “ <i>SuperHyperGirth</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	1222 1223
HG95b	[257] Henry Garrett, “ <i>Extreme SuperHyperGirth</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	1224 1225
HG94b	[258] Henry Garrett, “ <i>Overlook On SuperHyperGirth</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	1226 1227
HG93b	[259] Henry Garrett, “ <i>Neutrosophic SuperHyperMatching</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557063).	1228 1229
HG92b	[260] Henry Garrett, “ <i>Extreme SuperHyperMatching</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557009).	1230 1231
HG91b	[261] Henry Garrett, “ <i>Overlook On SuperHyperMatching</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).	1232 1233
HG90b	[262] Henry Garrett, “ <i>Neutrosophic Failed SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	1234 1235
HG89b	[263] Henry Garrett, “ <i>Extreme Failed SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	1236 1237
HG88b	[264] Henry Garrett, “ <i>Overlook On Failed SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	1238 1239
HG87b	[265] Henry Garrett, “ <i>Extreme SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574952).	1240 1241
HG86b	[266] Henry Garrett, “ <i>Neutrosophic SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574992).	1242 1243
HG85b	[267] Henry Garrett, “ <i>Extreme SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	1244 1245
HG84b	[268] Henry Garrett, “ <i>Overlook On SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	1246 1247
HG83b	[269] Henry Garrett, “ <i>Neutrosophic Failed SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	1248 1249

HG82b	[270]	Henry Garrett, “ <i>Extreme Failed SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	1250 1251
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HG80b	[272]	Henry Garrett, “ <i>Neutrosophic SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	1254 1255
HG79b	[273]	Henry Garrett, “ <i>Extreme SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	1256 1257
HG78b	[274]	Henry Garrett, “ <i>Overlook On SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	1258 1259
HG77b	[275]	Henry Garrett, “ <i>Neutrosophic Failed SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	1260 1261
HG76b	[276]	Henry Garrett, “ <i>Extreme Failed SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	1262 1263
HG75b	[277]	Henry Garrett, “ <i>Neutrosophic SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	1264 1265
HG74b	[278]	Henry Garrett, “ <i>Extreme SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	1266 1267
HG73b	[279]	Henry Garrett, “ <i>Overlook On SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	1268 1269
HG72b	[280]	Henry Garrett, “ <i>Neutrosophic SuperHyperAlliances</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	1270 1271
HG71b	[281]	Henry Garrett, “ <i>Extreme SuperHyperAlliances</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	1272 1273
HG70b	[282]	Henry Garrett, “ <i>Overlook On SuperHyperAlliances</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	1274 1275
HG69b	[283]	Henry Garrett, “ <i>SuperHyperMatching</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).	1276 1277
HG68b	[284]	Henry Garrett, “ <i>Failed SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	1278 1279
HG67b	[285]	Henry Garrett, “ <i>SuperHyperClique</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	1280 1281
HG66b	[286]	Henry Garrett, “ <i>Failed SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	1282 1283
HG65b	[287]	Henry Garrett, “ <i>SuperHyperStable</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	1284 1285

HG64b	[288] Henry Garrett, “ <i>Failed SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.7497450).	1286 1287
HG63b	[289] Henry Garrett, “ <i>SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.7494862).	1288 1289
HG62b	[290] Henry Garrett, “ <i>SuperHyperAlliances</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.7493845).	1290 1291
HG61b	[291] Henry Garrett, “ <i>SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.7480110).	1292 1293
HG60b	[292] Henry Garrett, “ <i>Neut. SuperHyperEdges</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.7378758).	1294 1295
HG32b	[293] Henry Garrett, “ <i>Beyond Neutrosophic Graphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.6320305).	1296 1297
HG44b	[294] Henry Garrett, “ <i>Neutrosophic Duality</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zen- odo.6677173).	1298 1299

CHAPTER 3

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1307 Of acknowledgements

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Cancer In Extreme SuperHyperGraph

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The cancer is the Extreme disease but the Extreme model is going to figure out what's going on this Extreme phenomenon. The special Extreme case of this Extreme disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The Extreme recognition of the cancer could help to find some Extreme treatments for this Extreme disease. In the following, some Extreme steps are Extreme devised on this disease.

Step 1. (Extreme Definition) The Extreme recognition of the cancer in the long-term Extreme function.

Step 2. (Extreme Issue) The specific region has been assigned by the Extreme model [it's called Extreme SuperHyperGraph] and the long Extreme cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Extreme SuperHyperGraph] to have convenient perception on what's happened and what's done.

Step 3. (Extreme Model) There are some specific Extreme models, which are well-known and they've got the names, and some general Extreme models. The moves and the Extreme traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by an Extreme SuperHyperPath(-/SuperHyperK-Domination, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the Extreme SuperHyperK-Domination or the Extreme SuperHyperK-Domination in those Extreme Extreme SuperHyperModels.

Some cells have been faced with some attacks from the situation which is caused by the cancer's attacks. In this case, there are some embedded analysis on the ongoing situations which in that, the cells could be labelled as some groups and some groups or individuals have excessive labels which all are raised from the behaviors to overcome the cancer's attacks. In the embedded situations, the individuals of cells and the groups of cells could be considered as "new groups". Thus it motivates us to find the proper SuperHyperModels for getting more proper analysis on this messy story. I've found the SuperHyperModels which are officially called "SuperHyperGraphs" and "Extreme SuperHyperGraphs". In this SuperHyperModel, the cells and the groups of cells are defined as "SuperHyperVertices" and the relations between

the individuals of cells and the groups of cells are defined as “SuperHyperEdges”. Thus it’s another motivation for us to do research on this SuperHyperModel based on the “Cancer’s Recognition”. Sometimes, the situations get worst. The situation is passed from the certainty and precise style. Thus it’s the beyond them. There are three descriptions, namely, the degrees of determinacy, indeterminacy and neutrality, for any object based on vague forms, namely, incomplete data, imprecise data, and uncertain analysis. The latter model could be considered on the previous SuperHyperModel. It’s SuperHyperModel. It’s SuperHyperGraph but it’s officially called “Extreme SuperHyperGraphs”. The cancer is the disease but the model is going to figure out what’s going on this phenomenon. The special case of this disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The recognition of the cancer could help to find some treatments for this disease. The SuperHyperGraph and Extreme SuperHyperGraph are the SuperHyperModels on the “Cancer’s Recognition” and both bases are the background of this research. Sometimes the cancer has been happened on the region, full of cells, groups of cells and embedded styles. In this segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities of the moves of the cancer in the forms of alliances’ styles with the formation of the design and the architecture are formally called “ SuperHyperK-Domination” in the themes of jargons and buzzwords. The prefix “SuperHyper” refers to the theme of the embedded styles to figure out the background for the SuperHyperNotions. The recognition of the cancer in the long-term function. The specific region has been assigned by the model [it’s called SuperHyperGraph] and the long cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn’t be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it’s said to be Extreme SuperHyperGraph] to have convenient perception on what’s happened and what’s done. There are some specific models, which are well-known and they’ve got the names, and some general models. The moves and the traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by an Extreme SuperHyperPath (-/SuperHyperK-Domination, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the optimal SuperHyperK-Domination or the Extreme SuperHyperK-Domination in those Extreme SuperHyperModels. Some general results are introduced. Beyond that in SuperHyperStar, all possible Extreme SuperHyperPath s have only two SuperHyperEdges but it’s not enough since it’s essential to have at least three SuperHyperEdges to form any style of a SuperHyperK-Domination. There isn’t any formation of any SuperHyperK-Domination but literarily, it’s the deformation of any SuperHyperK-Domination. It, literarily, deforms and it doesn’t form.

Question 4.0.1. *How to define the SuperHyperNotions and to do research on them to find the “amount of SuperHyperK-Domination” of either individual of cells or the groups of cells based on the fixed cell or the fixed group of cells, extensively, the “amount of SuperHyperK-Domination” based on the fixed groups of cells or the fixed groups of group of cells?*

Question 4.0.2. *What are the best descriptions for the “Cancer’s Recognition” in terms of these messy and dense SuperHyperModels where embedded notions are illustrated?*

It’s motivation to find notions to use in this dense model is titled “SuperHyperGraphs”. Thus it motivates us to define different types of “ SuperHyperK-Domination” and “Extreme SuperHyperK-Domination” on “SuperHyperGraph” and “Extreme SuperHyperGraph”. Then the

research has taken more motivations to define SuperHyperClasses and to find some connections 1387
amid this SuperHyperNotion with other SuperHyperNotions. It motivates us to get some 1388
instances and examples to make clarifications about the framework of this research. The general 1389
results and some results about some connections are some avenues to make key point of this 1390
research, “Cancer’s Recognition”, more understandable and more clear. 1391
Some SuperHyperClasses and some Extreme SuperHyperClasses are the cases of this research 1392
on the modeling of the regions where are under the attacks of the cancer to recognize 1393
this disease as it’s mentioned on the title “Cancer’s Recognitions”. To formalize the 1394
instances on the SuperHyperNotion, SuperHyperK-Domination, the new SuperHyperClasses 1395
and SuperHyperClasses, are introduced. Some general results are gathered in the section on 1396
the SuperHyperK-Domination and the Extreme SuperHyperK-Domination. The clarifications, 1397
instances and literature reviews have taken the whole way through. In this scientific research, 1398
the literature reviews have fulfilled the lines containing the notions and the results. The 1399
SuperHyperGraph and Extreme SuperHyperGraph are the SuperHyperModels on the “Cancer’s 1400
Recognitions” and both bases are the background of this research. Sometimes the cancer has 1401
been happened on the region, full of cells, groups of cells and embedded styles. In this scientific 1402
segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities 1403
of the moves of the cancer in the longest and strongest styles with the formation of the design 1404
and the architecture are formally called “ SuperHyperK-Domination” in the themes of jargons 1405
and buzzwords. The prefix “SuperHyper” refers to the theme of the embedded styles to figure 1406
out the background for the SuperHyperNotions. 1407

Extreme Eulerian-Cycle-Decomposition

- Henry Garrett, “New Ideas On Super Mixed-Devastations By Hyper Decisions Of SuperHyperDuality In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34953.52320). 1410
1411
1412
- Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By SuperHyperDuality As Hyper Imaginations On Super Mixed-Illustrations”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33275.80161). 1413
1414
1415
- Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperJoin As Hyper Separations On Super Sorts”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11050.90569). 1416
1417
1418
- Henry Garrett, “New Ideas On Super connections By Hyper disconnections Of SuperHyperJoin In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17761.79206). 1419
1420
1421
- Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperPerfect As Hyper Idealism On Super Vacancy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19911.37285). 1422
1423
1424
- Henry Garrett, “New Ideas On Super Isolation By Hyper Perfectness Of SuperHyperPerfect In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23266.81602). 1425
1426
1427
- Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperTotal As Hyper Covering On Super Infections”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19360.87048). 1428
1429
1430
- Henry Garrett, “New Ideas On Super Extremism By Hyper Treatments Of SuperHyperTotal In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32363.21286). 1431
1432
1433
- Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperConnected As Hyper Group On Super Surge”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11758.69441). 1434
1435
1436
- Henry Garrett, “New Ideas On Super Outbreak By Hyper Collections Of SuperHyperConnected In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31891.35367). 1437
1438
1439
- Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDominating As Hyper Closing On Super Messy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21510.45125). 1440
1441
1442

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Henry Garrett, “New Ideas On Super Missing By Hyper Searching Of SuperHyperDominating 1443
In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 1444
10.13140/RG.2.2.13121.84321). 1445

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CHAPTER 6

1446

New Ideas On Super Decomensation By	1447
Hyper Decompress Of	1448
Eulerian-Cycle-Decomposition In	1449
Recognition of Cancer With	1450
(Neutrosophic) SuperHyperGraph	1451

CHAPTER 7

1452

ABSTRACT

1453

In this scientific research, (Different Neutrosophic Types of Neutrosophic SuperHyperEulerian- 1454
Cycle-Decomposition). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a Eulerian-Cycle- 1455
Decomposition pair $S = (V, E)$. Consider a Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and 1456
 $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called Neutrosophic e-SuperHyperEulerian-Cycle- 1457
Decomposition if the following expression is called Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition 1458
criteria holds 1459

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition if the following expression is called Neutro- 1460
sophic e-SuperHyperEulerian-Cycle-Decomposition criteria holds 1461

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; Neutrosophic v- 1462
SuperHyperEulerian-Cycle-Decomposition if the following expression is called Neutrosophic v- 1463
SuperHyperEulerian-Cycle-Decomposition criteria holds 1464

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition if the following expression is called Neutro- 1465
sophic v-SuperHyperEulerian-Cycle-Decomposition criteria holds 1466

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; Neutrosophic
 SuperHyperEulerian-Cycle-Decomposition if it's either of Neutrosophic e-SuperHyperEulerian-
 Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-
 SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition.
 ((Neutrosophic) SuperHyperEulerian-Cycle-Decomposition). Assume a Neutrosophic SuperHy-
 perGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperEdge
 (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called an Extreme SuperHyperEulerian-Cycle-
 Decomposition if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic
 re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and
 Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHy-
 perGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet
 S of high Extreme cardinality of the Extreme SuperHyperEdges in the conseNeighborive
 Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that
 they form the Extreme SuperHyperEulerian-Cycle-Decomposition; a Neutrosophic SuperHyperEulerian-
 Cycle-Decomposition if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic
 re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and
 Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic Super-
 hyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutro-
 sophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardin-
 ality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVer-
 tices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; an Extreme
 SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial if it's either of Neutrosophic e-
 SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neut-
 rosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-
 Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme
 SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number
 of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme Super-
 hyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges
 and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-
 Decomposition; and the Extreme power is corresponded to its Extreme coefficient; a Neutro-
 sophic SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial if it's either of Neutrosophic
 e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neut-
 rosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-
 Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutro-
 sophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic
 number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a
 Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic
 SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic
 SuperHyperEulerian-Cycle-Decomposition; and the Neutrosophic power is corresponded to its Neutro-
 sophic coefficient; an Extreme V-SuperHyperEulerian-Cycle-Decomposition if it's either of Neutrosophic
 e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neut-
 rosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-
 Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum
 Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme
 SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges
 and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-

Decomposition; a Neutrosophic V-SuperHyperEulerian-Cycle-Decomposition if it's either of Neutrosophic
e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic
v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the
maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; an Extreme V-SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; and the Extreme power is corresponded to its Extreme coefficient; a Neutrosophic SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; and the Neutrosophic power is corresponded to its Neutrosophic coefficient. In this scientific research, new setting is introduced for new SuperHyperNotions, namely, a SuperHyperEulerian-Cycle-Decomposition and Neutrosophic SuperHyperEulerian-Cycle-Decomposition. Two different types of SuperHyperDefinitions are debut for them but the research goes further and the SuperHyperNotion, SuperHyperUniform, and SuperHyperClass based on that are well-defined and well-reviewed. The literature review is implemented in the whole of this research. For shining the elegance and the significance of this research, the comparison between this SuperHyperNotion with other SuperHyperNotions and fundamental SuperHyperNumbers are featured. The definitions are followed by the examples and the instances thus the clarifications are driven with different tools. The applications are figured out to make sense about the theoretical aspect of this ongoing research. The "Cancer's Recognition" are the under research to figure out the challenges make sense about ongoing and upcoming research. The special case is up. The cells are viewed in the deemed ways. There are different types of them. Some of them are individuals and some of them are well-modeled by the group of cells. These types are all officially called "SuperHyperVertex" but the relations amid them all officially called "SuperHyperEdge". The frameworks "SuperHyperGraph" and "Neutrosophic SuperHyperGraph" are chosen and elected to research about "Cancer's Recognition". Thus these complex and dense SuperHyperModels open up some avenues to research on theoretical segments and "Cancer's Recognition". Some avenues are posed to pursue this research. It's also officially collected in the form of some questions and some problems. Assume a SuperHyperGraph. Assume a SuperHyperGraph. Then δ -SuperHyperEulerian-Cycle-Decomposition is a maximal of SuperHyperVertices with a maximum cardinality such that either of the

following expressions hold for the (Neutrosophic) cardinalities of SuperHyperNeighbors of $s \in S$: there are $|S \cap N(s)| > |S \cap (V \setminus N(s))| + \delta$; and $|S \cap N(s)| < |S \cap (V \setminus N(s))| + \delta$. The first Expression, holds if S is an δ -SuperHyperOffensive. And the second Expression, holds if S is an δ -SuperHyperDefensive; a Neutrosophic δ -SuperHyperEulerian-Cycle-Decomposition is a maximal Neutrosophic of SuperHyperVertices with maximum Neutrosophic cardinality such that either of the following expressions hold for the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$ there are: $|S \cap N(s)|_{Neutrosophic} > |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta$; and $|S \cap N(s)|_{Neutrosophic} < |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta$. The first Expression, holds if S is a Neutrosophic δ -SuperHyperOffensive. And the second Expression, holds if S is a Neutrosophic δ -SuperHyperDefensive. It's useful to define a "Neutrosophic" version of a SuperHyperEulerian-Cycle-Decomposition. Since there's more ways to get type-results to make a SuperHyperEulerian-Cycle-Decomposition more understandable. For the sake of having Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to "redefine" the notion of a "SuperHyperEulerian-Cycle-Decomposition". The SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the alphabets. In this procedure, there's the usage of the position of labels to assign to the values. Assume a SuperHyperEulerian-Cycle-Decomposition. It's redefined a Neutrosophic SuperHyperEulerian-Cycle-Decomposition if the mentioned Table holds, concerning, "The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph" with the key points, "The Values of The Vertices & The Number of Position in Alphabet", "The Values of The SuperVertices&The maximum Values of Its Vertices", "The Values of The Edges&The maximum Values of Its Vertices", "The Values of The HyperEdges&The maximum Values of Its Endpoints". To get structural examples and instances, I'm going to introduce the next SuperHyperClass of SuperHyperGraph based on a SuperHyperEulerian-Cycle-Decomposition. It's the main. It'll be disciplinary to have the foundation of previous definition in the kind of SuperHyperClass. If there's a need to have all SuperHyperEulerian-Cycle-Decomposition until the SuperHyperEulerian-Cycle-Decomposition, then it's officially called a "SuperHyperEulerian-Cycle-Decomposition" but otherwise, it isn't a SuperHyperEulerian-Cycle-Decomposition. There are some instances about the clarifications for the main definition titled a "SuperHyperEulerian-Cycle-Decomposition". These two examples get more scrutiny and discernment since there are characterized in the disciplinary ways of the SuperHyperClass based on a SuperHyperEulerian-Cycle-Decomposition. For the sake of having a Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to "redefine" the notion of a "Neutrosophic SuperHyperEulerian-Cycle-Decomposition" and a "Neutrosophic SuperHyperEulerian-Cycle-Decomposition". The SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the alphabets. In this procedure, there's the usage of the position of labels to assign to the values. Assume a Neutrosophic SuperHyperGraph. It's redefined "Neutrosophic SuperHyperGraph" if the intended Table holds. And a SuperHyperEulerian-Cycle-Decomposition are redefined to a "Neutrosophic SuperHyperEulerian-Cycle-Decomposition" if the intended Table holds. It's useful to define "Neutrosophic" version of SuperHyperClasses. Since there's more ways to get Neutrosophic type-results to make a Neutrosophic SuperHyperEulerian-Cycle-Decomposition more understandable. Assume a Neutrosophic SuperHyperGraph. There are some Neutrosophic SuperHyperClasses if the intended Table holds. Thus SuperHyperPath, SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultiPartite, and SuperHyperWheel, are "Neutrosophic SuperHyperPath", "Neutrosophic SuperHyperEulerian-Cycle-Decomposition", "Neutrosophic SuperHyperStar", "Neutrosophic SuperHy-

perBipartite”, “Neutrosophic SuperHyperMultiPartite”, and “Neutrosophic SuperHyperWheel” 1605
if the intended Table holds. A SuperHyperGraph has a “Neutrosophic SuperHyperEulerian- 1606
Cycle-Decomposition” where it’s the strongest [the maximum Neutrosophic value from all the 1607
SuperHyperEulerian-Cycle-Decomposition amid the maximum value amid all SuperHyperVertices 1608
from a SuperHyperEulerian-Cycle-Decomposition .] SuperHyperEulerian-Cycle-Decomposition . A graph is a 1609
SuperHyperUniform if it’s a SuperHyperGraph and the number of elements of SuperHyperEdges 1610
are the same. Assume a Neutrosophic SuperHyperGraph. There are some SuperHyperClasses 1611
as follows. It’s SuperHyperPath if it’s only one SuperVertex as intersection amid two given 1612
SuperHyperEdges with two exceptions; it’s SuperHyperEulerian-Cycle-Decomposition if it’s only one 1613
SuperVertex as intersection amid two given SuperHyperEdges; it’s SuperHyperStar it’s only one 1614
SuperVertex as intersection amid all SuperHyperEdges; it’s SuperHyperBipartite it’s only one 1615
SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming 1616
two separate sets, has no SuperHyperEdge in common; it’s SuperHyperMultiPartite it’s only 1617
one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, 1618
forming multi separate sets, has no SuperHyperEdge in common; it’s a SuperHyperWheel if it’s 1619
only one SuperVertex as intersection amid two given SuperHyperEdges and one SuperVertex 1620
has one SuperHyperEdge with any common SuperVertex. The SuperHyperModel proposes 1621
the specific designs and the specific architectures. The SuperHyperModel is officially called 1622
“SuperHyperGraph” and “Neutrosophic SuperHyperGraph”. In this SuperHyperModel, The 1623
“specific” cells and “specific group” of cells are SuperHyperModeled as “SuperHyperVertices” 1624
and the common and intended properties between “specific” cells and “specific group” of cells 1625
are SuperHyperModeled as “SuperHyperEdges”. Sometimes, it’s useful to have some degrees of 1626
determinacy, indeterminacy, and neutrality to have more precise SuperHyperModel which in this 1627
case the SuperHyperModel is called “Neutrosophic”. In the future research, the foundation will 1628
be based on the “Cancer’s Recognition” and the results and the definitions will be introduced 1629
in redeemed ways. The recognition of the cancer in the long-term function. The specific region 1630
has been assigned by the model [it’s called SuperHyperGraph] and the long cycle of the move 1631
from the cancer is identified by this research. Sometimes the move of the cancer hasn’t be easily 1632
identified since there are some determinacy, indeterminacy and neutrality about the moves 1633
and the effects of the cancer on that region; this event leads us to choose another model [it’s 1634
said to be Neutrosophic SuperHyperGraph] to have convenient perception on what’s happened 1635
and what’s done. There are some specific models, which are well-known and they’ve got the 1636
names, and some SuperHyperGeneral SuperHyperModels. The moves and the traces of the 1637
cancer on the complex tracks and between complicated groups of cells could be fantasized by a 1638
Neutrosophic SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, Super- 1639
HyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the 1640
longest SuperHyperEulerian-Cycle-Decomposition or the strongest SuperHyperEulerian-Cycle-Decomposition 1641
in those Neutrosophic SuperHyperModels. For the longest SuperHyperEulerian-Cycle-Decomposition, 1642
called SuperHyperEulerian-Cycle-Decomposition, and the strongest SuperHyperEulerian-Cycle-Decomposition, 1643
called Neutrosophic SuperHyperEulerian-Cycle-Decomposition, some general results are introduced. 1644
Beyond that in SuperHyperStar, all possible SuperHyperPaths have only two SuperHyperEdges 1645
but it’s not enough since it’s essential to have at least three SuperHyperEdges to form any style 1646
of a SuperHyperEulerian-Cycle-Decomposition. There isn’t any formation of any SuperHyperEulerian- 1647
Cycle-Decomposition but literarily, it’s the deformation of any SuperHyperEulerian-Cycle-Decomposition. It, 1648
literarily, deforms and it doesn’t form. A basic familiarity with Neutrosophic SuperHyperEulerian- 1649
Cycle-Decomposition theory, SuperHyperGraphs, and Neutrosophic SuperHyperGraphs theory are 1650

proposed.	1651
Keywords: Neutrosophic SuperHyperGraph, SuperHyperEulerian-Cycle-Decomposition, Cancer's	1652
Neutrosophic Recognition	1653
AMS Subject Classification: 05C17, 05C22, 05E45	1654

CHAPTER 8

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Applied Notions Under The Scrutiny Of The Motivation Of This Scientific Research

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In this scientific research, there are some ideas in the featured frameworks of motivations. I try to bring the motivations in the narrative ways. Some cells have been faced with some attacks from the situation which is caused by the cancer's attacks. In this case, there are some embedded analysis on the ongoing situations which in that, the cells could be labelled as some groups and some groups or individuals have excessive labels which all are raised from the behaviors to overcome the cancer's attacks. In the embedded situations, the individuals of cells and the groups of cells could be considered as "new groups". Thus it motivates us to find the proper SuperHyperModels for getting more proper analysis on this messy story. I've found the SuperHyperModels which are officially called "SuperHyperGraphs" and "Extreme SuperHyperGraphs". In this SuperHyperModel, the cells and the groups of cells are defined as "SuperHyperVertices" and the relations between the individuals of cells and the groups of cells are defined as "SuperHyperEdges". Thus it's another motivation for us to do research on this SuperHyperModel based on the "Cancer's Recognition". Sometimes, the situations get worst. The situation is passed from the certainty and precise style. Thus it's the beyond them. There are three descriptions, namely, the degrees of determinacy, indeterminacy and neutrality, for any object based on vague forms, namely, incomplete data, imprecise data, and uncertain analysis. The latter model could be considered on the previous SuperHyperModel. It's SuperHyperModel. It's SuperHyperGraph but it's officially called "Extreme SuperHyperGraphs". The cancer is the disease but the model is going to figure out what's going on this phenomenon. The special case of this disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The recognition of the cancer could help to find some treatments for this disease. The SuperHyperGraph and Extreme SuperHyperGraph are the SuperHyperModels on the "Cancer's Recognition" and both bases are the background of this research. Sometimes the cancer has been happened on the region, full of cells, groups of cells and embedded styles. In this segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities of the moves of the cancer in the forms of alliances' styles with the formation of the design and the architecture are formally called "SuperHyperEulerian-Cycle-Decomposition" in the themes of jargons and buzzwords. The prefix "SuperHyper" refers to the theme of the embedded

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styles to figure out the background for the SuperHyperNotions. The recognition of the cancer
 in the long-term function. The specific region has been assigned by the model [it's called
 SuperHyperGraph] and the long cycle of the move from the cancer is identified by this research.
 Sometimes the move of the cancer hasn't be easily identified since there are some determinacy,
 indeterminacy and neutrality about the moves and the effects of the cancer on that region;
 this event leads us to choose another model [it's said to be Extreme SuperHyperGraph] to
 have convenient perception on what's happened and what's done. There are some specific
 models, which are well-known and they've got the names, and some general models. The
 moves and the traces of the cancer on the complex tracks and between complicated groups of
 cells could be fantasized by an Extreme SuperHyperPath (-/SuperHyperEulerian-Cycle-Decomposition,
 SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is
 to find either the optimal SuperHyperEulerian-Cycle-Decomposition or the Extreme SuperHyperEulerian-
 Cycle-Decomposition in those Extreme SuperHyperModels. Some general results are introduced.
 Beyond that in SuperHyperStar, all possible Extreme SuperHyperPath s have only two
 SuperHyperEdges but it's not enough since it's essential to have at least three SuperHyperEdges
 to form any style of a SuperHyperEulerian-Cycle-Decomposition. There isn't any formation of any
 SuperHyperEulerian-Cycle-Decomposition but literarily, it's the deformation of any SuperHyperEulerian-
 Cycle-Decomposition. It, literarily, deforms and it doesn't form.

Question 8.0.1. *How to define the SuperHyperNotions and to do research on them to find the “
 amount of SuperHyperEulerian-Cycle-Decomposition” of either individual of cells or the groups of cells
 based on the fixed cell or the fixed group of cells, extensively, the “amount of SuperHyperEulerian-
 Cycle-Decomposition” based on the fixed groups of cells or the fixed groups of group of cells?*

Question 8.0.2. *What are the best descriptions for the “Cancer's Recognition” in terms of these
 messy and dense SuperHyperModels where embedded notions are illustrated?*

It's motivation to find notions to use in this dense model is titled “SuperHyperGraphs”. Thus
 it motivates us to define different types of “SuperHyperEulerian-Cycle-Decomposition” and “Extreme
 SuperHyperEulerian-Cycle-Decomposition” on “SuperHyperGraph” and “Extreme SuperHyperGraph”.
 Then the research has taken more motivations to define SuperHyperClasses and to find some
 connections amid this SuperHyperNotion with other SuperHyperNotions. It motivates us to get
 some instances and examples to make clarifications about the framework of this research. The
 general results and some results about some connections are some avenues to make key point of
 this research, “Cancer's Recognition”, more understandable and more clear.
 The framework of this research is as follows. In the beginning, I introduce basic definitions
 to clarify about preliminaries. In the subsection “Preliminaries”, initial definitions about
 SuperHyperGraphs and Extreme SuperHyperGraph are deeply-introduced and in-depth-
 discussed. The elementary concepts are clarified and illustrated completely and sometimes
 review literature are applied to make sense about what's going to figure out about the
 upcoming sections. The main definitions and their clarifications alongside some results
 about new notions, SuperHyperEulerian-Cycle-Decomposition and Extreme SuperHyperEulerian-Cycle-
 Decomposition, are figured out in sections “SuperHyperEulerian-Cycle-Decomposition” and “Extreme
 SuperHyperEulerian-Cycle-Decomposition”. In the sense of tackling on getting results and in Eulerian-
 Cycle-Decomposition to make sense about continuing the research, the ideas of SuperHyperUniform
 and Extreme SuperHyperUniform are introduced and as their consequences, corresponded
 SuperHyperClasses are figured out to debut what's done in this section, titled “Results on
 SuperHyperClasses” and “Results on Extreme SuperHyperClasses”. As going back to origin of

the notions, there are some smart steps toward the common notions to extend the new notions in 1733
new frameworks, SuperHyperGraph and Extreme SuperHyperGraph, in the sections “Results on 1734
SuperHyperClasses” and “Results on Extreme SuperHyperClasses”. The starter research about 1735
the general SuperHyperRelations and as concluding and closing section of theoretical research are 1736
contained in the section “General Results”. Some general SuperHyperRelations are fundamental 1737
and they are well-known as fundamental SuperHyperNotions as elicited and discussed in the 1738
sections, “General Results”, “ SuperHyperEulerian-Cycle-Decomposition ”, “Extreme SuperHyperEulerian- 1739
Cycle-Decomposition ”, “Results on SuperHyperClasses” and “Results on Extreme SuperHyperClasses”. 1740
There are curious questions about what’s done about the SuperHyperNotions to make sense 1741
about excellency of this research and going to figure out the word “best” as the description 1742
and adjective for this research as presented in section, “ SuperHyperEulerian-Cycle-Decomposition ”. 1743
The keyword of this research debut in the section “Applications in Cancer’s Recognition” 1744
with two cases and subsections “Case 1: The Initial Steps Toward SuperHyperBipartite as 1745
SuperHyperModel” and “Case 2: The Increasing Steps Toward SuperHyperMultipartite as 1746
SuperHyperModel”. In the section, “Open Problems”, there are some scrutiny and discernment 1747
on what’s done and what’s happened in this research in the terms of “questions” and “problems” 1748
to make sense to figure out this research in featured style. The advantages and the limitations 1749
of this research alongside about what’s done in this research to make sense and to get sense 1750
about what’s figured out are included in the section, “Conclusion and Closing Remarks”. 1751

Extreme Preliminaries Of This Scientific Research On the Redeemed Ways

In this section, the basic material in this scientific research, is referred to [Single Valued Neutrosophic Set](Ref.[HG38],Definition 2.2,p.2), [Neutrosophic Set](Ref.[HG38],Definition 2.1,p.1), [Neutrosophic SuperHyperGraph (NSHG)](Ref.[HG38],Definition 2.5,p.2), [Characterization of the Neutrosophic SuperHyperGraph (NSHG)](Ref.[HG38],Definition 2.7,p.3), [t-norm](Ref.[HG38], Definition 2.7, p.3), and [Characterization of the Neutrosophic SuperHyperGraph (NSHG)](Ref.[HG38],Definition 2.7,p.3), [Neutrosophic Strength of the Neutrosophic SuperHyperPaths] (Ref.[HG38],Definition 5.3,p.7), and [Different Neutrosophic Types of Neutrosophic SuperHyperEdges (NSHE)] (Ref.[HG38],Definition 5.4,p.7). Also, the new ideas and their clarifications are addressed to Ref.[HG38].

In this subsection, the basic material which is used in this scientific research, is presented. Also, the new ideas and their clarifications are elicited.

Definition 9.0.1 (Neutrosophic Set). (Ref.[HG38],Definition 2.1,p.1).

Let X be a Eulerian-Cycle-Decomposition of points (objects) with generic elements in X denoted by x ; then the **Neutrosophic set** A (NS A) is an object having the form

$$A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$$

where the functions $T, I, F : X \rightarrow]^{-}0, 1^{+}[$ define respectively the a **truth-membership function**, an **indeterminacy-membership function**, and a **falsity-membership function** of the element $x \in X$ to the set A with the condition

$$^{-}0 \leq T_A(x) + I_A(x) + F_A(x) \leq 3^{+}.$$

The functions $T_A(x), I_A(x)$ and $F_A(x)$ are real standard or nonstandard subsets of $]^{-}0, 1^{+}[$.

Definition 9.0.2 (Single Valued Neutrosophic Set). (Ref.[HG38],Definition 2.2,p.2).

Let X be a Eulerian-Cycle-Decomposition of points (objects) with generic elements in X denoted by x . A **single valued Neutrosophic set** A (SVNS A) is characterized by truth-membership function $T_A(x)$, an indeterminacy-membership function $I_A(x)$, and a falsity-membership function $F_A(x)$. For each point x in X , $T_A(x), I_A(x), F_A(x) \in [0, 1]$. A SVNS A can be written as

$$A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}.$$

Definition 9.0.3. The **degree of truth-membership, indeterminacy-membership** and **falsity-membership of the subset** $X \subset A$ of the single valued Neutrosophic set $A = \{< x : T_A(x), I_A(x), F_A(x) >, x \in X\}$:

$$T_A(X) = \min[T_A(v_i), T_A(v_j)]_{v_i, v_j \in X},$$

$$I_A(X) = \min[I_A(v_i), I_A(v_j)]_{v_i, v_j \in X},$$

$$\text{and } F_A(X) = \min[F_A(v_i), F_A(v_j)]_{v_i, v_j \in X}.$$

Definition 9.0.4. The **support** of $X \subset A$ of the single valued Neutrosophic set $A = \{< x : T_A(x), I_A(x), F_A(x) >, x \in X\}$:

$$\text{supp}(X) = \{x \in X : T_A(x), I_A(x), F_A(x) > 0\}.$$

Definition 9.0.5 (Neutrosophic SuperHyperGraph (NSHG)). (**Ref.**[HG38], Definition 2.5, p.2). 1767
 Assume V' is a given set. a **Neutrosophic SuperHyperGraph** (NSHG) S is a pair $S = (V, E)$, 1768
 where 1769

- (i) $V = \{V_1, V_2, \dots, V_n\}$ a finite set of finite single valued Neutrosophic subsets of V' ; 1770
- (ii) $V = \{(V_i, T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i)) : T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i) \geq 0\}$, $(i = 1, 2, \dots, n)$; 1771
- (iii) $E = \{E_1, E_2, \dots, E_{n'}\}$ a finite set of finite single valued Neutrosophic subsets of V ; 1772
- (iv) $E = \{(E_{i'}, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'})) : T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}) \geq 0\}$, $(i' = 1, 2, \dots, n')$; 1773
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- (v) $V_i \neq \emptyset$, $(i = 1, 2, \dots, n)$; 1775
- (vi) $E_{i'} \neq \emptyset$, $(i' = 1, 2, \dots, n')$; 1776
- (vii) $\sum_i \text{supp}(V_i) = V$, $(i = 1, 2, \dots, n)$; 1777
- (viii) $\sum_{i'} \text{supp}(E_{i'}) = V$, $(i' = 1, 2, \dots, n')$; 1778
- (ix) and the following conditions hold:

$$T'_V(E_{i'}) \leq \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i, V_j \in E_{i'}},$$

$$I'_V(E_{i'}) \leq \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i, V_j \in E_{i'}},$$

$$\text{and } F'_V(E_{i'}) \leq \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i, V_j \in E_{i'}}$$

where $i' = 1, 2, \dots, n'$. 1779

Here the Neutrosophic SuperHyperEdges (NSHE) $E_{j'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_j are single valued Neutrosophic sets. $T_{V'}(V_i)$, $I_{V'}(V_i)$, and $F_{V'}(V_i)$ denote the 1780
 degree of truth-membership, the degree of indeterminacy-membership and the degree of 1781
 falsity-membership the Neutrosophic SuperHyperVertex (NSHV) V_i to the Neutrosophic 1782
 SuperHyperVertex (NSHV) V . $T'_V(E_{i'})$, $I'_V(E_{i'})$, and $F'_V(E_{i'})$ denote the degree of truth- 1783
 membership, the degree of indeterminacy-membership and the degree of falsity-membership of 1784
 the Neutrosophic SuperHyperEdge (NSHE) $E_{i'}$ to the Neutrosophic SuperHyperEdge (NSHE) 1785
 E . Thus, the ii' th element of the **incidence matrix** of Neutrosophic SuperHyperGraph (NSHG) 1786
 are of the form $(V_i, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}))$, the sets V and E are crisp sets. 1787
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Definition 9.0.6 (Characterization of the Neutrosophic SuperHyperGraph (NSHG)). (Ref.[HG38], Definition 2.7, p.3). 1789

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. The Neutrosophic SuperHyperEdges (NSHE) $E_{i'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_i of Neutrosophic SuperHyperGraph (NSHG) $S = (V, E)$ could be characterized as follow-up items. 1790 1791 1792 1793

(i) If $|V_i| = 1$, then V_i is called **vertex**; 1794

(ii) if $|V_i| \geq 1$, then V_i is called **SuperVertex**; 1795

(iii) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **edge**; 1796

(iv) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **HyperEdge**; 1797

(v) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **SuperEdge**; 1798 1799

(vi) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **SuperHyperEdge**. 1800 1801

If we choose different types of binary operations, then we could get hugely diverse types of general forms of Neutrosophic SuperHyperGraph (NSHG). 1802 1803

Definition 9.0.7 (t-norm). (Ref.[HG38], Definition 2.7, p.3). 1804

A binary operation $\otimes : [0, 1] \times [0, 1] \rightarrow [0, 1]$ is a **t-norm** if it satisfies the following for $x, y, z, w \in [0, 1]$: 1805 1806

(i) $1 \otimes x = x$; 1807

(ii) $x \otimes y = y \otimes x$; 1808

(iii) $x \otimes (y \otimes z) = (x \otimes y) \otimes z$; 1809

(iv) If $w \leq x$ and $y \leq z$ then $w \otimes y \leq x \otimes z$. 1810

Definition 9.0.8. The **degree of truth-membership, indeterminacy-membership and falsity-membership of the subset** $X \subset A$ of the single valued Neutrosophic set $A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$ (with respect to t-norm T_{norm}):

$$T_A(X) = T_{norm}[T_A(v_i), T_A(v_j)]_{v_i, v_j \in X},$$

$$I_A(X) = T_{norm}[I_A(v_i), I_A(v_j)]_{v_i, v_j \in X},$$

$$\text{and } F_A(X) = T_{norm}[F_A(v_i), F_A(v_j)]_{v_i, v_j \in X}.$$

Definition 9.0.9. The **support** of $X \subset A$ of the single valued Neutrosophic set $A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$:

$$\text{supp}(X) = \{ x \in X : T_A(x), I_A(x), F_A(x) > 0 \}.$$

Definition 9.0.10. (General Forms of Neutrosophic SuperHyperGraph (NSHG)). 1811

Assume V' is a given set. a **Neutrosophic SuperHyperGraph** (NSHG) S is a pair $S = (V, E)$, where 1812 1813

- (i) $V = \{V_1, V_2, \dots, V_n\}$ a finite set of finite single valued Neutrosophic subsets of V' ; 1814
- (ii) $V = \{(V_i, T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i)) : T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i) \geq 0\}$, $(i = 1, 2, \dots, n)$; 1815
- (iii) $E = \{E_1, E_2, \dots, E_{n'}\}$ a finite set of finite single valued Neutrosophic subsets of V ; 1816
- (iv) $E = \{(E_{i'}, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'})) : T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}) \geq 0\}$, $(i' = 1, 2, \dots, n')$; 1817
1818
- (v) $V_i \neq \emptyset$, $(i = 1, 2, \dots, n)$; 1819
- (vi) $E_{i'} \neq \emptyset$, $(i' = 1, 2, \dots, n')$; 1820
- (vii) $\sum_i \text{supp}(V_i) = V$, $(i = 1, 2, \dots, n)$; 1821
- (viii) $\sum_{i'} \text{supp}(E_{i'}) = V$, $(i' = 1, 2, \dots, n')$. 1822

Here the Neutrosophic SuperHyperEdges (NSHE) $E_{j'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_j are single valued Neutrosophic sets. $T_{V'}(V_i)$, $I_{V'}(V_i)$, and $F_{V'}(V_i)$ denote the degree of truth-membership, the degree of indeterminacy-membership and the degree of falsity-membership the Neutrosophic SuperHyperVertex (NSHV) V_i to the Neutrosophic SuperHyperVertex (NSHV) V . $T'_V(E_{i'})$, $I'_V(E_{i'})$, and $F'_V(E_{i'})$ denote the degree of truth-membership, the degree of indeterminacy-membership and the degree of falsity-membership of the Neutrosophic SuperHyperEdge (NSHE) $E_{i'}$ to the Neutrosophic SuperHyperEdge (NSHE) E . Thus, the ii' 'th element of the **incidence matrix** of Neutrosophic SuperHyperGraph (NSHG) are of the form $(V_i, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}))$, the sets V and E are crisp sets. 1823
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1831

Definition 9.0.11 (Characterization of the Neutrosophic SuperHyperGraph (NSHG)). 1832
 (Ref.[HG38], Definition 2.7,p.3). 1833

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. The Neutrosophic SuperHyperEdges (NSHE) $E_{i'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_i of Neutrosophic SuperHyperGraph (NSHG) $S = (V, E)$ could be characterized as follow-up items. 1834
1835
1836

- (i) If $|V_i| = 1$, then V_i is called **vertex**; 1837
- (ii) if $|V_i| \geq 1$, then V_i is called **SuperVertex**; 1838
- (iii) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **edge**; 1839
- (iv) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **HyperEdge**; 1840
- (v) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **SuperEdge**; 1841
1842
- (vi) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **SuperHyperEdge**. 1843
1844

This SuperHyperModel is too messy and too dense. Thus there's a need to have some restrictions and conditions on SuperHyperGraph. The special case of this SuperHyperGraph makes the patterns and regularities. 1845
1846
1847

Definition 9.0.12. A graph is **SuperHyperUniform** if it's SuperHyperGraph and the number of elements of SuperHyperEdges are the same. 1848
1849

To get more visions on SuperHyperUniform, the some SuperHyperClasses are introduced. It makes to have SuperHyperUniform more understandable.

Definition 9.0.13. Assume a Neutrosophic SuperHyperGraph. There are some SuperHyperClasses as follows.

- (i). It's **Neutrosophic SuperHyperPath** if it's only one SuperVertex as intersection amid two given SuperHyperEdges with two exceptions;
- (ii). it's **SuperHyperCycle** if it's only one SuperVertex as intersection amid two given SuperHyperEdges;
- (iii). it's **SuperHyperStar** it's only one SuperVertex as intersection amid all SuperHyperEdges;
- (iv). it's **SuperHyperBipartite** it's only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming two separate sets, has no SuperHyperEdge in common;
- (v). it's **SuperHyperMultiPartite** it's only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming multi separate sets, has no SuperHyperEdge in common;
- (vi). it's **SuperHyperWheel** if it's only one SuperVertex as intersection amid two given SuperHyperEdges and one SuperVertex has one SuperHyperEdge with any common SuperVertex.

Definition 9.0.14. Let a pair $S = (V, E)$ be a Neutrosophic SuperHyperGraph (NSHG) S . Then a sequence of Neutrosophic SuperHyperVertices (NSHV) and Neutrosophic SuperHyperEdges (NSHE)

$$V_1, E_1, V_2, E_2, V_3, \dots, V_{s-1}, E_{s-1}, V_s$$

is called a **Neutrosophic SuperHyperPath** (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_1 to Neutrosophic SuperHyperVertex (NSHV) V_s if either of following conditions hold:

- (i) $V_i, V_{i+1} \in E_{i'}$;
- (ii) there's a vertex $v_i \in V_i$ such that $v_i, V_{i+1} \in E_{i'}$;
- (iii) there's a SuperVertex $V'_i \in V_i$ such that $V'_i, V_{i+1} \in E_{i'}$;
- (iv) there's a vertex $v_{i+1} \in V_{i+1}$ such that $V_i, v_{i+1} \in E_{i'}$;
- (v) there's a SuperVertex $V'_{i+1} \in V_{i+1}$ such that $V_i, V'_{i+1} \in E_{i'}$;
- (vi) there are a vertex $v_i \in V_i$ and a vertex $v_{i+1} \in V_{i+1}$ such that $v_i, v_{i+1} \in E_{i'}$;
- (vii) there are a vertex $v_i \in V_i$ and a SuperVertex $V'_{i+1} \in V_{i+1}$ such that $v_i, V'_{i+1} \in E_{i'}$;
- (viii) there are a SuperVertex $V'_i \in V_i$ and a vertex $v_{i+1} \in V_{i+1}$ such that $V'_i, v_{i+1} \in E_{i'}$;
- (ix) there are a SuperVertex $V'_i \in V_i$ and a SuperVertex $V'_{i+1} \in V_{i+1}$ such that $V'_i, V'_{i+1} \in E_{i'}$.

Definition 9.0.15. (Characterization of the Neutrosophic SuperHyperPaths).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. a Neutrosophic SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_1 to Neutrosophic SuperHyperVertex (NSHV) V_s is sequence of Neutrosophic SuperHyperVertices (NSHV) and Neutrosophic SuperHyperEdges (NSHE)

$$V_1, E_1, V_2, E_2, V_3, \dots, V_{s-1}, E_{s-1}, V_s,$$

could be characterized as follow-up items.

- (i) If for all $V_i, E_{j'}$, $|V_i| = 1$, $|E_{j'}| = 2$, then NSHP is called **path**;
- (ii) if for all $E_{j'}$, $|E_{j'}| = 2$, and there's V_i , $|V_i| \geq 1$, then NSHP is called **SuperPath**;
- (iii) if for all $V_i, E_{j'}$, $|V_i| = 1$, $|E_{j'}| \geq 2$, then NSHP is called **HyperPath**;
- (iv) if there are $V_i, E_{j'}$, $|V_i| \geq 1$, $|E_{j'}| \geq 2$, then NSHP is called **Neutrosophic SuperHyperPath**.

Definition 9.0.16 (Neutrosophic Strength of the Neutrosophic SuperHyperPaths). (Ref.[HG38], Definition 5.3,p.7).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. A Neutrosophic SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_1 to Neutrosophic SuperHyperVertex (NSHV) V_s is sequence of Neutrosophic SuperHyperVertices (NSHV) and Neutrosophic SuperHyperEdges (NSHE)

$$V_1, E_1, V_2, E_2, V_3, \dots, V_{s-1}, E_{s-1}, V_s,$$

have

- (i) **Neutrosophic t-strength** $(\min\{T(V_i)\}, m, n)_{i=1}^s$;
- (ii) **Neutrosophic i-strength** $(m, \min\{I(V_i)\}, n)_{i=1}^s$;
- (iii) **Neutrosophic f-strength** $(m, n, \min\{F(V_i)\})_{i=1}^s$;
- (iv) **Neutrosophic strength** $(\min\{T(V_i)\}, \min\{I(V_i)\}, \min\{F(V_i)\})_{i=1}^s$.

Definition 9.0.17 (Different Neutrosophic Types of Neutrosophic SuperHyperEdges (NSHE)). (Ref.[HG38], Definition 5.4,p.7).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called

- (ix) **Neutrosophic t-connective** if $T(E) \geq$ maximum number of Neutrosophic t-strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;
- (x) **Neutrosophic i-connective** if $I(E) \geq$ maximum number of Neutrosophic i-strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

(xi) **Neutrosophic f-connective** if $F(E) \geq$ maximum number of Neutrosophic f-strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

(xii) **Neutrosophic connective** if $(T(E), I(E), F(E)) \geq$ maximum number of Neutrosophic strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$.

Definition 9.0.18. (Different Neutrosophic Types of Neutrosophic SuperHyperEulerian-Cycle-
Decomposition).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called

(i) **Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

(ii) **Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$;

(iii) **Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

(iv) **Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$;

- (v) **Neutrosophic SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition.

Definition 9.0.19. ((Neutrosophic) SuperHyperEulerian-Cycle-Decomposition). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called

- (i) an **Extreme SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition;
- (ii) a **Neutrosophic SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition;
- (iii) an **Extreme SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; and the Extreme power is corresponded to its Extreme coefficient;
- (iv) a **Neutrosophic SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; and the Neutrosophic power is corresponded to its Neutrosophic coefficient;

- (v) an **Extreme V-SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; 1965-1972
- (vi) a **Neutrosophic V-SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; 1973-1980
- (vii) an **Extreme V-SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; and the Extreme power is corresponded to its Extreme coefficient; 1981-1990
- (viii) a **Neutrosophic SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; and the Neutrosophic power is corresponded to its Neutrosophic coefficient. 1991-2001

Definition 9.0.20. ((Extreme/Neutrosophic) δ -SuperHyperEulerian-Cycle-Decomposition). 2002
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Then 2003

- (i) an δ -**SuperHyperEulerian-Cycle-Decomposition** is a Neutrosophic kind of Neutrosophic SuperHyperEulerian-Cycle-Decomposition such that either of the following expressions hold for 2004-2005

Table 9.1: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph Mentioned in the Definition (29.0.23)

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

136TBL3

the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$:

2006

$$\begin{aligned} |S \cap N(s)| &> |S \cap (V \setminus N(s))| + \delta; & \boxed{136EQN1} \\ |S \cap N(s)| &< |S \cap (V \setminus N(s))| + \delta. & \boxed{136EQN2} \end{aligned}$$

The Expression (29.1), holds if S is an δ -**SuperHyperOffensive**. And the Expression (29.1), holds if S is an δ -**SuperHyperDefensive**;

2007

2008

- (ii) a **Neutrosophic δ -SuperHyperEulerian-Cycle-Decomposition** is a Neutrosophic kind of Neutrosophic SuperHyperEulerian-Cycle-Decomposition such that either of the following Neutrosophic expressions hold for the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$:

2009

2010

2011

2012

$$\begin{aligned} |S \cap N(s)|_{Neutrosophic} &> |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta; & \boxed{136EQN3} \\ |S \cap N(s)|_{Neutrosophic} &< |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta. & \boxed{136EQN4} \end{aligned}$$

The Expression (29.1), holds if S is a **Neutrosophic δ -SuperHyperOffensive**. And the Expression (29.1), holds if S is a **Neutrosophic δ -SuperHyperDefensive**.

2013

2014

For the sake of having a Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to “**redefine**” the notion of “Neutrosophic SuperHyperGraph”. The SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the alphabets. In this procedure, there's the usage of the position of labels to assign to the values.

2015

2016

2017

2018

136DEF1

Definition 9.0.21. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. It's redefined **Neutrosophic SuperHyperGraph** if the Table (29.1) holds.

2019

2020

It's useful to define a “Neutrosophic” version of SuperHyperClasses. Since there's more ways to get Neutrosophic type-results to make a Neutrosophic more understandable.

2021

2022

136DEF2

Definition 9.0.22. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. There are some **Neutrosophic SuperHyperClasses** if the Table (29.2) holds. Thus Neutrosophic SuperHyperPath, SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultiPartite, and SuperHyperWheel, are **Neutrosophic SuperHyperPath**, **Neutrosophic SuperHyperCycle**, **Neutrosophic SuperHyperStar**, **Neutrosophic SuperHyperBipartite**, **Neutrosophic SuperHyperMultiPartite**, and **Neutrosophic SuperHyperWheel** if the Table (29.2) holds.

2023

2024

2025

2026

2027

2028

2029

It's useful to define a “Neutrosophic” version of a Neutrosophic SuperHyperEulerian-Cycle-Decomposition. Since there's more ways to get type-results to make a Neutrosophic

2030

2031

Table 9.2: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph, Mentioned in the Definition (29.0.22)

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

Table 9.3: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph Mentioned in the Definition (29.0.23)

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

SuperHyperEulerian-Cycle-Decomposition more Neutrosophically understandable. 2032
 For the sake of having a Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to 2033
 “**redefine**” the Neutrosophic notion of “Neutrosophic SuperHyperEulerian-Cycle-Decomposition”. The 2034
 SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the 2035
 alphabets. In this procedure, there's the usage of the position of labels to assign to the values. 2036
 2037

Definition 9.0.23. Assume a SuperHyperEulerian-Cycle-Decomposition. It's redefined a **Neutro-** 2038
sophic SuperHyperEulerian-Cycle-Decomposition if the Table (29.3) holds. 2039

CHAPTER 10

2040

Extreme SuperHyper Eulerian-Cycle-Decomposition But As The Extensions Excerpt From Dense And Super Forms

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Definition 10.0.1. (Extreme event).

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Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Any Extreme k -subset of A of V is called **Extreme k -event** and if $k = 2$, then Extreme subset of A of V is called **Extreme event**. The following expression is called **Extreme probability** of A .

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$$E(A) = \sum_{a \in A} E(a). \quad (10.1)$$

Definition 10.0.2. (Extreme Independent).

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Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. s Extreme k -events $A_i, i \in I$ is called **Extreme s -independent** if the following expression is called **Extreme s -independent criteria**

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$$E(\cap_{i \in I} A_i) = \prod_{i \in I} P(A_i).$$

And if $s = 2$, then Extreme k -events of A and B is called **Extreme independent**. The following expression is called **Extreme independent criteria**

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$$E(A \cap B) = P(A)P(B). \quad (10.2)$$

Definition 10.0.3. (Extreme Variable).

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Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Any k -function Eulerian-Cycle-Decomposition like E is called **Extreme k -Variable**. If $k = 2$, then any 2-function Eulerian-Cycle-Decomposition like E is called **Extreme Variable**.

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The notion of independent on Extreme Variable is likewise.

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Definition 10.0.4. (Extreme Expectation).

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Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a

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probability Eulerian-Cycle-Decomposition. an Extreme k-Variable E has a number is called **Extreme Expectation** if the following expression is called **Extreme Expectation criteria**

$$Ex(E) = \sum_{\alpha \in V} E(\alpha)P(\alpha).$$

Definition 10.0.5. (Extreme Crossing).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. an Extreme number is called **Extreme Crossing** if the following expression is called **Extreme Crossing criteria**

$$Cr(S) = \min\{\text{Number of Crossing in a Plane Embedding of } S\}.$$

Lemma 10.0.6. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let m and n propose special Eulerian-Cycle-Decomposition. Then with $m \geq 4n$,

Proof. Consider a planar embedding G of G with $cr(G)$ crossings. Let S be an Extreme random k -subset of V obtained by choosing each SuperHyperVertex of G Extreme independently with probability Eulerian-Cycle-Decomposition $p := 4n/m$, and set $H := G[S]$ and $H := G[S]$.

Define random variables X, Y, Z on V as follows: X is the Extreme number of SuperHyperVertices, Y the Extreme number of SuperHyperEdges, and Z the Extreme number of crossings of H . The trivial bound noted above, when applied to H , yields the inequality $Z \geq cr(H) \geq Y - 3X$. By linearity of Extreme Expectation,

$$E(Z) \geq E(Y) - 3E(X).$$

Now $E(X) = pn$, $E(Y) = p^2m$ (each SuperHyperEdge having some SuperHyperEnds) and $E(Z) = p^4cr(G)$ (each crossing being defined by some SuperHyperVertices). Hence

$$p^4cr(G) \geq p^2m - 3pn.$$

Dividing both sides by p^4 , we have:

$$cr(G) \geq \frac{pm - 3n}{p^3} = \frac{n}{(4n/m)^3} = \frac{1}{64}m^3n^2.$$

■ 2073

Theorem 10.0.7. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let P be a SuperHyperSet of n points in the plane, and let l be the Extreme number of SuperHyperLines in the plane passing through at least $k + 1$ of these points, where $1 \leq k \leq 2\sqrt{2}n$. Then $l < 32n^2/k^3$.

Proof. Form an Extreme SuperHyperGraph G with SuperHyperVertex SuperHyperSet P whose SuperHyperEdge are the segments between conseNeighborive points on the SuperHyperLines which pass through at least $k + 1$ points of P . This Extreme SuperHyperGraph has at least kl SuperHyperEdges and Extreme crossing at most l choose two. Thus either $kl < 4n$, in which case $l < 4n/k \leq 32n^2/k^3$, or $l^2/2 > 1$ choose $2 \geq cr(G) \geq (kl)^3/64n^2$ by the Extreme Crossing Lemma, and again $l < 32n^2/k^3$. ■

Theorem 10.0.8. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let P be a SuperHyperSet of n points in the plane, and let k be the number of pairs of points of P at unit SuperHyperDistance. Then $k < 5n^{4/3}$.

Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Draw a SuperHyperUnit SuperHyperCircle around each SuperHyperPoint of P . Let n_i be the Extreme number of these SuperHyperCircles passing through exactly i points of P . Then $\sum i = 0^{n-1} n_i = n$ and $k = \frac{1}{2} \sum i = 0^{n-1} i n_i$. Now form an Extreme SuperHyperGraph H with SuperHyperVertex SuperHyperSet P whose SuperHyperEdges are the SuperHyperArcs between conseNeighborive SuperHyperPoints on the SuperHyperCircles that pass through at least three SuperHyperPoints of P . Then

$$e(H) = \sum_{i=3}^{n-1} i n_i = 2k - n_1 - 2n_2 \geq 2k - 2n.$$

Some SuperHyperPairs of SuperHyperVertices of H might be joined by some parallel SuperHyperEdges. Delete from H one of each SuperHyperPair of parallel SuperHyperEdges, so as to obtain a simple Extreme SuperHyperGraph G with $e(G) \geq k - n$. Now $cr(G) \leq n(n-1)$ because G is formed from at most n SuperHyperCircles, and any two SuperHyperCircles cross at most twice. Thus either $e(G) < 4n$, in which case $k < 5n < 5n^{4/3}$, or $n^2 > n(n-1) \geq cr(G) \geq (k-n)^3/64n^2$ by the Extreme Crossing Lemma, and $k < 4n^{4/3} + n < 5n^{4/3}$. ■

Proposition 10.0.9. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X be a nonnegative Extreme Variable and t a positive real number. Then

$$P(X \geq t) \leq \frac{E(X)}{t}.$$

Proof.

$$\begin{aligned} E(X) &= \sum \{X(a)P(a) : a \in V\} \geq \sum \{X(a)P(a) : a \in V, X(a) \geq t\} \\ &\geq \sum \{tP(a) : a \in V, X(a) \geq t\} = t \sum \{P(a) : a \in V, X(a) \geq t\} \\ &= tP(X \geq t). \end{aligned}$$

Dividing the first and last members by t yields the asserted inequality. ■

Corollary 10.0.10. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X_n be a nonnegative integer-valued variable in a probability Eulerian-Cycle-Decomposition (V_n, E_n) , $n \geq 1$. If $E(X_n) \rightarrow 0$ as $n \rightarrow \infty$, then $P(X_n = 0) \rightarrow 1$ as $n \rightarrow \infty$.

Proof.

Theorem 10.0.11. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. A special SuperHyperGraph in $G_{n,p}$ almost surely has stability number at most $\lceil 2p^{-1} \log n \rceil$.

Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. A special SuperHyperGraph in $G_{n,p}$ is up. Let $G \in \mathcal{G}_{n,p}$ and let S be a given SuperHyperSet of $k + 1$ SuperHyperVertices of G , where $k \in \mathbb{N}$. The probability that S is a stable SuperHyperSet of G is $(1 - p)^{(k+1)\text{choose}2}$, this being the probability that none of the $(k + 1)\text{choose}2$ pairs of SuperHyperVertices of S is a SuperHyperEdge of the Extreme SuperHyperGraph G . Let A_S denote the event that S is a stable SuperHyperSet of G , and let X_S denote the indicator Extreme Variable for this Extreme Event. By equation, we have

$$E(X_S) = P(X_S = 1) = P(A_S) = (1 - p)^{(k+1)\text{choose}2}.$$

Let X be the number of stable SuperHyperSets of cardinality $k + 1$ in G . Then

$$X = \sum \{X_S : S \subseteq V, |S| = k + 1\}$$

and so, by those,

$$E(X) = \sum \{E(X_S) : S \subseteq V, |S| = k + 1\} = (n \text{ choose } k+1)(1 - p)^{(k+1)\text{choose}2}.$$

We bound the right-hand side by invoking two elementary inequalities:

$$(n \text{ choose } k+1) \leq \frac{n^{k+1}}{(k + 1)!} \text{ and } 1 - p \leq e^{-p}.$$

This yields the following upper bound on $E(X)$.

$$E(X) \leq \frac{n^{k+1} e^{-p(k+1)\text{choose}2}}{(k + 1)!} = \frac{ne^{-pk/2k+1}}{(k + 1)!}$$

Suppose now that $k = \lceil 2p^{-1} \log n \rceil$. Then $k \geq 2p^{-1} \log n$, so $ne^{-pk/2} \leq 1$. Because k grows at least as fast as the logarithm of n , implies that $E(X) \rightarrow 0$ as $n \rightarrow \infty$. Because X is integer-valued and nonnegative, we deduce from Corollary that $P(X = 0) \rightarrow 1$ as $n \rightarrow \infty$. Consequently, an Extreme SuperHyperGraph in $\mathcal{G}_{n,p}$ almost surely has stability number at most k . ■

Definition 10.0.12. (Extreme Variance).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. an Extreme k -Variable E has a number is called **Extreme Variance** if the following expression is called **Extreme Variance criteria**

$$Vx(E) = Ex((X - Ex(X))^2).$$

Theorem 10.0.13. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X be an Extreme Variable and let t be a positive real number. Then

$$E(|X - Ex(X)| \geq t) \leq \frac{V(X)}{t^2}.$$

Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X be an Extreme Variable and let t be a positive real number. Then

$$E(|X - Ex(X)| \geq t) = E((X - Ex(X))^2 \geq t^2) \leq \frac{Ex((X - Ex(X))^2)}{t^2} = \frac{V(X)}{t^2}.$$

■ 2139

Corollary 10.0.14. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X_n be an Extreme Variable in a probability Eulerian-Cycle-Decomposition $(V_n, E_n), n \geq 1$. If $Ex(X_n) \neq 0$ and $V(X_n) \ll E^2(X_n)$, then

$$E(X_n = 0) \rightarrow 0 \text{ as } n \rightarrow \infty$$

Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Set $X := X_n$ and $t := |Ex(X_n)|$ in Chebyshev's Inequality, and observe that $E(X_n = 0) \leq E(|X_n - Ex(X_n)| \geq |Ex(X_n)|)$ because $|X_n - Ex(X_n)| = |Ex(X_n)|$ when $X_n = 0$.

■ 2146

Theorem 10.0.15. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let $G \in \mathcal{G}_{n,1/2}$. For $0 \leq k \leq n$, set $f(k) := (n \text{ choose } k)2^{-(k \text{ choose } 2)}$ and let k^* be the least value of k for which $f(k)$ is less than one. Then almost surely $\alpha(G)$ takes one of the three values $k^* - 2, k^* - 1, k^*$.

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Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. As in the proof of related Theorem, the result is straightforward.

■ 2153

Corollary 10.0.16. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let $G \in \mathcal{G}_{n,1/2}$ and let f and k^* be as defined in previous Theorem. Then either:

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(i). $f(k^*) \ll 1$, in which case almost surely $\alpha(G)$ is equal to either $k^* - 2$ or $k^* - 1$, or

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(ii). $f(k^* - 1) \gg 1$, in which case almost surely $\alpha(G)$ is equal to either $k^* - 1$ or k^* .

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Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. The latter is straightforward.

■ 2160

Definition 10.0.17. (Extreme Threshold).

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Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let P be a monotone property of SuperHyperGraphs (one which is preserved when SuperHyperEdges are added). Then a **Extreme Threshold** for P is a function $f(n)$ such that:

2165

(i). if $p \ll f(n)$, then $G \in \mathcal{G}_{n,p}$ almost surely does not have P ,

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(ii). if $p \gg f(n)$, then $G \in \mathcal{G}_{n,p}$ almost surely has P .

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Definition 10.0.18. (Extreme Balanced). 2168

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is 2169
a probability Eulerian-Cycle-Decomposition. Let F be a fixed Extreme SuperHyperGraph. Then 2170
there is a threshold function for the property of containing a copy of F as an Extreme 2171
SubSuperHyperGraph is called **Extreme Balanced**. 2172

Theorem 10.0.19. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. 2173
Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let F be a nonempty balanced 2174
Extreme SubSuperHyperGraph with k SuperHyperVertices and l SuperHyperEdges. Then $n^{-k/l}$ 2175
is a threshold function for the property of containing F as an Extreme SubSuperHyperGraph. 2176

Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider 2177
 $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. The latter is straightforward. ■ 2178

Example 10.0.20. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in 2179
the mentioned Extreme Figures in every Extreme items. 2180

- On the Figure (30.1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian- 2181
Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. E_1 and E_3 2182
are some empty Extreme SuperHyperEdges but E_2 is a loop Extreme SuperHyperEdge and 2183
 E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, 2184
there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, 2185
 V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an 2186
Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given 2187
Extreme SuperHyperEulerian-Cycle-Decomposition. 2188

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ &= \{\{E_4\}\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\ &= \{\{V_1, V_2, V_4, V_1\}\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^4. \end{aligned}$$

2189

- On the Figure (30.2), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian- 2190
Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. E_1, E_2 and 2191
 E_3 are some empty Extreme SuperHyperEdges but E_4 is an Extreme SuperHyperEdge. 2192
Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHy- 2193
perEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means 2194
that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the 2195
Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperEulerian- 2196
Cycle-Decomposition. 2197

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}}$$

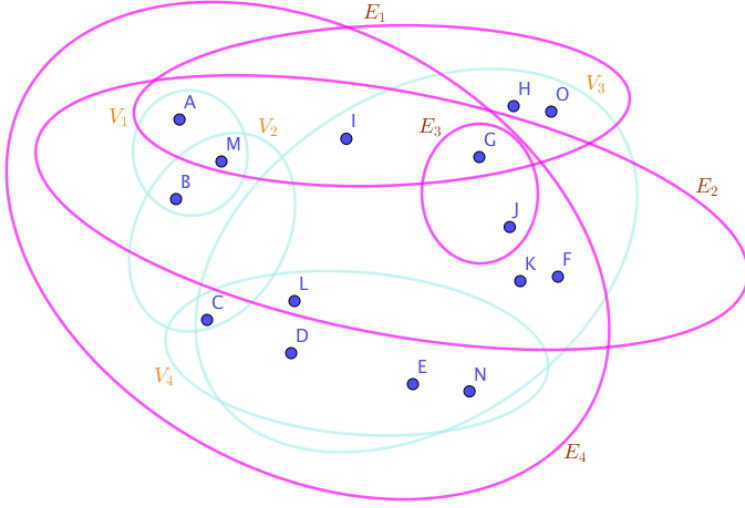


Figure 10.1: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG1

$$\begin{aligned}
 &= \{\{E_4\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{V_1, V_2, V_4, V_1\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^4.
 \end{aligned}$$

2198

- On the Figure (30.3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. 2199
2200

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{E_4\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{V_1, V_2, V_3, V_1\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^4.
 \end{aligned}$$

2201

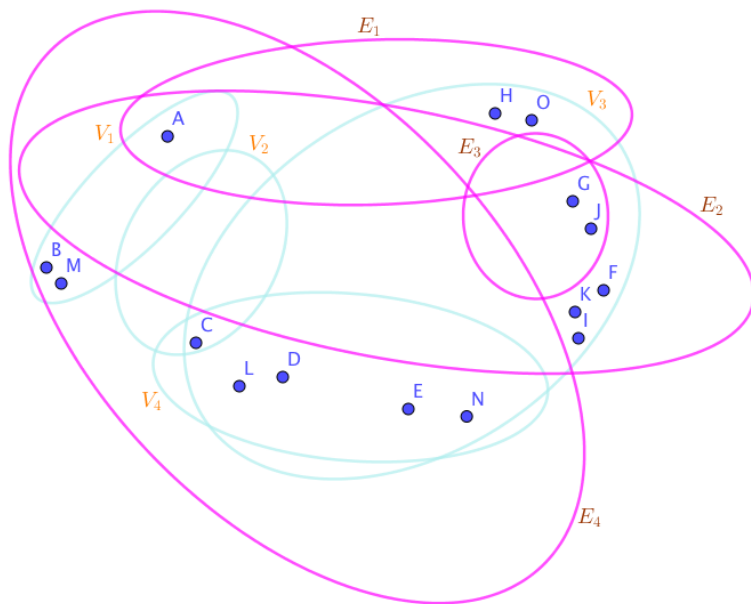


Figure 10.2: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG2

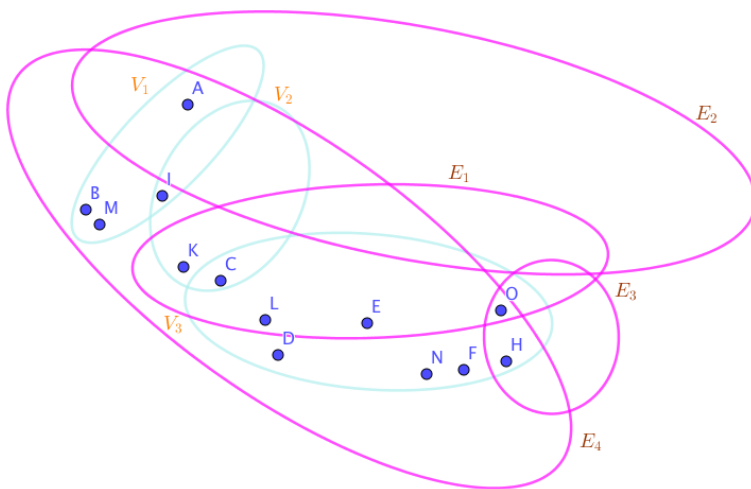


Figure 10.3: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG3

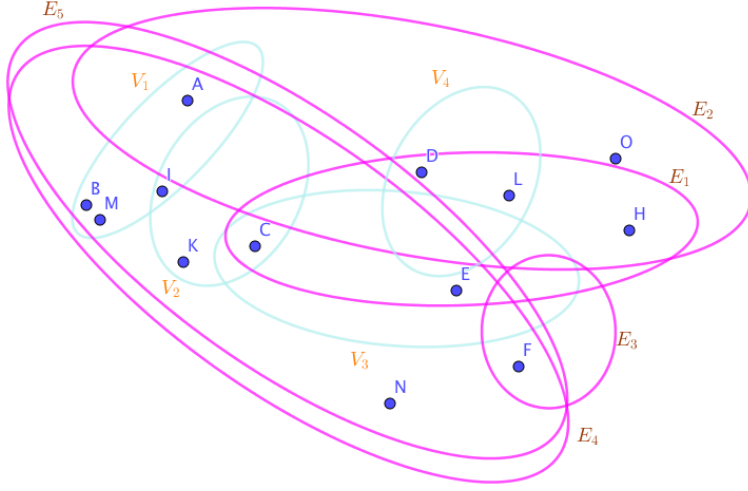


Figure 10.4: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG4

- On the Figure (30.4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. 2202 2203

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

2204

- On the Figure (30.5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. 2205 2206

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}
 \end{aligned}$$

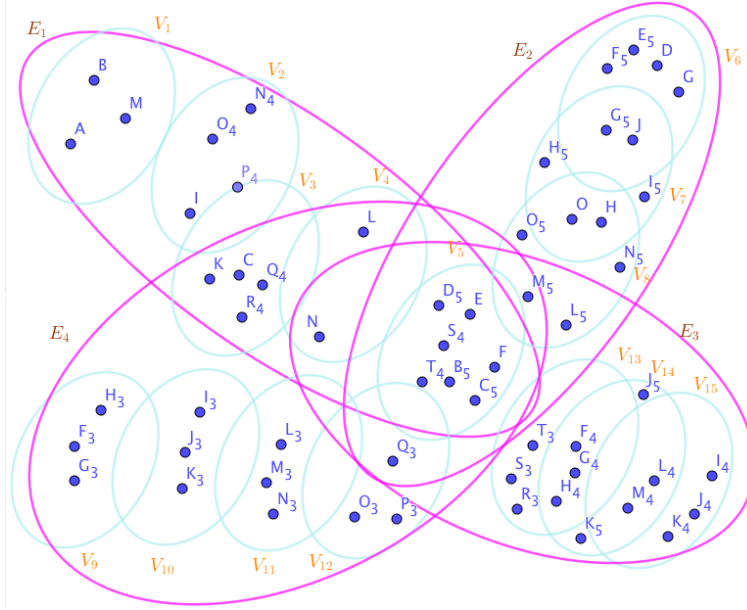


Figure 10.5: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG5

$$= z^0.$$

2207

- On the Figure (30.6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. 2208
2209

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

2210

- On the Figure (30.7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward. 2211
2212

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}}$$

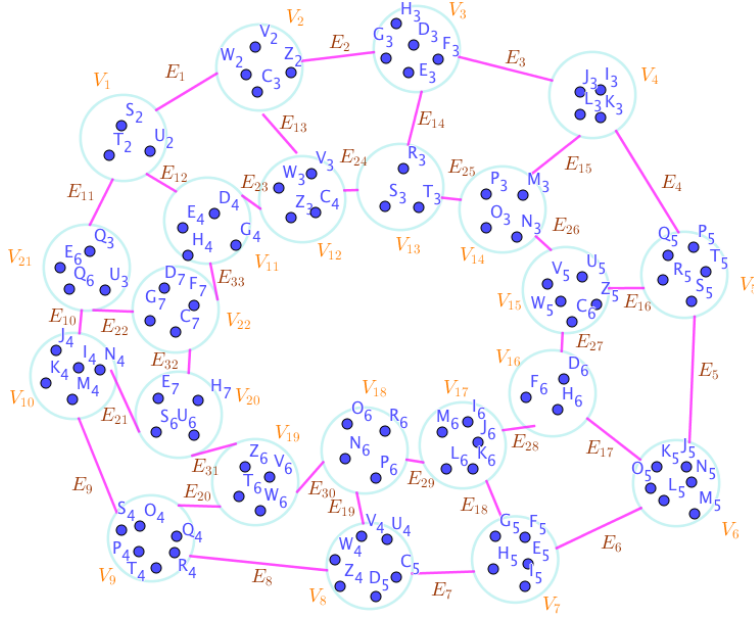


Figure 10.6: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG6

$$= \{\{\}\}.$$

$$\mathcal{C}(\text{NSHG})_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(\text{NSHG})_{\text{Extreme V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(\text{NSHG})_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

2213

- On the Figure (30.8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward.

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$$\mathcal{C}(\text{NSHG})_{\text{Extreme Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(\text{NSHG})_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(\text{NSHG})_{\text{Extreme V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(\text{NSHG})_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

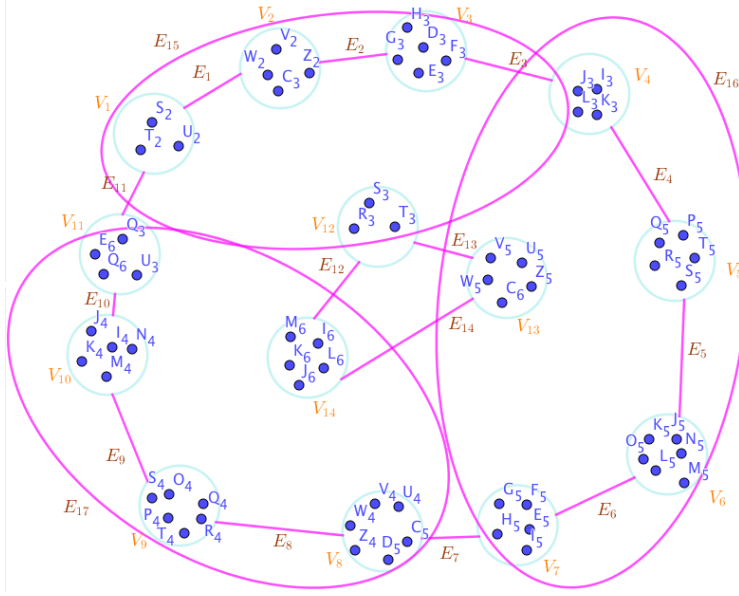


Figure 10.7: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG7

$$= z^0.$$

2216

- On the Figure (30.9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward.

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2218

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

2219

- On the Figure (30.10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straightforward.

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2221

2222

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}}$$

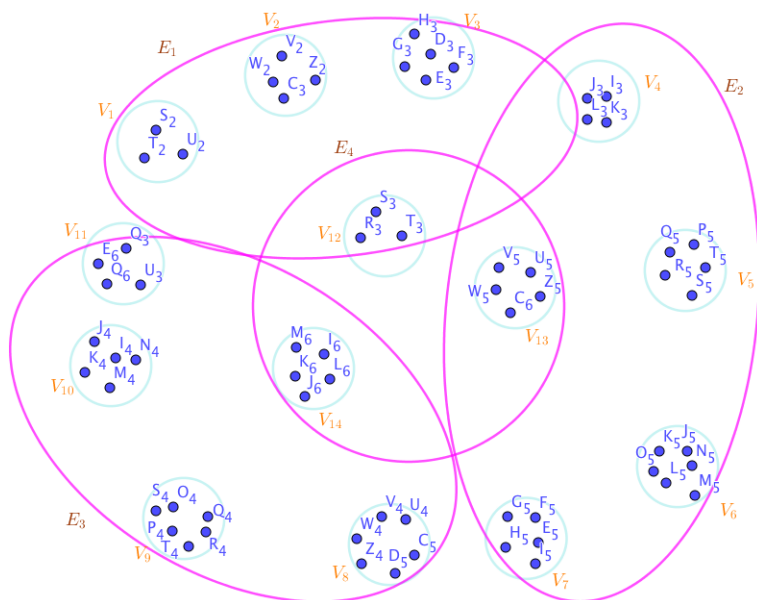


Figure 10.8: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG8

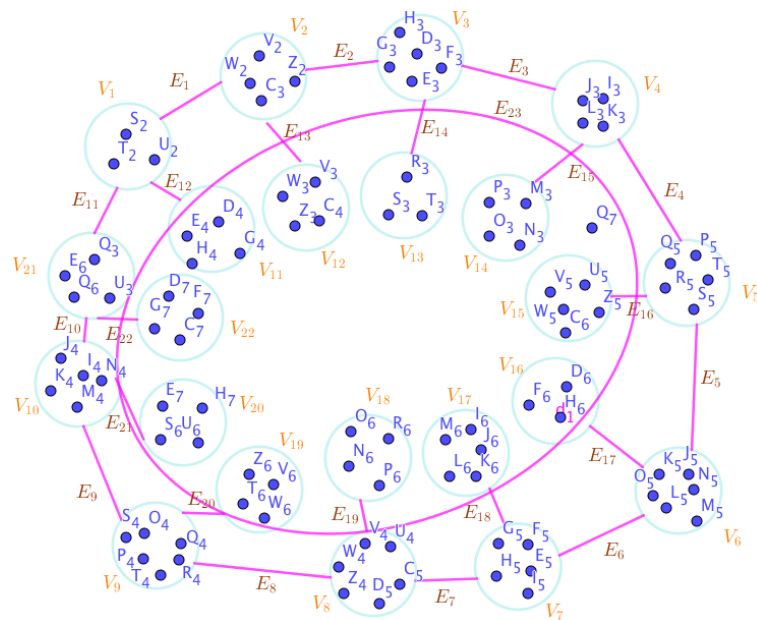


Figure 10.9: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG9

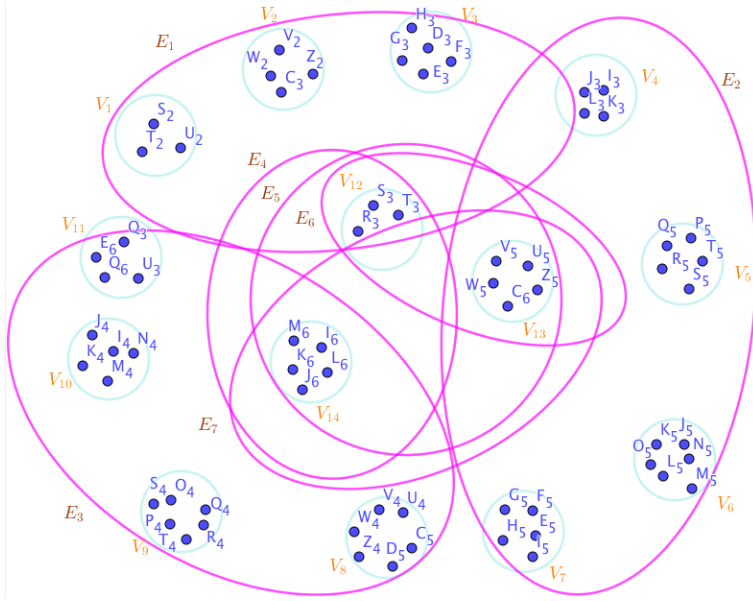


Figure 10.10: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG10

$$\begin{aligned}
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

2223

- On the Figure (30.11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward.

2224

2225

2226

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}
 \end{aligned}$$

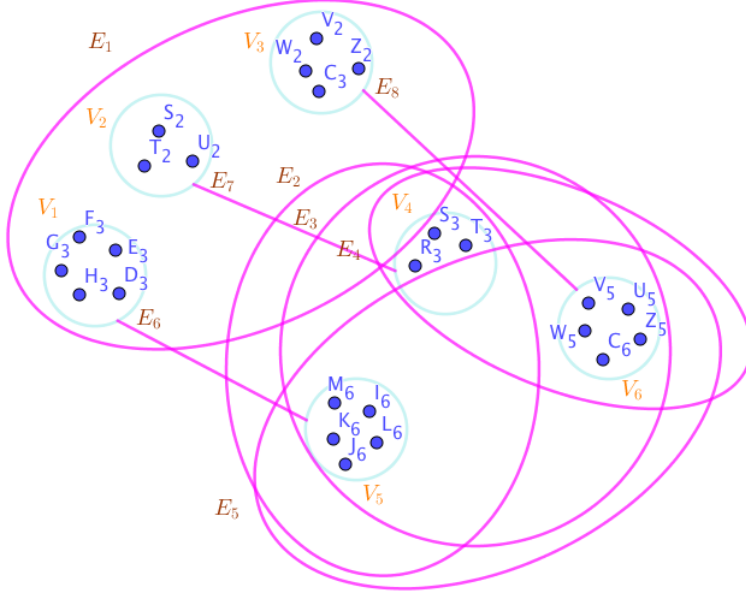


Figure 10.11: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG11

$$= z^0.$$

2227

- On the Figure (30.12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2228 2229 2230

$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

2231

- On the Figure (30.13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight- 2232 2233

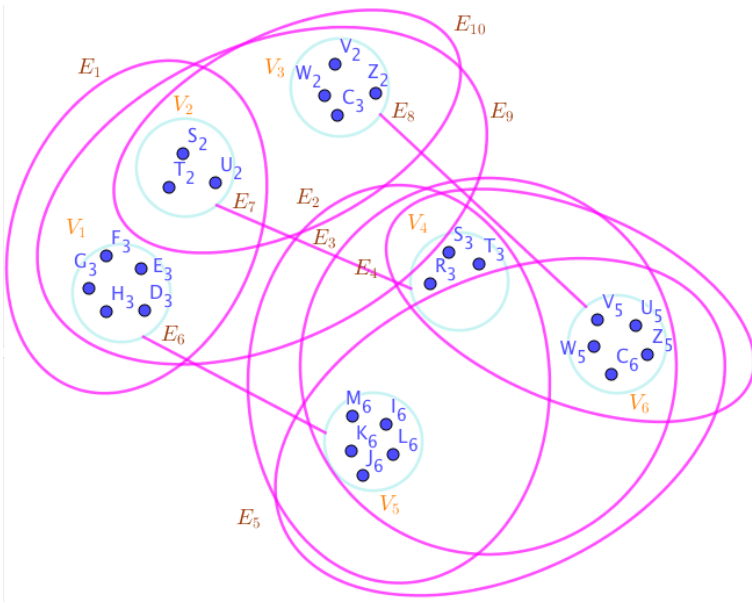


Figure 10.13: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG13

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} &= \{\{\}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^0. \end{aligned}$$

2239

- On the Figure (30.15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2241

2242

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \{\{\}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^0. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} &= \{\{\}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^0. \end{aligned}$$

2243

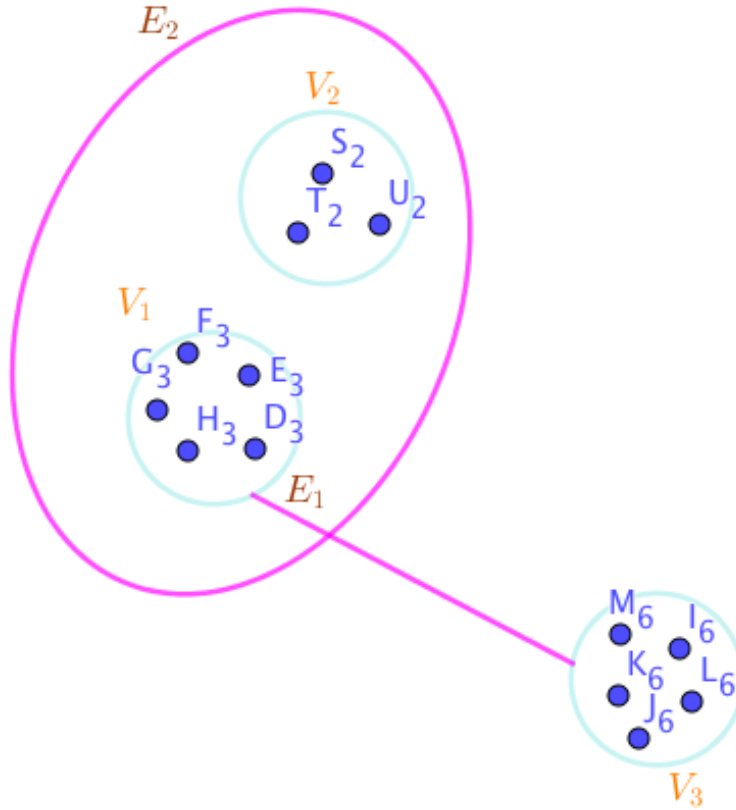


Figure 10.14: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG14

- On the Figure (30.16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2244 2245 2246

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ = \{\{\}\}. \end{aligned}$$

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ = z^0. \end{aligned}$$

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\ = \{\{\}\}. \end{aligned}$$

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ = z^0. \end{aligned}$$

2247

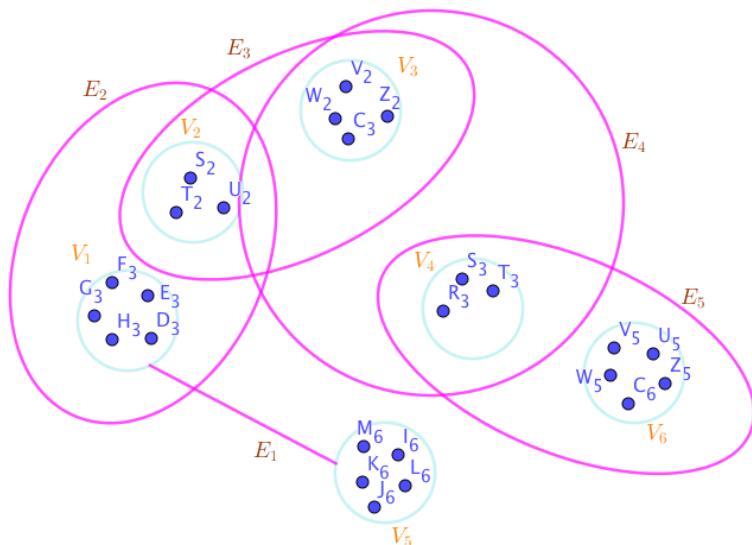


Figure 10.15: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG15

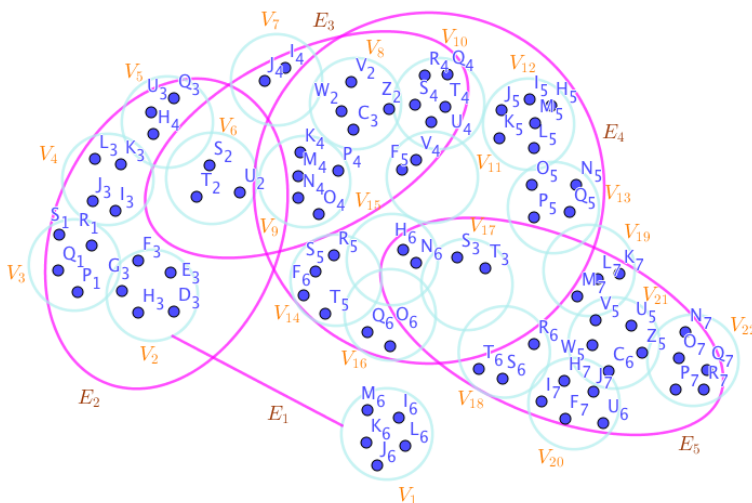


Figure 10.16: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG16

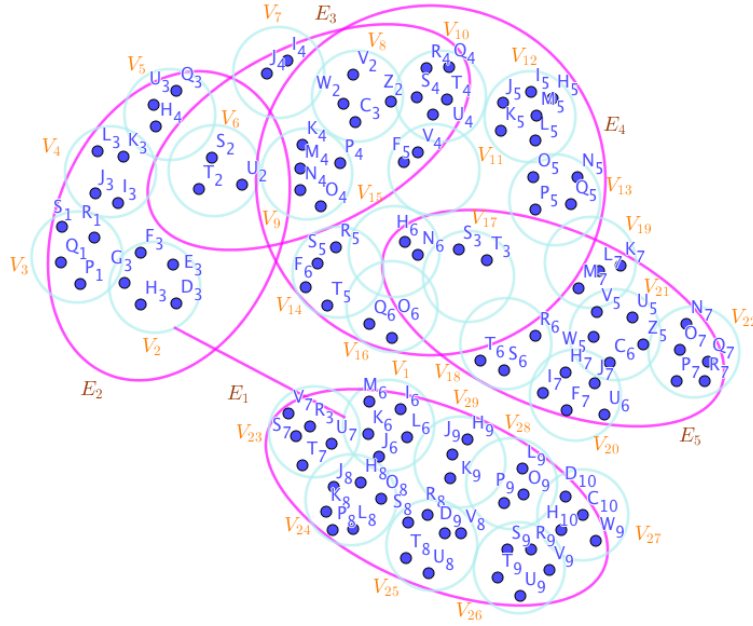


Figure 10.17: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG17

- On the Figure (30.17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2248 2249 2250

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

2251

- On the Figure (30.18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2252 2253 2254

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}.
 \end{aligned}$$

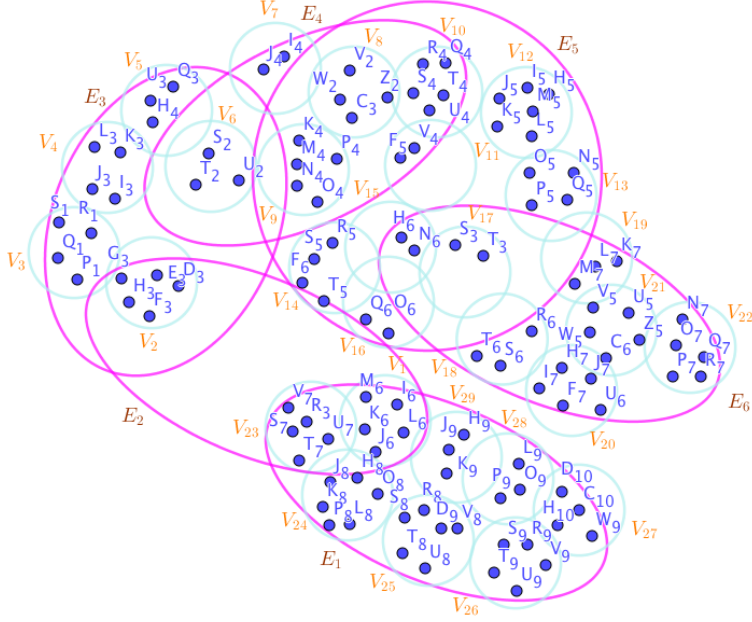


Figure 10.18: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG18

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} = z^0.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} = \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} = z^0.$$

2255

- On the Figure (30.19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2256 2257 2258

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} = \{\{E_{i=112}\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} = z^{12}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} = \{\{VE_{i=112}\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

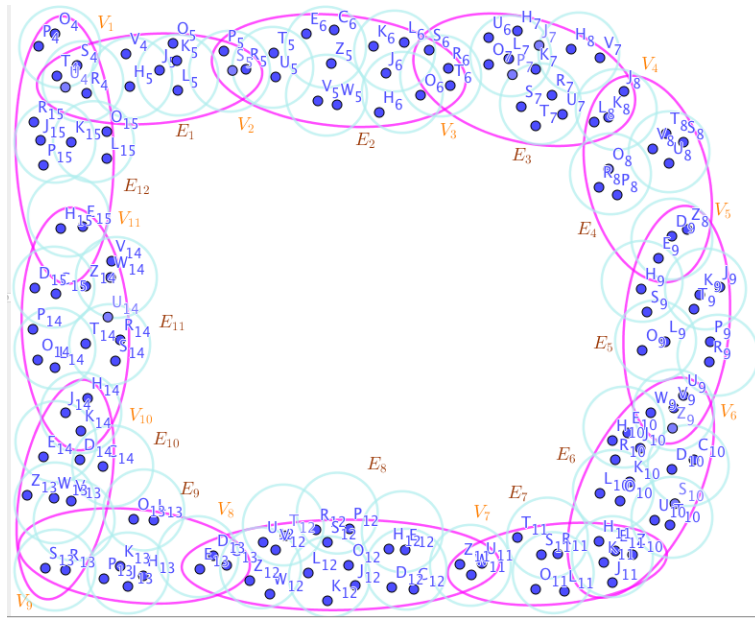


Figure 10.19: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

136NSHG19

$$= z^{|\{V^{E_{i=112}}\}|}.$$

2259

- On the Figure (30.20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight-forward. 2260 2261 2262

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ = \{\{\}\}. \end{aligned}$$

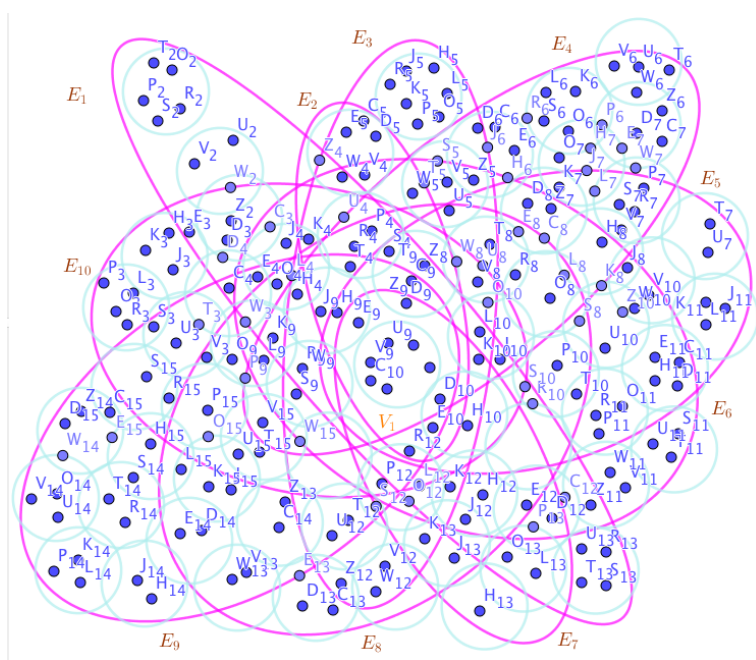
$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ = z^0. \end{aligned}$$

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\ = \{\{\}\}. \end{aligned}$$

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ = z^0. \end{aligned}$$

2263

- On the Figure (30.21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperEulerian-Cycle-Decomposition, is up. The Extreme Algorithm is Extremely straight- 2264 2265



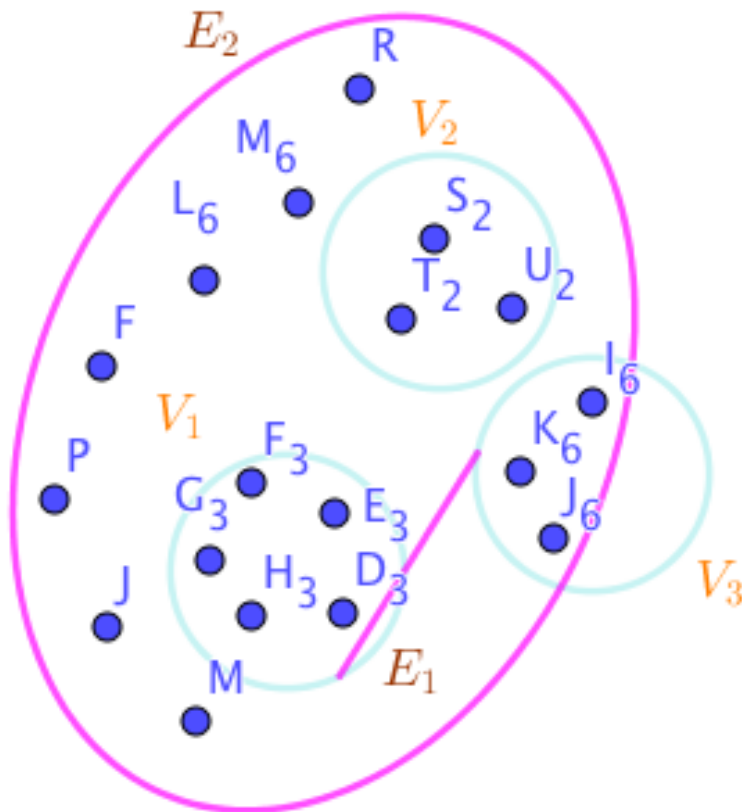


Figure 10.21: The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.3)

95NHG1

$$\begin{aligned}
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

2271

Proposition 10.0.21. Assume a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The all interior Extreme SuperHyperVertices belong to any Extreme quasi-R-Eulerian-Cycle-Decomposition if for any of them, and any of other corresponded Extreme SuperHyperVertex, some interior Extreme SuperHyperVertices are mutually Extreme SuperHyperNeighbors with no Extreme exception at all minus all Extreme SuperHyperNeighbors to any amount of them.

Proposition 10.0.22. Assume a connected non-obvious Extreme SuperHyperGraph $ESHG : (V, E)$. There's only one Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only the maximum

95NHG2

Proposition 10.0.23. Assume a connected Extreme SuperHyperGraph $ESHG : (V, E)$. If an Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has z Extreme SuperHyperVertices, then the Extreme cardinality of the Extreme R-Eulerian-Cycle-Decomposition is at least

$$V \setminus (V \setminus \{a_E, b_E, c_E, \dots, z_E\}).$$

Proposition 10.0.24. Assume a simple Extreme SuperHyperGraph $ESHG : (V, E)$. Then the Extreme number of type-result-R-Eulerian-Cycle-Decomposition has, the least Extreme cardinality, the

lower sharp Extreme bound for Extreme cardinality, is the Extreme cardinality of

$$V \setminus V \setminus \{a_E, b_{E'}, c_{E''}, c_{E'''}\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

If there's an Extreme type-result-R-Eulerian-Cycle-Decomposition with the least Extreme cardinality, the lower sharp Extreme bound for cardinality. 2292
2293

Proposition 10.0.25. Assume a connected loopless Extreme SuperHyperGraph $ESHG : (V, E)$. Then in the worst case, literally, 2294
2295

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{V_1, E_1, V_2, E_2, V_3, E_3, V_4, E_4, V_1\}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} = z^4. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} = \{V_1, V_2, V_3, V_4, V_1\}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} = z^5. \end{aligned}$$

Is an Extreme type-result-Eulerian-Cycle-Decomposition. In other words, the least cardinality, the lower sharp bound for the cardinality, of an Extreme type-result-Eulerian-Cycle-Decomposition is the cardinality of 2296
2297
2298

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{V_1, E_1, V_2, E_2, V_3, E_3, V_4, E_4, V_1\}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} = z^4. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} = \{V_1, V_2, V_3, V_4, V_1\}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} = z^5. \end{aligned}$$

Proof. Assume a connected loopless Extreme SuperHyperGraph $ESHG : (V, E)$. The SuperHyperSet of the SuperHyperVertices $V \setminus V \setminus \{z\}$ isn't a quasi-R-Eulerian-Cycle-Decomposition since neither amount of Extreme SuperHyperEdges nor amount of SuperHyperVertices where amount refers to the Extreme number of SuperHyperVertices(-/SuperHyperEdges) more than one to form any kind of SuperHyperEdges or any number of SuperHyperEdges. Let us consider the Extreme SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E,E'=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

This Extreme SuperHyperSet of the Extreme SuperHyperVertices has the eligibilities to propose property such that there's no Extreme SuperHyperVertex of an Extreme SuperHyperEdge is common and there's an Extreme SuperHyperEdge for all Extreme SuperHyperVertices but the maximum Extreme cardinality indicates that these Extreme type-SuperHyperSets couldn't give us the Extreme lower bound in the term of Extreme sharpness. In other words, the Extreme SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E,E'=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}$$

of the Extreme SuperHyperVertices implies at least on-quasi-triangle style is up but sometimes the Extreme SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E,E'=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}$$

of the Extreme SuperHyperVertices is free-quasi-triangle and it doesn't make a contradiction to the supposition on the connected loopless Extreme SuperHyperGraph $ESHG : (V, E)$. Thus the minimum case never happens in the generality of the connected loopless Extreme SuperHyperGraphs. Thus if we assume in the worst case, literally,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \} \cdot$$

Is a quasi-R-Eulerian-Cycle-Decomposition. In other words, the least cardinality, the lower sharp bound for the cardinality, of a quasi-R-Eulerian-Cycle-Decomposition is the cardinality of

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \} \cdot$$

Then we've lost some connected loopless Extreme SuperHyperClasses of the connected loopless Extreme SuperHyperGraphs titled free-triangle, on-triangle, and their quasi-types but the SuperHyperStable is only up in this quasi-R-Eulerian-Cycle-Decomposition. It's the contradiction to that fact on the generality. There are some counterexamples to deny this statement. One of them comes from the setting of the graph titled path and cycle as the counterexamples-classes or reversely direction star as the examples-classes, are well-known classes in that setting and they could be considered as the examples-classes and counterexamples-classes for the tight bound of

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \} \cdot$$

Let $V \setminus V \setminus \{z\}$ in mind. There's no necessity on the SuperHyperEdge since we need at least two SuperHyperVertices to form a SuperHyperEdge. It doesn't withdraw the principles of the main definition since there's no condition to be satisfied but the condition is on the existence of the SuperHyperEdge instead of acting on the SuperHyperVertices. In other words, if there's a SuperHyperEdge, then the Extreme SuperHyperSet has the necessary condition for the intended definition to be applied. Thus the $V \setminus V \setminus \{z\}$ is withdrawn not by the conditions of the main definition but by the necessity of the pre-condition on the usage of the main definition.

The Extreme structure of the Extreme R-Eulerian-Cycle-Decomposition decorates the Extreme SuperHyperVertices don't have received any Extreme connections so as this Extreme style implies different versions of Extreme SuperHyperEdges with the maximum Extreme cardinality in the terms of Extreme SuperHyperVertices are spotlight. The lower Extreme bound is to have the maximum Extreme groups of Extreme SuperHyperVertices have perfect Extreme connections inside each of SuperHyperEdges and the outside of this Extreme SuperHyperSet doesn't matter but regarding the connectedness of the used Extreme SuperHyperGraph arising from its Extreme properties taken from the fact that it's simple. If there's no more than one Extreme SuperHyperVertex in the targeted Extreme SuperHyperSet, then there's no Extreme connection. Furthermore, the Extreme existence of one Extreme SuperHyperVertex has no Extreme effect to talk about the Extreme R-Eulerian-Cycle-Decomposition. Since at least two Extreme SuperHyperVertices involve to make a title in the Extreme background of the Extreme SuperHyperGraph. The Extreme SuperHyperGraph is obvious if it has no Extreme SuperHyperEdge but at least two Extreme SuperHyperVertices make the Extreme version of Extreme SuperHyperEdge. Thus in the Extreme setting of non-obvious Extreme SuperHyperGraph, there are at least one Extreme SuperHyperEdge. It's necessary to mention that the word "Simple" is used as Extreme adjective for the initial Extreme SuperHyperGraph, induces there's no Extreme appearance of the loop Extreme

version of the Extreme SuperHyperEdge and this Extreme SuperHyperGraph is said to be loopless. The Extreme adjective “loop” on the basic Extreme framework engages one Extreme SuperHyperVertex but it never happens in this Extreme setting. With these Extreme bases, on an Extreme SuperHyperGraph, there’s at least one Extreme SuperHyperEdge thus there’s at least an Extreme R-Eulerian-Cycle-Decomposition has the Extreme cardinality of an Extreme SuperHyperEdge. Thus, an Extreme R-Eulerian-Cycle-Decomposition has the Extreme cardinality at least an Extreme SuperHyperEdge. Assume an Extreme SuperHyperSet $V \setminus V \setminus \{z\}$. This Extreme SuperHyperSet isn’t an Extreme R-Eulerian-Cycle-Decomposition since either the Extreme SuperHyperGraph is an obvious Extreme SuperHyperModel thus it never happens since there’s no Extreme usage of this Extreme framework and even more there’s no Extreme connection inside or the Extreme SuperHyperGraph isn’t obvious and as its consequences, there’s an Extreme contradiction with the term “Extreme R-Eulerian-Cycle-Decomposition” since the maximum Extreme cardinality never happens for this Extreme style of the Extreme SuperHyperSet and beyond that there’s no Extreme connection inside as mentioned in first Extreme case in the forms of drawback for this selected Extreme SuperHyperSet. Let

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}$$

Comes up. This Extreme case implies having the Extreme style of on-quasi-triangle Extreme style on the every Extreme elements of this Extreme SuperHyperSet. Precisely, the Extreme R-Eulerian-Cycle-Decomposition is the Extreme SuperHyperSet of the Extreme SuperHyperVertices such that some Extreme amount of the Extreme SuperHyperVertices are on-quasi-triangle Extreme style. The Extreme cardinality of the v SuperHypeSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}$$

Is the maximum in comparison to the Extreme SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\} \cdot$$

But the lower Extreme bound is up. Thus the minimum Extreme cardinality of the maximum Extreme cardinality ends up the Extreme discussion. The first Extreme term refers to the Extreme setting of the Extreme SuperHyperGraph but this key point is enough since there’s an Extreme SuperHyperClass of an Extreme SuperHyperGraph has no on-quasi-triangle Extreme style amid some amount of its Extreme SuperHyperVertices. This Extreme setting of the Extreme SuperHyperModel proposes an Extreme SuperHyperSet has only some amount Extreme SuperHyperVertices from one Extreme SuperHyperEdge such that there’s no Extreme amount of Extreme SuperHyperEdges more than one involving these some amount of these Extreme SuperHyperVertices. The Extreme cardinality of this Extreme SuperHyperSet is the maximum and the Extreme case is occurred in the minimum Extreme situation. To sum them up, the Extreme SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\} \cdot$$

Has the maximum Extreme cardinality such that

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\} \cdot$$

Contains some Extreme SuperHyperVertices such that there's distinct-covers-order-amount Extreme SuperHyperEdges for amount of Extreme SuperHyperVertices taken from the Extreme SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \cdot$$

It means that the Extreme SuperHyperSet of the Extreme SuperHyperVertices

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \cdot$$

Is an Extreme R-Eulerian-Cycle-Decomposition for the Extreme SuperHyperGraph as used Extreme background in the Extreme terms of worst Extreme case and the common theme of the lower Extreme bound occurred in the specific Extreme SuperHyperClasses of the Extreme SuperHyperGraphs which are Extreme free-quasi-triangle.

Assume an Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has z Extreme number of the Extreme SuperHyperVertices. Then every Extreme SuperHyperVertex has at least no Extreme SuperHyperEdge with others in common. Thus those Extreme SuperHyperVertices have the eligibles to be contained in an Extreme R-Eulerian-Cycle-Decomposition. Those Extreme SuperHyperVertices are potentially included in an Extreme style-R-Eulerian-Cycle-Decomposition. Formally, consider

$$V \setminus (V \setminus \{a_E, b_E, c_E, \dots, z_E\}).$$

Are the Extreme SuperHyperVertices of an Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$. Thus

$$Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \dots, z.$$

where the \sim isn't an equivalence relation but only the symmetric relation on the Extreme SuperHyperVertices of the Extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \dots, z$$

if and only if Z_i and Z_j are the Extreme SuperHyperVertices and there's only and only one Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ between the Extreme SuperHyperVertices Z_i and Z_j . The other definition for the Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ in the terms of Extreme R-Eulerian-Cycle-Decomposition is

$$\{a_E, b_E, c_E, \dots, z_E\}.$$

This definition coincides with the definition of the Extreme R-Eulerian-Cycle-Decomposition but with slightly differences in the maximum Extreme cardinality amid those Extreme type-SuperHyperSets of the Extreme SuperHyperVertices. Thus the Extreme SuperHyperSet of the Extreme SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \dots, Z_z \mid Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \dots, z\}|_{\text{Extreme cardinality}},$$

and

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \cdot$$

is formalized with mathematical literatures on the Extreme R-Eulerian-Cycle-Decomposition. Let $Z_i \stackrel{E}{\sim} Z_j$, be defined as Z_i and Z_j are the Extreme SuperHyperVertices belong to the Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$. Thus,

$$E = \{Z_1, Z_2, \dots, Z_z \mid Z_i \stackrel{E}{\sim} Z_j, i \neq j, i, j = 1, 2, \dots, z\}.$$

Or

$$\{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \}.$$

But with the slightly differences,

2299

$$\begin{aligned} \text{Extreme R-Eulerian-Cycle-Decomposition} = \\ \{Z_1, Z_2, \dots, Z_z \mid \forall i \neq j, i, j = 1, 2, \dots, z, \exists E_x, Z_i \stackrel{E_x}{\sim} Z_j\}. \end{aligned}$$

2300

$$\begin{aligned} \text{Extreme R-Eulerian-Cycle-Decomposition} = \\ V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \}. \end{aligned}$$

Thus $E \in E_{ESHG:(V,E)}$ is an Extreme quasi-R-Eulerian-Cycle-Decomposition where $E \in E_{ESHG:(V,E)}$ is fixed that means $E_x = E \in E_{ESHG:(V,E)}$. for all Extreme intended SuperHyperVertices but in an Extreme Eulerian-Cycle-Decomposition, $E_x = E \in E_{ESHG:(V,E)}$ could be different and it's not unique. To sum them up, in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. If an Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has z Extreme SuperHyperVertices, then the Extreme cardinality of the Extreme R-Eulerian-Cycle-Decomposition is at least

$$V \setminus (V \setminus \{a_E, b_E, c_E, \dots, z_E\}).$$

It's straightforward that the Extreme cardinality of the Extreme R-Eulerian-Cycle-Decomposition is at least the maximum Extreme number of Extreme SuperHyperVertices of the Extreme SuperHyperEdges with the maximum number of the Extreme SuperHyperEdges. In other words, the maximum number of the Extreme SuperHyperEdges contains the maximum number of Extreme SuperHyperVertices are renamed to Extreme Eulerian-Cycle-Decomposition in some cases but the maximum number of the Extreme SuperHyperEdge with the maximum number of Extreme SuperHyperVertices, has the Extreme SuperHyperVertices are contained in an Extreme R-Eulerian-Cycle-Decomposition.

The obvious SuperHyperGraph has no Extreme SuperHyperEdges. But the non-obvious Extreme SuperHyperModel is up. The quasi-SuperHyperModel addresses some issues about the Extreme optimal SuperHyperObject. It specially delivers some remarks on the Extreme SuperHyperSet of the Extreme SuperHyperVertices such that there's distinct amount of Extreme SuperHyperEdges for distinct amount of Extreme SuperHyperVertices up to all taken from that Extreme SuperHyperSet of the Extreme SuperHyperVertices but this Extreme SuperHyperSet of the Extreme SuperHyperVertices is either has the maximum Extreme SuperHyperCardinality or it doesn't have maximum Extreme SuperHyperCardinality. In a non-obvious SuperHyperModel, there's at least one Extreme SuperHyperEdge containing at least all Extreme SuperHyperVertices. Thus it forms an Extreme quasi-R-Eulerian-Cycle-Decomposition where the Extreme completion of the Extreme incidence is up in that. Thus it's, literarily, an Extreme embedded R-Eulerian-Cycle-Decomposition. The SuperHyperNotions of embedded SuperHyperSet and quasi-SuperHyperSet

coincide. In the original setting, these types of SuperHyperSets only don't satisfy on the maximum SuperHyperCardinality. Thus the embedded setting is elected such that those SuperHyperSets have the maximum Extreme SuperHyperCardinality and they're Extreme SuperHyperOptimal. The less than two distinct types of Extreme SuperHyperVertices are included in the minimum Extreme style of the embedded Extreme R-Eulerian-Cycle-Decomposition. The interior types of the Extreme SuperHyperVertices are deciders. Since the Extreme number of SuperHyperNeighbors are only affected by the interior Extreme SuperHyperVertices. The common connections, more precise and more formal, the perfect unique connections inside the Extreme SuperHyperSet for any distinct types of Extreme SuperHyperVertices pose the Extreme R-Eulerian-Cycle-Decomposition. Thus Extreme exterior SuperHyperVertices could be used only in one Extreme SuperHyperEdge and in Extreme SuperHyperRelation with the interior Extreme SuperHyperVertices in that Extreme SuperHyperEdge. In the embedded Extreme Eulerian-Cycle-Decomposition, there's the usage of exterior Extreme SuperHyperVertices since they've more connections inside more than outside. Thus the title "exterior" is more relevant than the title "interior". One Extreme SuperHyperVertex has no connection, inside. Thus, the Extreme SuperHyperSet of the Extreme SuperHyperVertices with one SuperHyperElement has been ignored in the exploring to lead on the optimal case implying the Extreme R-Eulerian-Cycle-Decomposition. The Extreme R-Eulerian-Cycle-Decomposition with the exclusion of the exclusion of all Extreme SuperHyperVertices in one Extreme SuperHyperEdge and with other terms, the Extreme R-Eulerian-Cycle-Decomposition with the inclusion of all Extreme SuperHyperVertices in one Extreme SuperHyperEdge, is an Extreme quasi-R-Eulerian-Cycle-Decomposition. To sum them up, in a connected non-obvious Extreme SuperHyperGraph $ESHG : (V, E)$. There's only one Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only the maximum possibilities of the distinct interior Extreme SuperHyperVertices inside of any given Extreme quasi-R-Eulerian-Cycle-Decomposition minus all Extreme SuperHyperNeighbor to some of them but not all of them. In other words, there's only an unique Extreme SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only two distinct Extreme SuperHyperVertices in an Extreme quasi-R-Eulerian-Cycle-Decomposition, minus all Extreme SuperHyperNeighbor to some of them but not all of them. The main definition of the Extreme R-Eulerian-Cycle-Decomposition has two titles. an Extreme quasi-R-Eulerian-Cycle-Decomposition and its corresponded quasi-maximum Extreme R-SuperHyperCardinality are two titles in the terms of quasi-R-styles. For any Extreme number, there's an Extreme quasi-R-Eulerian-Cycle-Decomposition with that quasi-maximum Extreme SuperHyperCardinality in the terms of the embedded Extreme SuperHyperGraph. If there's an embedded Extreme SuperHyperGraph, then the Extreme quasi-SuperHyperNotions lead us to take the collection of all the Extreme quasi-R-Eulerian-Cycle-DecompositionS for all Extreme numbers less than its Extreme corresponded maximum number. The essence of the Extreme Eulerian-Cycle-Decomposition ends up but this essence starts up in the terms of the Extreme quasi-R-Eulerian-Cycle-Decomposition, again and more in the operations of collecting all the Extreme quasi-R-Eulerian-Cycle-DecompositionS acted on the all possible used formations of the Extreme SuperHyperGraph to achieve one Extreme number. This Extreme number is considered as the equivalence class for all corresponded quasi-R-Eulerian-Cycle-DecompositionS. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Eulerian-Cycle-Decomposition}}$ be an Extreme number, an Extreme SuperHyperSet and an Extreme Eulerian-Cycle-Decomposition. Then

$$[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Eulerian-Cycle-Decomposition}}\}$$

$$\begin{aligned} & |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ & = z_{\text{Extreme Number}} \}. \end{aligned}$$

As its consequences, the formal definition of the Extreme Eulerian-Cycle-Decomposition is re-formalized and redefined as follows. 2364
2365

$$\begin{aligned} & G_{\text{Extreme Eulerian-Cycle-Decomposition}} \in \cup_{z_{\text{Extreme Number}}} \\ & [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\ & \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} | \\ & S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Eulerian-Cycle-Decomposition}}, \\ & |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ & = z_{\text{Extreme Number}} \}. \end{aligned}$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the Extreme Eulerian-Cycle-Decomposition. 2366
2367

$$\begin{aligned} & G_{\text{Extreme Eulerian-Cycle-Decomposition}} = \\ & \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\ & \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} | \\ & S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Eulerian-Cycle-Decomposition}}, \\ & |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ & = z_{\text{Extreme Number}} | \\ & |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ & = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. \end{aligned}$$

In more concise and more convenient ways, the modified definition for the Extreme Eulerian-Cycle-Decomposition poses the upcoming expressions. 2368
2369

$$\begin{aligned} & G_{\text{Extreme Eulerian-Cycle-Decomposition}} = \\ & \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} | \\ & |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ & = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. \end{aligned}$$

To translate the statement to this mathematical literature, the formulae will be revised. 2370

$$\begin{aligned} & G_{\text{Extreme Eulerian-Cycle-Decomposition}} = \\ & \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} | \\ & |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ & = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \\ & = \max \{|E| \mid E \in E_{ESHG:(V,E)}\} \}. \end{aligned}$$

And then,

2371

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}] \text{Extreme Class} \mid \\ |S_{\text{Extreme SuperHyperSet}}| \text{Extreme Cardinality} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

To get more visions in the closer look-up, there's an overall overlook.

2372

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}] \text{Extreme Class} &= \\ \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\ S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Eulerian-Cycle-Decomposition}}, \\ |S_{\text{Extreme SuperHyperSet}}| \text{Extreme Cardinality} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

2373

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}] \text{Extreme Class} &= \\ \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\ S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Eulerian-Cycle-Decomposition}}, \\ |S_{\text{Extreme SuperHyperSet}}| \text{Extreme Cardinality} \\ &= z_{\text{Extreme Number}} \mid \\ |S_{\text{Extreme SuperHyperSet}}| \text{Extreme Cardinality} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

2374

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}] \text{Extreme Class} \mid \\ |S_{\text{Extreme SuperHyperSet}}| \text{Extreme Cardinality} \\ &= \max_{[z_{\text{Extreme Number}}] \text{Extreme Class}} z_{\text{Extreme Number}} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

2375

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}] \text{Extreme Class} \mid \\ |S_{\text{Extreme SuperHyperSet}}| \text{Extreme Cardinality} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

Now, the extension of these types of approaches is up. Since the new term, “Extreme SuperHyper-
perNeighborhood”, could be redefined as the collection of the Extreme SuperHyperVertices such
that any amount of its Extreme SuperHyperVertices are incident to an Extreme SuperHyperEdge.
It's, literarily, another name for “Extreme Quasi-Eulerian-Cycle-Decomposition” but, precisely, it's

the generalization of “Extreme Quasi-Eulerian-Cycle-Decomposition” since “Extreme Quasi-Eulerian-Cycle-Decomposition” happens “Extreme Eulerian-Cycle-Decomposition” in an Extreme SuperHyperGraph as initial framework and background but “Extreme SuperHyperNeighborhood” may not happens “Extreme Eulerian-Cycle-Decomposition” in an Extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the Extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, “Extreme SuperHyperNeighborhood”, “Extreme Quasi-Eulerian-Cycle-Decomposition”, and “Extreme Eulerian-Cycle-Decomposition” are up. Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Eulerian-Cycle-Decomposition}}$ be an Extreme number, an Extreme SuperHyperNeighborhood and an Extreme Eulerian-Cycle-Decomposition and the new terms are up.

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &\in \cup_{z_{\text{Extreme Number}}} \\ [z_{\text{Extreme Number}}]_{\text{Extreme Class}} &= \\ \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\ |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\ &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. \end{aligned}$$

2391

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{N_{\text{Extreme SuperHyperNeighborhood}} \\ &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\ \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\ |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ &= z_{\text{Extreme Number}} \mid \\ |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\ &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. \end{aligned}$$

2392

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{N_{\text{Extreme SuperHyperNeighborhood}} \\ &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\ |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\ &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. \end{aligned}$$

2393

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ \{N_{\text{Extreme SuperHyperNeighborhood}} \\ &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\ |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. \end{aligned}$$

And with go back to initial structure,

2394

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\ &\cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\ &\quad |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

2395

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ &\{N_{\text{Extreme SuperHyperNeighborhood}} \\ &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\ &\cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\ &\quad |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ &= z_{\text{Extreme Number}} \mid \\ &\quad |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

2396

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ &\{N_{\text{Extreme SuperHyperNeighborhood}} \\ &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\ &\quad |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\ &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

2397

$$\begin{aligned} G_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \\ &\{N_{\text{Extreme SuperHyperNeighborhood}} \\ &\in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\ &\quad |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. \end{aligned}$$

Thus, in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The all interior Extreme SuperHyperVertices belong to any Extreme quasi-R-Eulerian-Cycle-Decomposition if for any of them, and any of other corresponded Extreme SuperHyperVertex, some interior Extreme SuperHyperVertices are mutually Extreme SuperHyperNeighbors with no Extreme exception at all minus all Extreme SuperHyperNeighbors to any amount of them.

To make sense with the precise words in the terms of “R-”, the follow-up illustrations are coming up.

The following Extreme SuperHyperSet of Extreme SuperHyperVertices is the simple Extreme type-SuperHyperSet of the Extreme R-Eulerian-Cycle-Decomposition.

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}.$$

The Extreme SuperHyperSet of Extreme SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Is the simple Extreme type-SuperHyperSet of the Extreme R-Eulerian-Cycle-Decomposition. The Extreme SuperHyperSet of the Extreme SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Is an **Extreme R-Eulerian-Cycle-Decomposition** $\mathcal{C}(ESHG)$ for an Extreme SuperHyperGraph $ESHG : (V, E)$ is an Extreme type-SuperHyperSet with

the maximum Extreme cardinality of an Extreme SuperHyperSet S of Extreme SuperHyperVertices such that there's no an Extreme SuperHyperEdge amid some Extreme SuperHyperVertices instead of all given by

Extreme Eulerian-Cycle-Decomposition is related to the Extreme SuperHyperSet of the Extreme SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

There's not only **one** Extreme SuperHyperVertex **inside** the intended Extreme SuperHyperSet. Thus the non-obvious Extreme Eulerian-Cycle-Decomposition is up. The obvious simple Extreme type-SuperHyperSet called the Extreme Eulerian-Cycle-Decomposition is an Extreme SuperHyperSet **includes** only **one** Extreme SuperHyperVertex. But the Extreme SuperHyperSet of Extreme SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

doesn't have less than two SuperHyperVertices **inside** the intended Extreme SuperHyperSet since they've come from at least so far an SuperHyperEdge. Thus the non-obvious simple Extreme type-SuperHyperSet of the Extreme R-Eulerian-Cycle-Decomposition **is** up. To sum them up, the Extreme SuperHyperSet of Extreme SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Is the non-obvious simple Extreme type-SuperHyperSet of the Extreme R-Eulerian-Cycle-Decomposition. Since the Extreme SuperHyperSet of the Extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an Extreme R-Eulerian-Cycle-Decomposition $\mathcal{C}(ESHG)$ for an Extreme SuperHyperGraph $ESHG : (V, E)$ is the Extreme SuperHyperSet S of Extreme SuperHyperVertices such that there's no an Extreme SuperHyperEdge for some Extreme SuperHyperVertices instead of all given by that Extreme type-SuperHyperSet called the Extreme Eulerian-Cycle-Decomposition **and** it's an Extreme **Eulerian-Cycle-Decomposition**. Since it's

the maximum Extreme cardinality of an Extreme SuperHyperSet S of Extreme SuperHyperVertices such that there's no an Extreme SuperHyperEdge for some amount Extreme SuperHyperVertices instead of all given by that Extreme type-SuperHyperSet called the Extreme Eulerian-Cycle-Decomposition. There isn't only less than two Extreme SuperHyperVertices inside the intended Extreme SuperHyperSet,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

Thus the non-obvious Extreme R-Eulerian-Cycle-Decomposition,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

is up. The non-obvious simple Extreme type-SuperHyperSet of the Extreme Eulerian-Cycle-Decomposition, not:

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

Is the Extreme SuperHyperSet, not:

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

does includes only less than two SuperHyperVertices in a connected Extreme SuperHyperGraph $ESHG : (V, E)$ but it's impossible in the case, they've corresponded to an SuperHyperEdge. It's interesting to mention that the only non-obvious simple Extreme type-SuperHyperSet called the

“Extreme R-Eulerian-Cycle-Decomposition”

amid those obvious[non-obvious] simple Extreme type-SuperHyperSets called the

Extreme R-Eulerian-Cycle-Decomposition,

is only and only

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

In a connected Extreme SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyper-Modeling. It's also, not only an Extreme free-triangle embedded SuperHyperModel and an Extreme on-triangle embedded SuperHyperModel but also it's an Extreme stable embedded SuperHyperModel. But all only non-obvious simple Extreme type-SuperHyperSets of the Extreme R-Eulerian-Cycle-Decomposition amid those obvious simple Extreme type-SuperHyperSets of the Extreme Eulerian-Cycle-Decomposition, are

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

In a connected Extreme SuperHyperGraph $ESHG : (V, E)$.

To sum them up, assume a connected loopless Extreme SuperHyperGraph $ESHG : (V, E)$. Then in the worst case, literally,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

is an Extreme R-Eulerian-Cycle-Decomposition. In other words, the least cardinality, the lower sharp bound for the cardinality, of an Extreme R-Eulerian-Cycle-Decomposition is the cardinality of

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}} \cdot$$

To sum them up, in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The all interior Extreme SuperHyperVertices belong to any Extreme quasi-R-Eulerian-Cycle-Decomposition if for any of them, and any of other corresponded Extreme SuperHyperVertex, some interior Extreme SuperHyperVertices are mutually Extreme SuperHyperNeighbors with no Extreme exception at all minus all Extreme SuperHyperNeighbors to any amount of them.

Assume a connected Extreme SuperHyperGraph $ESHG : (V, E)$. Let an Extreme SuperHyperEdge $ESHE : E \in E_{ESHG:(V,E)}$ has some Extreme SuperHyperVertices r . Consider all Extreme numbers of those Extreme SuperHyperVertices from that Extreme SuperHyperEdge excluding excluding more than r distinct Extreme SuperHyperVertices, exclude to any given Extreme SuperHyperSet of the Extreme SuperHyperVertices. Consider there's an Extreme R-Eulerian-Cycle-Decomposition with the least cardinality, the lower sharp Extreme bound for Extreme cardinality. Assume a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The Extreme SuperHyperSet of the Extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an Extreme SuperHyperSet S of the Extreme SuperHyperVertices such that there's an Extreme SuperHyperEdge to have some Extreme SuperHyperVertices uniquely but it isn't an Extreme R-Eulerian-Cycle-Decomposition. Since it doesn't have

the maximum Extreme cardinality of an Extreme SuperHyperSet S of Extreme SuperHyperVertices such that there's an Extreme SuperHyperEdge to have some SuperHyperVertices uniquely. The Extreme SuperHyperSet of the Extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of Extreme SuperHyperVertices but it isn't an Extreme R-Eulerian-Cycle-Decomposition. Since it **doesn't do** the Extreme procedure such that such that there's an Extreme SuperHyperEdge to have some Extreme SuperHyperVertices uniquely [there are at least one Extreme SuperHyperVertex outside implying there's, sometimes in the connected Extreme SuperHyperGraph $ESHG : (V, E)$, an Extreme SuperHyperVertex, titled its Extreme SuperHyperNeighbor, to that Extreme SuperHyperVertex in the Extreme SuperHyperSet S so as S doesn't do "the Extreme procedure"]. There's only **one** Extreme SuperHyperVertex **outside** the intended Extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of Extreme SuperHyperNeighborhood. Thus the obvious Extreme R-Eulerian-Cycle-Decomposition, V_{ESHE} is up. The obvious simple Extreme type-SuperHyperSet of the Extreme R-Eulerian-Cycle-Decomposition, V_{ESHE} , **is** an Extreme SuperHyperSet, V_{ESHE} , **includes** only **all** Extreme SuperHyperVertices does forms any kind of Extreme pairs are titled **Extreme SuperHyperNeighbors** in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. Since the Extreme SuperHyperSet of the Extreme SuperHyperVertices V_{ESHE} , is the **maximum Extreme SuperHyperCardinality** of an Extreme SuperHyperSet S of Extreme SuperHyperVertices **such that** there's an Extreme SuperHyperEdge to have some Extreme SuperHyperVertices uniquely. Thus, in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. Any Extreme R-Eulerian-Cycle-Decomposition only contains all interior Extreme SuperHyperVertices and all exterior Extreme SuperHyperVertices from the unique Extreme SuperHyperEdge where there's any of them has all possible Extreme SuperHyperNeighbors in and there's all Extreme SuperHyperNeighborhoods in with no exception minus all Extreme

SuperHyperNeighbors to some of them not all of them but everything is possible about Extreme SuperHyperNeighborhods and Extreme SuperHyperNeighbors out. The SuperHyperNotion, namely, Eulerian-Cycle-Decomposition, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following Extreme SuperHyperSet of Extreme SuperHyperEdges[SuperHyperVertices] is the simple Extreme type-SuperHyperSet of the Extreme Eulerian-Cycle-Decomposition. The Extreme SuperHyperSet of Extreme SuperHyperEdges[SuperHyperVertices],

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\ &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\ & \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\ &= az^s + bz^t. \end{aligned}$$

is the simple Extreme type-SuperHyperSet of the Extreme Eulerian-Cycle-Decomposition. The Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices],

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\ &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\ & \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\ &= az^s + bz^t. \end{aligned}$$

Is an **Extreme Eulerian-Cycle-Decomposition** $\mathcal{C}(ESHG)$ for an Extreme SuperHyperGraph $ESHG : (V, E)$ is an Extreme type-SuperHyperSet with

the maximum Extreme cardinality of an Extreme SuperHyperSet S of Extreme SuperHyperEdges[SuperHyperVertices] such that there's no Extreme SuperHyperVertex of an Extreme SuperHyperEdge is common and there's an Extreme SuperHyperEdge for all Extreme SuperHyperVertices. There are **not** only **two** Extreme SuperHyperVertices **inside** the intended Extreme SuperHyperSet. Thus the non-obvious Extreme Eulerian-Cycle-Decomposition is up. The obvious simple Extreme type-SuperHyperSet called the Extreme Eulerian-Cycle-Decomposition is an Extreme SuperHyperSet **includes** only **two** Extreme SuperHyperVertices. But the Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices],

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\ & \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \end{aligned}$$

$$\begin{aligned}
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} &= \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\
 \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Doesn't have less than three SuperHyperVertices inside the intended Extreme SuperHyper- 2467
 Set. Thus the non-obvious simple Extreme type-SuperHyperSet of the Extreme Eulerian-Cycle- 2468
 Decomposition is up. To sum them up, the Extreme SuperHyperSet of the Extreme SuperHy- 2469
 perEdges[SuperHyperVertices], 2470

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} &= \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\
 \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is the non-obvious simple Extreme type-SuperHyperSet of the Extreme Eulerian-Cycle-Decomposition. 2471
 Since the Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices], 2472

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 \mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} &= \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\
 \mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is an Extreme Eulerian-Cycle-Decomposition $\mathcal{C}(ESHG)$ for an Extreme SuperHyperGraph $ESHG : (V, E)$ 2473
 is the Extreme SuperHyperSet S of Extreme SuperHyperVertices such that there's 2474
 no an Extreme SuperHyperEdge for some Extreme SuperHyperVertices given by that Ex- 2475
 treme type-SuperHyperSet called the Extreme Eulerian-Cycle-Decomposition and it's an Extreme 2476
Eulerian-Cycle-Decomposition. Since it's 2477

2478
 the maximum Extreme cardinality of an Extreme SuperHyperSet S of Extreme Su- 2479
 perHyperEdges[SuperHyperVertices] such that there's no Extreme SuperHyperVertex of an 2480
 Extreme SuperHyperEdge is common and there's an Extreme SuperHyperEdge for all Extreme 2481
 SuperHyperVertices. There aren't only less than three Extreme SuperHyperVertices inside the 2482
 intended Extreme SuperHyperSet, 2483

$$\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}}$$

$$\begin{aligned}
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Thus the non-obvious Extreme Eulerian-Cycle-Decomposition,

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is up. The obvious simple Extreme type-SuperHyperSet of the Extreme Eulerian-Cycle-Decomposition, 2485
not: 2486

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is the Extreme SuperHyperSet, not:

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Does includes only less than three SuperHyperVertices in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple Extreme type-SuperHyperSet called the

“Extreme Eulerian-Cycle-Decomposition”

amid those obvious[non-obvious] simple Extreme type-SuperHyperSets called the

Extreme Eulerian-Cycle-Decomposition,

is only and only

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{ExtremeQuasi-Eulerian-Cycle-Decomposition} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 & \mathcal{C}(NSHG)_{ExtremeQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Extreme Cardinality}}{2} \rfloor}. \\
 & \mathcal{C}(NSHG)_{ExtremeR-Quasi-Eulerian-Cycle-Decomposition} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\
 & \mathcal{C}(NSHG)_{ExtremeR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial} \\
 &= az^s + bz^t.
 \end{aligned}$$

In a connected Extreme SuperHyperGraph $ESHG : (V, E)$.

■ 2495

CHAPTER 11

2496

The Extreme Departures on The Theoretical Results Toward Theoretical Motivations

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The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 2500
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Proposition 11.0.1. Assume a connected Extreme SuperHyperPath $ESHP : (V, E)$. Then 2502

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

Proof. Let

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$$\begin{aligned} & P : \\ & V_1^{EXTERNAL}, E_1, \\ & V_2^{EXTERNAL}, E_2, \\ & \dots, \\ & V_{\lfloor \frac{E_{NSHG}}{3} \rfloor}^{EXTERNAL}, E_{\lfloor \frac{E_{NSHG}}{3} \rfloor} \end{aligned}$$

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$$\begin{aligned} & P : \\ & E_1, V_1^{EXTERNAL}, \\ & E_2, V_2^{EXTERNAL}, \\ & \dots, \\ & E_{\lfloor \frac{E_{NSHG}}{3} \rfloor}, V_{\lfloor \frac{E_{NSHG}}{3} \rfloor}^{EXTERNAL} \end{aligned}$$

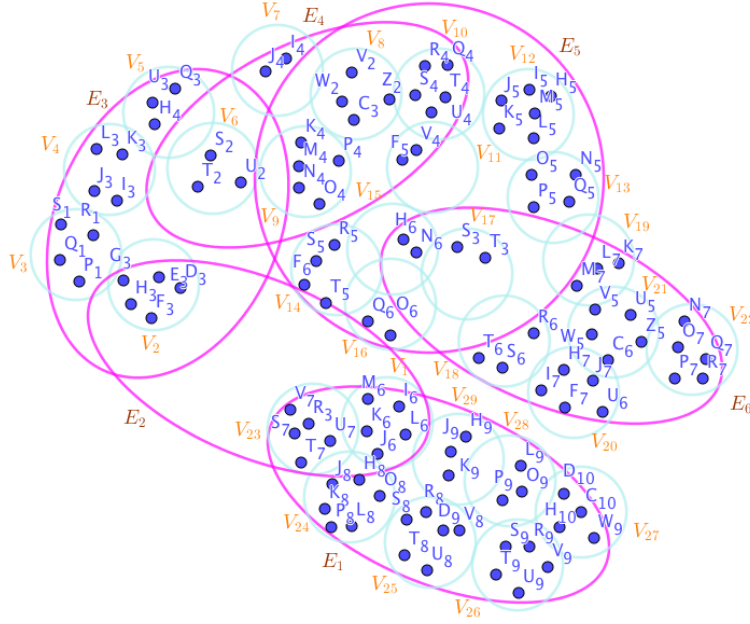


Figure 11.1: an Extreme SuperHyperPath Associated to the Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Example (42.0.5)

136NSHG18

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. ■

136EXM18a

Example 11.0.2. In the Figure (31.1), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.1), is the SuperHyperEulerian-Cycle-Decomposition.

Proposition 11.0.3. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ Eulerian-Cycle-Decomposition}} &= \{\{E_i \in E_{NSHG}\}\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^{|E_{NSHG}|}. \\ \mathcal{C}(NSHG)_{Extreme \text{ V-Eulerian-Cycle-Decomposition}} & \end{aligned}$$

$$\begin{aligned}
 &= \{\{V_{E_i \in E_{NSHG}}\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme } V\text{-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^{|V_{NSHG}|}.
 \end{aligned}$$

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(11.2)

Proof. Let

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$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &V_{\frac{|E_{NSHG}|}{3}}^{EXTERNAL}, E_{\frac{|E_{NSHG}|}{3}}
 \end{aligned}$$

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$$\begin{aligned}
 &P : \\
 &E_1, V_1^{EXTERNAL}, \\
 &E_2, V_2^{EXTERNAL}, \\
 &\dots, \\
 &E_{\frac{|E_{NSHG}|}{3}}, V_{\frac{|E_{NSHG}|}{3}}^{EXTERNAL}
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESHC : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. ■

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136EXM19a

Example 11.0.4. In the Figure (31.2), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.2), is the Extreme SuperHyperEulerian-Cycle-Decomposition.

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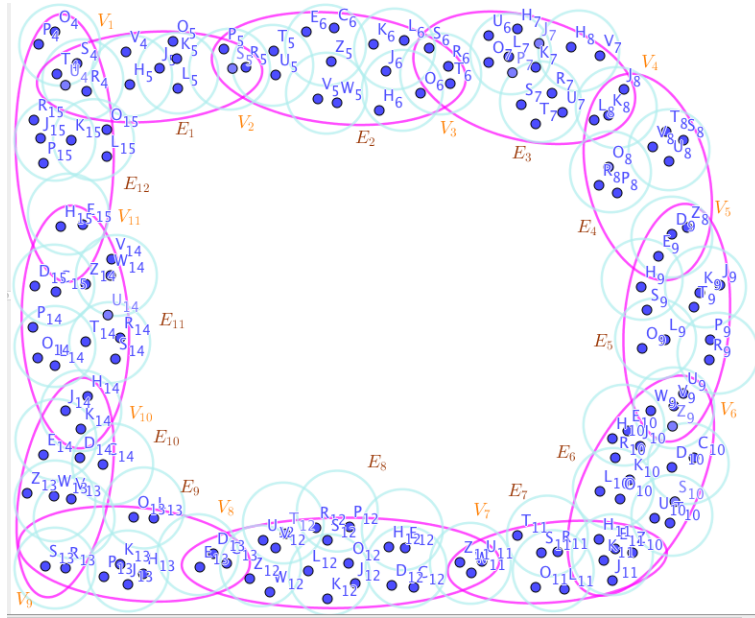


Figure 11.2: an Extreme SuperHyperCycle Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.7)

136NSHG19

Proposition 11.0.5. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 &P : \\
 &V_1^{\text{EXTERNAL}}, E_1, \\
 &CENTER, E_2
 \end{aligned}$$

2527

$$\begin{aligned}
 &P : \\
 &E_1, V_1^{\text{EXTERNAL}}, \\
 &E_2, CENTER
 \end{aligned}$$

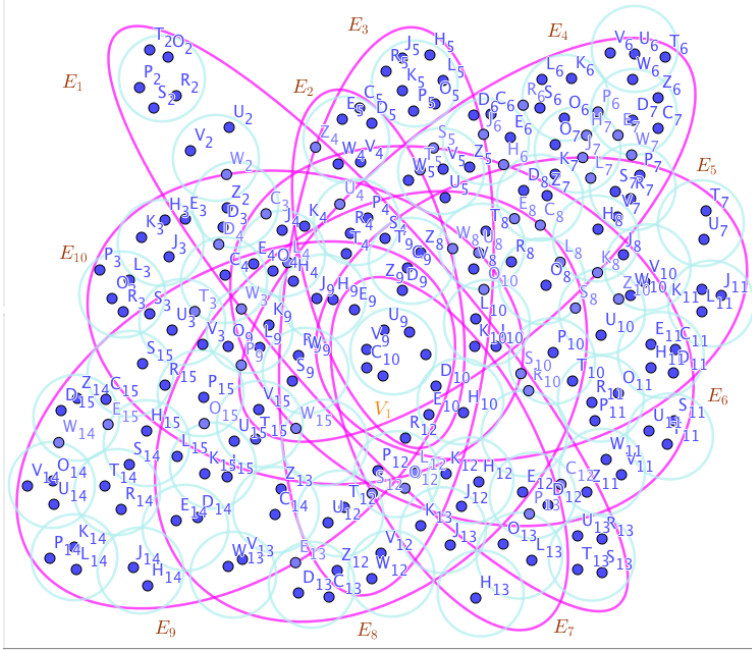


Figure 11.3: an Extreme SuperHyperStar Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.9)

136NSHG20a

be a longest path taken a connected Extreme SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. ■

136EXM20a

Example 11.0.6. In the Figure (31.3), the connected Extreme SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperStar $ESHS : (V, E)$, in the Extreme SuperHyperModel (31.3), is the Extreme SuperHyperEulerian-Cycle-Decomposition.

Proposition 11.0.7. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ = \{\{\}\}. \end{aligned}$$

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extreme \text{ Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 & \mathcal{C}(NSHG)_{Extreme \text{ V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 & \mathcal{C}(NSHG)_{Extreme \text{ V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{EXTERNAL}, E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}.
 \end{aligned}$$

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$$\begin{aligned}
 & P : \\
 & E_1, V_1^{EXTERNAL}, \\
 & E_2, V_2^{EXTERNAL}, \\
 & \dots, \\
 & E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}, V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's
 a new way to redefine as

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$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded
 to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is
 straightforward. Then there's no at least one SuperHyperEulerian-Cycle-Decomposition. Thus the
 notion of quasi may be up but the SuperHyperNotions based on SuperHyperEulerian-Cycle-
 Decomposition could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart
 could have one SuperHyperVertex as the representative in the

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest SuperHyperEulerian-Cycle-Decomposition taken from a connected Extreme SuperHyperBi-
 partite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-
 SuperHyperPart SuperHyperEdges are attained in any solution

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$$P :$$

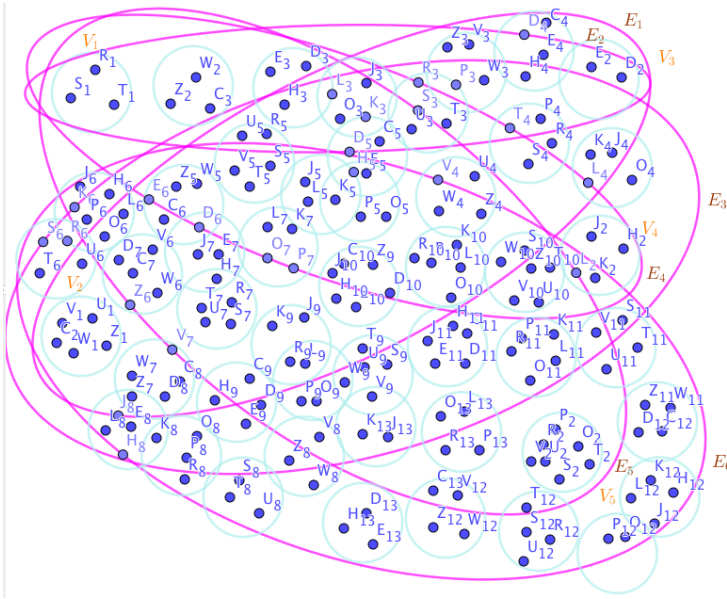


Figure 11.4: Extreme SuperHyperBipartite Extreme Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Example (42.0.11)

136NSHG21a

$$V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

The latter is straightforward. ■ 2552

Example 11.0.8. In the Extreme Figure (31.4), the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, is Extreme highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, in the Extreme SuperHyperModel (31.4), is the Extreme SuperHyperEulerian-Cycle-Decomposition.

Proposition 11.0.9. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} &= \{\{\}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^0. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} &= \{\{\}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^0. \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{EXTERNAL}, E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}.
 \end{aligned}$$

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$$\begin{aligned}
 P : \\
 &E_1, V_1^{EXTERNAL}, \\
 &E_2, V_2^{EXTERNAL}, \\
 &\dots, \\
 &E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}, V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperEulerian-Cycle-Decomposition taken from a connected Extreme SuperHyper-
 Multipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded
 to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is
 straightforward. Then there's no at least one SuperHyperEulerian-Cycle-Decomposition. Thus the
 notion of quasi may be up but the SuperHyperNotions based on SuperHyperEulerian-Cycle-
 Decomposition could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart
 could have one SuperHyperVertex as the representative in the

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$$\begin{aligned}
 P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$.
 Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart
 SuperHyperEdges are attained in any solution

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$$\begin{aligned}
 P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$.
 The latter is straightforward. ■

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Example 11.0.10. In the Figure (31.5), the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (31.5), is the Extreme SuperHyperEulerian-Cycle-Decomposition.

Proposition 11.0.11. *Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then,* 2580

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

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$$P:$$

$$V_1^{EXTERNAL}, E_1^*,$$

$$CENTER, E_2^*$$

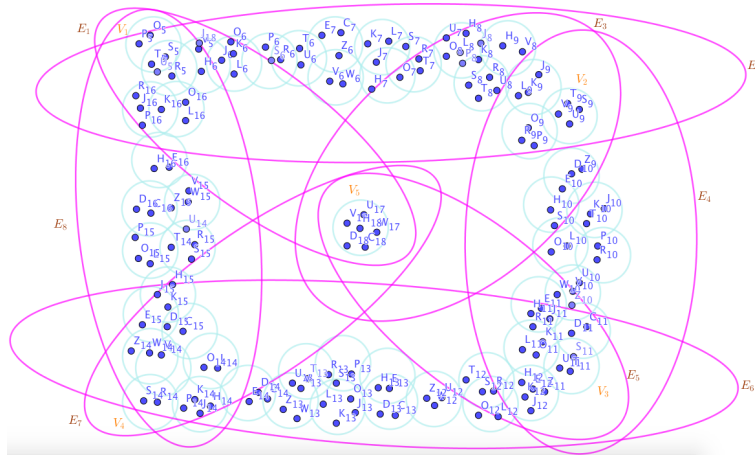


Figure 11.6: an Extreme SuperHyperWheel Extreme Associated to the Extreme Notions of Extreme SuperHyperEulerian-Cycle-Decomposition in the Extreme Example (42.0.15)

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$$P : \\ E_1^*, V_1^{EXTERNAL}, \\ E_2^*, CENTER$$

is a longest SuperHyperEulerian-Cycle-Decomposition taken from a connected Extreme SuperHyper-
Wheel $ESHW : (V, E)$. There's a new way to redefine as

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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded
to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is
straightforward. Then there's at least one SuperHyperEulerian-Cycle-Decomposition. Thus the notion
of quasi isn't up and the SuperHyperNotions based on SuperHyperEulerian-Cycle-Decomposition
could be applied. The unique embedded SuperHyperEulerian-Cycle-Decomposition proposes some
longest SuperHyperEulerian-Cycle-Decomposition excerpt from some representatives. The latter is
straightforward. ■

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Example 11.0.12. In the Extreme Figure (31.6), the connected Extreme SuperHyperWheel
 $NSHW : (V, E)$, is Extreme highlighted and featured. The obtained Extreme SuperHyperSet,
by the Algorithm in previous result, of the Extreme SuperHyperVertices of the connected
Extreme SuperHyperWheel $ESHW : (V, E)$, in the Extreme SuperHyperModel (31.6), is the
Extreme SuperHyperEulerian-Cycle-Decomposition.

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The Surveys of Mathematical Sets On The Results But As The Initial Motivation

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For the SuperHyperEulerian-Cycle-Decomposition, Extreme SuperHyperEulerian-Cycle-Decomposition, and the Extreme SuperHyperEulerian-Cycle-Decomposition, some general results are introduced.

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Remark 12.0.1. Let remind that the Extreme SuperHyperEulerian-Cycle-Decomposition is “redefined” on the positions of the alphabets.

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Corollary 12.0.2. Assume Extreme SuperHyperEulerian-Cycle-Decomposition. Then

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$$\begin{aligned} & \text{Extreme SuperHyperEulerian} - \text{Cycle} - \text{Decomposition} = \\ & \{ \text{theSuperHyperEulerian} - \text{Cycle} - \text{Decomposition of the SuperHyperVertices} \mid \\ & \max | \text{SuperHyperOffensive} \\ & \text{SuperHyperEulerian} - \text{Cycle} - \text{Decomposition} \\ & | \text{ExtremecardinalityamidthoseSuperHyperEulerian} - \text{Cycle} - \text{Decomposition}. \} \end{aligned}$$

plus one Extreme SuperHyperNeighbor to one. Where σ_i is the unary operation on the SuperHyperVertices of the SuperHyperGraph to assign the determinacy, the indeterminacy and the neutrality, for $i = 1, 2, 3$, respectively.

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Corollary 12.0.3. Assume an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then the notion of Extreme SuperHyperEulerian-Cycle-Decomposition and SuperHyperEulerian-Cycle-Decomposition coincide.

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Corollary 12.0.4. Assume an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then a conseNeighborive sequence of the SuperHyperVertices is an Extreme SuperHyperEulerian-Cycle-Decomposition if and only if it's a SuperHyperEulerian-Cycle-Decomposition.

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Corollary 12.0.5. Assume an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then a conseNeighborive sequence of the SuperHyperVertices is a strongest SuperHyperEulerian-Cycle-Decomposition if and only if it's a longest SuperHyperEulerian-Cycle-Decomposition.

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Corollary 12.0.6. Assume SuperHyperClasses of an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then its Extreme SuperHyperEulerian-Cycle-Decomposition is its SuperHyperEulerian-Cycle-Decomposition and reversely.

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Corollary 12.0.7. Assume an Extreme SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel) on the same identical letter of the alphabet. Then its Extreme SuperHyperEulerian-Cycle-Decomposition is its SuperHyperEulerian-Cycle-Decomposition and reversely.

Corollary 12.0.8. Assume an Extreme SuperHyperGraph. Then its Extreme SuperHyperEulerian-Cycle-Decomposition isn't well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition isn't well-defined.

Corollary 12.0.9. Assume SuperHyperClasses of an Extreme SuperHyperGraph. Then its Extreme SuperHyperEulerian-Cycle-Decomposition isn't well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition isn't well-defined.

Corollary 12.0.10. Assume an Extreme SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its Extreme SuperHyperEulerian-Cycle-Decomposition isn't well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition isn't well-defined.

Corollary 12.0.11. Assume an Extreme SuperHyperGraph. Then its Extreme SuperHyperEulerian-Cycle-Decomposition is well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition is well-defined.

Corollary 12.0.12. Assume SuperHyperClasses of an Extreme SuperHyperGraph. Then its Extreme SuperHyperEulerian-Cycle-Decomposition is well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition is well-defined.

Corollary 12.0.13. Assume an Extreme SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its Extreme SuperHyperEulerian-Cycle-Decomposition is well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition is well-defined.

Proposition 12.0.14. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. Then V is

- (i) : the dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : the strong dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : the connected dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : the δ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (v) : the strong δ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (vi) : the connected δ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.

Proposition 12.0.15. Let $NTG : (V, E, \sigma, \mu)$ be an Extreme SuperHyperGraph. Then \emptyset is

- (i) : the SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : the strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : the connected defensive SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : the δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;

(v) : the strong δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2655

(vi) : the connected δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2656

Proposition 12.0.16. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. Then an independent SuperHyperSet is 2657
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(i) : the SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2659

(ii) : the strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2660

(iii) : the connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2661

(iv) : the δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2662

(v) : the strong δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2663

(vi) : the connected δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2664

Proposition 12.0.17. Let $ESHG : (V, E)$ be an Extreme SuperHyperUniform SuperHyperGraph which is a SuperHyperEulerian-Cycle-Decomposition/SuperHyperPath. Then V is a maximal 2665
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(i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2667

(ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2668

(iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2669

(iv) : $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2670

(v) : strong $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2671

(vi) : connected $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2672

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 2673

Proposition 12.0.18. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is a SuperHyperUniform SuperHyperWheel. Then V is a maximal 2674
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(i) : dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2676

(ii) : strong dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2677

(iii) : connected dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2678

(iv) : $\mathcal{O}(ESHG)$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2679

(v) : strong $\mathcal{O}(ESHG)$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2680

(vi) : connected $\mathcal{O}(ESHG)$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2681

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 2682

Proposition 12.0.19. Let $ESHG : (V, E)$ be an Extreme SuperHyperUniform SuperHyperGraph which is a SuperHyperEulerian-Cycle-Decomposition/SuperHyperPath. Then the number of 2683
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(i) : the $SuperHyperEulerian-Cycle-Decomposition$;	2685
(ii) : the $SuperHyperEulerian-Cycle-Decomposition$;	2686
(iii) : the connected $SuperHyperEulerian-Cycle-Decomposition$;	2687
(iv) : the $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$;	2688
(v) : the strong $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$;	2689
(vi) : the connected $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$.	2690
is one and it's only V . Where the exterior $SuperHyperVertices$ and the interior $SuperHyperVertices$ coincide.	2691 2692
Proposition 12.0.20. Let $ESHG : (V, E)$ be an Extreme $SuperHyperUniform$ $SuperHyperGraph$ which is a $SuperHyperWheel$. Then the number of	2693 2694
(i) : the dual $SuperHyperEulerian-Cycle-Decomposition$;	2695
(ii) : the dual $SuperHyperEulerian-Cycle-Decomposition$;	2696
(iii) : the dual connected $SuperHyperEulerian-Cycle-Decomposition$;	2697
(iv) : the dual $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$;	2698
(v) : the strong dual $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$;	2699
(vi) : the connected dual $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$.	2700
is one and it's only V . Where the exterior $SuperHyperVertices$ and the interior $SuperHyperVertices$ coincide.	2701 2702
Proposition 12.0.21. Let $ESHG : (V, E)$ be an Extreme $SuperHyperUniform$ $SuperHyperGraph$ which is a $SuperHyperStar/SuperHyperComplete$ $SuperHyperBipartite/SuperHyperComplete$ $SuperHyperMultipartite$. Then a $SuperHyperSet$ contains [the $SuperHyperCenter$ and] the half of multiplying r with the number of all the $SuperHyperEdges$ plus one of all the $SuperHyperVertices$ is a	2703 2704 2705 2706 2707
(i) : dual $SuperHyperDefensive$ $SuperHyperEulerian-Cycle-Decomposition$;	2708
(ii) : strong dual $SuperHyperDefensive$ $SuperHyperEulerian-Cycle-Decomposition$;	2709
(iii) : connected dual $SuperHyperDefensive$ $SuperHyperEulerian-Cycle-Decomposition$;	2710
(iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual $SuperHyperDefensive$ $SuperHyperEulerian-Cycle-Decomposition$;	2711
(v) : strong $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual $SuperHyperDefensive$ $SuperHyperEulerian-Cycle-Decomposition$;	2712
(vi) : connected $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual $SuperHyperDefensive$ $SuperHyperEulerian-Cycle-Decomposition$.	2713

Proposition 12.0.22. *Let $ESHG : (V, E)$ be an Extreme SuperHyperUniform SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then a SuperHyperSet contains the half of multiplying r with the number of all the SuperHyperEdges plus one of all the SuperHyperVertices in the biggest SuperHyperPart is a*

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (v) : strong δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (vi) : connected δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.

Proposition 12.0.23. *Let $ESHG : (V, E)$ be an Extreme SuperHyperUniform SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then Then the number of*

- (i) : dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : strong dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : connected dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (v) : strong $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (vi) : connected $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.

is one and it's only S , a SuperHyperSet contains [the SuperHyperCenter and] the half of multiplying r with the number of all the SuperHyperEdges plus one of all the SuperHyperVertices. Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide.

Proposition 12.0.24. *Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. The number of connected component is $|V - S|$ if there's a SuperHyperSet which is a dual*

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : SuperHyperEulerian-Cycle-Decomposition;
- (v) : strong 1-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (vi) : connected 1-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.

Proposition 12.0.25. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. Then the number is at most $\mathcal{O}(ESHG)$ and the Extreme number is at most $\mathcal{O}_n(ESHG)$. 2745
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Proposition 12.0.26. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is SuperHyperComplete. The number is $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the Extreme number is $\min \sum_{v \in \{v_1, v_2, \dots, v_t\}} \frac{\mathcal{O}(ESHG:(V,E))}{2} \subseteq V \sigma(v)$, in the setting of dual 2747
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(i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2750

(ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2751

(iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2752

(iv) : $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2753

(v) : strong $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2754

(vi) : connected $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2755

Proposition 12.0.27. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is \emptyset . The number is 0 and the Extreme number is 0, for an independent SuperHyperSet in the setting of dual 2756
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(i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2759

(ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2760

(iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2761

(iv) : 0-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2762

(v) : strong 0-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2763

(vi) : connected 0-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2764

Proposition 12.0.28. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is SuperHyperComplete. Then there's no independent SuperHyperSet. 2765
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Proposition 12.0.29. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is SuperHyperEulerian-Cycle-Decomposition/SuperHyperPath/SuperHyperWheel. The number is $\mathcal{O}(ESHG : (V, E))$ and the Extreme number is $\mathcal{O}_n(ESHG : (V, E))$, in the setting of a dual 2767
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(i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2771

(ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2772

(iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2773

(iv) : $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2774

(v) : strong $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2775

(vi) : *connected $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.* 2776

Proposition 12.0.30. *Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is Super- 2777
HyperStar/complete SuperHyperBipartite/complete SuperHyperMultiPartite. The number is 2778
 $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the Extreme number is $\min \Sigma_{v \in \{v_1, v_2, \dots, v_t\}_{t > \frac{\mathcal{O}(ESHG:(V,E))}{2}}} \subseteq V \sigma(v)$, in the 2779
setting of a dual 2780*

(i) : *SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;* 2781

(ii) : *strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;* 2782

(iii) : *connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;* 2783

(iv) : *$(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;* 2784

(v) : *strong $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;* 2785

(vi) : *connected $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.* 2786

Proposition 12.0.31. *Let $\mathcal{NSHF} : (V, E)$ be a SuperHyperFamily of the $ESHGs : (V, E)$ 2787
Extreme SuperHyperGraphs which are from one-type SuperHyperClass which the result is obtained 2788
for the individuals. Then the results also hold for the SuperHyperFamily $\mathcal{NSHF} : (V, E)$ of 2789
these specific SuperHyperClasses of the Extreme SuperHyperGraphs. 2790*

Proposition 12.0.32. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. If S is a dual 2791
SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then $\forall v \in V \setminus S, \exists x \in S$ such that 2792*

(i) $v \in N_s(x)$; 2793

(ii) $vx \in E$. 2794

Proposition 12.0.33. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. If S is a dual 2795
SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then 2796*

(i) S is SuperHyperEulerian-Cycle-Decomposition set; 2797

(ii) there's $S \subseteq S'$ such that $|S'|$ is SuperHyperChromatic number. 2798

Proposition 12.0.34. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. Then 2799*

(i) $\Gamma \leq \mathcal{O}$; 2800

(ii) $\Gamma_s \leq \mathcal{O}_n$. 2801

Proposition 12.0.35. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph which is 2802
connected. Then 2803*

(i) $\Gamma \leq \mathcal{O} - 1$; 2804

(ii) $\Gamma_s \leq \mathcal{O}_n - \Sigma_{i=1}^3 \sigma_i(x)$. 2805

Proposition 12.0.36. *Let $ESHG : (V, E)$ be an odd SuperHyperPath. Then 2806*

(i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_{n-1}\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2807
 2808

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ and corresponded SuperHyperSet is $S = \{v_2, v_4, \dots, v_{n-1}\}$; 2809

(iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 2810

(iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_{n-1}\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only a dual SuperHyperEulerian-Cycle-Decomposition. 2811
 2812

Proposition 12.0.37. Let $ESHG : (V, E)$ be an even SuperHyperPath. Then 2813

(i) the set $S = \{v_2, v_4, \dots, v_n\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2814
 2815

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ and corresponded SuperHyperSets are $\{v_2, v_4, \dots, v_n\}$ and $\{v_1, v_3, \dots, v_{n-1}\}$; 2816

(iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_n\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 2817

(iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_n\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only dual SuperHyperEulerian-Cycle-Decomposition. 2818
 2819

Proposition 12.0.38. Let $ESHG : (V, E)$ be an even SuperHyperEulerian-Cycle-Decomposition. Then 2820

(i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_n\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2821
 2822

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ and corresponded SuperHyperSets are $\{v_2, v_4, \dots, v_n\}$ and $\{v_1, v_3, \dots, v_{n-1}\}$; 2823

(iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_n\}} \sigma(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sigma(s)\}$; 2824

(iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_n\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only dual SuperHyperEulerian-Cycle-Decomposition. 2825
 2826

Proposition 12.0.39. Let $ESHG : (V, E)$ be an odd SuperHyperEulerian-Cycle-Decomposition. Then 2827

(i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_{n-1}\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2828
 2829

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ and corresponded SuperHyperSet is $S = \{v_2, v_4, \dots, v_{n-1}\}$; 2830

(iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 2831

(iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_{n-1}\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only dual SuperHyperEulerian-Cycle-Decomposition. 2832
 2833

Proposition 12.0.40. Let $ESHG : (V, E)$ be SuperHyperStar. Then 2834

(i) the SuperHyperSet $S = \{c\}$ is a dual maximal SuperHyperEulerian-Cycle-Decomposition; 2835

(ii) $\Gamma = 1$; 2836

(iii) $\Gamma_s = \sum_{i=1}^3 \sigma_i(c)$; 2837

(iv) the SuperHyperSets $S = \{c\}$ and $S \subset S'$ are only dual SuperHyperEulerian-Cycle-Decomposition. 2838

Proposition 12.0.41. Let $ESHG : (V, E)$ be SuperHyperWheel. Then 2839

(i) the SuperHyperSet $S = \{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2840
2841

(ii) $\Gamma = |\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}|$; 2842

(iii) $\Gamma_s = \sum_{\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}} \sum_{i=1}^3 \sigma_i(s)$; 2843

(iv) the SuperHyperSet $\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is only a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2844
2845

Proposition 12.0.42. Let $ESHG : (V, E)$ be an odd SuperHyperComplete. Then 2846

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2847
2848

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$; 2849

(iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$; 2850

(iv) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is only a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2851
2852

Proposition 12.0.43. Let $ESHG : (V, E)$ be an even SuperHyperComplete. Then 2853

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2854
2855

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$; 2856

(iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$; 2857

(iv) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is only a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2858
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Proposition 12.0.44. Let $\mathcal{NSHF} : (V, E)$ be a m -SuperHyperFamily of Extreme SuperHyperStars with common Extreme SuperHyperVertex SuperHyperSet. Then 2860
2861

(i) the SuperHyperSet $S = \{c_1, c_2, \cdots, c_m\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition for \mathcal{NSHF} ; 2862
2863

(ii) $\Gamma = m$ for $\mathcal{NSHF} : (V, E)$; 2864

(iii) $\Gamma_s = \sum_{i=1}^m \sum_{j=1}^3 \sigma_j(c_i)$ for $\mathcal{NSHF} : (V, E)$; 2865

(iv) the SuperHyperSets $S = \{c_1, c_2, \cdots, c_m\}$ and $S \subset S'$ are only dual SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$. 2866
2867

Proposition 12.0.45. *Let $\mathcal{NSHF} : (V, E)$ be an m -SuperHyperFamily of odd SuperHyperComplete SuperHyperGraphs with common Extreme SuperHyperVertex SuperHyperSet. Then* 2868
2869

- (i) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition for \mathcal{NSHF} ;* 2870
2871
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ for $\mathcal{NSHF} : (V, E)$; 2872
- (iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$ for $\mathcal{NSHF} : (V, E)$; 2873
- (iv) *the SuperHyperSets $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ are only a dual maximal SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$.* 2874
2875

Proposition 12.0.46. *Let $\mathcal{NSHF} : (V, E)$ be a m -SuperHyperFamily of even SuperHyperComplete SuperHyperGraphs with common Extreme SuperHyperVertex SuperHyperSet. Then* 2876
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- (i) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$;* 2878
2879
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ for $\mathcal{NSHF} : (V, E)$; 2880
- (iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$ for $\mathcal{NSHF} : (V, E)$; 2881
- (iv) *the SuperHyperSets $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ are only dual maximal SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$.* 2882
2883

Proposition 12.0.47. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. Then* 2884
following statements hold; 2885

- (i) *if $s \geq t$ and a SuperHyperSet S of SuperHyperVertices is an t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is an s -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;* 2886
2887
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- (ii) *if $s \leq t$ and a SuperHyperSet S of SuperHyperVertices is a dual t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is a dual s -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.* 2889
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Proposition 12.0.48. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. Then* 2892
following statements hold; 2893

- (i) *if $s \geq t + 2$ and a SuperHyperSet S of SuperHyperVertices is an t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is an s -SuperHyperPowerful SuperHyperEulerian-Cycle-Decomposition;* 2894
2895
2896
- (ii) *if $s \leq t$ and a SuperHyperSet S of SuperHyperVertices is a dual t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is a dual s -SuperHyperPowerful SuperHyperEulerian-Cycle-Decomposition.* 2897
2898
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Proposition 12.0.49. *Let $ESHG : (V, E)$ be a $a[an]$ $[V-]$ SuperHyperUniform-strong-Extreme SuperHyperGraph. Then following statements hold;* 2900
2901

- (i) if $\forall a \in S$, $|N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2902
2903
- (ii) if $\forall a \in V \setminus S$, $|N_s(a) \cap S| > \lfloor \frac{r}{2} \rfloor + 1$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2904
2905
- (iii) if $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is an V -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2906
2907
- (iv) if $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is a dual V -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2908
2909
- Proposition 12.0.50.** Let $ESHG : (V, E)$ is a[an] $[V]$ -SuperHyperUniform-strong-Extreme SuperHyperGraph. Then following statements hold; 2910
2911
- (i) $\forall a \in S$, $|N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2912
2913
- (ii) $\forall a \in V \setminus S$, $|N_s(a) \cap S| > \lfloor \frac{r}{2} \rfloor + 1$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2914
2915
- (iii) $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an V -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2916
2917
- (iv) $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual V -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2918
2919
- Proposition 12.0.51.** Let $ESHG : (V, E)$ is a[an] $[V]$ -SuperHyperUniform-strong-Extreme SuperHyperGraph which is a SuperHyperComplete. Then following statements hold; 2920
2921
- (i) $\forall a \in S$, $|N_s(a) \cap S| < \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2922
2923
- (ii) $\forall a \in V \setminus S$, $|N_s(a) \cap S| > \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2924
2925
- (iii) $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2926
2927
- (iv) $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2928
2929
- Proposition 12.0.52.** Let $ESHG : (V, E)$ is a[an] $[V]$ -SuperHyperUniform-strong-Extreme SuperHyperGraph which is a SuperHyperComplete. Then following statements hold; 2930
2931
- (i) if $\forall a \in S$, $|N_s(a) \cap S| < \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2932
2933
- (ii) if $\forall a \in V \setminus S$, $|N_s(a) \cap S| > \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2934
2935
- (iii) if $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 2936
2937

(iv) if $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is a dual $(\mathcal{O} - 1)$ -
SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 2938
 2939

Proposition 12.0.53. Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Extreme
 SuperHyperGraph which is SuperHyperEulerian-Cycle-Decomposition. Then following statements hold; 2940
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(i) $\forall a \in S$, $|N_s(a) \cap S| < 2$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-
 Cycle-Decomposition; 2942
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(ii) $\forall a \in V \setminus S$, $|N_s(a) \cap S| > 2$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 2944
 2945

(iii) $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 2946
 2947

(iv) $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition. 2948
 2949

Proposition 12.0.54. Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Extreme
 SuperHyperGraph which is SuperHyperEulerian-Cycle-Decomposition. Then following statements hold; 2950
 2951

(i) if $\forall a \in S$, $|N_s(a) \cap S| < 2$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 2952
 2953

(ii) if $\forall a \in V \setminus S$, $|N_s(a) \cap S| > 2$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 2954
 2955

(iii) if $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 2956
 2957

(iv) if $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition. 2958
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Extreme Applications in Cancer's Extreme Recognition

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The cancer is the Extreme disease but the Extreme model is going to figure out what's going on this Extreme phenomenon. The special Extreme case of this Extreme disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The Extreme recognition of the cancer could help to find some Extreme treatments for this Extreme disease. In the following, some Extreme steps are Extreme devised on this disease.

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Step 1. (Extreme Definition) *The Extreme recognition of the cancer in the long-term Extreme function.*

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Step 2. (Extreme Issue) *The specific region has been assigned by the Extreme model [it's called Extreme SuperHyperGraph] and the long Extreme cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Extreme SuperHyperGraph] to have convenient perception on what's happened and what's done.*

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Step 3. (Extreme Model) *There are some specific Extreme models, which are well-known and they've got the names, and some general Extreme models. The moves and the Extreme traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by an Extreme SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the Extreme SuperHyperEulerian-Cycle-Decomposition or the Extreme SuperHyperEulerian-Cycle-Decomposition in those Extreme Extreme SuperHyperModels.*

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Table 14.1: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges
Belong to The Extreme SuperHyperBipartite

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

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result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite 2994
ESHB : (V, E) , in the Extreme SuperHyperModel (34.1), is the Extreme SuperHyperEulerian- 2995
Cycle-Decomposition. 2996

Table 15.1: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges
Belong to The Extreme SuperHyperMultipartite

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

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Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite ESHM : 3007
(V, E), in the Extreme SuperHyperModel (35.1), is the Extreme SuperHyperEulerian-Cycle- 3008
Decomposition. 3009

CHAPTER 16

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Wondering Open Problems But As The Directions To Forming The Motivations

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In what follows, some “problems” and some “questions” are proposed.

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The SuperHyperEulerian-Cycle-Decomposition and the Extreme SuperHyperEulerian-Cycle-Decomposition are defined on a real-world application, titled “Cancer’s Recognitions”.

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Question 16.0.1. *Which the else SuperHyperModels could be defined based on Cancer’s recognitions?*

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Question 16.0.2. *Are there some SuperHyperNotions related to SuperHyperEulerian-Cycle-Decomposition and the Extreme SuperHyperEulerian-Cycle-Decomposition?*

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Question 16.0.3. *Are there some Algorithms to be defined on the SuperHyperModels to compute them?*

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Question 16.0.4. *Which the SuperHyperNotions are related to beyond the SuperHyperEulerian-Cycle-Decomposition and the Extreme SuperHyperEulerian-Cycle-Decomposition?*

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Problem 16.0.5. *The SuperHyperEulerian-Cycle-Decomposition and the Extreme SuperHyperEulerian-Cycle-Decomposition do a SuperHyperModel for the Cancer’s recognitions and they’re based on SuperHyperEulerian-Cycle-Decomposition, are there else?*

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Problem 16.0.6. *Which the fundamental SuperHyperNumbers are related to these SuperHyper-Numbers types-results?*

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Problem 16.0.7. *What’s the independent research based on Cancer’s recognitions concerning the multiple types of SuperHyperNotions?*

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Conclusion and Closing Remarks

In this section, concluding remarks and closing remarks are represented. The drawbacks of this research are illustrated. Some benefits and some advantages of this research are highlighted. This research uses some approaches to make Extreme SuperHyperGraphs more understandable. In this endeavor, two SuperHyperNotions are defined on the SuperHyperEulerian-Cycle-Decomposition. For that sake in the second definition, the main definition of the Extreme SuperHyperGraph is redefined on the position of the alphabets. Based on the new definition for the Extreme SuperHyperGraph, the new SuperHyperNotion, Extreme SuperHyperEulerian-Cycle-Decomposition, finds the convenient background to implement some results based on that. Some SuperHyperClasses and some Extreme SuperHyperClasses are the cases of this research on the modeling of the regions where are under the attacks of the cancer to recognize this disease as it's mentioned on the title "Cancer's Recognitions". To formalize the instances on the SuperHyperNotion, SuperHyperEulerian-Cycle-Decomposition, the new SuperHyperClasses and SuperHyperClasses, are introduced. Some general results are gathered in the section on the SuperHyperEulerian-Cycle-Decomposition and the Extreme SuperHyperEulerian-Cycle-Decomposition. The clarifications, instances and literature reviews have taken the whole way through. In this research, the literature reviews have fulfilled the lines containing the notions and the results. The SuperHyperGraph and Extreme SuperHyperGraph are the SuperHyperModels on the "Cancer's Recognitions" and both bases are the background of this research. Sometimes the cancer has been happened on the region, full of cells, groups of cells and embedded styles. In this segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities of the moves of the cancer in the longest and strongest styles with the formation of the design and the architecture are formally called " SuperHyperEulerian-Cycle-Decomposition " in the themes of jargons and buzzwords. The prefix "SuperHyper" refers to the theme of the embedded styles to figure out the background for the SuperHyperNotions. In the Table (37.1), benefits and avenues for this research are, figured out, pointed out and spoken out.

Table 17.1: An Overlook On This Research And Beyond

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Advantages	Limitations
1. Redefining Extreme SuperHyperGraph	1. General Results
2. SuperHyperEulerian-Cycle-Decomposition	
3. Extreme SuperHyperEulerian-Cycle-Decomposition	2. Other SuperHyperNumbers
4. Modeling of Cancer’s Recognitions	
5. SuperHyperClasses	3. SuperHyperFamilies

Extreme SuperHyperDuality But As The Extensions Excerpt From Dense And Super Forms

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Definition 18.0.1. (Different Extreme Types of Extreme SuperHyperDuality). 3061

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3062

SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called 3063

(i) **Extreme e-SuperHyperDuality** if $\forall E_i \in E', \exists E_j \in E_{ESHG:(V,E)} \setminus E'$ such that 3064
 $V_a \in E_i, E_j$; 3065

(ii) **Extreme re-SuperHyperDuality** if $\forall E_i \in E', \exists E_j \in E_{ESHG:(V,E)} \setminus E'$ such that 3066
 $V_a \in E_i, E_j$ and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3067

(iii) **Extreme v-SuperHyperDuality** if $\forall V_i \in V', \exists V_j \in V_{ESHG:(V,E)} \setminus V'$ such that 3068
 $V_i, V_j \in E_a$; 3069

(iv) **Extreme rv-SuperHyperDuality** if $\forall V_i \in V', \exists V_j \in V_{ESHG:(V,E)} \setminus V'$ such that 3070
 $V_i, V_j \in E_a$ and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3071

(v) **Extreme SuperHyperDuality** if it's either of Extreme e-SuperHyperDuality, 3072
 Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv- 3073
 SuperHyperDuality. 3074

Definition 18.0.2. ((Extreme) SuperHyperDuality). 3075

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3076

SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 3077

(i) an **Extreme SuperHyperDuality** if it's either of Extreme e-SuperHyperDuality, 3078
 Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv- 3079
 SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 3080
 is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 3081
 cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence 3082
 of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the 3083
 Extreme SuperHyperDuality; 3084

- (ii) a **Extreme SuperHyperDuality** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for a Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; 3085-3090
- (iii) an **Extreme SuperHyperDuality SuperHyperPolynomial** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded to its Extreme coefficient; 3091-3099
- (iv) a **Extreme SuperHyperDuality SuperHyperPolynomial** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded to its Extreme coefficient; 3100-3108
- (v) an **Extreme R-SuperHyperDuality** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; 3109-3115
- (vi) a **Extreme R-SuperHyperDuality** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; 3116-3121
- (vii) an **Extreme R-SuperHyperDuality SuperHyperPolynomial** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme 3122-3127

cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVer- 3128
tices such that they form the Extreme SuperHyperDuality; and the Extreme power is 3129
corresponded to its Extreme coefficient; 3130

(viii) a **Extreme SuperHyperDuality SuperHyperPolynomial** if it's either of Extreme 3131
e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, 3132
and Extreme rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph 3133
 $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients 3134
defined as the Extreme number of the maximum Extreme cardinality of the Extreme 3135
SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality 3136
conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such 3137
that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded 3138
to its Extreme coefficient. 3139

Example 18.0.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the 3140
mentioned Extreme Figures in every Extreme items. 3141

- On the Figure (30.1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDu- 3142
ality, is up. The Extreme Algorithm is Extremely straightforward. E_1 and E_3 are some 3143
empty Extreme SuperHyperEdges but E_2 is a loop Extreme SuperHyperEdge and E_4 is 3144
an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's 3145
only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is 3146
Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme 3147
endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme 3148
SuperHyperDuality. 3149

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.2), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 3150
Duality, is up. The Extreme Algorithm is Extremely straightforward. E_1, E_2 and E_3 3151
are some empty Extreme SuperHyperEdges but E_4 is an Extreme SuperHyperEdge. 3152
Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHy- 3153
perEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that 3154
there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme 3155
SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperDuality. 3156

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3157
3158

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3159
3160

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3161
3162

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3163
3164

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_{3i+1_{i=0}^3}, E_{3i+24_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 6z^8. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_{3i+1_{i=0}^7}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 6z^8.\end{aligned}$$

- On the Figure (30.7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3165
3166

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_{15}, E_{16}, E_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3167
3168

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} = \{E_4\}.$$

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3169
3170

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_{3i+1^3_{i=0}}, E_{23}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 3z^5. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_{3i+1^3_{i=0}}, V_{15}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 3z^5.\end{aligned}$$

- On the Figure (30.10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3171
3172

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3173
3174

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_1, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_6, V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3175
3176

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_{i \neq 5, 7, 8}^{10}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (30.13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3177
3178

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_5, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3179
3180

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3181
3182

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3183
3184

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ (2 \times 1 \times 2) + (2 \times 4 \times 5)z.\end{aligned}$$

- On the Figure (30.17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3185
3186

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2)z.\end{aligned}$$

- On the Figure (30.18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3187
3188

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ (2 \times 2 \times 2)z.\end{aligned}$$

- On the Figure (30.19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3189
3190

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_{3i+1_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 3z^4. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_{2i+1_{i=0}^5}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 2z^6.\end{aligned}$$

- On the Figure (30.20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3191
3192

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3193
3194

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 3195
3196

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= 4z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= \\ = 10 \times 9 + 10 \times 6 + 12 \times 9 + 12 \times 6z^2.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 3197
3198

Proposition 18.0.4. Assume a connected Extreme SuperHyperPath $ESH P : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperDuality} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperDuality SuperHyperPolynomial} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e R-SuperHyperDuality} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e R-SuperHyperDuality SuperHyperPolynomial} \\
 & = \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extrem e Cardinality} z^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}.
 \end{aligned}$$

Proof. Let

3200

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}^{EXTERNAL}.
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a new way to redefine as

3201

3202

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. ■

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136EXM18a

Example 18.0.5. In the Figure (31.1), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.1), is the SuperHyperDuality.

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Proposition 18.0.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

3208

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperDuality} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperDuality SuperHyperPolynomial} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e R-SuperHyperDuality}
 \end{aligned}$$

$$= \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}.$$

$$\mathcal{C}(NSHG)_{Extreme R-SuperHyperDuality SuperHyperPolynomial}$$

$$= \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extreme Cardinality} \approx \frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}.$$

Proof. Let

3209

$$P :$$

$$V_1^{EXTERNAL}, E_1,$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}^{EXTERNAL}.$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$. There's a 3210
new way to redefine as 3211

$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 3212
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. ■ 3213

136EXM19a

Example 18.0.7. In the Figure (31.2), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme 3214
SuperHyperModel (31.2), is the Extreme SuperHyperDuality. 3215
3216

Proposition 18.0.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then 3217

$$\mathcal{C}(NSHG)_{Extreme Quasi-SuperHyperDuality} = \{E \in E_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Extreme Quasi-SuperHyperDuality SuperHyperPolynomial}$$

$$= |i \mid E_i \in E_{ESHG:(V,E)}|_{Extreme Cardinality} |z|.$$

$$\mathcal{C}(NSHG)_{Extreme R-Quasi-SuperHyperDuality} = \{CENTER \in V_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Extreme R-Quasi-SuperHyperDuality SuperHyperPolynomial} = z.$$

Proof. Let

3218

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

be a longest path taken a connected Extreme SuperHyperStar $ESHS : (V, E)$. There's a new 3219
way to redefine as 3220

$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 3221
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. ■ 3222

Example 18.0.9. In the Figure (31.3), the connected Extreme SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperStar $ESHS : (V, E)$, in the Extreme SuperHyperModel (31.3), is the Extreme SuperHyperDuality.

Proposition 18.0.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperDuality}} \\
 &= \{E_i \in E_{P_i^{ESHG:(V,E)}}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|}^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperDuality}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

3228

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's a new way to redefine as

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3230

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. Then there's at least one SuperHyperDuality. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperDuality could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1,
 \end{aligned}$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}$$

is a longest SuperHyperDuality taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$P :$$

$$V_1^{EXTERNAL}, E_1,$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}$$

The latter is straightforward. ■ 3240

Example 18.0.11. In the Extreme Figure (31.4), the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, is Extreme highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, in the Extreme SuperHyperModel (31.4), is the Extreme SuperHyperDuality.

Proposition 18.0.12. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Then

$$\begin{aligned} & \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} \\ &= \{E_i \in E_{P_i^{ESHG:(V,E)}}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)}| \in P^{ESHG:(V,E)}\}. \\ & \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= \left(\sum_{i=|P^{ESHG:(V,E)}|}^{\min_i |P_i^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)}| \in P^{ESHG:(V,E)}) \text{choose} |P_i^{ESHG:(V,E)}| \right) \\ & \quad z^{\min_i |P_i^{ESHG:(V,E)}| \in P^{ESHG:(V,E)}} \\ & \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} \\ &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, i \neq j\}. \\ & \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extreme \text{ Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

$$P :$$

$$V_1^{EXTERNAL}, E_1,$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}$$

is a longest SuperHyperDuality taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. Then there's at least one SuperHyperDuality. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperDuality could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

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Example 18.0.13. In the Figure (31.5), the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (31.5), is the Extreme SuperHyperDuality.

Proposition 18.0.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then,

$$\begin{aligned} \mathcal{C}(NSHG)_{Extremal\ Quasi-SuperHyperDuality} &= \{E^* \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Extremal\ Quasi-SuperHyperDuality\ SuperHyperPolynomial} \\ &= |i \mid E_i^* \in E_{ESHG:(V,E)}^*|_{Extremal\ Cardinality} |z. \\ \mathcal{C}(NSHG)_{Extremal\ R-Quasi-SuperHyperDuality} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extremal\ R-Quasi-SuperHyperDuality\ SuperHyperPolynomial} &= z. \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 P : \\
 &V_1^{EXTERNAL}, E_1^*, \\
 &V_2^{EXTERNAL}, E_2^*, \\
 &\dots, \\
 &E_{|E_{ESHG:(V,E)}^*|_{\text{Extreme Cardinality}}}^*, V_{|E_{ESHG:(V,E)}^*|_{\text{Extreme Cardinality}}+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperDuality taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\
 \exists! E_z^* &\in E_{ESHG:(V,E)}^*, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z^* \equiv \\
 \exists! E_z^* &\in E_{ESHG:(V,E)}^*, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z^*.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. Then there's at least one SuperHyperDuality. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperDuality could be applied. The unique embedded SuperHyperDuality proposes some longest SuperHyperDuality excerpt from some representatives. The latter is straightforward. ■

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Example 18.0.15. In the Extreme Figure (31.6), the connected Extreme SuperHyperWheel $NSHW : (V, E)$, is Extreme highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperWheel $ESHW : (V, E)$, in the Extreme SuperHyperModel (31.6), is the Extreme SuperHyperDuality.

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Extreme SuperHyperJoin But As The Extensions Excerpt From Dense And Super Forms

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Definition 19.0.1. (Different Extreme Types of Extreme SuperHyperJoin). 3286

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3287
SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called 3288

(i) **Extreme e-SuperHyperJoin** if $\forall E_i \in E_{ESHG:(V,E)} \setminus E', \exists E_j \in E'$, such that 3289
 $V_a \in E_i, E_j$; and $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; 3290

(ii) **Extreme re-SuperHyperJoin** if $\forall E_i \in E_{ESHG:(V,E)} \setminus E', \exists E_j \in E'$, such that 3291
 $V_a \in E_i, E_j$; $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} =$ 3292
 $|E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3293

(iii) **Extreme v-SuperHyperJoin** if $\forall V_i \in E_{ESHG:(V,E)} \setminus V', \exists V_j \in V'$, such that 3294
 $V_i, V_j \notin E_a$; and $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; 3295

(iv) **Extreme rv-SuperHyperJoin** if $\forall V_i \in E_{ESHG:(V,E)} \setminus V', \exists V_j \in V'$, such that 3296
 $V_i, V_j \in E_a$; $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} =$ 3297
 $|V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3298

(v) **Extreme SuperHyperJoin** if it's either of Extreme e-SuperHyperJoin, Extreme re- 3299
SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin. 3300

Definition 19.0.2. ((Extreme) SuperHyperJoin). 3301

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3302
SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 3303

(i) an **Extreme SuperHyperJoin** if it's either of Extreme e-SuperHyperJoin, Extreme 3304
re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and 3305
 $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme 3306
cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme 3307
SuperHyperEdges in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges 3308
and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; 3309

- (ii) a **Extreme SuperHyperJoin** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for a Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; 3310-3315
- (iii) an **Extreme SuperHyperJoin SuperHyperPolynomial** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme coefficient; 3316-3323
- (iv) a **Extreme SuperHyperJoin SuperHyperPolynomial** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme coefficient; 3324-3331
- (v) an **Extreme R-SuperHyperJoin** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; 3332-3338
- (vi) a **Extreme R-SuperHyperJoin** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; 3339-3344
- (vii) an **Extreme R-SuperHyperJoin SuperHyperPolynomial** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme coefficient; 3345-3352

(viii) a **Extreme SuperHyperJoin SuperHyperPolynomial** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme coefficient.

Example 19.0.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Extreme Figures in every Extreme items.

- On the Figure (30.1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. E_1 and E_3 are some empty Extreme SuperHyperEdges but E_2 is a loop Extreme SuperHyperEdge and E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperJoin.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_2, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.2), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. E_1, E_2 and E_3 are some empty Extreme SuperHyperEdges but E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperJoin.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_2, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_2, V_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3380
 is up. The Extreme Algorithm is Extremely straightforward. 3381

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3382
 is up. The Extreme Algorithm is Extremely straightforward. 3383

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3384
 is up. The Extreme Algorithm is Extremely straightforward. 3385

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_{3i+1^3_{i=0}}, E_{3i+24^3_{i=0}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 6z^8. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{3i+1^7_{i=0}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 6z^8.\end{aligned}$$

- On the Figure (30.7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3386
 is up. The Extreme Algorithm is Extremely straightforward. 3387

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_{15}, E_{16}, E_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3388
 is up. The Extreme Algorithm is Extremely straightforward. 3389

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3390
is up. The Extreme Algorithm is Extremely straightforward. 3391

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_{3i+1^3_{i=0}}, E_{23}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^5. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{3i+1^3_{i=0}}, V_{15}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 3z^5.\end{aligned}$$

- On the Figure (30.10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3392
is up. The Extreme Algorithm is Extremely straightforward. 3393

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3394
is up. The Extreme Algorithm is Extremely straightforward. 3395

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_1, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_6, V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3396
is up. The Extreme Algorithm is Extremely straightforward. 3397

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_{i=4}^{i \neq 5,7,8}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (30.13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, 3398
is up. The Extreme Algorithm is Extremely straightforward. 3399

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_3, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3400
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3402
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3404
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ (1 \times 5 \times 5) + (1 \times 2 + 1)z^3.\end{aligned}$$

- On the Figure (30.17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3406
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3408
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3410
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_{3i+1_{i=03}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^4. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{2i+1_{i=05}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 2z^6.\end{aligned}$$

- On the Figure (30.20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3412
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3414
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 3416
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 10 \times 6 + 10 \times 6 + 12 \times 6 + 12 \times 6z^2.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 3418
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Proposition 19.0.4. Assume a connected Extreme SuperHyperPath $ESHG : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extremal SuperHyperJoin} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extremal SuperHyperJoin SuperHyperPolynomial} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extremal R-SuperHyperJoin} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extremal R-SuperHyperJoin SuperHyperPolynomial} \\
 & = \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extremal Cardinality} z^{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}^{EXTERNAL}.
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperPath $ESHG : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. ■

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136EXM18a

Example 19.0.5. In the Figure (31.1), the connected Extreme SuperHyperPath $ESHG : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.1), is the SuperHyperJoin.

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Proposition 19.0.6. Assume a connected Extreme SuperHyperCycle $ESHC : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extremal SuperHyperJoin} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extremal SuperHyperJoin SuperHyperPolynomial} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{Extremal Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extremal R-SuperHyperJoin}
 \end{aligned}$$

$$= \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}.$$

$$\mathcal{C}(NSHG)_{Extreme R-SuperHyperJoin SuperHyperPolynomial}$$

$$= \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extreme Cardinality} \approx \frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}.$$

Proof. Let

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$$P :$$

$$V_1^{EXTERNAL}, E_1,$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}^{EXTERNAL}.$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$. There's a new way to redefine as

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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. ■

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136EXM19a

Example 19.0.7. In the Figure (31.2), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.2), is the Extreme SuperHyperJoin.

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Proposition 19.0.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

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$$\mathcal{C}(NSHG)_{Extreme Quasi-SuperHyperJoin} = \{E \in E_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Extreme Quasi-SuperHyperJoin SuperHyperPolynomial}$$

$$= |i| E_i \in E_{ESHG:(V,E)}|_{Extreme Cardinality}|z.$$

$$\mathcal{C}(NSHG)_{Extreme R-Quasi-SuperHyperJoin} = \{CENTER \in V_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Extreme R-Quasi-SuperHyperJoin SuperHyperPolynomial} = z.$$

Proof. Let

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$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

be a longest path taken a connected Extreme SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. ■

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Example 19.0.9. In the Figure (31.3), the connected Extreme SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperStar $ESHS : (V, E)$, in the Extreme SuperHyperModel (31.3), is the Extreme SuperHyperJoin.

Proposition 19.0.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} \\
 &= (PERFECT MATCHING). \\
 & \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
 & \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} \\
 &= (OTHERWISE). \\
 & \{\}, \\
 & \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & \quad z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} \\
 &= (OTHERWISE)0. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's

a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. Then there’s no at least one SuperHyperJoin. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperJoin could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest SuperHyperJoin taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

The latter is straightforward.

■ 3460

136EXM21a

Example 19.0.11. In the Extreme Figure (31.4), the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, is Extreme highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, in the Extreme SuperHyperModel (31.4), is the Extreme SuperHyperJoin.

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Proposition 19.0.12. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Then

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$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperJoin}} \\ = (PERFECT \text{ MATCHING}). \\ \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\ \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperJoin}} \end{aligned}$$

$$\begin{aligned}
 &= (OTHERWISE). \\
 &\{\}, \\
 &\text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 &\mathcal{C}(NSHG)_{Extreme SuperHyperJoin SuperHyperPolynomial} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) choose |P_i^{ESHG:(V,E)}| \right) \\
 &\sim \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}| \\
 &\text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 &\mathcal{C}(NSHG)_{Extreme SuperHyperJoin SuperHyperPolynomial} \\
 &= (OTHERWISE)0. \\
 &\mathcal{C}(NSHG)_{Extreme Quasi-SuperHyperJoin} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 &\mathcal{C}(NSHG)_{Extreme Quasi-SuperHyperJoin SuperHyperPolynomial} \\
 &= \sum_{|V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}|_{Extremity Cardinality}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| choose 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperJoin taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. Then there's no at least one SuperHyperJoin. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperJoin could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$P :$$

$$\begin{aligned}
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

136EXM22a

Example 19.0.13. In the Figure (31.5), the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (31.5), is the Extreme SuperHyperJoin.

Proposition 19.0.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then,

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{Extreme \ SuperHyperJoin} = \\
 &= \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extreme \ Cardinality}}{3}}. \\
 &\mathcal{C}(NSHG)_{Extreme \ SuperHyperJoin \ SuperHyperPolynomial} \\
 &= 3z^{\frac{|E_{ESHG:(V,E)}|_{Extreme \ Cardinality}}{3}}. \\
 &\mathcal{C}(NSHG)_{Extreme \ R-SuperHyperJoin} \\
 &= \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extreme \ Cardinality}}{3}}. \\
 &\mathcal{C}(NSHG)_{Extreme \ R-SuperHyperJoin \ SuperHyperPolynomial} \\
 &= \prod |V^{EXTERNAL}_{ESHG:(V,E)}|_{Extreme \ Cardinality} z^{\frac{|E_{ESHG:(V,E)}|_{Extreme \ Cardinality}}{3}}.
 \end{aligned}$$

Proof. Let

$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\frac{|E_{ESHG:(V,E)}|_{Extreme \ Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extreme \ Cardinality}}{3}}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperJoin taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. 3488
 There's a new way to redefine as 3489

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 3490
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. Then there's 3491
 at least one SuperHyperJoin. Thus the notion of quasi isn't up and the SuperHyperNotions based 3492
 on SuperHyperJoin could be applied. The unique embedded SuperHyperJoin proposes some 3493
 longest SuperHyperJoin excerpt from some representatives. The latter is straightforward. ■ 3494

136EXM23a

Example 19.0.15. In the Extreme Figure (31.6), the connected Extreme SuperHyperWheel 3495
 $NSHW : (V, E)$, is Extreme highlighted and featured. The obtained Extreme SuperHyperSet, 3496
 by the Algorithm in previous result, of the Extreme SuperHyperVertices of the connected 3497
 Extreme SuperHyperWheel $ESHW : (V, E)$, in the Extreme SuperHyperModel (31.6), is the 3498
 Extreme SuperHyperJoin. 3499

Extreme SuperHyperPerfect But As The Extensions Excerpt From Dense And Super Forms

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Definition 20.0.1. (Different Extreme Types of Extreme SuperHyperPerfect). 3504

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3505
SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called 3506

(i) **Extreme e-SuperHyperPerfect** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists! E_j \in E'$, such that 3507
 $V_a \in E_i, E_j$; 3508

(ii) **Extreme re-SuperHyperPerfect** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists! E_j \in E'$, such that 3509
 $V_a \in E_i, E_j$; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3510

(iii) **Extreme v-SuperHyperPerfect** if $\forall V_i \in V_{NSHG:(V,E)} \setminus V', \exists! V_j \in V'$, such that 3511
 $V_i, V_j \in E_a$; 3512

(iv) **Extreme rv-SuperHyperPerfect** if $\forall V_i \in V_{NSHG:(V,E)} \setminus V', \exists! V_j \in V'$, such that 3513
 $V_i, V_j \in E_a$; and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3514

(v) **Extreme SuperHyperPerfect** if it's either of Extreme e-SuperHyperPerfect, Extreme 3515
re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect. 3516

Definition 20.0.2. ((Extreme) SuperHyperPerfect). 3517

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3518
SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 3519

(i) an **Extreme SuperHyperPerfect** if it's either of Extreme e-SuperHyperPerfect, 3520
Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv- 3521
SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 3522
is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 3523
cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence 3524
of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the 3525
Extreme SuperHyperPerfect; 3526

- (ii) a **Extreme SuperHyperPerfect** if it's either of Extreme e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for a Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect;
- (iii) an **Extreme SuperHyperPerfect SuperHyperPolynomial** if it's either of Extreme e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded to its Extreme coefficient;
- (iv) a **Extreme SuperHyperPerfect SuperHyperPolynomial** if it's either of Extreme e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded to its Extreme coefficient;
- (v) an **Extreme R-SuperHyperPerfect** if it's either of Extreme e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect;
- (vi) a **Extreme R-SuperHyperPerfect** if it's either of Extreme e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect;
- (vii) an **Extreme R-SuperHyperPerfect SuperHyperPolynomial** if it's either of Extreme e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme

cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVer- 3570
tices such that they form the Extreme SuperHyperPerfect; and the Extreme power is 3571
corresponded to its Extreme coefficient; 3572

(viii) a **Extreme SuperHyperPerfect SuperHyperPolynomial** if it's either of Extreme 3573
e-SuperHyperPerfect, Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, 3574
and Extreme rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph 3575
 $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients 3576
defined as the Extreme number of the maximum Extreme cardinality of the Extreme 3577
SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality 3578
conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such 3579
that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded 3580
to its Extreme coefficient. 3581

Example 20.0.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the 3582
mentioned Extreme Figures in every Extreme items. 3583

- On the Figure (30.1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPer- 3584
fect, is up. The Extreme Algorithm is Extremely straightforward. E_1 and E_3 are some 3585
empty Extreme SuperHyperEdges but E_2 is a loop Extreme SuperHyperEdge and E_4 is 3586
an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's 3587
only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is 3588
Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme 3589
endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme 3590
SuperHyperPerfect. 3591

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.2), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 3592
Perfect, is up. The Extreme Algorithm is Extremely straightforward. E_1, E_2 and E_3 3593
are some empty Extreme SuperHyperEdges but E_4 is an Extreme SuperHyperEdge. 3594
Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHy- 3595
perEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that 3596
there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme 3597
SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperPerfect. 3598

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3599
3600

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3601
3602

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3603
3604

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3605
3606

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_{3i+1_{i=0}^3}, E_{3i+24_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 6z^8. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_{3i+1_{i=0}^7}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 6z^8.\end{aligned}$$

- On the Figure (30.7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3607
3608

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_{15}, E_{16}, E_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3609
3610

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} = \{E_4\}.$$

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3611
3612

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} &= \{E_{3i+1_{i=0}^3}, E_{23}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 3z^5. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_{3i+1_{i=0}^3}, V_{15}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 3z^5.\end{aligned}$$

- On the Figure (30.10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3613
3614

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3615
3616

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_1, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_6, V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 2z^2.\end{aligned}$$

- On the Figure (30.12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3617
3618

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1, V_{10_{i=4}^{i \neq 5,7,8}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (30.13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3619
3620

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_3, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3621
3622

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3623
3624

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3625
3626

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= \\ (1 \times 5 \times 5) + (1 \times 2 + 1)z^3.\end{aligned}$$

- On the Figure (30.17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3627
3628

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3629
3630

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3631
3632

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_{3i+1_{i=03}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^4. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_{2i+1_{i=05}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 2z^6.\end{aligned}$$

- On the Figure (30.20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3633
3634

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3635
3636

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 3637
3638

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 10 \times 6 + 10 \times 6 + 12 \times 6 + 12 \times 6z^2.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 3639
3640

Proposition 20.0.4. Assume a connected Extreme SuperHyperPath $ESH P : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperPerfect} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperPerfect SuperHyperPolynomial} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e R-SuperHyperPerfect} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e R-SuperHyperPerfect SuperHyperPolynomial} \\
 & = \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extrem e Cardinality} z^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}.
 \end{aligned}$$

Proof. Let

3642

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}^{EXTERNAL}.
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a new way to redefine as

3643

3644

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. ■

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3646

136EXM18a

Example 20.0.5. In the Figure (31.1), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.1), is the SuperHyperPerfect.

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Proposition 20.0.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperPerfect} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e SuperHyperPerfect SuperHyperPolynomial} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{Extrem e Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Extrem e R-SuperHyperPerfect}
 \end{aligned}$$

$$= \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}.$$

$$\mathcal{C}(NSHG)_{Extreme R-SuperHyperPerfect SuperHyperPolynomial}$$

$$= \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extreme Cardinality} \approx \frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}.$$

Proof. Let

3651

$$P :$$

$$V_1^{EXTERNAL}, E_1,$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Extreme Cardinality}}{3}}^{EXTERNAL}.$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$. There's a new way to redefine as

3653

$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. ■

3655

136EXM19a

Example 20.0.7. In the Figure (31.2), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.2), is the Extreme SuperHyperPerfect.

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Proposition 20.0.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

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$$\mathcal{C}(NSHG)_{Extreme SuperHyperPerfect} = \{E \in E_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Extreme SuperHyperPerfect SuperHyperPolynomial}$$

$$= |i \mid E_i \in E_{ESHG:(V,E)}|_{Extreme Cardinality}|z.$$

$$\mathcal{C}(NSHG)_{Extreme R-SuperHyperPerfect} = \{CENTER \in V_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Extreme R-SuperHyperPerfect SuperHyperPolynomial} = z.$$

Proof. Let

3660

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

be a longest path taken a connected Extreme SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. ■

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Example 20.0.9. In the Figure (31.3), the connected Extreme SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperStar $ESHS : (V, E)$, in the Extreme SuperHyperModel (31.3), is the Extreme SuperHyperPerfect.

Proposition 20.0.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
 &= (PERFECT MATCHING). \\
 & \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
 & \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
 &= (OTHERWISE). \\
 & \{\}, \\
 & \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & \quad \cdot \min_{i=|P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} |P_i^{ESHG:(V,E)}| \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (OTHERWISE)0. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

3670

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's

a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. Then there’s no at least one SuperHyperPerfect. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperPerfect could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest SuperHyperPerfect taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

The latter is straightforward.

■ 3682

136EXM21a

Example 20.0.11. In the Extreme Figure (31.4), the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, is Extreme highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, in the Extreme SuperHyperModel (31.4), is the Extreme SuperHyperPerfect.

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Proposition 20.0.12. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$.

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Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
 &= (PERFECT MATCHING). \\
 & \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
 & \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
 &= (OTHERWISE). \\
 & \{\}, \\
 & \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & \sim \min_{i=|P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (OTHERWISE)0. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperPerfect taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. Then there’s no at least one SuperHyperPerfect. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperPerfect could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|}, V_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|+1}^{EXTERNAL}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|}, V_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|+1}^{EXTERNAL}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

136EXM22a

Example 20.0.13. In the Figure (31.5), the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (31.5), is the Extreme SuperHyperPerfect.

Proposition 20.0.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then,

$$\begin{aligned} \mathcal{C}(NSHG)_{ExtremesuperHyperPerfect} &= \{E \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{ExtremesuperHyperPerfectsuperHyperPolynomial} \\ &= |i \mid E_i \in E_{ESHG:(V,E)}|_{ExtremesuperHyperCardinality} z. \\ \mathcal{C}(NSHG)_{ExtremesuperHyperPerfect} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{ExtremesuperHyperPerfectsuperHyperPolynomial} &= z. \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

is a longest SuperHyperPerfect taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. Then there's at least one SuperHyperPerfect. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperPerfect could be applied. The unique embedded SuperHyperPerfect proposes some longest SuperHyperPerfect excerpt from some representatives. The latter is straightforward. ■

136EXM23a

Example 20.0.15. In the Extreme Figure (31.6), the connected Extreme SuperHyperWheel $NSHW : (V, E)$, is Extreme highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperWheel $ESHW : (V, E)$, in the Extreme SuperHyperModel (31.6), is the Extreme SuperHyperPerfect.

Extreme SuperHyperTotal But As The Extensions Excerpt From Dense And Super Forms

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Definition 21.0.1. (Different Extreme Types of Extreme SuperHyperTotal). 3728

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3729
SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called 3730

- (i) **Extreme e-SuperHyperTotal** if $\forall E_i \in E_{ESHG:(V,E)}, \exists! E_j \in E'$, such that $V_a \in E_i, E_j$; 3731
- (ii) **Extreme re-SuperHyperTotal** if $\forall E_i \in E_{ESHG:(V,E)}, \exists! E_j \in E'$, such that $V_a \in$ 3732
 E_i, E_j ; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3733
- (iii) **Extreme v-SuperHyperTotal** if $\forall V_i \in V_{ESHG:(V,E)}, \exists! V_j \in V'$, such that $V_i, V_j \in E_a$; 3734
- (iv) **Extreme rv-SuperHyperTotal** if $\forall V_i \in V_{ESHG:(V,E)}, \exists! V_j \in V'$, such that $V_i, V_j \in E_a$; 3735
and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3736
- (v) **Extreme SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme 3737
re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal. 3738

Definition 21.0.2. ((Extreme) SuperHyperTotal). 3739

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3740
SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 3741

- (i) an **Extreme SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme 3742
re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and 3743
 $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme 3744
cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme 3745
SuperHyperEdges in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges 3746
and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; 3747
- (ii) a **Extreme SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme 3748
re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal 3749
and $\mathcal{C}(NSHG)$ for a Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum 3750
Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S 3751

- of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; 3752
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- (iii) an **Extreme SuperHyperTotal SuperHyperPolynomial** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient; 3754
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- (iv) a **Extreme SuperHyperTotal SuperHyperPolynomial** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient; 3763
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- (v) an **Extreme R-SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; 3772
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- (vi) a **Extreme R-SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; 3779
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- (vii) an **Extreme R-SuperHyperTotal SuperHyperPolynomial** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient; 3785
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(viii) a **Extreme SuperHyperTotal SuperHyperPolynomial** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient. 3794-3802

Example 21.0.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Extreme Figures in every Extreme items. 3803-3804

- On the Figure (30.1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. E_1 and E_3 are some empty Extreme SuperHyperEdges but E_2 is a loop Extreme SuperHyperEdge and E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperTotal. 3805-3812

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.2), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. E_1, E_2 and E_3 are some empty Extreme SuperHyperEdges but E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperTotal. 3813-3819

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3820-3821

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3822
3823

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3824
3825

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3826
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 20z^{10}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 20z^{10}.\end{aligned}$$

- On the Figure (30.7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3828
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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_{12}, E_{13}, E_{14}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_{12}, V_{13}, V_{14}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3830
3831

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_{12}, V_{13}, V_{14}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3832
3833

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} 10z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (30.10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3834
3835

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3836
3837

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_1, E_6, E_7, E_8\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = 2z^4.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (30.12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3838
3839

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_1, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = 5z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_1, V_{i=1}^{i \neq 4,5,6}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = z^5.$$

- On the Figure (30.13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3840
3841

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_3, E_9, E_6\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = 3z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (30.14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3842
3843

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_1, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_1, V_3\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 2z^2.$$

- On the Figure (30.15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3844
3845

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_2, V_3, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3846
3847

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\ 4 \times 3z^3.\end{aligned}$$

- On the Figure (30.17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3848
3849

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\ 4 \times 3z^4.\end{aligned}$$

- On the Figure (30.18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3850
3851

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\ 2 \times 4 \times 3z^4.\end{aligned}$$

- On the Figure (30.19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3852
3853

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 11z^{10}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 11z^{10}.\end{aligned}$$

- On the Figure (30.20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3854
3855

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_6, E_{10}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 9z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= |(|V| - 1)z^2.\end{aligned}$$

- On the Figure (30.21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3856
3857

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_1, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 9z^2.\end{aligned}$$

- On the Figure (30.22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 3858
3859

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_3, V_{10}, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3 \times 6z^3.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 3860
3861

Proposition 21.0.4. Assume a connected Extreme SuperHyperPath $ESHP : (V, E)$. Then 3862

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \\ &= \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \\ &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}\end{aligned}$$

Proof. Let

3863

$$\begin{aligned} P : \\ V_2^{EXTERNAL}, E_2, \\ V_3^{EXTERNAL}, E_3, \\ \dots \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a 3864
new way to redefine as 3865

$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 3866
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. ■ 3867

136EXM18a

Example 21.0.5. In the Figure (31.1), the connected Extreme SuperHyperPath $ESH P : (V, E)$, 3868
is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel 3869
(31.1), is the SuperHyperTotal. 3870

Proposition 21.0.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then 3871

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} &= \\ &= \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extreme\ Cardinality}-2}. \\ \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal\ SuperHyperPolynomial} \\ &= (|E_{ESHG:(V,E)}|_{Extreme\ Cardinality} - 1) \\ &\quad z^{|E_{ESHG:(V,E)}|_{Extreme\ Cardinality}-2}. \\ \mathcal{C}(NSHG)_{Extreme\ R-SuperHyperTotal} \\ &= \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extreme\ Cardinality}-2}. \\ \mathcal{C}(NSHG)_{Extreme\ R-SuperHyperTotal\ SuperHyperPolynomial} \\ &= \prod |V^{EXTERNAL}_{ESHG:(V,E)}|_{Extreme\ Cardinality} z^{|E_{ESHG:(V,E)}|_{Extreme\ Cardinality}-2} \end{aligned}$$

Proof. Let

3872

$$\begin{aligned} P : \\ V_2^{EXTERNAL}, E_2, \\ V_3^{EXTERNAL}, E_3, \\ \dots, \\ E_{\frac{|E_{ESHG:(V,E)}|_{Extreme\ Cardinality}-1}{2}}, V^{EXTERNAL}_{ESHG:(V,E)|_{Extreme\ Cardinality}-1}. \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESH C : (V, E)$. There's a 3873
new way to redefine as 3874

$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\begin{aligned} \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. ■

136EXM19a

Example 21.0.7. In the Figure (31.2), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.2), is the Extreme SuperHyperTotal.

Proposition 21.0.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} &= \{E_i, E_j \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal\ SuperHyperPolynomial} \\ &= |i(i-1)| \mid E_i \in E_{ESHG:(V,E)} \mid_{Extreme\ Cardinality} z^2. \\ \mathcal{C}(NSHG)_{Extreme\ R-SuperHyperTotal} &= \{CENTER, V_j \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme\ R-SuperHyperTotal\ SuperHyperPolynomial} &= \\ &(|V_{ESHG:(V,E)}|_{Extreme\ Cardinality}) \text{ choose } (|V_{ESHG:(V,E)}|_{Extreme\ Cardinality} - 1) \\ &z^2. \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i, CENTER, E_j.$$

be a longest path taken a connected Extreme SuperHyperStar $ESHS : (V, E)$. There’s a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. ■

136EXM20a

Example 21.0.9. In the Figure (31.3), the connected Extreme SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperStar $ESHS : (V, E)$, in the Extreme SuperHyperModel (31.3), is the Extreme SuperHyperTotal.

Proposition 21.0.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then 3890

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} \\
 &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\
 & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} \\
 & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal\ SuperHyperPolynomial} \\
 &= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} \\
 &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{Extreme\ Quasi-SuperHyperTotal\ SuperHyperPolynomial} \\
 &= \sum_{|V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}|_{Extreme\ Cardinality}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

3891

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's 3892
a new way to redefine as 3893

$$\begin{aligned}
 V_i^{EXTERNAL} \sim V_j^{EXTERNAL} &\equiv \\
 \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\
 \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 3894
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. Then there's 3895
no at least one SuperHyperTotal. Thus the notion of quasi may be up but the SuperHyperNotions 3896
based on SuperHyperTotal could be applied. There are only two SuperHyperParts. Thus every 3897
SuperHyperPart could have one SuperHyperVertex as the representative in the 3898

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest SuperHyperTotal taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart 3899
SuperHyperEdges are attained in any solution 3900
3901

$$P :$$

$$V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

The latter is straightforward. ■ 3902

136EXM21a

Example 21.0.11. In the Extreme Figure (31.4), the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, is Extreme highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, in the Extreme SuperHyperModel (31.4), is the Extreme SuperHyperTotal. 3903
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3905
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Proposition 21.0.12. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Then 3908
3909

$$\begin{aligned} & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} \\ &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\ & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} \\ & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal\ SuperHyperPolynomial} \\ &= z^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} \\ &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_b^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\ & \mathcal{C}(NSHG)_{Extreme\ Quasi-SuperHyperTotal\ SuperHyperPolynomial} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extreme\ Cardinality}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let 3910

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest SuperHyperTotal taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as 3911
3912

$$\begin{aligned} & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. Then there's 3913
3914

no at least one SuperHyperTotal. Thus the notion of quasi may be up but the SuperHyperNotions 3915
based on SuperHyperTotal could be applied. There are only z' SuperHyperParts. Thus every 3916
SuperHyperPart could have one SuperHyperVertex as the representative in the 3917

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$: 3918
(V, E). Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart 3919
SuperHyperEdges are attained in any solution 3920

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. 3921
The latter is straightforward. ■ 3922

136EXM22a

Example 21.0.13. In the Figure (31.5), the connected Extreme SuperHyperMultipartite 3923
 $ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by 3924
the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected 3925
Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (31.5), is 3926
the Extreme SuperHyperTotal. 3927

Proposition 21.0.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then, 3928

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ SuperHyperTotal}} &= \{E_i, E_j \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ SuperHyperTotal SuperHyperPolynomial}} \\ &= |i(i-1) \mid E_i \in E_{ESHG:(V,E)}^*|_{Extreme \text{ Cardinality}} z^2. \\ \mathcal{C}(NSHG)_{Extreme \text{ R-SuperHyperTotal}} &= \{CENTER, V_j \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ R-SuperHyperTotal SuperHyperPolynomial}} &= \\ &(|V_{ESHG:(V,E)}|_{Extreme \text{ Cardinality}}) \text{ choose } (|V_{ESHG:(V,E)}|_{Extreme \text{ Cardinality}} - 1) \\ &z^2. \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i^*, CENTER, E_j.$$

is a longest SuperHyperTotal taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$: 3930
(V, E). There's a new way to redefine as 3931

$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} &\equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. Then there’s at least one SuperHyperTotal. Thus the notion of quasi isn’t up and the SuperHyperNotions based on SuperHyperTotal could be applied. The unique embedded SuperHyperTotal proposes some longest SuperHyperTotal excerpt from some representatives. The latter is straightforward. ■

136EXM23a

Example 21.0.15. In the Extreme Figure (31.6), the connected Extreme SuperHyperWheel $NSHW : (V, E)$, is Extreme highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperWheel $ESHW : (V, E)$, in the Extreme SuperHyperModel (31.6), is the Extreme SuperHyperTotal.

Extreme SuperHyperConnected But As The Extensions Excerpt From Dense And Super Forms

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Definition 22.0.1. (Different Extreme Types of Extreme SuperHyperConnected). 3947

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3948

SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called 3949

(i) **Extreme e-SuperHyperConnected** if $\forall E_i \in E_{ESHG:(V,E)} \setminus E', \exists E_j \in E'$, such that 3950
 $V_a \in E_i, E_j$; and $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; 3951

(ii) **Extreme re-SuperHyperConnected** if $\forall E_i \in E_{ESHG:(V,E)} \setminus E', \exists E_j \in E'$, such that 3952
 $V_a \in E_i, E_j$; $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} =$ 3953
 $|E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3954

(iii) **Extreme v-SuperHyperConnected** if $\forall V_i \in E_{ESHG:(V,E)} \setminus V', \exists V_j \in V'$, such that 3955
 $V_i, V_j \notin E_a$; and $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; 3956

(iv) **Extreme rv-SuperHyperConnected** if $\forall V_i \in E_{ESHG:(V,E)} \setminus V', \exists V_j \in V'$, such that 3957
 $V_i, V_j \in E_a$; $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} =$ 3958
 $|V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 3959

(v) **Extreme SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, 3960
Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv- 3961
SuperHyperConnected. 3962

Definition 22.0.2. ((Extreme) SuperHyperConnected). 3963

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 3964

SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 3965

(i) an **Extreme SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, 3966
Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv- 3967
SuperHyperConnected and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 3968
is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 3969
cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence 3970

- of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperConnected; 3971 3972
- (ii) a **Extreme SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, 3973
Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv- 3974
SuperHyperConnected and $\mathcal{C}(NSHG)$ for a Extreme SuperHyperGraph $NSHG : (V, E)$ 3975
is the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme 3976
SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges 3977
and Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected; 3978
- (iii) an **Extreme SuperHyperConnected SuperHyperPolynomial** if it's either of 3979
Extreme e-SuperHyperConnected, Extreme re-SuperHyperConnected, Extreme v- 3980
SuperHyperConnected, and Extreme rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ for an 3981
Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial con- 3982
tains the Extreme coefficients defined as the Extreme number of the maximum Extreme 3983
cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high 3984
Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHy- 3985
perVertices such that they form the Extreme SuperHyperConnected; and the Extreme 3986
power is corresponded to its Extreme coefficient; 3987
- (iv) a **Extreme SuperHyperConnected SuperHyperPolynomial** if it's either of 3988
Extreme e-SuperHyperConnected, Extreme re-SuperHyperConnected, Extreme v- 3989
SuperHyperConnected, and Extreme rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ for an 3990
Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial con- 3991
tains the Extreme coefficients defined as the Extreme number of the maximum Extreme 3992
cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high 3993
Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHy- 3994
perVertices such that they form the Extreme SuperHyperConnected; and the Extreme 3995
power is corresponded to its Extreme coefficient; 3996
- (v) an **Extreme R-SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, 3997
Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv- 3998
SuperHyperConnected and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 3999
is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 4000
cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence 4001
of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the 4002
Extreme SuperHyperConnected; 4003
- (vi) a **Extreme R-SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, 4004
Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv- 4005
SuperHyperConnected and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 4006
is the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme Su- 4007
perHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges 4008
and Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected; 4009
- (vii) an **Extreme R-SuperHyperConnected SuperHyperPolynomial** if it's either 4010
of Extreme e-SuperHyperConnected, Extreme re-SuperHyperConnected, Extreme v- 4011
SuperHyperConnected, and Extreme rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ for an 4012

Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected; and the Extreme power is corresponded to its Extreme coefficient;

- (viii) a **Extreme SuperHyperConnected SuperHyperPolynomial** if it's either of Extreme e-SuperHyperConnected, Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected; and the Extreme power is corresponded to its Extreme coefficient.

Example 22.0.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Extreme Figures in every Extreme items.

- On the Figure (30.1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward. E_1 and E_3 are some empty Extreme SuperHyperEdges but E_2 is a loop Extreme SuperHyperEdge and E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperConnected.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.2), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward. E_1, E_2 and E_3 are some empty Extreme SuperHyperEdges but E_4 is an Extreme SuperHyperEdge. Thus in the terms of Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperConnected.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4045
 nected, is up. The Extreme Algorithm is Extremely straightforward. 4046

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4047
 nected, is up. The Extreme Algorithm is Extremely straightforward. 4048

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_1, E_2, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4049
 nected, is up. The Extreme Algorithm is Extremely straightforward. 4050

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4051
 nected, is up. The Extreme Algorithm is Extremely straightforward. 4052

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 20z^{10}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 20z^{10}.\end{aligned}$$

- On the Figure (30.7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4053
 nected, is up. The Extreme Algorithm is Extremely straightforward. 4054

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_{12}, E_{13}, E_{14}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_{12}, V_{13}, V_{14}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4055
 nected, is up. The Extreme Algorithm is Extremely straightforward. 4056

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperCon- 4057
nected, is up. The Extreme Algorithm is Extremely straightforward. 4058

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} 10z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{i+1}_{i=11}^9, V_{22}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (30.10), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4059
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4060

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.11), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4061
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4062

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_1, E_6, E_7, E_8\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = 2z^4.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (30.12), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4063
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4064

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_1, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = 5z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_{i=1}^{i \neq 4,5,6}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^5.$$

- On the Figure (30.13), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4065
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4066

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_3, E_9, E_6\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = 3z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (30.14), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4067
 Connected, is up. The Extreme Algorithm is Extremely straightforward. 4068

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_1\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = z.$$

- On the Figure (30.15), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4069
 Connected, is up. The Extreme Algorithm is Extremely straightforward. 4070

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_2, E_3, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_2, V_3, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

- On the Figure (30.16), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4071
 Connected, is up. The Extreme Algorithm is Extremely straightforward. 4072

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_2, E_3, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_2, V_6, V_{17}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 4 \times 3z^3.$$

- On the Figure (30.17), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4073
 Connected, is up. The Extreme Algorithm is Extremely straightforward. 4074

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_2, E_3, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_2, V_6, V_{17}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 4 \times 3z^4.$$

- On the Figure (30.18), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4075
 Connected, is up. The Extreme Algorithm is Extremely straightforward. 4076

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_2, E_3, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_2, V_6, V_{17}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 2 \times 4 \times 3z^4.$$

- On the Figure (30.19), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4077
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4078

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 11z^{10}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 11z^{10}.\end{aligned}$$

- On the Figure (30.20), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4079
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4080

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4081
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4082

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Extreme SuperHyperNotion, namely, Extreme SuperHyper- 4083
Connected, is up. The Extreme Algorithm is Extremely straightforward. 4084

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_3, V_{10}, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 3 \times 6z^3.\end{aligned}$$

*The previous Extreme approach apply on the upcoming Extreme results on Extreme 4085
SuperHyperClasses. 4086*

Proposition 22.0.4. Assume a connected Extreme SuperHyperPath $ESH P : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extrem e \text{ Quasi-SuperHyperConnected}} = \\
 & = \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{Extrem e \text{ Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 & = z^{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{Extrem e \text{ R-Quasi-SuperHyperConnected}} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{Extrem e \text{ R-Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 & = \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} z^{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 2}
 \end{aligned}$$

Proof. Let

4088

$$\begin{aligned}
 & P : \\
 & V_2^{EXTERNAL}, E_2, \\
 & V_3^{EXTERNAL}, E_3, \\
 & \dots, \\
 & E_{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 1}, V_i^{EXTERNAL}_{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 1}.
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a new way to redefine as

4090

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. ■

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136EXM18a

Example 22.0.5. In the Figure (31.1), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.1), is the SuperHyperConnected.

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Proposition 22.0.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Extrem e \text{ Quasi-SuperHyperConnected}} = \\
 & = \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{Extrem e \text{ Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 & = (|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 1) \\
 & z^{|E_{ESHG:(V,E)}|_{Extrem e \text{ Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{Extrem e \text{ R-Quasi-SuperHyperConnected}}
 \end{aligned}$$

$$\begin{aligned}
 &= \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extreme Cardinality}-2} \\
 &\mathcal{C}(NSHG)_{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial} \\
 &= \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Extreme Cardinality} z^{|E_{ESHG:(V,E)}|_{Extreme Cardinality}-2}
 \end{aligned}$$

Proof. Let

4097

$$\begin{aligned}
 &P : \\
 &V_2^{EXTERNAL}, E_2, \\
 &V_3^{EXTERNAL}, E_3, \\
 &\dots, \\
 &E_{|E_{ESHG:(V,E)}|_{Extreme Cardinality}-1}, V_{|E_{ESHG:(V,E)}|_{Extreme Cardinality}-1}^{EXTERNAL}.
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$. There's a new way to redefine as

4098
4099

$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. ■

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136EXM19a

Example 22.0.7. In the Figure (31.2), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (31.2), is the Extreme SuperHyperConnected.

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4103
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Proposition 22.0.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{Extreme SuperHyperConnected} = \{E_i \in E_{ESHG:(V,E)}\}. \\
 &\mathcal{C}(NSHG)_{Extreme SuperHyperConnected SuperHyperPolynomial} \\
 &= |i| E_i \in |E_{ESHG:(V,E)}|_{Extreme Cardinality} z. \\
 &\mathcal{C}(NSHG)_{Extreme R-SuperHyperConnected} = \{CENTER \in V_{ESHG:(V,E)}\}. \\
 &\mathcal{C}(NSHG)_{Extreme R-SuperHyperConnected SuperHyperPolynomial} = z.
 \end{aligned}$$

Proof. Let

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$$P : V_i^{EXTERNAL}, E_i, CENTER, E_j.$$

be a longest path taken a connected Extreme SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

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4108

$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. ■

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Example 22.0.9. In the Figure (31.3), the connected Extreme SuperHyperStar $ESHS : (V, E)$, 4111
is highlighted and featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous 4112
Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperStar 4113
 $ESHS : (V, E)$, in the Extreme SuperHyperModel (31.3), is the Extreme SuperHyperConnected. 4114

Proposition 22.0.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then 4115

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} \\ &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\ & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} \\ &= z^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ & \quad \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-SuperHyperConnected}} \\ &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, V_b^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, i \neq j\}. \\ & \mathcal{C}(NSHG)_{\text{Extreme V-SuperHyperConnected SuperHyperPolynomial}} \\ &= \sum_{|V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

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$$\begin{aligned} & P : \\ & V_1^{EXTERNAL}, E_1, \\ & V_2^{EXTERNAL}, E_2 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's 4117
a new way to redefine as 4118

$$\begin{aligned} & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 4119
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. Then 4120
there's no at least one SuperHyperConnected. Thus the notion of quasi may be up but the 4121
SuperHyperNotions based on SuperHyperConnected could be applied. There are only two 4122
SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the 4123
representative in the 4124

$$\begin{aligned} & P : \\ & V_1^{EXTERNAL}, E_1, \\ & V_2^{EXTERNAL}, E_2 \end{aligned}$$

is a longest SuperHyperConnected taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

The latter is straightforward. ■

Example 22.0.11. In the Extreme Figure (31.4), the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, is Extreme highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperBipartite $ESHB : (V, E)$, in the Extreme SuperHyperModel (31.4), is the Extreme SuperHyperConnected.

Proposition 22.0.12. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Then

$$\begin{aligned} & \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperConnected}} \\ &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\ & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperConnected SuperHyperPolynomial}} \\ &= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{Extreme \text{ V-SuperHyperConnected}} \\ &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}}, i \neq j\}. \\ & \mathcal{C}(NSHG)_{Extreme \text{ V-SuperHyperConnected SuperHyperPolynomial}} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extreme \text{ Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{ choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest SuperHyperConnected taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

$$\begin{aligned} & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. Then there’s no at least one SuperHyperConnected. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperConnected could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

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Example 22.0.13. In the Figure (31.5), the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (31.5), is the Extreme SuperHyperConnected.

Proposition 22.0.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then,

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme\ SuperHyperConnected} &= \{E_i \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Extreme\ SuperHyperConnected\ SuperHyperPolynomial} \\ &= |i \mid E_i \in |E_{ESHG:(V,E)}^*|_{Extreme\ Cardinality}|z. \\ \mathcal{C}(NSHG)_{Extreme\ V-SuperHyperConnected} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme\ V-SuperHyperConnected\ SuperHyperPolynomial} &= z. \end{aligned}$$

Proof. Let

$$P : V^{EXTERNAL}_i, E^*_i, CENTER, E_j.$$

is a longest SuperHyperConnected taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There’s a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} &\equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded 4159
 to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. 4160
 Then there’s at least one SuperHyperConnected. Thus the notion of quasi isn’t up and 4161
 the SuperHyperNotions based on SuperHyperConnected could be applied. The unique 4162
 embedded SuperHyperConnected proposes some longest SuperHyperConnected excerpt from 4163
 some representatives. The latter is straightforward. ■ 4164

136EXM23a

Example 22.0.15. In the Extreme Figure (31.6), the connected Extreme SuperHyperWheel 4165
 $NSHW : (V, E)$, is Extreme highlighted and featured. The obtained Extreme SuperHyperSet, 4166
 by the Algorithm in previous result, of the Extreme SuperHyperVertices of the connected 4167
 Extreme SuperHyperWheel $ESHW : (V, E)$, in the Extreme SuperHyperModel (31.6), is the 4168
 Extreme SuperHyperConnected. 4169

CHAPTER 23

4170

Background

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There are some scientific researches covering the topic of this research. In what follows, there are some discussion and literature reviews about them.

The seminal paper and groundbreaking article is titled “Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes” in Ref. [HG1] by Henry Garrett (2022). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental SuperHyperNumber and using neutrosophic SuperHyperClasses of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “Journal of Mathematical Techniques and Computational Mathematics(JMTCM)” with ISO abbreviation “J Math Techniques Comput Math” in volume 1 and issue 3 with pages 242-263. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers.

The seminal paper and groundbreaking article is titled “Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer’s Treatments” in Ref. [HG2] by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental notions and using vital tools in Cancer’s Treatments. It’s published in prestigious and fancy journal is entitled “Journal of Mathematical Techniques and Computational Mathematics(JMTCM)” with ISO abbreviation “J Math Techniques Comput Math” in volume 2 and issue 1 with pages 35-47. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers.

The seminal paper and groundbreaking article is titled “A Research on Cancer’s Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations” in Ref. [HG3] by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental notions and using vital tools in Cancer’s Recognition. It’s published in prestigious and fancy journal is entitled “Journal of Mathematical Techniques and Computational Mathematics(JMTCM)” with ISO abbreviation “J Math Techniques Comput Math” in volume 2 and issue 3 with pages 136-148. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers.

The seminal paper and groundbreaking article is titled “neutrosophic co-degree and neutrosophic degree alongside chromatic numbers in the setting of some classes related to neutrosophic hypergraphs” in **Ref. [HG93]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on general forms without using neutrosophic classes of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “Journal of Current Trends in Computer Science Research (JCTCSR)” with ISO abbreviation “J Curr Trends Comp Sci Res” in volume 2 and issue 1 with pages 16-24. The research article studies deeply with choosing neutrosophic hypergraphs instead of neutrosophic SuperHyperGraph. It’s the breakthrough toward independent results based on initial background. In some articles are titled “0039 | Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph” in **Ref. [HG4]** by Henry Garrett (2022), “0049 | (Failed)1-Zero-Forcing Number in Neutrosophic Graphs” in **Ref. [HG5]** by Henry Garrett (2022), “Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs” in **Ref. [HG6]** by Henry Garrett (2022), “Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition” in **Ref. [HG7]** by Henry Garrett (2022), “Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs” in **Ref. [HG8]** by Henry Garrett (2022), “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph” in **Ref. [HG9]** by Henry Garrett (2022), “Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs” in **Ref. [HG10]** by Henry Garrett (2022), “Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs” in **Ref. [HG11]** by Henry Garrett (2022), “Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs” in **Ref. [HG12]** by Henry Garrett (2022), “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG13]** by Henry Garrett (2022), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. [HG14]** by Henry Garrett (2022), “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond” in **Ref. [HG15]** by Henry Garrett (2022), “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs ” in **Ref. [HG16]** by Henry Garrett (2022), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. [HG12]** by Henry Garrett (2022), “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG17]** by Henry Garrett (2022), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. [HG18]** by Henry Garrett (2022), “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances” in

Ref. [HG19] by Henry Garrett (2022), “(Neutrosophic) SuperHyperAlliances With SuperHyper- 4251
Defensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph 4252
With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) 4253
SuperHyperClasses” in **Ref. [HG20]** by Henry Garrett (2022), “SuperHyperGirth on Su- 4254
perHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s 4255
Recognitions” in **Ref. [HG21]** by Henry Garrett (2022), “Some SuperHyperDegrees and 4256
Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside 4257
Applications in Cancer’s Treatments” in **Ref. [HG22]** by Henry Garrett (2022), “SuperHyper- 4258
Dominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions 4259
in Game Theory and Neutrosophic SuperHyperClasses” in **Ref. [HG23]** by Henry Garrett 4260
(2022), “SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer’s Recog- 4261
nition In Neutrosophic SuperHyperGraphs” in **Ref. [HG24]** by Henry Garrett (2023), “The 4262
Focus on The Partitions Obtained By Parallel Moves In The Cancer’s Extreme Recognition With 4263
Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) Super- 4264
HyperGraphs” in **Ref. [HG25]** by Henry Garrett (2023), “Extreme Failed SuperHyperClique 4265
Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks 4266
By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs” in **Ref. [HG26]** by Henry 4267
Garrett (2023), “Indeterminacy On The All Possible Connections of Cells In Front of Can- 4268
cer’s Attacks In The Terms of Neutrosophic Failed SuperHyperClique on Cancer’s Recognition 4269
called Neutrosophic SuperHyperGraphs” in **Ref. [HG27]** by Henry Garrett (2023), “Perfect 4270
Directions Toward Idealism in Cancer’s Neutrosophic Recognition Forwarding Neutrosophic 4271
SuperHyperClique on Neutrosophic SuperHyperGraphs” in **Ref. [HG28]** by Henry Garrett 4272
(2023), “Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in 4273
the Terms of Cancer’s Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) 4274
SuperHyperClique” in **Ref. [HG29]** by Henry Garrett (2023), “Different Neutrosophic Types 4275
of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer’s Neutrosophic 4276
Recognition modeled in the Form of Neutrosophic SuperHyperGraphs” in **Ref. [HG30]** by 4277
Henry Garrett (2023), “Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHy- 4278
perModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs” in **Ref. [HG31]** by 4279
Henry Garrett (2023), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic 4280
SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. 4281
[HG32]** by Henry Garrett (2023), “(Neutrosophic) SuperHyperStable on Cancer’s Recognition 4282
by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs” in **Ref. [HG33]** by Henry 4283
Garrett (2023), “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use 4284
Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond” in **Ref. 4285
[HG34]** by Henry Garrett (2022), “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s 4286
Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG35]** by Henry Garrett (2022), 4287
“Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModel- 4288
ing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG36]** by 4289
Henry Garrett (2022), “Basic Neutrosophic Notions Concerning SuperHyperDominating and 4290
Neutrosophic SuperHyperResolving in SuperHyperGraph” in **Ref. [HG37]** by Henry Garrett 4291
(2022), “Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions 4292
Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyperGraph (NSHG)” 4293
in **Ref. [HG38]** by Henry Garrett (2022), and **[HG4; HG5; HG6; HG7; HG8; HG9; 4294
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HG32; HG33; HG34; HG35; HG36; HG37; HG38; HG94; HG942; HG95; HG952; HG96; HG962; HG97; HG972; HG98; HG982; HG106; HG107; HG111; HG112; HG115; HG116; HG120; HG121; HG122; HG123; HG124; HG125; HG126; HG127; HG128; HG129; HG130; HG131; HG132; HG134; HG135; HG136; HG137; HG138; HG139; HG140; HG141; HG142; HG143; HG144; HG145; HG146; HG147; HG148; HG149; HG150; HG151; HG152; HG153; HG154; HG155; HG156; HG157; HG158; HG159; HG160; HG161; HG162; HG163; HG164; HG165; HG166; HG167; HG168; HG169; HG170; HG171; HG172; HG173; HG174; HG175; HG176; HG177; HG178; HG179; HG180; HG181; HG182; HG183; HG184; HG185; HG186; HG187; HG188; HG189; HG190; HG191; HG192; HG193; HG194; HG195; HG196; HG197; HG198; HG199; HG200; HG201; HG202; HG203; HG204; HG205; HG206; HG207; HG208; HG209; HG210; HG211; HG212; HG213; HG214; HG215; HG93; HG217; HG218; HG219; HG220; HG221; HG222; HG223; HG224; HG225; HG226; HG228; HG230; HG231; HG232; HG233; HG234; HG235; HG236; HG237; HG238; HG239; HG240; HG241; HG242; HG243; HG244; HG245; HG246; HG247; HG248; HG249; HG250; HG251; HG252; HG253], there are some endeavors to formalize the basic SuperHyperNotions about neutrosophic SuperHyperGraph and SuperHyperGraph alongside scientific research books at [HG60b; HG61b; HG62b; HG63b; HG64b; HG65b; HG66b; HG67b; HG68b; HG69b; HG70b; HG71b; HG72b; HG73b; HG74b; HG75b; HG76b; HG77b; HG78b; HG79b; HG80b; HG81b; HG82b; HG83b; HG84b; HG85b; HG86b; HG87b; HG88b; HG89b; HG90b; HG91b; HG92b; HG93b; HG94b; HG95b; HG96b; HG97b; HG98b; HG99b; HG100b; HG101b; HG102b; HG103b; HG104b; HG105b; HG106b; HG107b; HG108b; HG109b; HG110b; HG111b; HG112b; HG113b; HG114b; HG115b; HG116b; HG117b; HG118b; HG119b; HG120b; HG121b; HG122b; HG123b; HG124b; HG125b; HG126b; HG127b; HG128b; HG129b; HG130b; HG131b; HG132b; HG133b; HG134b; HG135b; HG136b; HG137b; HG138b; HG139b; HG140b; HG141b; HG142b; HG143b; HG144b; HG145b; HG146b; HG147b; HG148b; HG149b; HG150b; HG151b; HG152b; HG153b; HG154b; HG155b; HG156b; HG157b; HG158b; HG159b; HG160b; HG161b; HG162b; HG163b; HG164b; HG165b; HG166b]. Two popular scientific research books in Scribd in the terms of high readers, 4190 and 5189 respectively, on neutrosophic science is on [HG32b; HG44b]. Some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in **Ref. [HG71b]** by Henry Garrett (2023) which is indexed by Google Scholar and has more than 4331 readers in Scribd. It's titled "Beyond Neutrosophic Graphs" and published by Dr. Henry Garrett. This research book covers different types of notions and settings in neutrosophic graph theory and neutrosophic SuperHyperGraph theory. Also, some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in **Ref. [HG70b]** by Henry Garrett (2023) which is indexed by Google Scholar and has more than 5327 readers in Scribd. It's titled "Neutrosophic Duality" and published by Dr. Henry Garrett. This research book presents different types of notions SuperHyperResolving and SuperHyperDominating in the setting of duality in neutrosophic graph theory and neutrosophic SuperHyperGraph theory. This research book has scrutiny on the complement of the intended set and the intended set, simultaneously. It's smart to consider a set but acting on its complement that what's done in this research book which is popular in the terms of high readers in Scribd. See the seminal scientific researches [HG1; HG2; HG3]. The formalization of the no-

tions on the framework of notions in SuperHyperGraphs, Neutrosophic notions in Super- 4343
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HG153b; HG154b; HG155b; HG156b; HG157b; HG158b; HG159b; HG160b; 4374
HG161b; HG162b; HG163b; HG164b; HG165b; HG166b]. Two popular scientific re- 4375
search books in Scribd in the terms of high readers, 4331 and 5327 respectively, on neutrosophic 4376
science is on [HG32b; HG44b]. 4377

Bibliography

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HG1	[1]	Henry Garrett, "Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes", <i>J Math Techniques Comput Math</i> 1(3) (2022) 242-263. (doi: 10.33140/JMTCM.01.03.09)	4379 4380 4381 4382
HG2	[2]	Henry Garrett, "Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer's Treatments", <i>J Math Techniques Comput Math</i> 2(1) (2023) 35-47. (https://www.opastpublishers.com/open-access-articles/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a.pdf)	4383 4384 4385 4386 4387 4388
HG3	[3]	Henry Garrett, "A Research on Cancer's Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations", <i>J Math Techniques Comput Math</i> 2(3) (2023) 136-148. (https://www.opastpublishers.com/open-access-articles/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-.pdf)	4389 4390 4391 4392 4393 4394
HG93	[4]	Henry Garrett, "Neutrosophic Co-degree and Neutrosophic Degree alongside Chromatic Numbers in the Setting of Some Classes Related to Neutrosophic Hypergraphs", <i>J Curr Trends Comp Sci Res</i> 2(1) (2023) 16-24. (https://www.opastpublishers.com/open-access-articles/neutrosophic-codegree-and-neutrosophic-degree-alongside-chromatic-numbers-in-the-setting-of-some-classes-related-to-neut.pdf)	4395 4396 4397 4398 4399
HG4	[5]	Garrett, Henry. "0039 Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph." CERN European Organization for Nuclear Research - Zenodo, Nov. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.5281/zenodo.6319942 . https://oa.mg/work/10.5281/zenodo.6319942	4400 4401 4402 4403 4404
HG5	[6]	Garrett, Henry. "0049 (Failed)1-Zero-Forcing Number in Neutrosophic Graphs." CERN European Organization for Nuclear Research - Zenodo, Feb. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.13140/rg.2.2.35241.26724 . https://oa.mg/work/10.13140/rg.2.2.35241.26724	4405 4406 4407 4408

HG6	[7]	Henry Garrett, “Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010308 (doi: 10.20944/preprints202301.0308.v1).	4409 4410 4411
HG7	[8]	Henry Garrett, “Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition”, <i>Preprints 2023</i> , 2023010282 (doi: 10.20944/preprints202301.0282.v1).	4412 4413 4414 4415
HG8	[9]	Henry Garrett, “Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010267 (doi: 10.20944/preprints202301.0267.v1).	4416 4417 4418
HG9	[10]	Henry Garrett, “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph”, <i>Preprints 2023</i> , 2023010265 (doi: 10.20944/preprints202301.0265.v1).	4419 4420 4421 4422 4423
HG10	[11]	Henry Garrett, “Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010262, (doi: 10.20944/preprints202301.0262.v1).	4424 4425 4426 4427
HG11	[12]	Henry Garrett, “Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010240 (doi: 10.20944/preprints202301.0240.v1).	4428 4429 4430
HG12	[13]	Henry Garrett, “Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010224, (doi: 10.20944/preprints202301.0224.v1).	4431 4432 4433
HG13	[14]	Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010105 (doi: 10.20944/preprints202301.0105.v1).	4434 4435 4436
HG14	[15]	Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, <i>Preprints 2023</i> , 2023010088 (doi: 10.20944/preprints202301.0088.v1).	4437 4438 4439
HG15	[16]	Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, <i>Preprints 2023</i> , 2023010044	4440 4441 4442
HG16	[17]	Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010043 (doi: 10.20944/preprints202301.0043.v1).	4443 4444 4445
HG17	[18]	Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010105 (doi: 10.20944/preprints202301.0105.v1).	4446 4447 4448

HG18	[19]	Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	4449 4450 4451
HG19	[20]	Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).	4452 4453 4454
HG20	[21]	Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, Preprints 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).	4455 4456 4457 4458
HG21	[22]	Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).	4459 4460 4461
HG22	[23]	Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, Preprints 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).	4462 4463 4464
HG23	[24]	Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).	4465 4466 4467
HG253	[25]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7853867).	4468 4469 4470
HG252	[26]	Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7853922).	4471 4472 4473
HG251	[27]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7851519).	4474 4475 4476
HG250	[28]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Type-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7851550).	4477 4478 4479
HG249	[29]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7839333).	4480 4481 4482
HG248	[30]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Type-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7840206).	4483 4484 4485

HG247	[31]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7834229).	4486 4487 4488
HG246	[32]	Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Type-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7834261).	4489 4490 4491
HG245	[33]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7824560).	4492 4493 4494
HG244	[34]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7824623).	4495 4496 4497
HG243	[35]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7819531).	4498 4499 4500
HG242	[36]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7819579).	4501 4502 4503
HG241	[37]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot”, Zenodo 2023, (doi: 10.5281/zenodo.7812236).	4504 4505
HG240	[38]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By initial Eulerian-Path-Cut As Hyper initial Eulogy On Super initial EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7809365).	4506 4507 4508
HG239	[39]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Cut As Hyper Eulogy-Path-Cut On Super EULA-Path-Cut”, Zenodo 2023, (doi: 10.5281/zenodo.7809358).	4509 4510 4511
HG238	[40]	Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7809219).	4512 4513 4514
HG237	[41]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyper-Graph By Eulerian-Path-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7809328).	4515 4516 4517
HG236	[42]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7806767).	4518 4519 4520
HG235	[43]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Type-Cycle-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7806838).	4521 4522 4523

HG234	[44]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Decomposition As Hyper Decompress On Super Decompen- sation”, Zenodo 2023, (doi: 10.5281/zenodo.7804238).	4524 4525 4526
HG233	[45]	Henry Garrett, “New Ideas On Super Decompression By Hyper Decompress Of Hamiltonian-Type-Cycle-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7804228).	4527 4528 4529
HG232	[46]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7799902).	4530 4531 4532
HG231	[47]	Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Type- Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7804218).	4533 4534 4535
HG230	[48]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7796334).	4536 4537 4538
HG228	[49]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Decomposition As Hyper Decompress On Super Decompen- sation”, Zenodo 2023, (doi: 10.5281/zenodo.7793372).	4539 4540 4541
HG226	[50]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7791952).	4542 4543 4544
HG225	[51]	Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cycle- Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7791982).	4545 4546 4547
HG224	[52]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7790026).	4548 4549 4550
HG223	[53]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7790052).	4551 4552 4553
HG222	[54]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Decomposition As Hyper Decompress On Super Decompen- sation”, Zenodo 2023, (doi: 10.5281/zenodo.7787066).	4554 4555 4556
HG221	[55]	Henry Garrett, “New Ideas On Super Decompression By Hyper Decompress Of Hamiltonian-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHy- perGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7787094).	4557 4558 4559
HG220	[56]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7781476).	4560 4561 4562

HG219	[57]	Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7783082).	4563 4564 4565
HG218	[58]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyper-Graph By Trace-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7777857).	4566 4567 4568
HG217	[59]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Trace-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7779286).	4569 4570 4571
HG215	[60]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7771831).	4572 4573 4574
HG214	[61]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Trace-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7772468).	4575 4576 4577
HG213	[62]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Cut As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20913.25446).	4578 4579 4580
HG212	[63]	Henry Garrett, “New Ideas On Super Tract By Hyper Track Of Trace-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7764916).	4581 4582 4583
HG211	[64]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11770.98247).	4584 4585 4586
HG210	[65]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Edge-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12400.12808).	4587 4588 4589
HG209	[66]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Decomposition As Hyper Decompress On Super Decomensation”, ResearchGate 2023, (doi: 10.13140/RG.2.2.22545.10089).	4590 4591 4592
HG208	[67]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Edge-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29544.34564).	4593 4594 4595
HG207	[68]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Edge-Cut As Hyper Edify On Super Eddy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11377.76644).	4596 4597 4598
HG206	[69]	Henry Garrett, “New Ideas On Super Eddy By Hyper Edify Of Edge-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23750.96329).	4599 4600 4601

HG205	[70]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31366.24641).	4602 4603 4604
HG204	[71]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Vertex-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34721.68960).	4605 4606 4607
HG203	[72]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Decomposition As Hyper Decompress On Super Decomensation”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30212.81289).	4608 4609 4610
HG202	[73]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Vertex-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18468.76169).	4611 4612 4613
HG201	[74]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Vertex-Cut As Hyper Vertu On Super Vertigo”, ResearchGate 2023, (doi: 10.13140/RG.2.2.24288.35842).	4614 4615 4616
HG200	[75]	Henry Garrett, “New Ideas On Super Vertigo By Hyper Vertu Of Vertex-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32467.25124).	4617 4618 4619
HG199	[76]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31025.45925).	4620 4621 4622
HG198	[77]	Henry Garrett, “New Ideas On Super Nebulizer By Hyper Nub Of Stable-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17184.25602).	4623 4624 4625
HG197	[78]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Decompositions As Hyper Stain On Super Stagy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23423.28327).	4626 4627 4628
HG196	[79]	Henry Garrett, “New Ideas On Super Stale By Hyper Stalk Of Stable-Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28456.44805).	4629 4630 4631
HG195	[80]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Stable-Cut As Hyper Stain On Super Stagy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23525.68320).	4632 4633 4634
HG194	[81]	Henry Garrett, “New Ideas On Super Stale By Hyper Stalk Of Stable-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20170.24000).	4635 4636 4637
HG193	[82]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Neighbors As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.36475.59683).	4638 4639 4640

HG192	[83]	Henry Garrett, “New Ideas On Super Nebulizer By Hyper Nub Of Clique-Neighbors In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29764.71046).	4641 4642 4643
HG191	[84]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Decompositions As Hyper Decompile On Super Decommission”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18780.87683).	4644 4645 4646
HG190	[85]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Clique- Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27169.48487).	4647 4648 4649
HG189	[86]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Clique-Cut As Hyper Click On Super Cliche”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26134.01603).	4650 4651 4652
HG188	[87]	Henry Garrett, “New Ideas On Super Cliff By Hyper Cling Of Clique-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27392.30721).	4653 4654 4655
HG187	[88]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Space As Hyper Spin On Super Spacy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33028.40321).	4656 4657 4658
HG186	[89]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By List- Coloring As Hyper List On Super Lisle”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21389.20966).	4659 4660 4661
HG185	[90]	Henry Garrett, “New Ideas On Super Lith By Hyper Lite Of List-Coloring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16356.04489).	4662 4663 4664
HG184	[91]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Space As Hyper Sparse On Super Spark”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21756.21129).	4665 4666 4667
HG183	[92]	Henry Garrett, “New Ideas On Super Solidarity By Hyper Soul Of Space In Cancer’s Recognition With (Extreme) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30983.68009).	4668 4669 4670
HG182	[93]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Connectivity As Hyper Disclosure On Super Closure”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28552.29445).	4671 4672 4673
HG181	[94]	Henry Garrett, “New Ideas On Super Uniform By Hyper Deformation Of Edge-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.10936.21761).	4674 4675 4676
HG180	[95]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Connectivity As Hyper Leak On Super Structure”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35105.89447).	4677 4678 4679

HG179	[96] Henry Garrett, “New Ideas On Super System By Hyper Explosions Of Vertex-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.30072.72960).	4680 4681 4682
HG178	[97] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Tree-Decomposition As Hyper Forward On Super Returns”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.31147.52003).	4683 4684 4685
HG177	[98] Henry Garrett, “New Ideas On Super Nodes By Hyper Moves Of Tree-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.32825.24163).	4686 4687 4688
HG176	[99] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Chord As Hyper Excellence On Super Excess”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.13059.58401).	4689 4690 4691
HG175	[100] Henry Garrett, “New Ideas On Super Gap By Hyper Navigations Of Chord In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.11172.14720).	4692 4693 4694
HG174	[101] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyper(i,j)-Domination As Hyper Controller On Super Waves”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.22011.80165).	4695 4696 4697
HG173	[102] Henry Garrett, “New Ideas On Super Coincidence By Hyper Routes Of SuperHyper(i,j)-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.30819.84003).	4698 4699 4700
HG172	[103] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperEdge-Domination As Hyper Reversion On Super Indirection”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.10493.84962).	4701 4702 4703
HG171	[104] Henry Garrett, “New Ideas On Super Obstacles By Hyper Model Of SuperHyperEdge-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.13849.29280).	4704 4705 4706
HG170	[105] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Domination As Hyper k-Actions On Super Patterns”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.19944.14086).	4707 4708 4709
HG169	[106] Henry Garrett, “New Ideas On Super Harmony By Hyper k-Function Of SuperHyperK-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.23299.58404).	4710 4711 4712
HG168	[107] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Number As Hyper k-Partition On Super Layers”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.33103.76968).	4713 4714 4715
HG167	[108] Henry Garrett, “New Ideas On Super Gradient By Hyper k-Class Of SuperHyperK-Number In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.23037.44003).	4716 4717 4718

HG166	[109] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperOrder As Hyper Enumerations On Super Landmarks”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35646.56641).	4719 4720 4721
HG165	[110] Henry Garrett, “New Ideas On Super Analogous By Hyper Visions Of SuperHyperOrder In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18030.48967).	4722 4723 4724
HG164	[111] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperColoring As Hyper Categories On Super Neighbors”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13973.81121).	4725 4726 4727
HG163	[112] Henry Garrett, “New Ideas On Super Relations By Hyper Identifications Of SuperHyperColoring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34106.47047).	4728 4729 4730
HG162	[113] Henry Garrett, “New Ideas On Super Contradiction By Hyper Detection of SuperHyperDefensive In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13397.09446).	4731 4732 4733
HG161	[114] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDimension As Hyper Distinguishing On Super Distances”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31956.88961).	4734 4735 4736
HG160	[115] Henry Garrett, “New Ideas On Super Locations By Hyper Differing Of SuperHyperDimension In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15179.67361).	4737 4738 4739
HG159	[116] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDominating As Hyper Closing On Super Messy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21510.45125).	4740 4741 4742
HG158	[117] Henry Garrett, “New Ideas On Super Missing By Hyper Searching Of SuperHyperDominating In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13121.84321).	4743 4744 4745
HG157	[118] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperConnected As Hyper Group On Super Surge”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11758.69441).	4746 4747 4748
HG156	[119] Henry Garrett, “New Ideas On Super Outbreak By Hyper Collections Of SuperHyperConnected In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31891.35367).	4749 4750 4751
HG155	[120] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperTotal As Hyper Covering On Super Infections”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19360.87048).	4752 4753 4754
HG154	[121] Henry Garrett, “New Ideas On Super Extremism By Hyper Treatments Of SuperHyperTotal In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32363.21286).	4755 4756 4757

HG153	[122] Henry Garrett, “New Ideas On Super Isolation By Hyper Perfectness Of SuperHyperPerfect In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23266.81602).	4758 4759 4760
HG152	[123] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperPerfect As Hyper Idealism On Super Vacancy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19911.37285).	4761 4762 4763
HG151	[124] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperJoin As Hyper Separations On Super Sorts”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11050.90569).	4764 4765 4766
HG150	[125] Henry Garrett, “New Ideas On Super connections By Hyper disconnections Of SuperHyperJoin In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17761.79206).	4767 4768 4769
HG149	[126] Henry Garrett, “New Ideas On Super Mixed-Devastations By Hyper Decisions Of SuperHyperDuality In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34953.52320).	4770 4771 4772
HG148	[127] Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By SuperHyperDuality As Hyper Imaginations On Super Mixed-Illustrations”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33275.80161).	4773 4774 4775
HG147	[128] Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By Path SuperHyperColoring As Hyper Correction On Super Faults”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30182.50241).	4776 4777 4778
HG146	[129] Henry Garrett, “New Ideas On Super Reflections By Hyper Rotations Of Path SuperHyperColoring In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33459.30243).	4779 4780 4781
HG145	[130] Henry Garrett, “New Ideas As Hyper Deformations On Super Chains In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph By SuperHyperDensity”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13444.60806).	4782 4783 4784
HG144	[131] Henry Garrett, “New Ideas As Hyper Ignorance By SuperHyperDensity On Super Resistances In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi:10.13140/RG.2.2.16800.05123).	4785 4786 4787
HG143	[132] Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-VI”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29913.80482).	4788 4789 4790
HG142	[133] Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-V”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33269.24809).	4791 4792 4793
HG141	[134] Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-IV”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34946.96960).	4794 4795 4796

HG140	[135] Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-III”, ResearchGate 2023, (doi: 10.13140/RG.2.2.14814.31040).	4797 4798 4799
HG139	[136] Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-II”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15653.17125).	4800 4801 4802
HG138	[137] Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-I”, ResearchGate 2023, (doi: 10.13140/RG.2.2.25719.50089).	4803 4804 4805
HG137	[138] Henry Garrett, “New Ideas On Super Disruptions In Cancer’s Extreme Recognition As Neutrosophic SuperHyperGraph By Hyper Plans Called SuperHyperConnectivities”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29441.94562).	4806 4807 4808
HG136	[139] Henry Garrett, “Cancer’s Neutrosophic Recognition As Neutrosophic SuperHyperGraph By SuperHyperConnectivities As Hyper Diagnosis On Super Mechanism”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17252.24968).	4809 4810 4811
HG135	[140] Henry Garrett, “Cancer’s Recognition and (Neutrosophic) SuperHyperGraph By the Criteria of Eulerian and Hamiltonian Type-Sets As Hyper Modified Cycles On Super Mess”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16652.59525).	4812 4813 4814
HG134	[141] Henry Garrett, “Eulerian and Hamiltonian In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph On Super Interactions By Hyper Extensions of Cycles”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34583.24485).	4815 4816 4817
HG132	[142] Henry Garrett, “SuperHyperGirth Type-Results on extreme SuperHyperGirth theory and (Neutrosophic) SuperHyperGraphs Toward Cancer’s extreme Recognition”, Preprints 2023, 2023010396 (doi: 10.20944/preprints202301.0396.v1).	4818 4819 4820
HG131	[143] Henry Garrett, “Neutrosophic SuperHyperGraphs Warns Hyper Landmark of neutrosophic SuperHyperGirth In Super Type-Versions of Cancer’s neutrosophic Recognition”, Preprints 2023, 2023010395 (doi: 10.20944/preprints202301.0395.v1).	4821 4822 4823
HG130	[144] Henry Garrett, “The Constructions of (Neutrosophic) SuperHyperGraphs on the Cancer’s Recognition in The Confrontation With Super Attacks In Hyper Situations By Implementing (Neutrosophic) 1-Failed SuperHyperForcing in The Technical Approaches to Neutralize SuperHyperViews”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26240.51204).	4824 4825 4826 4827
HG129	[145] Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing As the Entrepreneurs on Cancer’s Recognitions To Fail Forcing Style As the Super Classes With Hyper Effects In The Background of the Framework is So-Called (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12818.73925).	4828 4829 4830 4831
HG128	[146] Henry Garrett, “Super Actions On The Types of Hyper Levels In The Sensible Neutrosophic SuperHyperGirth On Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26836.88960).	4832 4833 4834

HG127	[147] Henry Garrett, “SuperHyperGirth Approaches on the Super Challenges on the Cancer’s Recognition In the Hyper Model of (Neutrosophic) SuperHyperGraph”, <i>ResearchGate</i> 2023,(doi: 10.13140/RG.2.2.36745.93289).	4835 4836 4837
HG126	[148] Henry Garrett, “Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010308 (doi: 10.20944/preprints202301.0308.v1).	4838 4839 4840
HG125	[149] Henry Garrett, “Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition”, <i>Preprints</i> 2023, 2023010282 (doi: 10.20944/preprints202301.0282.v1).	4841 4842 4843 4844
HG124	[150] Henry Garrett, “Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010267 (doi: 10.20944/preprints202301.0267.v1).	4845 4846 4847
HG123	[151] Henry Garrett, “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph”, <i>Preprints</i> 2023, 2023010265 (doi: 10.20944/preprints202301.0265.v1).	4848 4849 4850 4851 4852
HG122	[152] Henry Garrett, “Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010262,(doi: 10.20944/preprints202301.0262.v1).	4853 4854 4855 4856
HG121	[153] Henry Garrett, “Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010240 (doi: 10.20944/preprints202301.0240.v1).	4857 4858 4859
HG120	[154] Henry Garrett, “Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010224, (doi: 10.20944/preprints202301.0224.v1).	4860 4861 4862
HG24	[155] Henry Garrett, “SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer’s Recognition In Neutrosophic SuperHyperGraphs”, <i>ResearchGate</i> 2023,(doi: 10.13140/RG.2.2.35061.65767).	4863 4864 4865
HG25	[156] Henry Garrett, “The Focus on The Partitions Obtained By Parallel Moves In The Cancer’s Extreme Recognition With Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.18494.15680).	4866 4867 4868 4869
HG26	[157] Henry Garrett, “Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.32530.73922).	4870 4871 4872 4873

HG27	[158] Henry Garrett, “Indeterminacy On The All Possible Connections of Cells In Front of Cancer’s Attacks In The Terms of Neutrosophic Failed SuperHyperClique on Cancer’s Recognition called Neutrosophic SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15897.70243).	4874 4875 4876 4877
HG116	[159] Henry Garrett, “Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32530.73922).	4878 4879 4880 4881
HG115	[160] Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	4882 4883 4884
HG28	[161] Henry Garrett, “Perfect Directions Toward Idealism in Cancer’s Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30092.80004).	4885 4886 4887
HG29	[162] Henry Garrett, “Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in the Terms of Cancer’s Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) SuperHyperClique”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23172.19849).	4888 4889 4890 4891
HG112	[163] Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	4892 4893 4894
HG111	[164] Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	4895 4896 4897
HG30	[165] Henry Garrett, “Different Neutrosophic Types of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer’s Neutrosophic Recognition modeled in the Form of Neutrosophic SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17385.36968).	4898 4899 4900 4901
HG107	[166] Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, Preprints 2023, 2023010044	4902 4903 4904
HG106	[167] Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1).	4905 4906 4907
HG31	[168] Henry Garrett, “Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28945.92007).	4908 4909 4910
HG32	[169] Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11447.80803).	4911 4912 4913

HG33	[170] Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.35774.77123).	4914 4915 4916
HG34	[171] Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.36141.77287).	4917 4918 4919
HG35	[172] Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.29430.88642).	4920 4921 4922
HG36	[173] Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.11369.16487).	4923 4924 4925
HG982	[174] Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, <i>Preprints</i> 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).	4926 4927 4928
HG98	[175] Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.19380.94084).	4929 4930 4931
HG972	[176] Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, <i>Preprints</i> 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).	4932 4933 4934 4935
HG97	[177] Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.14426.41923).	4936 4937 4938 4939
HG962	[178] Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, <i>Preprints</i> 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).	4940 4941 4942
HG96	[179] Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, <i>ResearchGate</i> 2022 (doi: 10.13140/RG.2.2.20993.12640).	4943 4944 4945
HG952	[180] Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, <i>Preprints</i> 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).	4946 4947 4948
HG95	[181] Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs And SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, <i>ResearchGate</i> 2022 (doi: 10.13140/RG.2.2.23123.04641).	4949 4950 4951

HG942	[182] Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic Super-HyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).	4952 4953 4954
HG94	[183] Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic Super-HyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23324.56966).	4955 4956 4957
HG37	[184] Henry Garrett, “Basic Neutrosophic Notions Concerning SuperHyperDominating and Neutrosophic SuperHyperResolving in SuperHyperGraph”, ResearchGate 2022 (doi: 10.13140/RG.2.2.29173.86244).	4958 4959 4960
HG38	[185] Henry Garrett, “Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyperGraph (NSHG)”, ResearchGate 2022 (doi: 10.13140/RG.2.2.25385.88160).	4961 4962 4963
HG166b	[186] Henry Garrett, “Eulerian-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7856329).	4964 4965
HG165b	[187] Henry Garrett, “Eulerian-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7854561).	4966 4967
HG164b	[188] Henry Garrett, “Eulerian-Type-Path-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7851893).	4968 4969
HG163b	[189] Henry Garrett, “Eulerian-Type-Path-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7848019).	4970 4971
HG162b	[190] Henry Garrett, “Eulerian-Type-Path-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7835063).	4972 4973
HG161b	[191] Henry Garrett, “Eulerian-Path-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7826705).	4974 4975
HG160b	[192] Henry Garrett, “Eulerian-Path-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7820680).	4976 4977
HG159b	[193] Henry Garrett, “Eulerian-Path-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812750).	4978 4979
HG158b	[194] Henry Garrett, “Hamiltonian-Type-Cycle-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812142).	4980 4981
HG157b	[195] Henry Garrett, “Hamiltonian-Type-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7810394).	4982 4983
HG156b	[196] Henry Garrett, “Hamiltonian-Type-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7807782).	4984 4985
HG155b	[197] Henry Garrett, “Hamiltonian-Cycle-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7804449).	4986 4987

HG154b	[198] Henry Garrett, “Hamiltonian-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7793875).	4988 4989
HG153b	[199] Henry Garrett, “Hamiltonian-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7792307).	4990 4991
HG152b	[200] Henry Garrett, “Hamiltonian-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7790728).	4992 4993
HG151b	[201] Henry Garrett, “Hamiltonian-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7787712).	4994 4995
HG150b	[202] Henry Garrett, “Hamiltonian-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7783791).	4996 4997
HG149b	[203] Henry Garrett, “Trace-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7780123).	4998 4999
HG148b	[204] Henry Garrett, “Trace-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7773119).	5000 5001
HG147b	[205] Henry Garrett, “SuperHyperDuality”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7637762).	5002 5003
HG146b	[206] Henry Garrett, “Trace-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7766174).	5004 5005
HG145b	[207] Henry Garrett, “Edge-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7762232).	5006 5007
HG144b	[208] Henry Garrett, “Edge-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7758601).	5008 5009
HG143b	[209] Henry Garrett, “Edge-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7754661).	5010 5011
HG142b	[210] Henry Garrett, “Vertex-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7750995) .	5012 5013
HG141b	[211] Henry Garrett, “Vertex-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7749875).	5014 5015
HG140b	[212] Henry Garrett, “Vertex-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7747236).	5016 5017
HG139b	[213] Henry Garrett, “Stable-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7742587).	5018 5019
HG138b	[214] Henry Garrett, “Stable-Decompositions In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7738635).	5020 5021
HG137b	[215] Henry Garrett, “Stable-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7734719).	5022 5023

HG136b	[216] Henry Garrett, “Clique-Neighbors In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730484).	5024 5025
HG135b	[217] Henry Garrett, “Clique-Decompositions In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730469).	5026 5027
HG134b	[218] Henry Garrett, “Clique-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7722865).	5028 5029
HG133b	[219] Henry Garrett, “Space In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7713563).	5030 5031
HG132b	[220] Henry Garrett, “Space In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7709116).	5032 5033
HG131b	[221] Henry Garrett, “Edge-Connectivity In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706415).	5034 5035
HG130b	[222] Henry Garrett, “Vertex-Connectivity In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706063).	5036 5037
HG129b	[223] Henry Garrett, “Tree-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7701906).	5038 5039
HG128b	[224] Henry Garrett, “Chord In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7700205).	5040 5041
HG127b	[225] Henry Garrett, “(i,j)-Domination In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7694876).	5042 5043
HG126b	[226] Henry Garrett, “Edge-Domination In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7679410).	5044 5045
HG125b	[227] Henry Garrett, “K-Domination In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7675982).	5046 5047
HG124b	[228] Henry Garrett, “K-Number In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7672388).	5048 5049
HG123b	[229] Henry Garrett, “Order In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7668648).	5050 5051
HG122b	[230] Henry Garrett, “Coloring In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7662810).	5052 5053
HG121b	[231] Henry Garrett, “Dimension In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7659162).	5054 5055
HG120b	[232] Henry Garrett, “Cancer In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653233).	5056 5057
HG119b	[233] Henry Garrett, “SuperHyperWheel”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653204).	5058 5059

HG118b	[234] Henry Garrett, “SuperHyperMultipartite”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653142).	5060 5061
HG117b	[235] Henry Garrett, “SuperHyperBipartite”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653117).	5062 5063
HG116b	[236] Henry Garrett, “SuperHyperStar”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653089).	5064 5065
HG115b	[237] Henry Garrett, “SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651687).	5066 5067
HG114b	[238] Henry Garrett, “SuperHyperPath”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651619).	5068 5069
HG113b	[239] Henry Garrett, “SuperHyperDomination”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651439).	5070 5071
HG112b	[240] Henry Garrett, “SuperHyperDominating”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7650729).	5072 5073
HG111b	[241] Henry Garrett, “SuperHyperConnected”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647868).	5074 5075
HG110b	[242] Henry Garrett, “SuperHyperTotal”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647017).	5076 5077
HG109b	[243] Henry Garrett, “SuperHyperPerfect”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7644894).	5078 5079
HG108b	[244] Henry Garrett, “SuperHyperJoin”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7641880).	5080 5081
HG107b	[245] Henry Garrett, “Path SuperHyperColoring”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7632923).	5082 5083
HG106b	[246] Henry Garrett, “SuperHyperDensity”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7623459).	5084 5085
HG105b	[247] Henry Garrett, “Neutrosophic SuperHyperConnectivities”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416).	5086 5087
HG104b	[248] Henry Garrett, “Extreme SuperHyperConnectivities”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416).	5088 5089
HG103b	[249] Henry Garrett, “SuperHyperConnectivities”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606404).	5090 5091
HG102b	[250] Henry Garrett, “Neutrosophic SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	5092 5093
HG101b	[251] Henry Garrett, “Extreme SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	5094 5095

HG100b	[252] Henry Garrett, “Extreme SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	5096 5097
HG99b	[253] Henry Garrett, “SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7579929).	5098 5099
HG98b	[254] Henry Garrett, “Neutrosophic SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563170).	5100 5101
HG97b	[255] Henry Garrett, “Extreme SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563164).	5102 5103
HG96b	[256] Henry Garrett, “SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	5104 5105
HG95b	[257] Henry Garrett, “Extreme SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	5106 5107
HG94b	[258] Henry Garrett, “Overlook On SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	5108 5109
HG93b	[259] Henry Garrett, “Neutrosophic SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557063).	5110 5111
HG92b	[260] Henry Garrett, “Extreme SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557009).	5112 5113
HG91b	[261] Henry Garrett, “Overlook On SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).	5114 5115
HG90b	[262] Henry Garrett, “Neutrosophic Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	5116 5117
HG89b	[263] Henry Garrett, “Extreme Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	5118 5119
HG88b	[264] Henry Garrett, “Overlook On Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	5120 5121
HG87b	[265] Henry Garrett, “Extreme SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574952).	5122 5123
HG86b	[266] Henry Garrett, “Neutrosophic SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574992).	5124 5125
HG85b	[267] Henry Garrett, “Extreme SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	5126 5127
HG84b	[268] Henry Garrett, “Overlook On SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	5128 5129
HG83b	[269] Henry Garrett, “Neutrosophic Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	5130 5131

HG82b	[270] Henry Garrett, “Extreme Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	5132 5133
HG81b	[271] Henry Garrett, “Overlook On Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	5134 5135
HG80b	[272] Henry Garrett, “Neutrosophic SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	5136 5137
HG79b	[273] Henry Garrett, “Extreme SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	5138 5139
HG78b	[274] Henry Garrett, “Overlook On SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	5140 5141
HG77b	[275] Henry Garrett, “Neutrosophic Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	5142 5143
HG76b	[276] Henry Garrett, “Extreme Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	5144 5145
HG75b	[277] Henry Garrett, “Neutrosophic SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	5146 5147
HG74b	[278] Henry Garrett, “Extreme SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	5148 5149
HG73b	[279] Henry Garrett, “Overlook On SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	5150 5151
HG72b	[280] Henry Garrett, “Neutrosophic SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	5152 5153
HG71b	[281] Henry Garrett, “Extreme SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	5154 5155
HG70b	[282] Henry Garrett, “Overlook On SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	5156 5157
HG69b	[283] Henry Garrett, “SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).	5158 5159
HG68b	[284] Henry Garrett, “Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	5160 5161
HG67b	[285] Henry Garrett, “SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	5162 5163
HG66b	[286] Henry Garrett, “Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	5164 5165
HG65b	[287] Henry Garrett, “SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	5166 5167

HG64b	[288] Henry Garrett, “Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	5168 5169
HG63b	[289] Henry Garrett, “SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	5170 5171
HG62b	[290] Henry Garrett, “SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	5172 5173
HG61b	[291] Henry Garrett, “SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7480110).	5174 5175
HG60b	[292] Henry Garrett, “Neut. SuperHyperEdges”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7378758).	5176 5177
HG32b	[293] Henry Garrett, “Beyond Neutrosophic Graphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6320305).	5178 5179
HG44b	[294] Henry Garrett, “Neutrosophic Duality”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6677173).	5180 5181

Cancer In Neutrosophic SuperHyperGraph

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The cancer is the Neutrosophic disease but the Neutrosophic model is going to figure out what's going on this Neutrosophic phenomenon. The special Neutrosophic case of this Neutrosophic disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The Neutrosophic recognition of the cancer could help to find some Neutrosophic treatments for this Neutrosophic disease.

In the following, some Neutrosophic steps are Neutrosophic devised on this disease.

Step 1. (Neutrosophic Definition) *The Neutrosophic recognition of the cancer in the long-term Neutrosophic function.*

Step 2. (Neutrosophic Issue) *The specific region has been assigned by the Neutrosophic model [it's called Neutrosophic SuperHyperGraph] and the long Neutrosophic cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Neutrosophic SuperHyperGraph] to have convenient perception on what's happened and what's done.*

Step 3. (Neutrosophic Model) *There are some specific Neutrosophic models, which are well-known and they've got the names, and some general Neutrosophic models. The moves and the Neutrosophic traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by a Neutrosophic SuperHyperPath(-/SuperHyperK-Domination, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the Neutrosophic SuperHyperK-Domination or the Neutrosophic SuperHyperK-Domination in those Neutrosophic Neutrosophic SuperHyperModels.*

Some cells have been faced with some attacks from the situation which is caused by the cancer's attacks. In this case, there are some embedded analysis on the ongoing situations which in that, the cells could be labelled as some groups and some groups or individuals have excessive labels which all are raised from the behaviors to overcome the cancer's attacks. In the embedded situations, the individuals of cells and the groups of cells could be considered as "new groups". Thus it motivates us to find the proper SuperHyperModels for getting more

proper analysis on this messy story. I've found the SuperHyperModels which are officially called "SuperHyperGraphs" and "Neutrosophic SuperHyperGraphs". In this SuperHyperModel, the cells and the groups of cells are defined as "SuperHyperVertices" and the relations between the individuals of cells and the groups of cells are defined as "SuperHyperEdges". Thus it's another motivation for us to do research on this SuperHyperModel based on the "Cancer's Recognition". Sometimes, the situations get worst. The situation is passed from the certainty and precise style. Thus it's the beyond them. There are three descriptions, namely, the degrees of determinacy, indeterminacy and neutrality, for any object based on vague forms, namely, incomplete data, imprecise data, and uncertain analysis. The latter model could be considered on the previous SuperHyperModel. It's SuperHyperModel. It's SuperHyperGraph but it's officially called "Neutrosophic SuperHyperGraphs". The cancer is the disease but the model is going to figure out what's going on this phenomenon. The special case of this disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The recognition of the cancer could help to find some treatments for this disease. The SuperHyperGraph and Neutrosophic SuperHyperGraph are the SuperHyperModels on the "Cancer's Recognition" and both bases are the background of this research. Sometimes the cancer has been happened on the region, full of cells, groups of cells and embedded styles. In this segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities of the moves of the cancer in the forms of alliances' styles with the formation of the design and the architecture are formally called "SuperHyperK-Domination" in the themes of jargons and buzzwords. The prefix "SuperHyper" refers to the theme of the embedded styles to figure out the background for the SuperHyperNotions. The recognition of the cancer in the long-term function. The specific region has been assigned by the model [it's called SuperHyperGraph] and the long cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Neutrosophic SuperHyperGraph] to have convenient perception on what's happened and what's done. There are some specific models, which are well-known and they've got the names, and some general models. The moves and the traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by a Neutrosophic SuperHyperPath (-/SuperHyperK-Domination, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the optimal SuperHyperK-Domination or the Neutrosophic SuperHyperK-Domination in those Neutrosophic SuperHyperModels. Some general results are introduced. Beyond that in SuperHyperStar, all possible Neutrosophic SuperHyperPath s have only two SuperHyperEdges but it's not enough since it's essential to have at least three SuperHyperEdges to form any style of a SuperHyperK-Domination. There isn't any formation of any SuperHyperK-Domination but literarily, it's the deformation of any SuperHyperK-Domination. It, literarily, deforms and it doesn't form.

Question 24.0.1. *How to define the SuperHyperNotions and to do research on them to find the "amount of SuperHyperK-Domination" of either individual of cells or the groups of cells based on the fixed cell or the fixed group of cells, extensively, the "amount of SuperHyperK-Domination" based on the fixed groups of cells or the fixed groups of group of cells?*

Question 24.0.2. *What are the best descriptions for the "Cancer's Recognition" in terms of these messy and dense SuperHyperModels where embedded notions are illustrated?*

*It's motivation to find notions to use in this dense model is titled "SuperHyperGraphs". Thus 5259
it motivates us to define different types of " SuperHyperK-Domination" and "Neutrosophic 5260
SuperHyperK-Domination" on "SuperHyperGraph" and "Neutrosophic SuperHyperGraph". Then 5261
the research has taken more motivations to define SuperHyperClasses and to find some 5262
connections amid this SuperHyperNotion with other SuperHyperNotions. It motivates us to get 5263
some instances and examples to make clarifications about the framework of this research. The 5264
general results and some results about some connections are some avenues to make key point of 5265
this research, "Cancer's Recognition", more understandable and more clear. 5266
Some SuperHyperClasses and some Neutrosophic SuperHyperClasses are the cases of this 5267
research on the modeling of the regions where are under the attacks of the cancer to 5268
recognize this disease as it's mentioned on the title "Cancer's Recognitions". To formalize 5269
the instances on the SuperHyperNotion, SuperHyperK-Domination, the new SuperHyperClasses 5270
and SuperHyperClasses, are introduced. Some general results are gathered in the section on the 5271
SuperHyperK-Domination and the Neutrosophic SuperHyperK-Domination. The clarifications, 5272
instances and literature reviews have taken the whole way through. In this scientific research, 5273
the literature reviews have fulfilled the lines containing the notions and the results. The 5274
SuperHyperGraph and Neutrosophic SuperHyperGraph are the SuperHyperModels on the 5275
"Cancer's Recognitions" and both bases are the background of this research. Sometimes the 5276
cancer has been happened on the region, full of cells, groups of cells and embedded styles. In 5277
this scientific segment, the SuperHyperModel proposes some SuperHyperNotions based on the 5278
connectivities of the moves of the cancer in the longest and strongest styles with the formation 5279
of the design and the architecture are formally called " SuperHyperK-Domination" in the themes 5280
of jargons and buzzwords. The prefix "SuperHyper" refers to the theme of the embedded styles to 5281
figure out the background for the SuperHyperNotions. 5282*

Neutrosophic Eulerian-Cycle-Decomposition

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- Henry Garrett, "New Ideas On Super Mixed-Devastations By Hyper Decisions Of SuperHyperDuality In Cancer's Neutrosophic Recognition and Neutrosophic SuperHyperGraph", ResearchGate 2023, (doi: 10.13140/RG.2.2.34953.52320). 5286
- Henry Garrett, "New Ideas In Cancer's Recognition As (Neutrosophic) SuperHyperGraph By SuperHyperDuality As Hyper Imaginations On Super Mixed-Illustrations", ResearchGate 2023, (doi: 10.13140/RG.2.2.33275.80161). 5287
- Henry Garrett, "New Ideas In Cancer's Recognition And Neutrosophic SuperHyperGraph By SuperHyperJoin As Hyper Separations On Super Sorts", ResearchGate 2023, (doi: 10.13140/RG.2.2.11050.90569). 5288
- Henry Garrett, "New Ideas On Super connections By Hyper disconnections Of SuperHyperJoin In Cancer's Recognition with (Neutrosophic) SuperHyperGraph", ResearchGate 2023, (doi: 10.13140/RG.2.2.17761.79206). 5289
- Henry Garrett, "New Ideas In Cancer's Recognition And Neutrosophic SuperHyperGraph By SuperHyperPerfect As Hyper Idealism On Super Vacancy", ResearchGate 2023, (doi: 10.13140/RG.2.2.19911.37285). 5290
- Henry Garrett, "New Ideas On Super Isolation By Hyper Perfectness Of SuperHyperPerfect In Cancer's Recognition with (Neutrosophic) SuperHyperGraph", ResearchGate 2023, (doi: 10.13140/RG.2.2.23266.81602). 5291
- Henry Garrett, "New Ideas In Cancer's Recognition And Neutrosophic SuperHyperGraph By SuperHyperTotal As Hyper Covering On Super Infections", ResearchGate 2023, (doi: 10.13140/RG.2.2.19360.87048). 5292
- Henry Garrett, "New Ideas On Super Extremism By Hyper Treatments Of SuperHyperTotal In Cancer's Recognition with (Neutrosophic) SuperHyperGraph", ResearchGate 2023, (doi: 10.13140/RG.2.2.32363.21286). 5293
- Henry Garrett, "New Ideas In Cancer's Recognition And Neutrosophic SuperHyperGraph By SuperHyperConnected As Hyper Group On Super Surge", ResearchGate 2023, (doi: 10.13140/RG.2.2.11758.69441). 5294
- Henry Garrett, "New Ideas On Super Outbreak By Hyper Collections Of SuperHyperConnected In Cancer's Recognition With (Neutrosophic) SuperHyperGraph", ResearchGate 2023, (doi: 10.13140/RG.2.2.31891.35367). 5295
- Henry Garrett, "New Ideas In Cancer's Recognition And Neutrosophic SuperHyperGraph 5296

*By SuperHyperDominating As Hyper Closing On Super Messy”, ResearchGate 2023, (doi: 5317
10.13140/RG.2.2.21510.45125).* 5318

*Henry Garrett, “New Ideas On Super Missing By Hyper Searching Of SuperHyperDominating 5319
In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 5320
10.13140/RG.2.2.13121.84321).* 5321

CHAPTER 26

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New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decomensation

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CHAPTER 27

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ABSTRACT

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*In this scientific research, (Different Neutrosophic Types of Neutrosophic SuperHyperEulerian- 5329
Cycle-Decomposition). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a Eulerian-Cycle- 5330
Decomposition pair $S = (V, E)$. Consider a Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and 5331
 $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called Neutrosophic e-SuperHyperEulerian-Cycle- 5332
Decomposition if the following expression is called Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition 5333
criteria holds 5334*

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

*Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition if the following expression is called Neutro- 5335
sophic e-SuperHyperEulerian-Cycle-Decomposition criteria holds 5336*

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

*and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; Neutrosophic v- 5337
SuperHyperEulerian-Cycle-Decomposition if the following expression is called Neutrosophic v- 5338
SuperHyperEulerian-Cycle-Decomposition criteria holds 5339*

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

*Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition if the following expression is called Neutro- 5340
sophic v-SuperHyperEulerian-Cycle-Decomposition criteria holds 5341*

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; *Neutrosophic* 5342
SuperHyperEulerian-Cycle-Decomposition if it's either of *Neutrosophic e-SuperHyperEulerian-Cycle-* 5343
Decomposition, *Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition*, *Neutrosophic v-SuperHyperEulerian-* 5344
Cycle-Decomposition, and *Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition*. ((*Neutrosophic*) 5345
SuperHyperEulerian-Cycle-Decomposition). Assume a *Neutrosophic SuperHyperGraph (NSHG)* S 5346
 is a pair $S = (V, E)$. Consider a *Neutrosophic SuperHyperEdge (NSHE)* $E = \{V_1, V_2, \dots, V_s\}$. 5347
 Then E is called an *Extreme SuperHyperEulerian-Cycle-Decomposition* if it's either of *Neutro-* 5348
sophic e-SuperHyperEulerian-Cycle-Decomposition, *Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition*, 5349
Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and *Neutrosophic rv-SuperHyperEulerian-Cycle-* 5350
Decomposition and $C(NSHG)$ for an *Extreme SuperHyperGraph NSHG* : (V, E) is the maximum 5351
Extreme cardinality of an *Extreme SuperHyperSet* S of high *Extreme cardinality* of the 5352
Extreme SuperHyperEdges in the *conseNeighborive Extreme* sequence of *Extreme SuperHy-* 5353
perEdges and *Extreme SuperHyperVertices* such that they form the *Extreme SuperHyperEulerian-* 5354
Cycle-Decomposition; a *Neutrosophic SuperHyperEulerian-Cycle-Decomposition* if it's either of *Neutro-* 5355
sophic e-SuperHyperEulerian-Cycle-Decomposition, *Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition*, 5356
Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and *Neutrosophic rv-SuperHyperEulerian-Cycle-* 5357
Decomposition and $C(NSHG)$ for a *Neutrosophic SuperHyperGraph NSHG* : (V, E) is the 5358
 maximum *Neutrosophic cardinality* of the *Neutrosophic SuperHyperEdges* of a *Neutrosophic* 5359
SuperHyperSet S of high *Neutrosophic cardinality* *conseNeighborive Neutrosophic Super-* 5360
HyperEdges and *Neutrosophic SuperHyperVertices* such that they form the *Neutrosophic* 5361
SuperHyperEulerian-Cycle-Decomposition; an *Extreme SuperHyperEulerian-Cycle-Decomposition SuperHyper-* 5362
Polynomial if it's either of *Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition*, *Neutrosophic* 5363
re-SuperHyperEulerian-Cycle-Decomposition, *Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition*, and 5364
Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $C(NSHG)$ for an *Extreme Super-* 5365
HyperGraph NSHG : (V, E) is the *Extreme SuperHyperPolynomial* contains the *Extreme* 5366
 coefficients defined as the *Extreme number* of the maximum *Extreme cardinality* of the 5367
Extreme SuperHyperEdges of an *Extreme SuperHyperSet* S of high *Extreme cardinality* *conse-* 5368
Neighborive Extreme SuperHyperEdges and *Extreme SuperHyperVertices* such that they 5369
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$s \in S$: there are $|S \cap N(s)| > |S \cap (V \setminus N(s))| + \delta$; and $|S \cap N(s)| < |S \cap (V \setminus N(s))| + \delta$. The
 first Expression, holds if S is an δ -SuperHyperOffensive. And the second Expression, holds
 if S is an δ -SuperHyperDefensive; a Neutrosophic δ -SuperHyperEulerian-Cycle-Decomposition is a
 maximal Neutrosophic of SuperHyperVertices with maximum Neutrosophic cardinality such
 that either of the following expressions hold for the Neutrosophic cardinalities of SuperHy-
 perNeighbors of $s \in S$ there are: $|S \cap N(s)|_{\text{Neutrosophic}} > |S \cap (V \setminus N(s))|_{\text{Neutrosophic}} + \delta$;
 and $|S \cap N(s)|_{\text{Neutrosophic}} < |S \cap (V \setminus N(s))|_{\text{Neutrosophic}} + \delta$. The first Expression, holds
 if S is a Neutrosophic δ -SuperHyperOffensive. And the second Expression, holds if S is
 a Neutrosophic δ -SuperHyperDefensive It's useful to define a "Neutrosophic" version of
 a SuperHyperEulerian-Cycle-Decomposition . Since there's more ways to get type-results to make a
 SuperHyperEulerian-Cycle-Decomposition more understandable. For the sake of having Neutrosophic
 SuperHyperEulerian-Cycle-Decomposition, there's a need to "redefine" the notion of a "SuperHyperEulerian-
 Cycle-Decomposition ". The SuperHyperVertices and the SuperHyperEdges are assigned by the labels
 from the letters of the alphabets. In this procedure, there's the usage of the position of labels to
 assign to the values. Assume a SuperHyperEulerian-Cycle-Decomposition . It's redefined a Neutrosophic
 SuperHyperEulerian-Cycle-Decomposition if the mentioned Table holds, concerning, "The Values of
 Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic
 SuperHyperGraph" with the key points, "The Values of The Vertices & The Number of
 Position in Alphabet", "The Values of The SuperVertices&The maximum Values of Its Ver-
 tices", "The Values of The Edges&The maximum Values of Its Vertices", "The Values of The
 HyperEdges&The maximum Values of Its Vertices", "The Values of The SuperHyperEdges&The
 maximum Values of Its Endpoints". To get structural examples and instances, I'm going to intro-
 duce the next SuperHyperClass of SuperHyperGraph based on a SuperHyperEulerian-Cycle-Decomposition
 . It's the main. It'll be disciplinary to have the foundation of previous definition in the kind
 of SuperHyperClass. If there's a need to have all SuperHyperEulerian-Cycle-Decomposition until the
 SuperHyperEulerian-Cycle-Decomposition, then it's officially called a "SuperHyperEulerian-Cycle-Decomposition"
 but otherwise, it isn't a SuperHyperEulerian-Cycle-Decomposition . There are some instances about the
 clarifications for the main definition titled a "SuperHyperEulerian-Cycle-Decomposition ". These two
 examples get more scrutiny and discernment since there are characterized in the disciplinary ways
 of the SuperHyperClass based on a SuperHyperEulerian-Cycle-Decomposition . For the sake of having
 a Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to "redefine" the notion of a
 "Neutrosophic SuperHyperEulerian-Cycle-Decomposition" and a "Neutrosophic SuperHyperEulerian-Cycle-
 Decomposition ". The SuperHyperVertices and the SuperHyperEdges are assigned by the labels from
 the letters of the alphabets. In this procedure, there's the usage of the position of labels to assign to
 the values. Assume a Neutrosophic SuperHyperGraph. It's redefined "Neutrosophic SuperHyper-
 Graph" if the intended Table holds. And a SuperHyperEulerian-Cycle-Decomposition are redefined to a
 "Neutrosophic SuperHyperEulerian-Cycle-Decomposition" if the intended Table holds. It's useful to define
 "Neutrosophic" version of SuperHyperClasses. Since there's more ways to get Neutrosophic type-
 results to make a Neutrosophic SuperHyperEulerian-Cycle-Decomposition more understandable. Assume
 a Neutrosophic SuperHyperGraph. There are some Neutrosophic SuperHyperClasses if the in-
 tended Table holds. Thus SuperHyperPath, SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar,
 SuperHyperBipartite, SuperHyperMultiPartite, and SuperHyperWheel, are "Neutrosophic
 SuperHyperPath", "Neutrosophic SuperHyperEulerian-Cycle-Decomposition", "Neutrosophic SuperHy-
 perStar", "Neutrosophic SuperHyperBipartite", "Neutrosophic SuperHyperMultiPartite", and
 "Neutrosophic SuperHyperWheel" if the intended Table holds. A SuperHyperGraph has a "Neut-
 rosophic SuperHyperEulerian-Cycle-Decomposition" where it's the strongest [the maximum Neutrosophic

value from all the SuperHyperEulerian-Cycle-Decomposition amid the maximum value amid all SuperHyperVertices from a SuperHyperEulerian-Cycle-Decomposition .] SuperHyperEulerian-Cycle-Decomposition . 5480
A graph is a SuperHyperUniform if it's a SuperHyperGraph and the number of elements of SuperHyperEdges are the same. Assume a Neutrosophic SuperHyperGraph. There are some SuperHyperClasses as follows. It's SuperHyperPath if it's only one SuperVertex as intersection amid two given SuperHyperEdges with two exceptions; it's SuperHyperEulerian-Cycle-Decomposition if it's only one SuperVertex as intersection amid two given SuperHyperEdges; it's SuperHyperStar if it's only one SuperVertex as intersection amid all SuperHyperEdges; it's SuperHyperBipartite if it's only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming two separate sets, has no SuperHyperEdge in common; it's SuperHyperMultiPartite if it's only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming multi separate sets, has no SuperHyperEdge in common; it's a SuperHyperWheel if it's only one SuperVertex as intersection amid two given SuperHyperEdges and one SuperVertex has one SuperHyperEdge with any common SuperVertex. The SuperHyperModel proposes the specific designs and the specific architectures. The SuperHyperModel is officially called "SuperHyperGraph" and "Neutrosophic SuperHyperGraph". In this SuperHyperModel, The "specific" cells and "specific group" of cells are SuperHyperModeled as "SuperHyperVertices" and the common and intended properties between "specific" cells and "specific group" of cells are SuperHyperModeled as "SuperHyperEdges". Sometimes, it's useful to have some degrees of determinacy, indeterminacy, and neutrality to have more precise SuperHyperModel which in this case the SuperHyperModel is called "Neutrosophic". In the future research, the foundation will be based on the "Cancer's Recognition" and the results and the definitions will be introduced in redeemed ways. The recognition of the cancer in the long-term function. The specific region has been assigned by the model [it's called SuperHyperGraph] and the long cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Neutrosophic SuperHyperGraph] to have convenient perception on what's happened and what's done. There are some specific models, which are well-known and they've got the names, and some SuperHyperGeneral SuperHyperModels. The moves and the traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by a Neutrosophic SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the longest SuperHyperEulerian-Cycle-Decomposition or the strongest SuperHyperEulerian-Cycle-Decomposition in those Neutrosophic SuperHyperModels. For the longest SuperHyperEulerian-Cycle-Decomposition, called SuperHyperEulerian-Cycle-Decomposition, and the strongest SuperHyperEulerian-Cycle-Decomposition, called Neutrosophic SuperHyperEulerian-Cycle-Decomposition, some general results are introduced. Beyond that in SuperHyperStar, all possible SuperHyperPaths have only two SuperHyperEdges but it's not enough since it's essential to have at least three SuperHyperEdges to form any style of a SuperHyperEulerian-Cycle-Decomposition. There isn't any formation of any SuperHyperEulerian-Cycle-Decomposition but literarily, it's the deformation of any SuperHyperEulerian-Cycle-Decomposition. It, literarily, deforms and it doesn't form. A basic familiarity with Neutrosophic SuperHyperEulerian-Cycle-Decomposition theory, SuperHyperGraphs, and Neutrosophic SuperHyperGraphs theory are proposed. 5481
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Keywords: Neutrosophic SuperHyperGraph, SuperHyperEulerian-Cycle-Decomposition, Cancer's 5524

Applied Notions Under The Scrutiny Of The Motivation Of This Scientific Research

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In this scientific research, there are some ideas in the featured frameworks of motivations. I try to bring the motivations in the narrative ways. Some cells have been faced with some attacks from the situation which is caused by the cancer's attacks. In this case, there are some embedded analysis on the ongoing situations which in that, the cells could be labelled as some groups and some groups or individuals have excessive labels which all are raised from the behaviors to overcome the cancer's attacks. In the embedded situations, the individuals of cells and the groups of cells could be considered as "new groups". Thus it motivates us to find the proper SuperHyperModels for getting more proper analysis on this messy story. I've found the SuperHyperModels which are officially called "SuperHyperGraphs" and "Neutrosophic SuperHyperGraphs". In this SuperHyperModel, the cells and the groups of cells are defined as "SuperHyperVertices" and the relations between the individuals of cells and the groups of cells are defined as "SuperHyperEdges". Thus it's another motivation for us to do research on this SuperHyperModel based on the "Cancer's Recognition". Sometimes, the situations get worst. The situation is passed from the certainty and precise style. Thus it's the beyond them. There are three descriptions, namely, the degrees of determinacy, indeterminacy and neutrality, for any object based on vague forms, namely, incomplete data, imprecise data, and uncertain analysis. The latter model could be considered on the previous SuperHyperModel. It's SuperHyperModel. It's SuperHyperGraph but it's officially called "Neutrosophic SuperHyperGraphs". The cancer is the disease but the model is going to figure out what's going on this phenomenon. The special case of this disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The recognition of the cancer could help to find some treatments for this disease. The SuperHyperGraph and Neutrosophic SuperHyperGraph are the SuperHyperModels on the "Cancer's Recognition" and both bases are the background of this research. Sometimes the cancer has been happened on the region, full of cells, groups of cells and embedded styles. In this segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities of the moves of the cancer in the forms of alliances' styles with the formation of the design and the architecture are formally called "SuperHyperEulerian-Cycle-Decomposition" in the themes of jargons and buzzwords. The prefix "SuperHyper" refers to the

theme of the embedded styles to figure out the background for the SuperHyperNotions. The recognition of the cancer in the long-term function. The specific region has been assigned by the model [it's called SuperHyperGraph] and the long cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Neutrosophic SuperHyperGraph] to have convenient perception on what's happened and what's done. There are some specific models, which are well-known and they've got the names, and some general models. The moves and the traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by a Neutrosophic SuperHyperPath (-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the optimal SuperHyperEulerian-Cycle-Decomposition or the Neutrosophic SuperHyperEulerian-Cycle-Decomposition in those Neutrosophic SuperHyperModels. Some general results are introduced. Beyond that in SuperHyperStar, all possible Neutrosophic SuperHyperPath s have only two SuperHyperEdges but it's not enough since it's essential to have at least three SuperHyperEdges to form any style of a SuperHyperEulerian-Cycle-Decomposition. There isn't any formation of any SuperHyperEulerian-Cycle-Decomposition but literarily, it's the deformation of any SuperHyperEulerian-Cycle-Decomposition. It, literarily, deforms and it doesn't form.

Question 28.0.1. How to define the SuperHyperNotions and to do research on them to find the “amount of SuperHyperEulerian-Cycle-Decomposition” of either individual of cells or the groups of cells based on the fixed cell or the fixed group of cells, extensively, the “amount of SuperHyperEulerian-Cycle-Decomposition” based on the fixed groups of cells or the fixed groups of group of cells?

Question 28.0.2. What are the best descriptions for the “Cancer's Recognition” in terms of these messy and dense SuperHyperModels where embedded notions are illustrated?

It's motivation to find notions to use in this dense model is titled “SuperHyperGraphs”. Thus it motivates us to define different types of “SuperHyperEulerian-Cycle-Decomposition” and “Neutrosophic SuperHyperEulerian-Cycle-Decomposition” on “SuperHyperGraph” and “Neutrosophic SuperHyperGraph”. Then the research has taken more motivations to define SuperHyperClasses and to find some connections amid this SuperHyperNotion with other SuperHyperNotions. It motivates us to get some instances and examples to make clarifications about the framework of this research. The general results and some results about some connections are some avenues to make key point of this research, “Cancer's Recognition”, more understandable and more clear. The framework of this research is as follows. In the beginning, I introduce basic definitions to clarify about preliminaries. In the subsection “Preliminaries”, initial definitions about SuperHyperGraphs and Neutrosophic SuperHyperGraph are deeply-introduced and in-depth-discussed. The elementary concepts are clarified and illustrated completely and sometimes review literature are applied to make sense about what's going to figure out about the upcoming sections. The main definitions and their clarifications alongside some results about new notions, SuperHyperEulerian-Cycle-Decomposition and Neutrosophic SuperHyperEulerian-Cycle-Decomposition, are figured out in sections “SuperHyperEulerian-Cycle-Decomposition” and “Neutrosophic SuperHyperEulerian-Cycle-Decomposition”. In the sense of tackling on getting results and in Eulerian-Cycle-Decomposition to make sense about continuing the research, the ideas of SuperHyperUniform and Neutrosophic SuperHyperUniform are introduced and as their consequences, corresponded SuperHyperClasses are figured out to debut what's done in this section, titled “Results on SuperHyperClasses” and “Results on Neutrosophic SuperHyperClasses”. As going back to origin of the notions, there are some smart steps toward

the common notions to extend the new notions in new frameworks, SuperHyperGraph and 5605
Neutrosophic SuperHyperGraph, in the sections “Results on SuperHyperClasses” and “Results 5606
on Neutrosophic SuperHyperClasses”. The starter research about the general SuperHyperRela- 5607
tions and as concluding and closing section of theoretical research are contained in the section 5608
“General Results”. Some general SuperHyperRelations are fundamental and they are well-known 5609
as fundamental SuperHyperNotions as elicited and discussed in the sections, “General Results”, 5610
“ SuperHyperEulerian-Cycle-Decomposition ”, “Neutrosophic SuperHyperEulerian-Cycle-Decomposition ”, “Results 5611
on SuperHyperClasses” and “Results on Neutrosophic SuperHyperClasses”. There are curious 5612
questions about what’s done about the SuperHyperNotions to make sense about excellency of this 5613
research and going to figure out the word “best” as the description and adjective for this research 5614
as presented in section, “ SuperHyperEulerian-Cycle-Decomposition ”. The keyword of this research debut 5615
in the section “Applications in Cancer’s Recognition” with two cases and subsections “Case 5616
1: The Initial Steps Toward SuperHyperBipartite as SuperHyperModel” and “Case 2: The 5617
Increasing Steps Toward SuperHyperMultipartite as SuperHyperModel”. In the section, “Open 5618
Problems”, there are some scrutiny and discernment on what’s done and what’s happened in this 5619
research in the terms of “questions” and “problems” to make sense to figure out this research 5620
in featured style. The advantages and the limitations of this research alongside about what’s 5621
done in this research to make sense and to get sense about what’s figured out are included in the 5622
section, “Conclusion and Closing Remarks”. 5623

Neutrosophic Preliminaries Of This Scientific Research On the Redeemed Ways

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In this section, the basic material in this scientific research, is referred to [Single Valued Neutrosophic Set](Ref.[HG38],Definition 2.2,p.2), [Neutrosophic Set](Ref.[HG38],Definition 2.1,p.1), [Neutrosophic SuperHyperGraph (NSHG)](Ref.[HG38],Definition 2.5,p.2), [Characterization of the Neutrosophic SuperHyperGraph (NSHG)](Ref.[HG38],Definition 2.7,p.3), [t-norm](Ref.[HG38], Definition 2.7, p.3), and [Characterization of the Neutrosophic SuperHyperGraph (NSHG)](Ref.[HG38],Definition 2.7,p.3), [Neutrosophic Strength of the Neutrosophic SuperHyperPaths] (Ref.[HG38],Definition 5.3,p.7), and [Different Neutrosophic Types of Neutrosophic SuperHyperEdges (NSHE)] (Ref.[HG38],Definition 5.4,p.7). Also, the new ideas and their clarifications are addressed to Ref.[HG38].

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Definition 29.0.1 (Neutrosophic Set). (Ref.[HG38],Definition 2.1,p.1).

Let X be a Eulerian-Cycle-Decomposition of points (objects) with generic elements in X denoted by x ; then the **Neutrosophic set** A (NS A) is an object having the form

$$A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$$

where the functions $T, I, F : X \rightarrow]-0, 1^+[$ define respectively the a **truth-membership function**, an **indeterminacy-membership function**, and a **falsity-membership function** of the element $x \in X$ to the set A with the condition

$$-0 \leq T_A(x) + I_A(x) + F_A(x) \leq 3^+.$$

The functions $T_A(x), I_A(x)$ and $F_A(x)$ are real standard or nonstandard subsets of $]-0, 1^+[$. 5639

Definition 29.0.2 (Single Valued Neutrosophic Set). (Ref.[HG38],Definition 2.2,p.2).

Let X be a Eulerian-Cycle-Decomposition of points (objects) with generic elements in X denoted by x . A **single valued Neutrosophic set** A (SVNS A) is characterized by truth-membership function $T_A(x)$, an indeterminacy-membership function $I_A(x)$, and a falsity-membership function $F_A(x)$. For each point x in X , $T_A(x), I_A(x), F_A(x) \in [0, 1]$. A SVNS A can be written as

$$A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}.$$

Definition 29.0.3. The **degree of truth-membership, indeterminacy-membership** and **falsity-membership of the subset** $X \subset A$ of the single valued Neutrosophic set $A = \{< x : T_A(x), I_A(x), F_A(x) >, x \in X\}$:

$$T_A(X) = \min[T_A(v_i), T_A(v_j)]_{v_i, v_j \in X},$$

$$I_A(X) = \min[I_A(v_i), I_A(v_j)]_{v_i, v_j \in X},$$

$$\text{and } F_A(X) = \min[F_A(v_i), F_A(v_j)]_{v_i, v_j \in X}.$$

Definition 29.0.4. The **support** of $X \subset A$ of the single valued Neutrosophic set $A = \{< x : T_A(x), I_A(x), F_A(x) >, x \in X\}$:

$$\text{supp}(X) = \{x \in X : T_A(x), I_A(x), F_A(x) > 0\}.$$

Definition 29.0.5 (Neutrosophic SuperHyperGraph (NSHG)). (**Ref.**[HG38], Definition 2.5, p.2). 5640
 Assume V' is a given set. a **Neutrosophic SuperHyperGraph** (NSHG) S is a pair $S = (V, E)$, 5641
 where 5642

- (i) $V = \{V_1, V_2, \dots, V_n\}$ a finite set of finite single valued Neutrosophic subsets of V' ; 5643
- (ii) $V = \{(V_i, T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i)) : T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i) \geq 0\}$, $(i = 1, 2, \dots, n)$; 5644
- (iii) $E = \{E_1, E_2, \dots, E_{n'}\}$ a finite set of finite single valued Neutrosophic subsets of V ; 5645
- (iv) $E = \{(E_{i'}, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'})) : T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}) \geq 0\}$, $(i' = 1, 2, \dots, n')$; 5646
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- (v) $V_i \neq \emptyset$, $(i = 1, 2, \dots, n)$; 5648
- (vi) $E_{i'} \neq \emptyset$, $(i' = 1, 2, \dots, n')$; 5649
- (vii) $\sum_i \text{supp}(V_i) = V$, $(i = 1, 2, \dots, n)$; 5650
- (viii) $\sum_{i'} \text{supp}(E_{i'}) = V$, $(i' = 1, 2, \dots, n')$; 5651
- (ix) and the following conditions hold:

$$T'_V(E_{i'}) \leq \min[T_{V'}(V_i), T_{V'}(V_j)]_{V_i, V_j \in E_{i'}},$$

$$I'_V(E_{i'}) \leq \min[I_{V'}(V_i), I_{V'}(V_j)]_{V_i, V_j \in E_{i'}},$$

$$\text{and } F'_V(E_{i'}) \leq \min[F_{V'}(V_i), F_{V'}(V_j)]_{V_i, V_j \in E_{i'}}$$

where $i' = 1, 2, \dots, n'$. 5652

Here the Neutrosophic SuperHyperEdges (NSHE) $E_{j'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_j are single valued Neutrosophic sets. $T_{V'}(V_i)$, $I_{V'}(V_i)$, and $F_{V'}(V_i)$ denote the 5653
 degree of truth-membership, the degree of indeterminacy-membership and the degree of 5654
 falsity-membership the Neutrosophic SuperHyperVertex (NSHV) V_i to the Neutrosophic 5655
 SuperHyperVertex (NSHV) V . $T'_V(E_{i'})$, $I'_V(E_{i'})$, and $F'_V(E_{i'})$ denote the degree of truth- 5656
 membership, the degree of indeterminacy-membership and the degree of falsity-membership of 5657
 the Neutrosophic SuperHyperEdge (NSHE) $E_{i'}$ to the Neutrosophic SuperHyperEdge (NSHE) 5658
 E . Thus, the ii' th element of the **incidence matrix** of Neutrosophic SuperHyperGraph (NSHG) 5659
 are of the form $(V_i, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}))$, the sets V and E are crisp sets. 5660
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Definition 29.0.6 (Characterization of the Neutrosophic SuperHyperGraph (NSHG)). (Ref.[HG38], Definition 2.7, p.3). 5662

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. The Neutrosophic SuperHyperEdges (NSHE) $E_{i'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_i of Neutrosophic SuperHyperGraph (NSHG) $S = (V, E)$ could be characterized as follow-up items. 5664

(i) If $|V_i| = 1$, then V_i is called **vertex**; 5667

(ii) if $|V_i| \geq 1$, then V_i is called **SuperVertex**; 5668

(iii) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **edge**; 5669

(iv) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **HyperEdge**; 5670

(v) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **SuperEdge**; 5671

(vi) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **SuperHyperEdge**. 5674

If we choose different types of binary operations, then we could get hugely diverse types of general forms of Neutrosophic SuperHyperGraph (NSHG). 5675

Definition 29.0.7 (t-norm). (Ref.[HG38], Definition 2.7, p.3). 5677

A binary operation $\otimes : [0, 1] \times [0, 1] \rightarrow [0, 1]$ is a **t-norm** if it satisfies the following for $x, y, z, w \in [0, 1]$: 5678

(i) $1 \otimes x = x$; 5680

(ii) $x \otimes y = y \otimes x$; 5681

(iii) $x \otimes (y \otimes z) = (x \otimes y) \otimes z$; 5682

(iv) If $w \leq x$ and $y \leq z$ then $w \otimes y \leq x \otimes z$. 5683

Definition 29.0.8. The **degree of truth-membership, indeterminacy-membership and falsity-membership of the subset** $X \subset A$ of the single valued Neutrosophic set $A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$ (with respect to t-norm T_{norm}):

$$T_A(X) = T_{norm}[T_A(v_i), T_A(v_j)]_{v_i, v_j \in X},$$

$$I_A(X) = T_{norm}[I_A(v_i), I_A(v_j)]_{v_i, v_j \in X},$$

$$\text{and } F_A(X) = T_{norm}[F_A(v_i), F_A(v_j)]_{v_i, v_j \in X}.$$

Definition 29.0.9. The **support** of $X \subset A$ of the single valued Neutrosophic set $A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$:

$$\text{supp}(X) = \{x \in X : T_A(x), I_A(x), F_A(x) > 0\}.$$

Definition 29.0.10. (General Forms of Neutrosophic SuperHyperGraph (NSHG)). 5684

Assume V' is a given set. a **Neutrosophic SuperHyperGraph** (NSHG) S is a pair $S = (V, E)$, where 5685

- (i) $V = \{V_1, V_2, \dots, V_n\}$ a finite set of finite single valued Neutrosophic subsets of V' ; 5687
- (ii) $V = \{(V_i, T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i)) : T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i) \geq 0\}$, $(i = 1, 2, \dots, n)$; 5688
- (iii) $E = \{E_1, E_2, \dots, E_{n'}\}$ a finite set of finite single valued Neutrosophic subsets of V ; 5689
- (iv) $E = \{(E_{i'}, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'})) : T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}) \geq 0\}$, $(i' = 1, 2, \dots, n')$; 5690
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- (v) $V_i \neq \emptyset$, $(i = 1, 2, \dots, n)$; 5692
- (vi) $E_{i'} \neq \emptyset$, $(i' = 1, 2, \dots, n')$; 5693
- (vii) $\sum_i \text{supp}(V_i) = V$, $(i = 1, 2, \dots, n)$; 5694
- (viii) $\sum_{i'} \text{supp}(E_{i'}) = V$, $(i' = 1, 2, \dots, n')$. 5695

Here the Neutrosophic SuperHyperEdges (NSHE) $E_{j'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_j are single valued Neutrosophic sets. $T_{V'}(V_i)$, $I_{V'}(V_i)$, and $F_{V'}(V_i)$ denote the degree of truth-membership, the degree of indeterminacy-membership and the degree of falsity-membership the Neutrosophic SuperHyperVertex (NSHV) V_i to the Neutrosophic SuperHyperVertex (NSHV) V . $T'_V(E_{i'})$, $I'_V(E_{i'})$, and $F'_V(E_{i'})$ denote the degree of truth-membership, the degree of indeterminacy-membership and the degree of falsity-membership of the Neutrosophic SuperHyperEdge (NSHE) $E_{i'}$ to the Neutrosophic SuperHyperEdge (NSHE) E . Thus, the ii' 'th element of the **incidence matrix** of Neutrosophic SuperHyperGraph (NSHG) are of the form $(V_i, T'_V(E_{i'}), I'_V(E_{i'}), F'_V(E_{i'}))$, the sets V and E are crisp sets. 5700
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Definition 29.0.11 (Characterization of the Neutrosophic SuperHyperGraph (NSHG)). (Ref.[HG38], Definition 2.7,p.3). 5705
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Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. The Neutrosophic SuperHyperEdges (NSHE) $E_{i'}$ and the Neutrosophic SuperHyperVertices (NSHV) V_i of Neutrosophic SuperHyperGraph (NSHG) $S = (V, E)$ could be characterized as follow-up items. 5707
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- (i) If $|V_i| = 1$, then V_i is called **vertex**; 5710
- (ii) if $|V_i| \geq 1$, then V_i is called **SuperVertex**; 5711
- (iii) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **edge**; 5712
- (iv) if for all V_i s are incident in $E_{i'}$, $|V_i| = 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **HyperEdge**; 5713
- (v) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| = 2$, then $E_{i'}$ is called **SuperEdge**; 5714
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- (vi) if there's a V_i is incident in $E_{i'}$ such that $|V_i| \geq 1$, and $|E_{i'}| \geq 2$, then $E_{i'}$ is called **SuperHyperEdge**. 5716
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This SuperHyperModel is too messy and too dense. Thus there's a need to have some restrictions and conditions on SuperHyperGraph. The special case of this SuperHyperGraph makes the patterns and regularities. 5718
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Definition 29.0.12. A graph is **SuperHyperUniform** if it's SuperHyperGraph and the number of elements of SuperHyperEdges are the same. 5721
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To get more visions on SuperHyperUniform, the some SuperHyperClasses are introduced. It makes to have SuperHyperUniform more understandable.

Definition 29.0.13. Assume a Neutrosophic SuperHyperGraph. There are some SuperHyperClasses as follows.

- (i). It's **Neutrosophic SuperHyperPath** if it's only one SuperVertex as intersection amid two given SuperHyperEdges with two exceptions;
- (ii). it's **SuperHyperCycle** if it's only one SuperVertex as intersection amid two given SuperHyperEdges;
- (iii). it's **SuperHyperStar** it's only one SuperVertex as intersection amid all SuperHyperEdges;
- (iv). it's **SuperHyperBipartite** it's only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming two separate sets, has no SuperHyperEdge in common;
- (v). it's **SuperHyperMultiPartite** it's only one SuperVertex as intersection amid two given SuperHyperEdges and these SuperVertices, forming multi separate sets, has no SuperHyperEdge in common;
- (vi). it's **SuperHyperWheel** if it's only one SuperVertex as intersection amid two given SuperHyperEdges and one SuperVertex has one SuperHyperEdge with any common SuperVertex.

Definition 29.0.14. Let a pair $S = (V, E)$ be a Neutrosophic SuperHyperGraph (NSHG) S . Then a sequence of Neutrosophic SuperHyperVertices (NSHV) and Neutrosophic SuperHyperEdges (NSHE)

$$V_1, E_1, V_2, E_2, V_3, \dots, V_{s-1}, E_{s-1}, V_s$$

is called a **Neutrosophic SuperHyperPath** (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_1 to Neutrosophic SuperHyperVertex (NSHV) V_s if either of following conditions hold:

- (i) $V_i, V_{i+1} \in E_{i'}$;
- (ii) there's a vertex $v_i \in V_i$ such that $v_i, V_{i+1} \in E_{i'}$;
- (iii) there's a SuperVertex $V'_i \in V_i$ such that $V'_i, V_{i+1} \in E_{i'}$;
- (iv) there's a vertex $v_{i+1} \in V_{i+1}$ such that $V_i, v_{i+1} \in E_{i'}$;
- (v) there's a SuperVertex $V'_{i+1} \in V_{i+1}$ such that $V_i, V'_{i+1} \in E_{i'}$;
- (vi) there are a vertex $v_i \in V_i$ and a vertex $v_{i+1} \in V_{i+1}$ such that $v_i, v_{i+1} \in E_{i'}$;
- (vii) there are a vertex $v_i \in V_i$ and a SuperVertex $V'_{i+1} \in V_{i+1}$ such that $v_i, V'_{i+1} \in E_{i'}$;
- (viii) there are a SuperVertex $V'_i \in V_i$ and a vertex $v_{i+1} \in V_{i+1}$ such that $V'_i, v_{i+1} \in E_{i'}$;
- (ix) there are a SuperVertex $V'_i \in V_i$ and a SuperVertex $V'_{i+1} \in V_{i+1}$ such that $V'_i, V'_{i+1} \in E_{i'}$.

Definition 29.0.15. (Characterization of the Neutrosophic SuperHyperPaths).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. a Neutrosophic SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_1 to Neutrosophic SuperHyperVertex (NSHV) V_s is sequence of Neutrosophic SuperHyperVertices (NSHV) and Neutrosophic SuperHyperEdges (NSHE)

$$V_1, E_1, V_2, E_2, V_3, \dots, V_{s-1}, E_{s-1}, V_s,$$

could be characterized as follow-up items.

- (i) If for all $V_i, E_{j'}, |V_i| = 1, |E_{j'}| = 2$, then NSHP is called **path**;
- (ii) if for all $E_{j'}, |E_{j'}| = 2$, and there's $V_i, |V_i| \geq 1$, then NSHP is called **SuperPath**;
- (iii) if for all $V_i, E_{j'}, |V_i| = 1, |E_{j'}| \geq 2$, then NSHP is called **HyperPath**;
- (iv) if there are $V_i, E_{j'}, |V_i| \geq 1, |E_{j'}| \geq 2$, then NSHP is called **Neutrosophic SuperHyperPath**.

Definition 29.0.16 (Neutrosophic Strength of the Neutrosophic SuperHyperPaths). (Ref.[HG38], Definition 5.3,p.7).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. A Neutrosophic SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_1 to Neutrosophic SuperHyperVertex (NSHV) V_s is sequence of Neutrosophic SuperHyperVertices (NSHV) and Neutrosophic SuperHyperEdges (NSHE)

$$V_1, E_1, V_2, E_2, V_3, \dots, V_{s-1}, E_{s-1}, V_s,$$

have

- (i) **Neutrosophic t-strength** $(\min\{T(V_i)\}, m, n)_{i=1}^s$;
- (ii) **Neutrosophic i-strength** $(m, \min\{I(V_i)\}, n)_{i=1}^s$;
- (iii) **Neutrosophic f-strength** $(m, n, \min\{F(V_i)\})_{i=1}^s$;
- (iv) **Neutrosophic strength** $(\min\{T(V_i)\}, \min\{I(V_i)\}, \min\{F(V_i)\})_{i=1}^s$.

Definition 29.0.17 (Different Neutrosophic Types of Neutrosophic SuperHyperEdges (NSHE)). (Ref.[HG38], Definition 5.4,p.7).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called

- (ix) **Neutrosophic t-connective** if $T(E) \geq$ maximum number of Neutrosophic t-strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;
- (x) **Neutrosophic i-connective** if $I(E) \geq$ maximum number of Neutrosophic i-strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

(xi) **Neutrosophic f-connective** if $F(E) \geq$ maximum number of Neutrosophic f-strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

(xii) **Neutrosophic connective** if $(T(E), I(E), F(E)) \geq$ maximum number of Neutrosophic strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$.

Definition 29.0.18. (Different Neutrosophic Types of Neutrosophic SuperHyperEulerian-Cycle-Decomposition).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called

(i) **Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

(ii) **Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall E' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$;

(iii) **Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

(iv) **Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition** if the following expression is called **Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition criteria** holds

$\forall V' \in C : C$ is
a SuperHyperCycle and it has
the all number of SuperHyperEdges;

and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$;

- (v) **Neutrosophic SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition. 5794-5797

Definition 29.0.19. ((Neutrosophic) SuperHyperEulerian-Cycle-Decomposition). 5798

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 5799-5800

- (i) an **Extreme SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; 5801-5808
- (ii) a **Neutrosophic SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; 5809-5816
- (iii) an **Extreme SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; and the Extreme power is corresponded to its Extreme coefficient; 5817-5826
- (iv) a **Neutrosophic SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; and the Neutrosophic power is corresponded to its Neutrosophic coefficient; 5827-5837

- (v) an **Extreme V-SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; 5838-5845
- (vi) a **Neutrosophic V-SuperHyperEulerian-Cycle-Decomposition** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; 5846-5853
- (vii) an **Extreme V-SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperEulerian-Cycle-Decomposition; and the Extreme power is corresponded to its Extreme coefficient; 5854-5863
- (viii) a **Neutrosophic SuperHyperEulerian-Cycle-Decomposition SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic re-SuperHyperEulerian-Cycle-Decomposition, Neutrosophic v-SuperHyperEulerian-Cycle-Decomposition, and Neutrosophic rv-SuperHyperEulerian-Cycle-Decomposition and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperEulerian-Cycle-Decomposition; and the Neutrosophic power is corresponded to its Neutrosophic coefficient. 5864-5874

Definition 29.0.20. ((Extreme/Neutrosophic) δ –SuperHyperEulerian-Cycle-Decomposition). 5875
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Then 5876

- (i) an δ –**SuperHyperEulerian-Cycle-Decomposition** is a Neutrosophic kind of Neutrosophic SuperHyperEulerian-Cycle-Decomposition such that either of the following expressions hold for 5877-5878

Table 29.1: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph Mentioned in the Definition (29.0.23)

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

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the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$:

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$$\begin{aligned} |S \cap N(s)| &> |S \cap (V \setminus N(s))| + \delta; & 136EQN1 \\ |S \cap N(s)| &< |S \cap (V \setminus N(s))| + \delta. & 136EQN2 \end{aligned}$$

The Expression (29.1), holds if S is an δ -**SuperHyperOffensive**. And the Expression (29.1), holds if S is an δ -**SuperHyperDefensive**;

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(ii) a **Neutrosophic δ -SuperHyperEulerian-Cycle-Decomposition** is a Neutrosophic kind of Neutrosophic SuperHyperEulerian-Cycle-Decomposition such that either of the following Neutrosophic expressions hold for the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$:

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$$\begin{aligned} |S \cap N(s)|_{Neutrosophic} &> |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta; & 136EQN3 \\ |S \cap N(s)|_{Neutrosophic} &< |S \cap (V \setminus N(s))|_{Neutrosophic} + \delta. & 136EQN4 \end{aligned}$$

The Expression (29.1), holds if S is a **Neutrosophic δ -SuperHyperOffensive**. And the Expression (29.1), holds if S is a **Neutrosophic δ -SuperHyperDefensive**.

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For the sake of having a Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to "redefine" the notion of "Neutrosophic SuperHyperGraph". The SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the alphabets. In this procedure, there's the usage of the position of labels to assign to the values.

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Definition 29.0.21. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. It's redefined **Neutrosophic SuperHyperGraph** if the Table (29.1) holds.

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It's useful to define a "Neutrosophic" version of SuperHyperClasses. Since there's more ways to get Neutrosophic type-results to make a Neutrosophic more understandable.

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Definition 29.0.22. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. There are some **Neutrosophic SuperHyperClasses** if the Table (29.2) holds. Thus Neutrosophic SuperHyperPath, SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultiPartite, and SuperHyperWheel, are **Neutrosophic SuperHyperPath**, **Neutrosophic SuperHyperCycle**, **Neutrosophic SuperHyperStar**, **Neutrosophic SuperHyperBipartite**, **Neutrosophic SuperHyperMultiPartite**, and **Neutrosophic SuperHyperWheel** if the Table (29.2) holds.

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Table 29.2: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph, Mentioned in the Definition (29.0.22)

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

136TBL4

Table 29.3: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph Mentioned in the Definition (29.0.23)

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

136TBL1

It's useful to define a "Neutrosophic" version of a Neutrosophic SuperHyperEulerian-Cycle- 5903
Decomposition. Since there's more ways to get type-results to make a Neutrosophic SuperHyperEulerian- 5904
Cycle-Decomposition more Neutrosophically understandable. 5905
For the sake of having a Neutrosophic SuperHyperEulerian-Cycle-Decomposition, there's a need to 5906
"redefine" the Neutrosophic notion of "Neutrosophic SuperHyperEulerian-Cycle-Decomposition". The 5907
SuperHyperVertices and the SuperHyperEdges are assigned by the labels from the letters of the 5908
alphabets. In this procedure, there's the usage of the position of labels to assign to the values. 5909

136DEF1

Definition 29.0.23. Assume a SuperHyperEulerian-Cycle-Decomposition. It's redefined a **Neutro- 5910**
sophic SuperHyperEulerian-Cycle-Decomposition if the Table (29.3) holds. 5911

Neutrosophic SuperHyper Eulerian-Cycle-Decomposition But As The Extensions Excerpt From Dense And Super Forms

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Definition 30.0.1. (Neutrosophic event).

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Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider

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$S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Any Neutrosophic k -subset of A of V

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is called **Neutrosophic k -event** and if $k = 2$, then Neutrosophic subset of A of V is called

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Neutrosophic event. The following expression is called **Neutrosophic probability** of A .

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$$E(A) = \sum_{a \in A} E(a). \quad (30.1)$$

Definition 30.0.2. (Neutrosophic Independent).

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Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is

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a probability Eulerian-Cycle-Decomposition. s Neutrosophic k -events A_i , $i \in I$ is called **Neutrosophic**

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s-independent if the following expression is called **Neutrosophic s-independent criteria**

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$$E(\cap_{i \in I} A_i) = \prod_{i \in I} P(A_i).$$

And if $s = 2$, then Neutrosophic k -events of A and B is called **Neutrosophic independent**.

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The following expression is called **Neutrosophic independent criteria**

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$$E(A \cap B) = P(A)P(B). \quad (30.2)$$

Definition 30.0.3. (Neutrosophic Variable).

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Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$

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is a probability Eulerian-Cycle-Decomposition. Any k -function Eulerian-Cycle-Decomposition like E is called

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Neutrosophic k -Variable. If $k = 2$, then any 2-function Eulerian-Cycle-Decomposition like E is

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called **Neutrosophic Variable**.

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The notion of independent on Neutrosophic Variable is likewise.

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Definition 30.0.4. (Neutrosophic Expectation).

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Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$

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is a probability Eulerian-Cycle-Decomposition. A Neutrosophic k-Variable E has a number is called **Neutrosophic Expectation** if the following expression is called **Neutrosophic Expectation criteria**

$$Ex(E) = \sum_{\alpha \in V} E(\alpha)P(\alpha).$$

Definition 30.0.5. (Neutrosophic Crossing). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. A Neutrosophic number is called **Neutrosophic Crossing** if the following expression is called **Neutrosophic Crossing criteria**

$$Cr(S) = \min\{\text{Number of Crossing in a Plane Embedding of } S\}.$$

Lemma 30.0.6. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let m and n propose special Eulerian-Cycle-Decomposition. Then with $m \geq 4n$,

Proof. Consider a planar embedding G of G with $cr(G)$ crossings. Let S be a Neutrosophic random k-subset of V obtained by choosing each SuperHyperVertex of G Neutrosophic independently with probability Eulerian-Cycle-Decomposition $p := 4n/m$, and set $H := G[S]$ and $H := G[S]$.

Define random variables X, Y, Z on V as follows: X is the Neutrosophic number of SuperHyperVertices, Y the Neutrosophic number of SuperHyperEdges, and Z the Neutrosophic number of crossings of H . The trivial bound noted above, when applied to H , yields the inequality $Z \geq cr(H) \geq Y - 3X$. By linearity of Neutrosophic Expectation,

$$E(Z) \geq E(Y) - 3E(X).$$

Now $E(X) = pn$, $E(Y) = p^2m$ (each SuperHyperEdge having some SuperHyperEnds) and $E(Z) = p^4cr(G)$ (each crossing being defined by some SuperHyperVertices). Hence

$$p^4cr(G) \geq p^2m - 3pn.$$

Dividing both sides by p^4 , we have:

$$cr(G) \geq \frac{pm - 3n}{p^3} = \frac{n}{(4n/m)^3} = \frac{1}{64}m^3n^2.$$

■ 5946

Theorem 30.0.7. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let P be a SuperHyperSet of n points in the plane, and let l be the Neutrosophic number of SuperHyperLines in the plane passing through at least $k + 1$ of these points, where $1 \leq k \leq 2\sqrt{2n}$. Then $l < 32n^2/k^3$.

Proof. Form a Neutrosophic SuperHyperGraph G with SuperHyperVertex SuperHyperSet P whose SuperHyperEdge are the segments between conseNeighborive points on the SuperHyperLines which pass through at least $k + 1$ points of P . This Neutrosophic SuperHyperGraph has at least kl SuperHyperEdges and Neutrosophic crossing at most l choose two. Thus either $kl < 4n$, in which case $l < 4n/k \leq 32n^2/k^3$, or $l^2/2 > 1$ choose $2 \geq cr(G) \geq (kl)^3/64n^2$ by the Neutrosophic Crossing Lemma, and again $l < 32n^2/k^3$. ■

Theorem 30.0.8. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let P be a SuperHyperSet of n points in the plane, and let k be the number of pairs of points of P at unit SuperHyperDistance. Then $k < 5n^{4/3}$.

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Draw a SuperHyperUnit SuperHyperCircle around each SuperHyperPoint of P . Let n_i be the Neutrosophic number of these SuperHyperCircles passing through exactly i points of P . Then $\sum i = 0^{n-1} n_i = n$ and $k = \frac{1}{2} \sum i = 0^{n-1} i n_i$. Now form a Neutrosophic SuperHyperGraph H with SuperHyperVertex SuperHyperSet P whose SuperHyperEdges are the SuperHyperArcs between conseNeighborive SuperHyperPoints on the SuperHyperCircles that pass through at least three SuperHyperPoints of P . Then

$$e(H) = \sum_{i=3}^{n-1} i n_i = 2k - n_1 - 2n_2 \geq 2k - 2n.$$

Some SuperHyperPairs of SuperHyperVertices of H might be joined by some parallel SuperHyperEdges. Delete from H one of each SuperHyperPair of parallel SuperHyperEdges, so as to obtain a simple Neutrosophic SuperHyperGraph G with $e(G) \geq k - n$. Now $cr(G) \leq n(n-1)$ because G is formed from at most n SuperHyperCircles, and any two SuperHyperCircles cross at most twice. Thus either $e(G) < 4n$, in which case $k < 5n < 5n^{4/3}$, or $n^2 > n(n-1) \geq cr(G) \geq (k-n)^3/64n^2$ by the Neutrosophic Crossing Lemma, and $k < 4n^{4/3} + n < 5n^{4/3}$. ■

Proposition 30.0.9. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X be a nonnegative Neutrosophic Variable and t a positive real number. Then

$$P(X \geq t) \leq \frac{E(X)}{t}.$$

Proof.

$$\begin{aligned} E(X) &= \sum \{X(a)P(a) : a \in V\} \geq \sum \{X(a)P(a) : a \in V, X(a) \geq t\} \\ &= \sum \{tP(a) : a \in V, X(a) \geq t\} = t \sum \{P(a) : a \in V, X(a) \geq t\} \\ &= tP(X \geq t). \end{aligned}$$

Dividing the first and last members by t yields the asserted inequality. ■

Corollary 30.0.10. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X_n be a nonnegative integer-valued variable in a probability Eulerian-Cycle-Decomposition (V_n, E_n) , $n \geq 1$. If $E(X_n) \rightarrow 0$ as $n \rightarrow \infty$, then $P(X_n = 0) \rightarrow 1$ as $n \rightarrow \infty$.

Proof. ■

Theorem 30.0.11. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. A special SuperHyperGraph in $G_{n,p}$ almost surely has stability number at most $\lceil 2p^{-1} \log n \rceil$.

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. A special SuperHyperGraph in $G_{n,p}$ is up. Let $G \in \mathcal{G}_{n,p}$ and let S be a given SuperHyperSet of $k + 1$ SuperHyperVertices of G , where $k \in \mathbb{N}$. The probability that S is a stable SuperHyperSet of G is $(1 - p)^{\binom{k+1}{2}}$, this being the probability that none of the $\binom{k+1}{2}$ pairs of SuperHyperVertices of S is a SuperHyperEdge of the Neutrosophic SuperHyperGraph G . Let A_S denote the event that S is a stable SuperHyperSet of G , and let X_S denote the indicator Neutrosophic Variable for this Neutrosophic Event. By equation, we have

$$E(X_S) = P(X_S = 1) = P(A_S) = (1 - p)^{\binom{k+1}{2}}.$$

Let X be the number of stable SuperHyperSets of cardinality $k + 1$ in G . Then

$$X = \sum \{X_S : S \subseteq V, |S| = k + 1\}$$

and so, by those,

$$E(X) = \sum \{E(X_S) : S \subseteq V, |S| = k + 1\} = \binom{n}{k+1} (1 - p)^{\binom{k+1}{2}}.$$

We bound the right-hand side by invoking two elementary inequalities:

$$\binom{n}{k+1} \leq \frac{n^{k+1}}{(k+1)!} \text{ and } 1 - p \leq e^{-p}.$$

This yields the following upper bound on $E(X)$.

$$E(X) \leq \frac{n^{k+1} e^{-p} (1 - p)^{\binom{k+1}{2}}}{(k+1)!} = \frac{ne^{-pk/2k+1}}{(k+1)!}$$

Suppose now that $k = \lceil 2p^{-1} \log n \rceil$. Then $k \geq 2p^{-1} \log n$, so $ne^{-pk/2k+1} \leq 1$. Because k grows at least as fast as the logarithm of n , implies that $E(X) \rightarrow 0$ as $n \rightarrow \infty$. Because X is integer-valued and nonnegative, we deduce from Corollary that $P(X = 0) \rightarrow 1$ as $n \rightarrow \infty$. Consequently, a Neutrosophic SuperHyperGraph in $\mathcal{G}_{n,p}$ almost surely has stability number at most k . ■

Definition 30.0.12. (Neutrosophic Variance).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. A Neutrosophic k -Variable E has a number is called **Neutrosophic Variance criteria** if the following expression is called **Neutrosophic Variance criteria**

$$Vx(E) = Ex((X - Ex(X))^2).$$

Theorem 30.0.13. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X be a Neutrosophic Variable and let t be a positive real number. Then

$$E(|X - Ex(X)| \geq t) \leq \frac{V(X)}{t^2}.$$

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X be a Neutrosophic Variable and let t be a positive real number. Then

$$E(|X - Ex(X)| \geq t) = E((X - Ex(X))^2 \geq t^2) \leq \frac{Ex((X - Ex(X))^2)}{t^2} = \frac{V(X)}{t^2}.$$

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Corollary 30.0.14. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let X_n be a Neutrosophic Variable in a probability Eulerian-Cycle-Decomposition (V_n, E_n) , $n \geq 1$. If $Ex(X_n) \neq 0$ and $V(X_n) \ll E^2(X_n)$, then

$$E(X_n = 0) \rightarrow 0 \text{ as } n \rightarrow \infty$$

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Set $X := X_n$ and $t := |Ex(X_n)|$ in Chebyshev's Inequality, and observe that $E(X_n = 0) \leq E(|X_n - Ex(X_n)| \geq |Ex(X_n)|)$ because $|X_n - Ex(X_n)| = |Ex(X_n)|$ when $X_n = 0$.

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Theorem 30.0.15. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let $G \in \mathcal{G}_{n,1/2}$. For $0 \leq k \leq n$, set $f(k) := (n \text{ choose } k)2^{-(k \text{ choose } 2)}$ and let k^* be the least value of k for which $f(k)$ is less than one. Then almost surely $\alpha(G)$ takes one of the three values $k^* - 2, k^* - 1, k^*$.

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. As in the proof of related Theorem, the result is straightforward.

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Corollary 30.0.16. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let $G \in \mathcal{G}_{n,1/2}$ and let f and k^* be as defined in previous Theorem. Then either:

- (i). $f(k^*) \ll 1$, in which case almost surely $\alpha(G)$ is equal to either $k^* - 2$ or $k^* - 1$, or
- (ii). $f(k^* - 1) \gg 1$, in which case almost surely $\alpha(G)$ is equal to either $k^* - 1$ or k^* .

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. The latter is straightforward.

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Definition 30.0.17. (Neutrosophic Threshold). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let P be a monotone property of SuperHyperGraphs (one which is preserved when SuperHyperEdges are added). Then a **Neutrosophic Threshold** for P is a function $f(n)$ such that:

- (i). if $p \ll f(n)$, then $G \in \mathcal{G}_{n,p}$ almost surely does not have P ,
- (ii). if $p \gg f(n)$, then $G \in \mathcal{G}_{n,p}$ almost surely has P .

Definition 30.0.18. (Neutrosophic Balanced). 6044

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ 6045
is a probability Eulerian-Cycle-Decomposition. Let F be a fixed Neutrosophic SuperHyperGraph. Then 6046
there is a threshold function for the property of containing a copy of F as a Neutrosophic 6047
SubSuperHyperGraph is called **Neutrosophic Balanced**. 6048

Theorem 30.0.19. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S =$ 6049
 (V, E) . Consider $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. Let F be a nonempty 6050
balanced Neutrosophic SubSuperHyperGraph with k SuperHyperVertices and l SuperHyperEdges. 6051
Then $n^{-k/l}$ is a threshold function for the property of containing F as a Neutrosophic 6052
SubSuperHyperGraph. 6053

Proof. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider 6054
 $S = (V, E)$ is a probability Eulerian-Cycle-Decomposition. The latter is straightforward. ■ 6055

136EXM1

Example 30.0.20. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ 6056
in the mentioned Neutrosophic Figures in every Neutrosophic items. 6057

- On the Figure (30.1), the Neutrosophic SuperHyperNotion, namely, Neutrosophic 6058
SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically 6059
straightforward. E_1 and E_3 are some empty Neutrosophic SuperHyperEdges but E_2 6060
is a loop Neutrosophic SuperHyperEdge and E_4 is a Neutrosophic SuperHyperEdge. 6061
Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic 6062
SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic 6063
isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic 6064
endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given 6065
Neutrosophic SuperHyperEulerian-Cycle-Decomposition. 6066

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{E_4\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{V_1, V_2, V_4, V_1\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^4. \end{aligned}$$

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- On the Figure (30.2), the Neutrosophic SuperHyperNotion, namely, Neutrosophic 6068
SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically 6069
straightforward. E_1, E_2 and E_3 are some empty Neutrosophic SuperHyperEdges 6070
but E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic 6071
SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The 6072
Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no 6073
Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic 6074

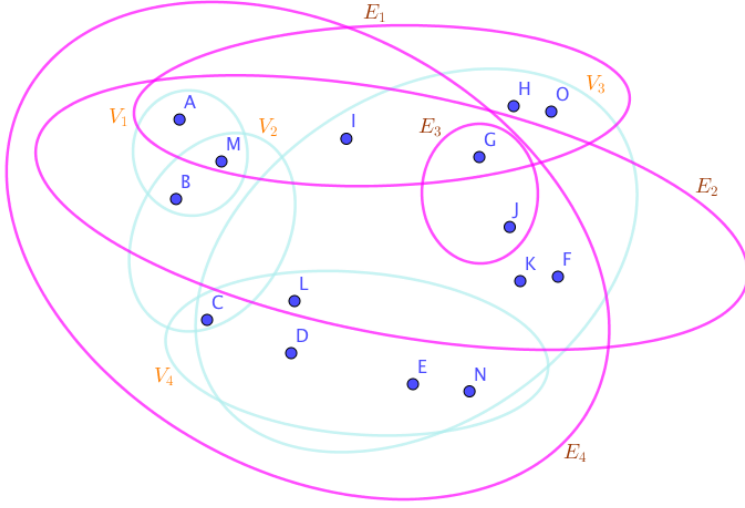


Figure 30.1: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG1

SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperEulerian-Cycle-Decomposition. 6075
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$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \{\{E_4\}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} &= \{\{V_1, V_2, V_4, V_1\}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^4. \end{aligned}$$

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- On the Figure (30.3), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6078
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$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \{\{E_4\}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} &= \{\{V_1, V_2, V_3, V_1\}\}. \end{aligned}$$

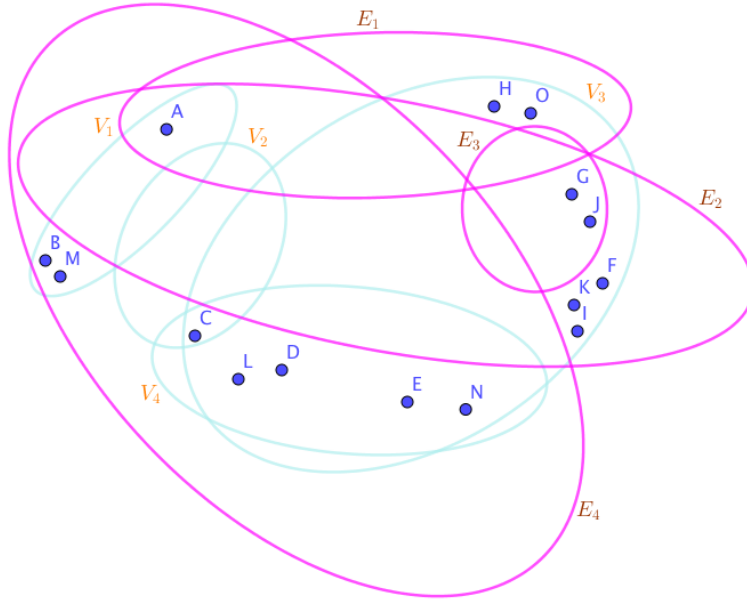


Figure 30.2: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG2

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^4. \end{aligned}$$

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- On the Figure (30.4), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophicly straightforward.

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$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

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- On the Figure (30.5), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophicly

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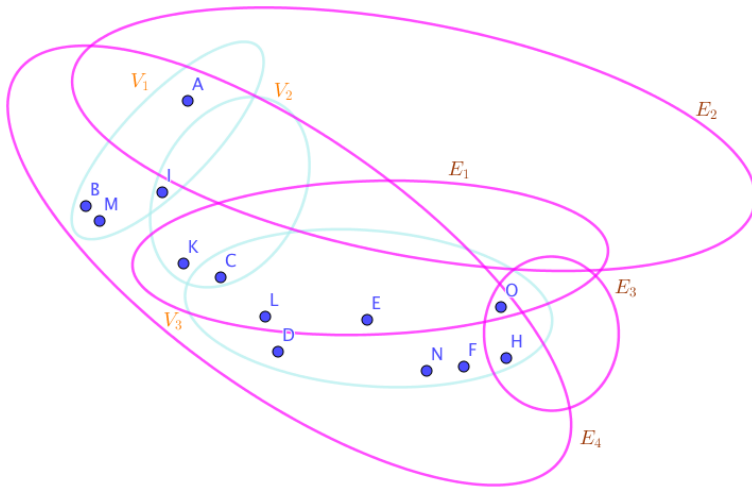


Figure 30.3: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG3

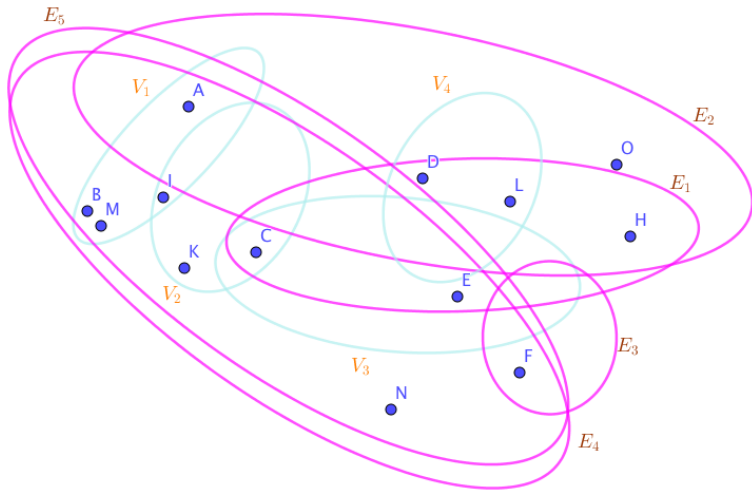


Figure 30.4: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG4

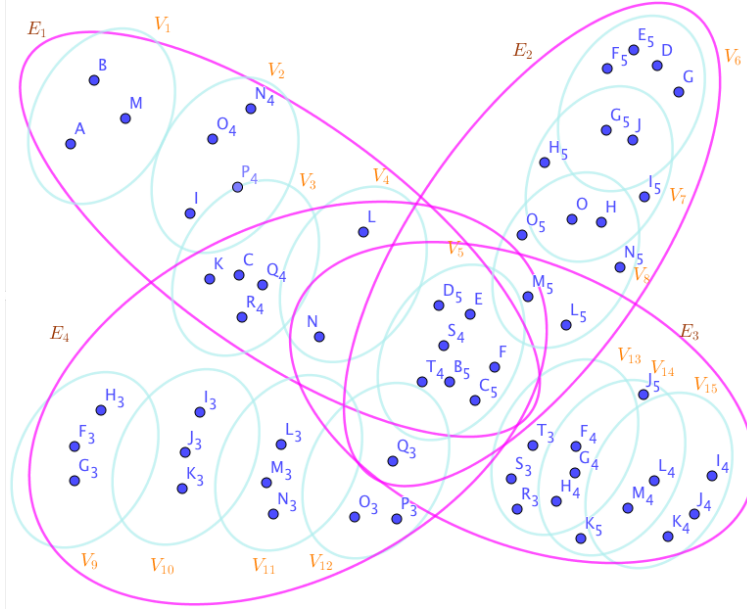


Figure 30.5: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG5

straightforward.

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$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

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- On the Figure (30.6), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

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$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

136NSHG6

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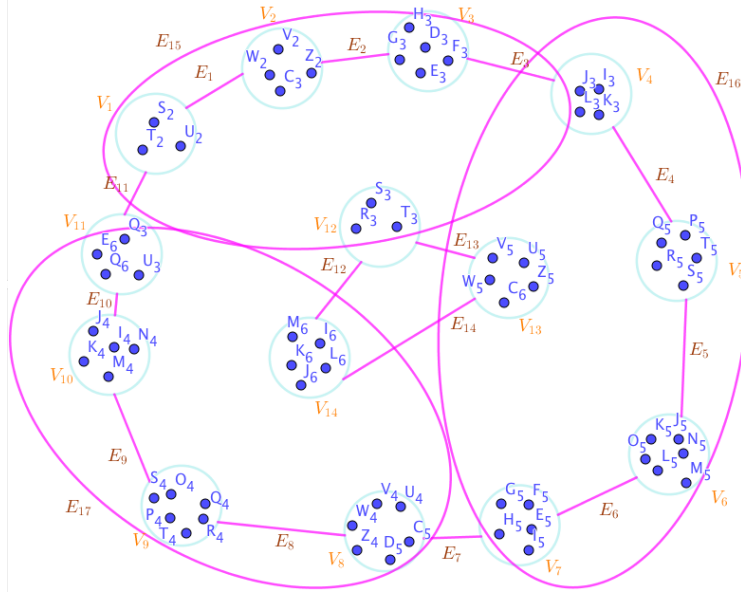


Figure 30.7: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG7

- On the Figure (30.8), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6098
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$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

6101

- On the Figure (30.9), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6102
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6104

$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \end{aligned}$$

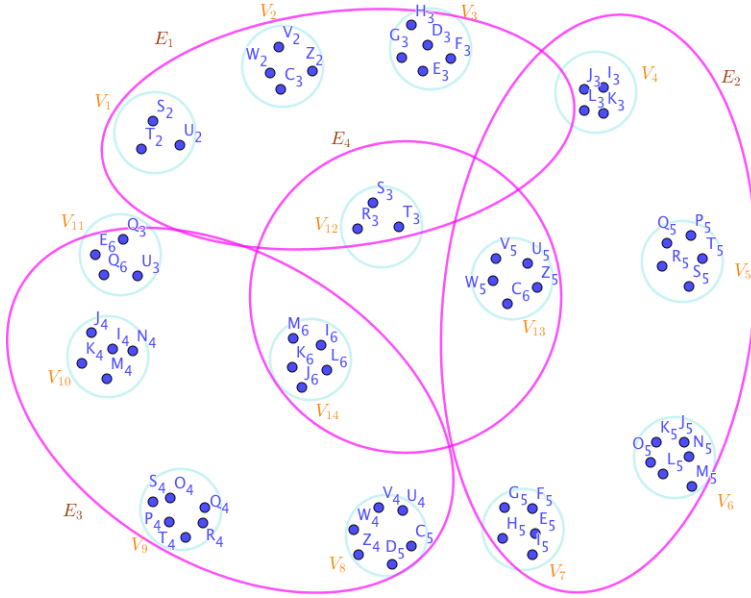


Figure 30.8: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG8

$$\begin{aligned}
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

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- On the Figure (30.10), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

6109

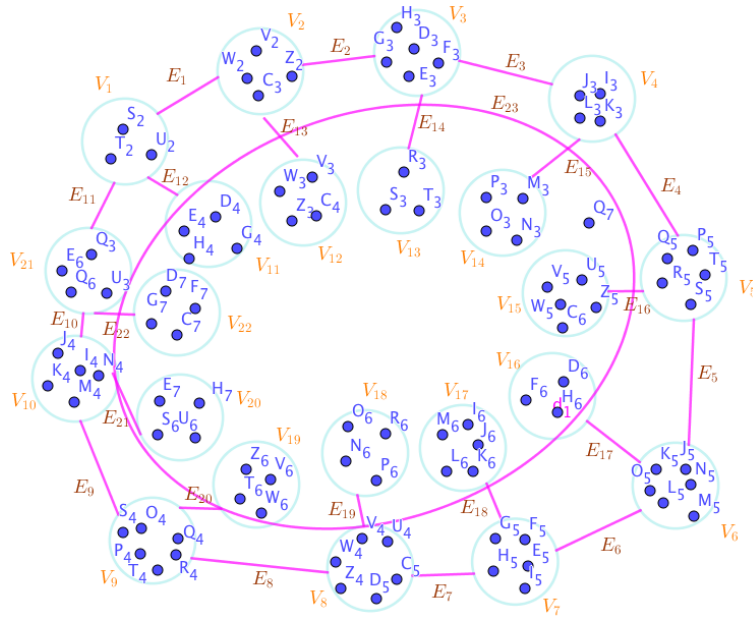


Figure 30.9: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG9

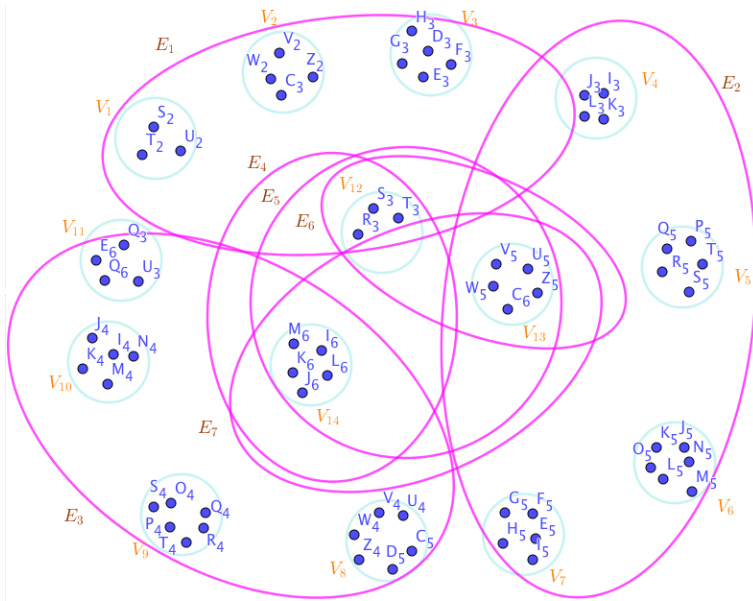


Figure 30.10: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG10

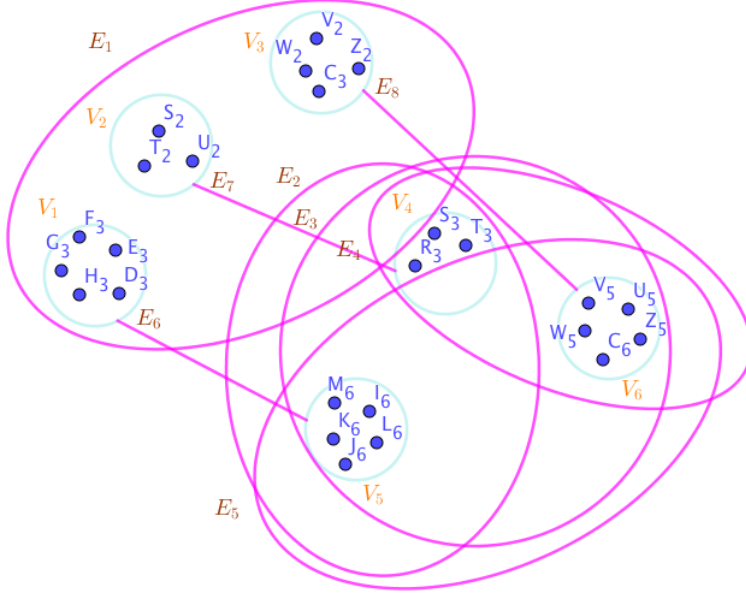


Figure 30.11: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG11

- On the Figure (30.11), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6110 6111 6112

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

6113

- On the Figure (30.12), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6114 6115 6116

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}}
 \end{aligned}$$

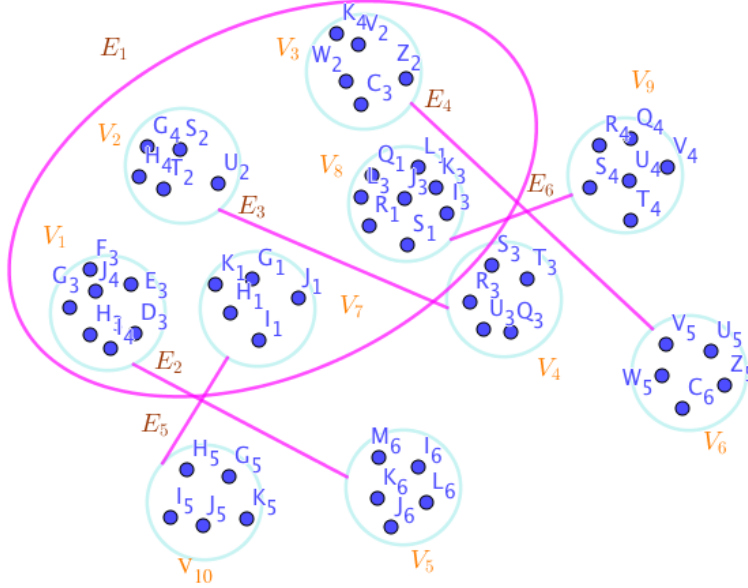


Figure 30.12: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG12

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

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- On the Figure (30.13), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

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$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

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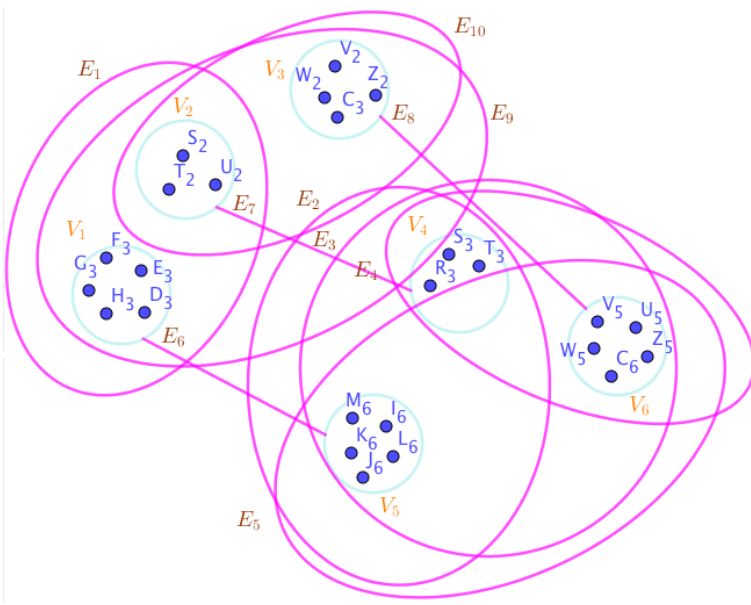


Figure 30.13: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG13

- On the Figure (30.14), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6122
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$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

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- On the Figure (30.15), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6126
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$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \end{aligned}$$

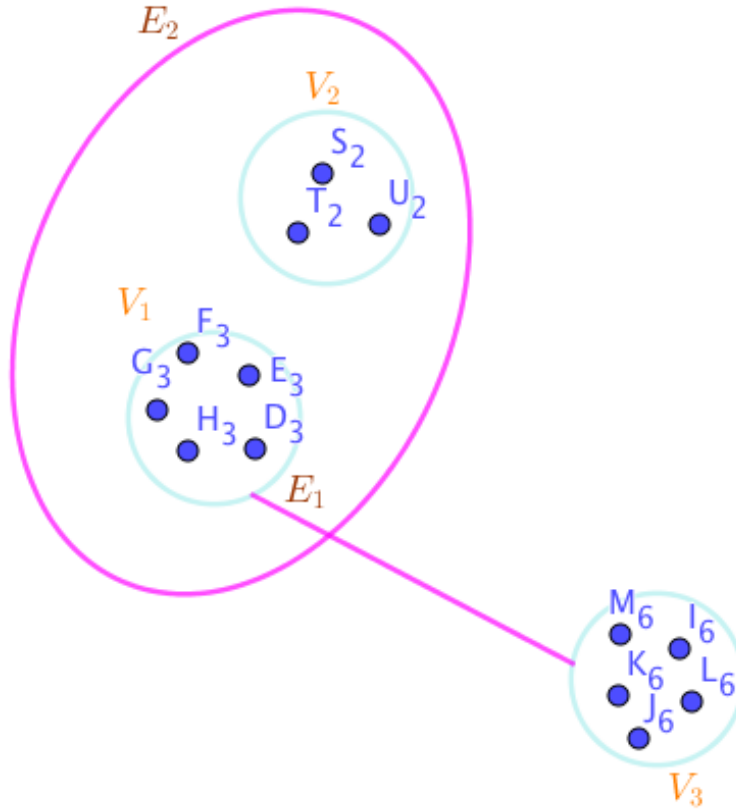


Figure 30.14: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG14

$$\begin{aligned}
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

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- On the Figure (30.16), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophicly straightforward.

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}}
 \end{aligned}$$

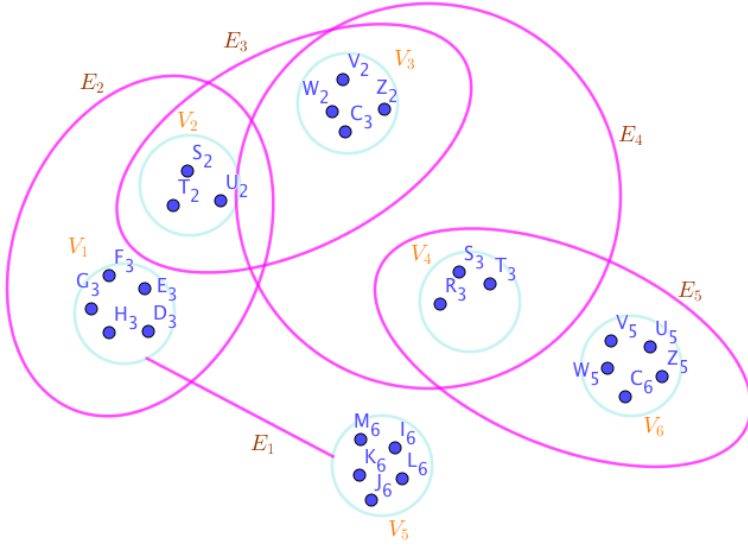


Figure 30.15: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG15

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

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- On the Figure (30.17), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

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$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

6137

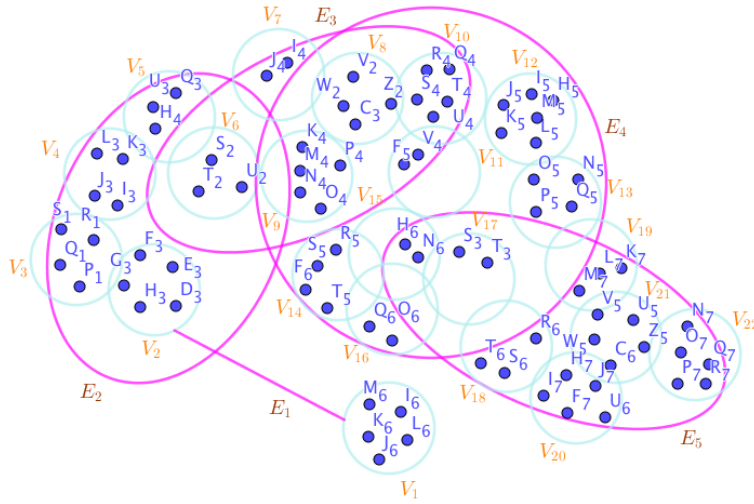


Figure 30.16: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG17

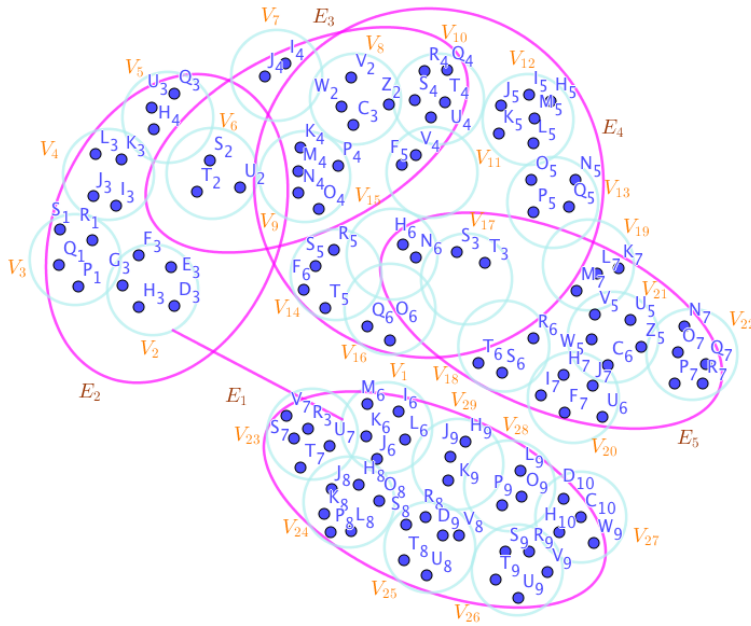


Figure 30.17: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG17

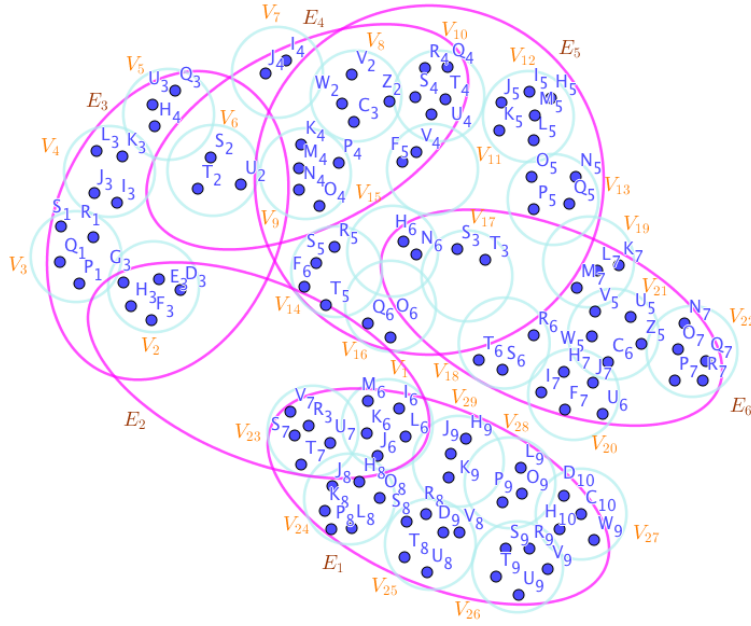


Figure 30.18: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG18

- On the Figure (30.18), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6138 6139 6140

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

6141

- On the Figure (30.19), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 6142 6143 6144

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{E_{i=112}\}\}.
 \end{aligned}$$

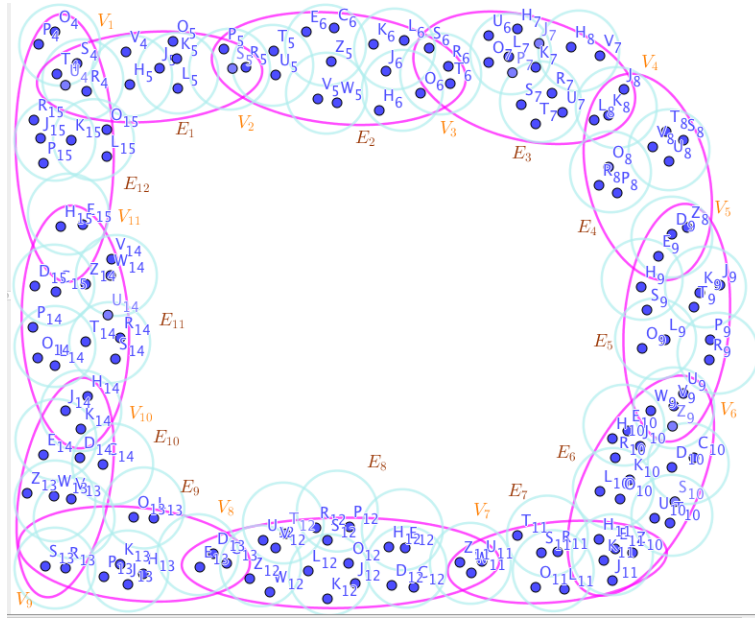


Figure 30.19: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG19

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^{12}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{VE_{i=1}^{12}\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^{|\{VE_{i=1}^{12}\}|}. \end{aligned}$$

6145

- On the Figure (30.20), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

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$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \end{aligned}$$

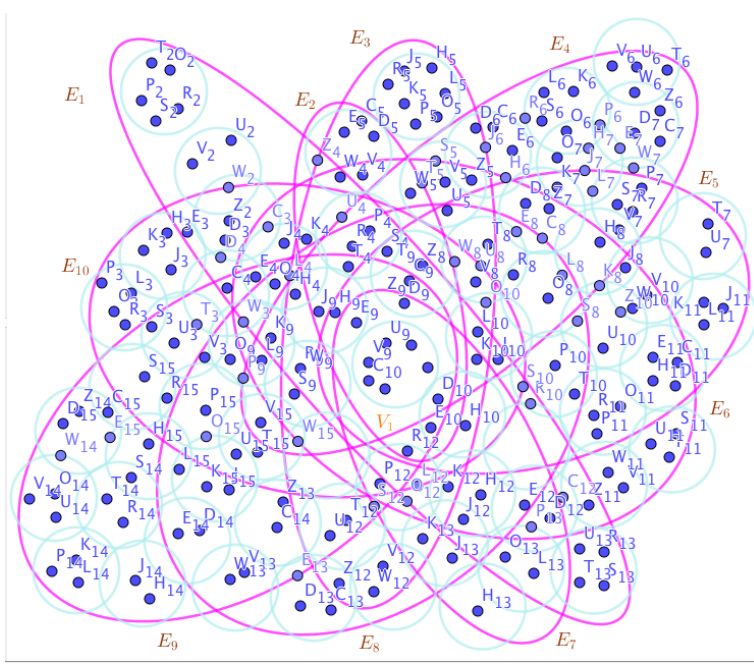


Figure 30.20: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

136NSHG20

$$= z^0.$$

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- On the Figure (30.21), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

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$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{E_1, E_2\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^2. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{V_1, V_2, \{R\}, \{M_6\}, \{L_6\}, \{F\}, \{P\}, \{J\}, \{M\}, V_3, V_1\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^{11}. \end{aligned}$$

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- On the Figure (30.22), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, is up. The Neutrosophic Algorithm is Neutrosophically

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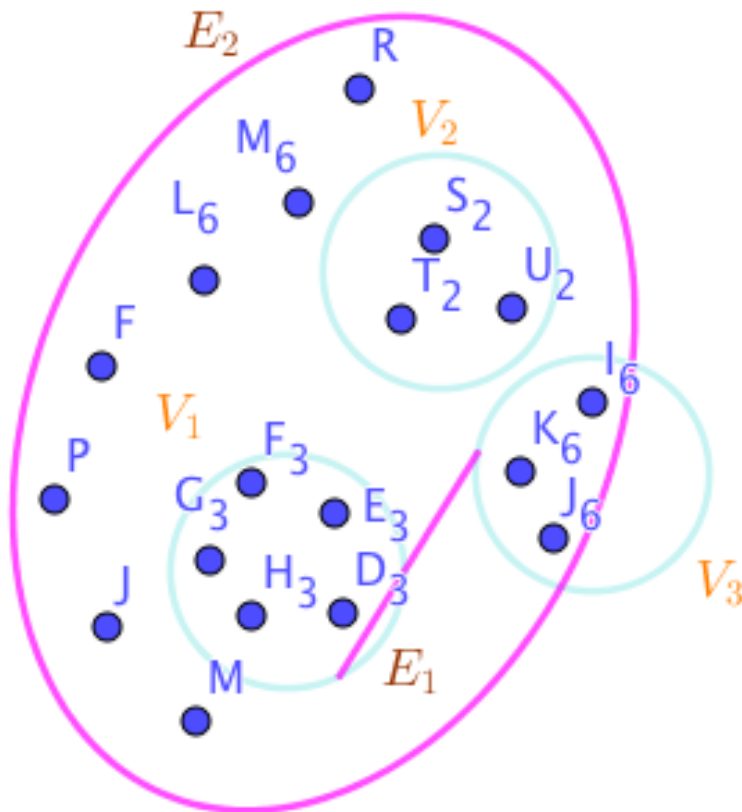


Figure 30.21: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

95NHG1

straightforward.

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

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Proposition 30.0.21. Assume a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. The all interior Neutrosophic SuperHyperVertices belong to any Neutrosophic quasi- R -Eulerian-Cycle-

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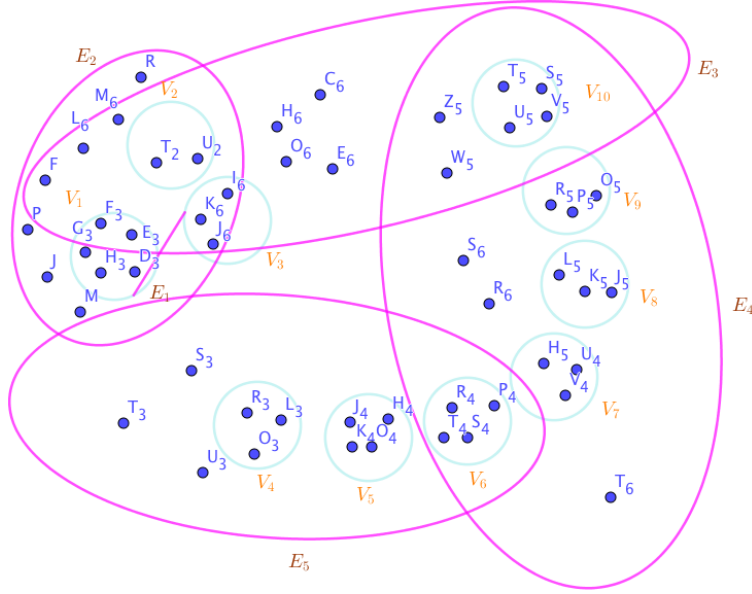


Figure 30.22: The Neutrosophic SuperHyperGraphs Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.3)

95NHG2

Decomposition if for any of them, and any of other corresponded Neutrosophic SuperHyperVertex, some interior Neutrosophic SuperHyperVertices are mutually Neutrosophic SuperHyperNeighbors with no Neutrosophic exception at all minus all Neutrosophic SuperHyperNeighbors to any amount of them.

Proposition 30.0.22. Assume a connected non-obvious Neutrosophic SuperHyperGraph $ESHG : (V, E)$. There's only one Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only the maximum possibilities of the distinct interior Neutrosophic SuperHyperVertices inside of any given Neutrosophic quasi-R-Eulerian-Cycle-Decomposition minus all Neutrosophic SuperHyperNeighbor to some of them but not all of them. In other words, there's only an unique Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only two distinct Neutrosophic SuperHyperVertices in an Neutrosophic quasi-R-Eulerian-Cycle-Decomposition, minus all Neutrosophic SuperHyperNeighbor to some of them but not all of them.

Proposition 30.0.23. Assume a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. If a Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has z Neutrosophic SuperHyperVertices, then the Neutrosophic cardinality of the Neutrosophic R-Eulerian-Cycle-Decomposition is at least

$$V \setminus (V \setminus \{a_E, b_E, c_E, \dots, z_E\}).$$

It's straightforward that the Neutrosophic cardinality of the Neutrosophic R-Eulerian-Cycle-Decomposition is at least the maximum Neutrosophic number of Neutrosophic SuperHyperVertices of the Neutrosophic SuperHyperEdges with the maximum number of the Neutrosophic SuperHyperEdges. In other words, the maximum number of the Neutrosophic SuperHyperEdges contains the maximum Neutrosophic number of Neutrosophic SuperHyperVertices are renamed to

Neutrosophic Eulerian-Cycle-Decomposition in some cases but the maximum number of the Neutrosophic SuperHyperEdge with the maximum Neutrosophic number of Neutrosophic SuperHyperVertices, has the Neutrosophic SuperHyperVertices are contained in a Neutrosophic R-Eulerian-Cycle-Decomposition. 6177
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Proposition 30.0.24. Assume a simple Neutrosophic SuperHyperGraph $ESHG : (V, E)$. Then the Neutrosophic number of type-result-R-Eulerian-Cycle-Decomposition has, the least Neutrosophic cardinality, the lower sharp Neutrosophic bound for Neutrosophic cardinality, is the Neutrosophic cardinality of

$$V \setminus V \setminus \{a_E, b_{E'}, c_{E''}, c_{E'''}\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}.$$

If there's a Neutrosophic type-result-R-Eulerian-Cycle-Decomposition with the least Neutrosophic cardinality, the lower sharp Neutrosophic bound for cardinality. 6181
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Proposition 30.0.25. Assume a connected loopless Neutrosophic SuperHyperGraph $ESHG : (V, E)$. Then in the worst case, literally, 6183
 6184

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{V_1, E_1, V_2, E_2, V_3, E_3, V_4, E_4, V_1\}. \\ \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} &= z^4. \\ \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} &= \{V_1, V_2, V_3, V_4, V_1\}. \\ \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} &= z^5. \end{aligned}$$

Is a Neutrosophic type-result-Eulerian-Cycle-Decomposition. In other words, the least cardinality, the lower sharp bound for the cardinality, of a Neutrosophic type-result-Eulerian-Cycle-Decomposition is the cardinality of 6185
 6186
 6187

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{V_1, E_1, V_2, E_2, V_3, E_3, V_4, E_4, V_1\}. \\ \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} &= z^4. \\ \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} &= \{V_1, V_2, V_3, V_4, V_1\}. \\ \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} &= z^5. \end{aligned}$$

Proof. Assume a connected loopless Neutrosophic SuperHyperGraph $ESHG : (V, E)$. The SuperHyperSet of the SuperHyperVertices $V \setminus V \setminus \{z\}$ isn't a quasi-R-Eulerian-Cycle-Decomposition since neither amount of Neutrosophic SuperHyperEdges nor amount of SuperHyperVertices where amount refers to the Neutrosophic number of SuperHyperVertices(-/SuperHyperEdges) more than one to form any kind of SuperHyperEdges or any number of SuperHyperEdges. Let us consider the Neutrosophic SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E,E'=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}.$$

This Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices has the eligibilities to propose property such that there's no Neutrosophic SuperHyperVertex of a Neutrosophic SuperHyperEdge is common and there's an Neutrosophic SuperHyperEdge for all Neutrosophic

SuperHyperVertices but the maximum Neutrosophic cardinality indicates that these Neutrosophic type-SuperHyperSets couldn't give us the Neutrosophic lower bound in the term of Neutrosophic sharpness. In other words, the Neutrosophic SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}$$

of the Neutrosophic SuperHyperVertices implies at least on-quasi-triangle style is up but sometimes the Neutrosophic SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}$$

of the Neutrosophic SuperHyperVertices is free-quasi-triangle and it doesn't make a contradiction to the supposition on the connected loopless Neutrosophic SuperHyperGraph $ESHG : (V, E)$. Thus the minimum case never happens in the generality of the connected loopless Neutrosophic SuperHyperGraphs. Thus if we assume in the worst case, literally,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=E} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}.$$

Is a quasi-R-Eulerian-Cycle-Decomposition. In other words, the least cardinality, the lower sharp bound for the cardinality, of a quasi-R-Eulerian-Cycle-Decomposition is the cardinality of

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=E} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}.$$

Then we've lost some connected loopless Neutrosophic SuperHyperClasses of the connected loopless Neutrosophic SuperHyperGraphs titled free-triangle, on-triangle, and their quasi-types but the SuperHyperStable is only up in this quasi-R-Eulerian-Cycle-Decomposition. It's the contradiction to that fact on the generality. There are some counterexamples to deny this statement. One of them comes from the setting of the graph titled path and cycle as the counterexamples-classes or reversely direction star as the examples-classes, are well-known classes in that setting and they could be considered as the examples-classes and counterexamples-classes for the tight bound of

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=E} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}.$$

Let $V \setminus V \setminus \{z\}$ in mind. There's no necessity on the SuperHyperEdge since we need at least two SuperHyperVertices to form a SuperHyperEdge. It doesn't withdraw the principles of the main definition since there's no condition to be satisfied but the condition is on the existence of the SuperHyperEdge instead of acting on the SuperHyperVertices. In other words, if there's a SuperHyperEdge, then the Neutrosophic SuperHyperSet has the necessary condition for the intended definition to be applied. Thus the $V \setminus V \setminus \{z\}$ is withdrawn not by the conditions of the main definition but by the necessity of the pre-condition on the usage of the main definition. The Neutrosophic structure of the Neutrosophic R-Eulerian-Cycle-Decomposition decorates the Neutrosophic SuperHyperVertices don't have received any Neutrosophic connections so as this Neutrosophic style implies different versions of Neutrosophic SuperHyperEdges with the maximum Neutrosophic cardinality in the terms of Neutrosophic SuperHyperVertices are spotlight. The lower Neutrosophic bound is to have the maximum Neutrosophic groups of Neutrosophic SuperHyperVertices have perfect Neutrosophic connections inside

each of SuperHyperEdges and the outside of this Neutrosophic SuperHyperSet doesn't matter but regarding the connectedness of the used Neutrosophic SuperHyperGraph arising from its Neutrosophic properties taken from the fact that it's simple. If there's no more than one Neutrosophic SuperHyperVertex in the targeted Neutrosophic SuperHyperSet, then there's no Neutrosophic connection. Furthermore, the Neutrosophic existence of one Neutrosophic SuperHyperVertex has no Neutrosophic effect to talk about the Neutrosophic R-Eulerian-Cycle-Decomposition. Since at least two Neutrosophic SuperHyperVertices involve to make a title in the Neutrosophic background of the Neutrosophic SuperHyperGraph. The Neutrosophic SuperHyperGraph is obvious if it has no Neutrosophic SuperHyperEdge but at least two Neutrosophic SuperHyperVertices make the Neutrosophic version of Neutrosophic SuperHyperEdge. Thus in the Neutrosophic setting of non-obvious Neutrosophic SuperHyperGraph, there are at least one Neutrosophic SuperHyperEdge. It's necessary to mention that the word "Simple" is used as Neutrosophic adjective for the initial Neutrosophic SuperHyperGraph, induces there's no Neutrosophic appearance of the loop Neutrosophic version of the Neutrosophic SuperHyperEdge and this Neutrosophic SuperHyperGraph is said to be loopless. The Neutrosophic adjective "loop" on the basic Neutrosophic framework engages one Neutrosophic SuperHyperVertex but it never happens in this Neutrosophic setting. With these Neutrosophic bases, on a Neutrosophic SuperHyperGraph, there's at least one Neutrosophic SuperHyperEdge thus there's at least a Neutrosophic R-Eulerian-Cycle-Decomposition has the Neutrosophic cardinality of a Neutrosophic SuperHyperEdge. Thus, a Neutrosophic R-Eulerian-Cycle-Decomposition has the Neutrosophic cardinality at least a Neutrosophic SuperHyperEdge. Assume a Neutrosophic SuperHyperSet $V \setminus V \setminus \{z\}$. This Neutrosophic SuperHyperSet isn't a Neutrosophic R-Eulerian-Cycle-Decomposition since either the Neutrosophic SuperHyperGraph is an obvious Neutrosophic SuperHyperModel thus it never happens since there's no Neutrosophic usage of this Neutrosophic framework and even more there's no Neutrosophic connection inside or the Neutrosophic SuperHyperGraph isn't obvious and as its consequences, there's a Neutrosophic contradiction with the term "Neutrosophic R-Eulerian-Cycle-Decomposition" since the maximum Neutrosophic cardinality never happens for this Neutrosophic style of the Neutrosophic SuperHyperSet and beyond that there's no Neutrosophic connection inside as mentioned in first Neutrosophic case in the forms of drawback for this selected Neutrosophic SuperHyperSet. Let

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}$$

Comes up. This Neutrosophic case implies having the Neutrosophic style of on-quasi-triangle Neutrosophic style on the every Neutrosophic elements of this Neutrosophic SuperHyperSet. Precisely, the Neutrosophic R-Eulerian-Cycle-Decomposition is the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices such that some Neutrosophic amount of the Neutrosophic SuperHyperVertices are on-quasi-triangle Neutrosophic style. The Neutrosophic cardinality of the v SuperHypeSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots, a_{E'}, b_{E'}, c_{E'}, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\}$$

Is the maximum in comparison to the Neutrosophic SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E, E'} = \{E \in E_{ESHG:(V, E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V, E)}\}\} \cdot$$

But the lower Neutrosophic bound is up. Thus the minimum Neutrosophic cardinality of the maximum Neutrosophic cardinality ends up the Neutrosophic discussion. The first Neutrosophic

term refers to the Neutrosophic setting of the Neutrosophic SuperHyperGraph but this key point is enough since there's a Neutrosophic SuperHyperClass of a Neutrosophic SuperHyperGraph has no on-quasi-triangle Neutrosophic style amid some amount of its Neutrosophic SuperHyperVertices. This Neutrosophic setting of the Neutrosophic SuperHyperModel proposes a Neutrosophic SuperHyperSet has only some amount Neutrosophic SuperHyperVertices from one Neutrosophic SuperHyperEdge such that there's no Neutrosophic amount of Neutrosophic SuperHyperEdges more than one involving these some amount of these Neutrosophic SuperHyperVertices. The Neutrosophic cardinality of this Neutrosophic SuperHyperSet is the maximum and the Neutrosophic case is occurred in the minimum Neutrosophic situation. To sum them up, the Neutrosophic SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Has the maximum Neutrosophic cardinality such that

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Contains some Neutrosophic SuperHyperVertices such that there's distinct-covers-order-amount Neutrosophic SuperHyperEdges for amount of Neutrosophic SuperHyperVertices taken from the Neutrosophic SuperHyperSet

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

It means that the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Is a Neutrosophic R-Eulerian-Cycle-Decomposition for the Neutrosophic SuperHyperGraph as used Neutrosophic background in the Neutrosophic terms of worst Neutrosophic case and the common theme of the lower Neutrosophic bound occurred in the specific Neutrosophic SuperHyperClasses of the Neutrosophic SuperHyperGraphs which are Neutrosophic free-quasi-triangle.

Assume a Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has z Neutrosophic number of the Neutrosophic SuperHyperVertices. Then every Neutrosophic SuperHyperVertex has at least no Neutrosophic SuperHyperEdge with others in common. Thus those Neutrosophic SuperHyperVertices have the eligibles to be contained in a Neutrosophic R-Eulerian-Cycle-Decomposition. Those Neutrosophic SuperHyperVertices are potentially included in a Neutrosophic style-R-Eulerian-Cycle-Decomposition. Formally, consider

$$V \setminus (V \setminus \{a_E, b_E, c_E, \dots, z_E\}).$$

Are the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$. Thus

$$Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \dots, z.$$

where the \sim isn't an equivalence relation but only the symmetric relation on the Neutrosophic SuperHyperVertices of the Neutrosophic SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \dots, z$$

if and only if Z_i and Z_j are the Neutrosophic SuperHyperVertices and there's only and only one Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ between the Neutrosophic SuperHyperVertices Z_i and Z_j . The other definition for the Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ in the terms of Neutrosophic R-Eulerian-Cycle-Decomposition is

$$\{a_E, b_E, c_E, \dots, z_E\}.$$

This definition coincides with the definition of the Neutrosophic R-Eulerian-Cycle-Decomposition but with slightly differences in the maximum Neutrosophic cardinality amid those Neutrosophic type-SuperHyperSets of the Neutrosophic SuperHyperVertices. Thus the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \dots, Z_z \mid Z_i \sim Z_j, i \neq j, i, j = 1, 2, \dots, z\}|_{\text{Neutrosophic cardinality}},$$

and

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}.$$

is formalized with mathematical literatures on the Neutrosophic R-Eulerian-Cycle-Decomposition. Let $Z_i \stackrel{E}{\sim} Z_j$, be defined as Z_i and Z_j are the Neutrosophic SuperHyperVertices belong to the Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$. Thus,

$$E = \{Z_1, Z_2, \dots, Z_z \mid Z_i \stackrel{E}{\sim} Z_j, i \neq j, i, j = 1, 2, \dots, z\}.$$

Or

$$\{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}.$$

But with the slightly differences,

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Neutrosophic R-Eulerian-Cycle-Decomposition =

$$\{Z_1, Z_2, \dots, Z_z \mid \forall i \neq j, i, j = 1, 2, \dots, z, \exists E_x, Z_i \stackrel{E_x}{\sim} Z_j\}.$$

6189

Neutrosophic R-Eulerian-Cycle-Decomposition =

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}}.$$

Thus $E \in E_{ESHG:(V,E)}$ is a Neutrosophic quasi-R-Eulerian-Cycle-Decomposition where $E \in E_{ESHG:(V,E)}$ is fixed that means $E_x = E \in E_{ESHG:(V,E)}$. for all Neutrosophic intended SuperHyperVertices but in a Neutrosophic Eulerian-Cycle-Decomposition, $E_x = E \in E_{ESHG:(V,E)}$ could be different and it's not unique. To sum them up, in a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. If a Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has z Neutrosophic SuperHyperVertices, then the Neutrosophic cardinality of the Neutrosophic R-Eulerian-Cycle-Decomposition is at least

$$V \setminus (V \setminus \{a_E, b_E, c_E, \dots, z_E\}).$$

It's straightforward that the Neutrosophic cardinality of the Neutrosophic R-Eulerian-Cycle- 6190
 Decomposition is at least the maximum Neutrosophic number of Neutrosophic SuperHyperVertices 6191

of the Neutrosophic SuperHyperEdges with the maximum number of the Neutrosophic SuperHyperEdges. In other words, the maximum number of the Neutrosophic SuperHyperEdges contains the maximum Neutrosophic number of Neutrosophic SuperHyperVertices are renamed to Neutrosophic Eulerian-Cycle-Decomposition in some cases but the maximum number of the Neutrosophic SuperHyperEdge with the maximum Neutrosophic number of Neutrosophic SuperHyperVertices, has the Neutrosophic SuperHyperVertices are contained in a Neutrosophic R-Eulerian-Cycle-Decomposition.

The obvious SuperHyperGraph has no Neutrosophic SuperHyperEdges. But the non-obvious Neutrosophic SuperHyperModel is up. The quasi-SuperHyperModel addresses some issues about the Neutrosophic optimal SuperHyperObject. It specially delivers some remarks on the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices such that there's distinct amount of Neutrosophic SuperHyperEdges for distinct amount of Neutrosophic SuperHyperVertices up to all taken from that Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices but this Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices is either has the maximum Neutrosophic SuperHyperCardinality or it doesn't have maximum Neutrosophic SuperHyperCardinality. In a non-obvious SuperHyperModel, there's at least one Neutrosophic SuperHyperEdge containing at least all Neutrosophic SuperHyperVertices. Thus it forms a Neutrosophic quasi-R-Eulerian-Cycle-Decomposition where the Neutrosophic completion of the Neutrosophic incidence is up in that. Thus it's, literarily, a Neutrosophic embedded R-Eulerian-Cycle-Decomposition. The SuperHyperNotions of embedded SuperHyperSet and quasi-SuperHyperSet coincide. In the original setting, these types of SuperHyperSets only don't satisfy on the maximum SuperHyperCardinality. Thus the embedded setting is elected such that those SuperHyperSets have the maximum Neutrosophic SuperHyperCardinality and they're Neutrosophic SuperHyperOptimal. The less than two distinct types of Neutrosophic SuperHyperVertices are included in the minimum Neutrosophic style of the embedded Neutrosophic R-Eulerian-Cycle-Decomposition. The interior types of the Neutrosophic SuperHyperVertices are deciders. Since the Neutrosophic number of SuperHyperNeighbors are only affected by the interior Neutrosophic SuperHyperVertices. The common connections, more precise and more formal, the perfect unique connections inside the Neutrosophic SuperHyperSet for any distinct types of Neutrosophic SuperHyperVertices pose the Neutrosophic R-Eulerian-Cycle-Decomposition. Thus Neutrosophic exterior SuperHyperVertices could be used only in one Neutrosophic SuperHyperEdge and in Neutrosophic SuperHyperRelation with the interior Neutrosophic SuperHyperVertices in that Neutrosophic SuperHyperEdge. In the embedded Neutrosophic Eulerian-Cycle-Decomposition, there's the usage of exterior Neutrosophic SuperHyperVertices since they've more connections inside more than outside. Thus the title "exterior" is more relevant than the title "interior". One Neutrosophic SuperHyperVertex has no connection, inside. Thus, the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices with one SuperHyperElement has been ignored in the exploring to lead on the optimal case implying the Neutrosophic R-Eulerian-Cycle-Decomposition. The Neutrosophic R-Eulerian-Cycle-Decomposition with the exclusion of the exclusion of all Neutrosophic SuperHyperVertices in one Neutrosophic SuperHyperEdge and with other terms, the Neutrosophic R-Eulerian-Cycle-Decomposition with the inclusion of all Neutrosophic SuperHyperVertices in one Neutrosophic SuperHyperEdge, is a Neutrosophic quasi-R-Eulerian-Cycle-Decomposition. To sum them up, in a connected non-obvious Neutrosophic SuperHyperGraph $ESHG : (V, E)$. There's only one Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only the maximum possibilities of the distinct interior Neutrosophic SuperHyperVertices inside of any given Neutrosophic quasi-R-Eulerian-Cycle-Decomposition minus all Neutrosophic SuperHyperNeighbor to some of

them but not all of them. In other words, there's only an unique Neutrosophic SuperHyperEdge $E \in E_{ESHG:(V,E)}$ has only two distinct Neutrosophic SuperHyperVertices in an Neutrosophic quasi-R-Eulerian-Cycle-Decomposition, minus all Neutrosophic SuperHyperNeighbor to some of them but not all of them.

The main definition of the Neutrosophic R-Eulerian-Cycle-Decomposition has two titles. a Neutrosophic quasi-R-Eulerian-Cycle-Decomposition and its corresponded quasi-maximum Neutrosophic R-SuperHyperCardinality are two titles in the terms of quasi-R-styles. For any Neutrosophic number, there's a Neutrosophic quasi-R-Eulerian-Cycle-Decomposition with that quasi-maximum Neutrosophic SuperHyperCardinality in the terms of the embedded Neutrosophic SuperHyperGraph. If there's an embedded Neutrosophic SuperHyperGraph, then the Neutrosophic quasi-SuperHyperNotions lead us to take the collection of all the Neutrosophic quasi-R-Eulerian-Cycle-DecompositionS for all Neutrosophic numbers less than its Neutrosophic corresponded maximum number. The essence of the Neutrosophic Eulerian-Cycle-Decomposition ends up but this essence starts up in the terms of the Neutrosophic quasi-R-Eulerian-Cycle-Decomposition, again and more in the operations of collecting all the Neutrosophic quasi-R-Eulerian-Cycle-DecompositionS acted on the all possible used formations of the Neutrosophic SuperHyperGraph to achieve one Neutrosophic number. This Neutrosophic number is considered as the equivalence class for all corresponded quasi-R-Eulerian-Cycle-DecompositionS. Let $z_{\text{Neutrosophic Number}}$, $S_{\text{Neutrosophic SuperHyperSet}}$ and $G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}$ be a Neutrosophic number, a Neutrosophic SuperHyperSet and a Neutrosophic Eulerian-Cycle-Decomposition. Then

$$\begin{aligned} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &= \{S_{\text{Neutrosophic SuperHyperSet}} \mid \\ &S_{\text{Neutrosophic SuperHyperSet}} = G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}, \\ &|S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\ &= z_{\text{Neutrosophic Number}}\}. \end{aligned}$$

As its consequences, the formal definition of the Neutrosophic Eulerian-Cycle-Decomposition is re-formalized and redefined as follows.

$$\begin{aligned} G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &\in \cup_{z_{\text{Neutrosophic Number}}} \\ [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &= \\ \cup_{z_{\text{Neutrosophic Number}}} & \\ \{S_{\text{Neutrosophic SuperHyperSet}} \mid & \\ S_{\text{Neutrosophic SuperHyperSet}} = G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}, & \\ |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} & \\ = z_{\text{Neutrosophic Number}}\}. & \end{aligned}$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the Neutrosophic Eulerian-Cycle-Decomposition.

$$\begin{aligned} G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\ \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &= \\ \cup_{z_{\text{Neutrosophic Number}}} \{S_{\text{Neutrosophic SuperHyperSet}} \mid & \\ S_{\text{Neutrosophic SuperHyperSet}} = G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}, & \end{aligned}$$

$$\begin{aligned}
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= z_{\text{Neutrosophic Number}} | \\
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \}.
 \end{aligned}$$

In more concise and more convenient ways, the modified definition for the Neutrosophic Eulerian-Cycle-Decomposition poses the upcoming expressions. 6263
6264

$$\begin{aligned}
 & G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} = \\
 & \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} | \\
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \}.
 \end{aligned}$$

To translate the statement to this mathematical literature, the formulae will be revised. 6265

$$\begin{aligned}
 & G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} = \\
 & \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} | \\
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \\
 &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}.
 \end{aligned}$$

And then, 6266

$$\begin{aligned}
 & G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} = \\
 & \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} | \\
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}.
 \end{aligned}$$

To get more visions in the closer look-up, there's an overall overlook. 6267

$$\begin{aligned}
 & G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} = \\
 & \cup_{z_{\text{Neutrosophic Number}}} \{S_{\text{Neutrosophic SuperHyperSet}} | \\
 & S_{\text{Neutrosophic SuperHyperSet}} = G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}, \\
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}.
 \end{aligned}$$

6268

$$\begin{aligned}
 & G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} = \\
 & \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} = \\
 & \cup_{z_{\text{Neutrosophic Number}}} \{S_{\text{Neutrosophic SuperHyperSet}} | \\
 & S_{\text{Neutrosophic SuperHyperSet}} = G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}, \\
 & |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}}
 \end{aligned}$$

$$\begin{aligned}
 &= z_{\text{Neutrosophic Number}} | \\
 &|S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 &= \max \{|E| \mid E \in E_{ESHG:(V,E)}\}.
 \end{aligned}$$

6269

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &| \\
 |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} & \\
 = \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} & \\
 = \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. &
 \end{aligned}$$

6270

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 \{S \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &| \\
 |S_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} & \\
 = \max \{|E| \mid E \in E_{ESHG:(V,E)}\}. &
 \end{aligned}$$

Now, the extension of these types of approaches is up. Since the new term, “Neutrosophic SuperHyperNeighborhood”, could be redefined as the collection of the Neutrosophic SuperHyperVertices such that any amount of its Neutrosophic SuperHyperVertices are incident to a Neutrosophic SuperHyperEdge. It’s, literarily, another name for “Neutrosophic Quasi-Eulerian-Cycle-Decomposition” but, precisely, it’s the generalization of “Neutrosophic Quasi-Eulerian-Cycle-Decomposition” since “Neutrosophic Quasi-Eulerian-Cycle-Decomposition” happens “Neutrosophic Eulerian-Cycle-Decomposition” in a Neutrosophic SuperHyperGraph as initial framework and background but “Neutrosophic SuperHyperNeighborhood” may not happens “Neutrosophic Eulerian-Cycle-Decomposition” in a Neutrosophic SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the Neutrosophic SuperHyperCardinality arise from it. To get orderly keywords, the terms, “Neutrosophic SuperHyperNeighborhood”, “Neutrosophic Quasi-Eulerian-Cycle-Decomposition”, and “Neutrosophic Eulerian-Cycle-Decomposition” are up.

Thus, let

$z_{\text{Neutrosophic Number}}$, $N_{\text{Neutrosophic SuperHyperNeighborhood}}$ and $G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}}$ be a Neutrosophic number, a Neutrosophic SuperHyperNeighborhood and a Neutrosophic Eulerian-Cycle-Decomposition and the new terms are up.

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &\in \cup_{z_{\text{Neutrosophic Number}}} \\
 [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &= \\
 \cup_{z_{\text{Neutrosophic Number}}} \{N_{\text{Neutrosophic SuperHyperNeighborhood}} &| \\
 |N_{\text{Neutrosophic SuperHyperNeighborhood}}|_{\text{Neutrosophic Cardinality}} & \\
 = \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \}. &
 \end{aligned}$$

6287

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 \{N_{\text{Neutrosophic SuperHyperNeighborhood}} &
 \end{aligned}$$

$$\begin{aligned}
 & \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} = \\
 & \cup_{z_{\text{Neutrosophic Number}}} \{N_{\text{Neutrosophic SuperHyperNeighborhood}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 & = z_{\text{Neutrosophic Number}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperNeighborhood}}|_{\text{Neutrosophic Cardinality}} \\
 & = \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \}.
 \end{aligned}$$

6288

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 & \{N_{\text{Neutrosophic SuperHyperNeighborhood}} \\
 & \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperNeighborhood}}|_{\text{Neutrosophic Cardinality}} \\
 & = \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \}.
 \end{aligned}$$

6289

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 & \{N_{\text{Neutrosophic SuperHyperNeighborhood}} \\
 & \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 & = \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} \}.
 \end{aligned}$$

And with go back to initial structure,

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$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &\in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} = \\
 & \cup_{z_{\text{Neutrosophic Number}}} \{N_{\text{Neutrosophic SuperHyperNeighborhood}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperNeighborhood}}|_{\text{Neutrosophic Cardinality}} \\
 & = \max \{|E| \mid E \in E_{ESHG:(V,E)}\}.
 \end{aligned}$$

6291

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 & \{N_{\text{Neutrosophic SuperHyperNeighborhood}} \\
 & \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} = \\
 & \cup_{z_{\text{Neutrosophic Number}}} \{N_{\text{Neutrosophic SuperHyperNeighborhood}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} \\
 & = z_{\text{Neutrosophic Number}} \mid \\
 & \quad |N_{\text{Neutrosophic SuperHyperNeighborhood}}|_{\text{Neutrosophic Cardinality}} \\
 & = \max \{|E| \mid E \in E_{ESHG:(V,E)}\}.
 \end{aligned}$$

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 \{N_{\text{Neutrosophic SuperHyperNeighborhood}} & \\
 \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &| \\
 |N_{\text{Neutrosophic SuperHyperNeighborhood}}|_{\text{Neutrosophic Cardinality}} & \\
 = \max_{[z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}}} z_{\text{Neutrosophic Number}} & \\
 = \max \{ |E| \mid E \in E_{ESHG:(V,E)} \} \}. &
 \end{aligned}$$

$$\begin{aligned}
 G_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} &= \\
 \{N_{\text{Neutrosophic SuperHyperNeighborhood}} & \\
 \in \cup_{z_{\text{Neutrosophic Number}}} [z_{\text{Neutrosophic Number}}]_{\text{Neutrosophic Class}} &| \\
 |N_{\text{Neutrosophic SuperHyperSet}}|_{\text{Neutrosophic Cardinality}} & \\
 = \max \{ |E| \mid E \in E_{ESHG:(V,E)} \} \}. &
 \end{aligned}$$

Thus, in a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. The all interior Neutrosophic SuperHyperVertices belong to any Neutrosophic quasi-R-Eulerian-Cycle-Decomposition if for any of them, and any of other corresponded Neutrosophic SuperHyperVertex, some interior Neutrosophic SuperHyperVertices are mutually Neutrosophic SuperHyperNeighbors with no Neutrosophic exception at all minus all Neutrosophic SuperHyperNeighbors to any amount of them.

To make sense with the precise words in the terms of “R-”, the follow-up illustrations are coming up.

The following Neutrosophic SuperHyperSet of Neutrosophic SuperHyperVertices is the simple Neutrosophic type-SuperHyperSet of the Neutrosophic R-Eulerian-Cycle-Decomposition.

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

The Neutrosophic SuperHyperSet of Neutrosophic SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Is the simple Neutrosophic type-SuperHyperSet of the Neutrosophic R-Eulerian-Cycle-Decomposition. The Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

Is an **Neutrosophic R-Eulerian-Cycle-Decomposition** $\mathcal{C}(ESHG)$ for an Neutrosophic SuperHyper-Graph $ESHG : (V, E)$ is a Neutrosophic type-SuperHyperSet with

the maximum Neutrosophic cardinality of a Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices such that there's no a Neutrosophic SuperHyperEdge amid some Neutrosophic SuperHyperVertices instead of all given by

Neutrosophic Eulerian-Cycle-Decomposition is related to the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

There's not only one Neutrosophic SuperHyperVertex inside the intended Neutrosophic SuperHyperSet. Thus the non-obvious Neutrosophic Eulerian-Cycle-Decomposition is up. The obvious simple Neutrosophic type-SuperHyperSet called the Neutrosophic Eulerian-Cycle-Decomposition is a Neutrosophic SuperHyperSet includes only one Neutrosophic SuperHyperVertex. But the Neutrosophic SuperHyperSet of Neutrosophic SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

doesn't have less than two SuperHyperVertices inside the intended Neutrosophic SuperHyperSet since they've come from at least so far an SuperHyperEdge. Thus the non-obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic R-Eulerian-Cycle-Decomposition is up. To sum them up, the Neutrosophic SuperHyperSet of Neutrosophic SuperHyperVertices,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

Is the non-obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic R-Eulerian-Cycle-Decomposition. Since the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an Neutrosophic R-Eulerian-Cycle-Decomposition $\mathcal{C}(ESHG)$ for an Neutrosophic SuperHyperGraph $ESHG : (V, E)$ is the Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices such that there's no a Neutrosophic SuperHyperEdge for some Neutrosophic SuperHyperVertices instead of all given by that Neutrosophic type-SuperHyperSet called the Neutrosophic Eulerian-Cycle-Decomposition and it's an Neutrosophic Eulerian-Cycle-Decomposition. Since it's

the maximum Neutrosophic cardinality of a Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices such that there's no a Neutrosophic SuperHyperEdge for some amount Neutrosophic SuperHyperVertices instead of all given by that Neutrosophic type-SuperHyperSet called the Neutrosophic Eulerian-Cycle-Decomposition. There isn't only less than two Neutrosophic SuperHyperVertices inside the intended Neutrosophic SuperHyperSet,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

Thus the non-obvious Neutrosophic R-Eulerian-Cycle-Decomposition,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

is up. The non-obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic Eulerian-Cycle-Decomposition, not:

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_E = \{E \in E_{ESHG:(V,E)} \mid |E| = \max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}.$$

Is the Neutrosophic SuperHyperSet, not:

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

does includes only less than two SuperHyperVertices in a connected Neutrosophic Super-
 HyperGraph $ESHG : (V, E)$ but it's impossible in the case, they've corresponded to an
 SuperHyperEdge. It's interesting to mention that the only non-obvious simple Neutrosophic
 type-SuperHyperSet called the

“Neutrosophic R-Eulerian-Cycle-Decomposition”

amid those obvious[non-obvious] simple Neutrosophic type-SuperHyperSets called the

Neutrosophic R-Eulerian-Cycle-Decomposition,

is only and only

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

In a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyper-
 Modeling. It's also, not only a Neutrosophic free-triangle embedded SuperHyperModel and a
 Neutrosophic on-triangle embedded SuperHyperModel but also it's a Neutrosophic stable em-
 bedded SuperHyperModel. But all only non-obvious simple Neutrosophic type-SuperHyperSets
 of the Neutrosophic R-Eulerian-Cycle-Decomposition amid those obvious simple Neutrosophic type-
 SuperHyperSets of the Neutrosophic Eulerian-Cycle-Decomposition, are

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

In a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$.

To sum them up, assume a connected loopless Neutrosophic SuperHyperGraph $ESHG : (V, E)$.
 Then in the worst case, literally,

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

is a Neutrosophic R-Eulerian-Cycle-Decomposition. In other words, the least cardinality, the lower
 sharp bound for the cardinality, of a Neutrosophic R-Eulerian-Cycle-Decomposition is the cardinality of

$$V \setminus V \setminus \{a_E, b_E, c_E, \dots\}_{E=\{E \in E_{ESHG:(V,E)} \mid |E|=\max\{|E| \mid E \in E_{ESHG:(V,E)}\}\}} \cdot$$

To sum them up, in a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. The all interior
 Neutrosophic SuperHyperVertices belong to any Neutrosophic quasi-R-Eulerian-Cycle-Decomposition if
 for any of them, and any of other corresponded Neutrosophic SuperHyperVertex, some interior
 Neutrosophic SuperHyperVertices are mutually Neutrosophic SuperHyperNeighbors with no
 Neutrosophic exception at all minus all Neutrosophic SuperHyperNeighbors to any amount of
 them.

Assume a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. Let a Neutrosophic Super-
 rHyperEdge $ESHE : E \in E_{ESHG:(V,E)}$ has some Neutrosophic SuperHyperVertices r . Consider
 all Neutrosophic numbers of those Neutrosophic SuperHyperVertices from that Neutrosophic
 SuperHyperEdge excluding excluding more than r distinct Neutrosophic SuperHyperVertices,

exclude to any given Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices. Consider there's a Neutrosophic R-Eulerian-Cycle-Decomposition with the least cardinality, the lower sharp Neutrosophic bound for Neutrosophic cardinality. Assume a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. The Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is a Neutrosophic SuperHyperSet S of the Neutrosophic SuperHyperVertices such that there's a Neutrosophic SuperHyperEdge to have some Neutrosophic SuperHyperVertices uniquely but it isn't a Neutrosophic R-Eulerian-Cycle-Decomposition. Since it doesn't have

the maximum Neutrosophic cardinality of a Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices such that there's a Neutrosophic SuperHyperEdge to have some SuperHyperVertices uniquely. The Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum Neutrosophic cardinality of a Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices but it isn't a Neutrosophic R-Eulerian-Cycle-Decomposition. Since it **doesn't do** the Neutrosophic procedure such that such that there's a Neutrosophic SuperHyperEdge to have some Neutrosophic SuperHyperVertices uniquely [there are at least one Neutrosophic SuperHyperVertex outside implying there's, sometimes in the connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$, a Neutrosophic SuperHyperVertex, titled its Neutrosophic SuperHyperNeighbor, to that Neutrosophic SuperHyperVertex in the Neutrosophic SuperHyperSet S so as S doesn't do "the Neutrosophic procedure"]. There's only **one** Neutrosophic SuperHyperVertex **outside** the intended Neutrosophic SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of Neutrosophic SuperHyperNeighborhood. Thus the obvious Neutrosophic R-Eulerian-Cycle-Decomposition, V_{ESHE} is up. The obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic R-Eulerian-Cycle-Decomposition, V_{ESHE} , **is** a Neutrosophic SuperHyperSet, V_{ESHE} , **includes** only **all** Neutrosophic SuperHyperVertices does forms any kind of Neutrosophic pairs are titled Neutrosophic SuperHyperNeighbors in a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. Since the Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperVertices V_{ESHE} , is the **maximum Neutrosophic SuperHyperCardinality** of a Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices **such that** there's a Neutrosophic SuperHyperEdge to have some Neutrosophic SuperHyperVertices uniquely. Thus, in a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$. Any Neutrosophic R-Eulerian-Cycle-Decomposition only contains all interior Neutrosophic SuperHyperVertices and all exterior Neutrosophic SuperHyperVertices from the unique Neutrosophic SuperHyperEdge where there's any of them has all possible Neutrosophic SuperHyperNeighbors in and there's all Neutrosophic SuperHyperNeighborhoods in with no exception minus all Neutrosophic SuperHyperNeighbors to some of them not all of them but everything is possible about Neutrosophic SuperHyperNeighborhoods and Neutrosophic SuperHyperNeighbors out. The SuperHyperNotion, namely, Eulerian-Cycle-Decomposition, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following Neutrosophic SuperHyperSet of Neutrosophic SuperHyperEdges[SuperHyperVertices] is the simple Neutrosophic type-SuperHyperSet of the Neutrosophic Eulerian-Cycle-Decomposition. The Neutrosophic SuperHyperSet of Neutrosophic SuperHyperEdges[SuperHyperVertices],

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\ &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\ & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \end{aligned}$$

$$\begin{aligned}
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Neutrosophic Cardinality}}{2} \rfloor} \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} &= \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

is the simple Neutrosophic type-SuperHyperSet of the Neutrosophic Eulerian-Cycle-Decomposition. 6354
 The Neutrosophic SuperHyperSet of the Neutrosophic SuperHyperEdges[SuperHyperVertices], 6355

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Neutrosophic Cardinality}}{2} \rfloor} \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Neutrosophic Cardinality}}{2} \rfloor} \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} &= \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is an **Neutrosophic Eulerian-Cycle-Decomposition** $\mathcal{C}(ESHG)$ for an Neutrosophic SuperHyper- 6356
 Graph $ESHG : (V, E)$ is a Neutrosophic type-SuperHyperSet with 6357

the **maximum Neutrosophic cardinality** of a Neutrosophic SuperHyperSet S of Neut- 6359
 rosophic SuperHyperEdges[SuperHyperVertices] such that there's no Neutrosophic Super- 6360
 HyperVertex of a Neutrosophic SuperHyperEdge is common and there's an Neutrosophic 6361
 SuperHyperEdge for all Neutrosophic SuperHyperVertices. There are not only **two** Neut- 6362
 rosophic SuperHyperVertices **inside** the intended Neutrosophic SuperHyperSet. Thus the 6363
 non-obvious Neutrosophic Eulerian-Cycle-Decomposition is up. The obvious simple Neutrosophic type- 6364
 SuperHyperSet called the Neutrosophic Eulerian-Cycle-Decomposition is a Neutrosophic SuperHyperSet 6365
includes only **two** Neutrosophic SuperHyperVertices. But the Neutrosophic SuperHyperSet of 6366
 the Neutrosophic SuperHyperEdges[SuperHyperVertices], 6367

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)| \text{Neutrosophic Cardinality}}{2} \rfloor} \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)| \text{Neutrosophic Cardinality}}{2} \rfloor} \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} &= \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Doesn't have less than three SuperHyperVertices **inside** the intended Neutrosophic SuperHyper- 6368
 perSet. Thus the non-obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic 6369
 Eulerian-Cycle-Decomposition **is** up. To sum them up, the Neutrosophic SuperHyperSet of the Neutro- 6370
 sophic SuperHyperEdges[SuperHyperVertices], 6371

$$\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}}$$

$$\begin{aligned}
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is the non-obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic Eulerian- 6372
Cycle-Decomposition. Since the Neutrosophic SuperHyperSet of the Neutrosophic SuperHy- 6373
perEdges[SuperHyperVertices], 6374

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is an Neutrosophic Eulerian-Cycle-Decomposition $\mathcal{C}(ESHG)$ for an Neutrosophic SuperHyperGraph 6375
 $ESHG : (V, E)$ is the Neutrosophic SuperHyperSet S of Neutrosophic SuperHyperVertices such 6376
that there's no a Neutrosophic SuperHyperEdge for some Neutrosophic SuperHyperVertices 6377
given by that Neutrosophic type-SuperHyperSet called the Neutrosophic Eulerian-Cycle-Decomposition 6378
and it's an Neutrosophic Eulerian-Cycle-Decomposition. Since it's 6379
6380

the maximum Neutrosophic cardinality of a Neutrosophic SuperHyperSet S of Neut- 6381
rosophic SuperHyperEdges[SuperHyperVertices] such that there's no Neutrosophic Super- 6382
HyperVertex of a Neutrosophic SuperHyperEdge is common and there's an Neutrosophic 6383
SuperHyperEdge for all Neutrosophic SuperHyperVertices. There aren't only less than three 6384
Neutrosophic SuperHyperVertices inside the intended Neutrosophic SuperHyperSet, 6385

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 &\mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Thus the non-obvious Neutrosophic Eulerian-Cycle-Decomposition,

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is up. The obvious simple Neutrosophic type-SuperHyperSet of the Neutrosophic Eulerian-Cycle-Decomposition, not:

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Is the Neutrosophic SuperHyperSet, not:

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-Decomposition}} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= 2z^{\lfloor \frac{|ESHG:(V,E)|_{\text{Neutrosophic Cardinality}}}{2} \rfloor} \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition}} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t \\
 & \mathcal{C}(NSHG)_{\text{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial}} \\
 &= az^s + bz^t.
 \end{aligned}$$

Does includes only less than three SuperHyperVertices in a connected Neutrosophic Super-HyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple Neutrosophic type-SuperHyperSet called the

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“Neutrosophic Eulerian-Cycle-Decomposition”

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amid those obvious[non-obvious] simple Neutrosophic type-SuperHyperSets called the

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Neutrosophic Eulerian-Cycle-Decomposition,

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is only and only

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{NeutrosophicQuasi-Eulerian-Cycle-Decomposition} \\
 &= \{E_{2i-1}\}_{i=1}^{\lfloor \frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{2} \rfloor}. \\
 & \mathcal{C}(NSHG)_{NeutrosophicQuasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial} \\
 &= 2z^{\lfloor \frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{2} \rfloor}. \\
 & \mathcal{C}(NSHG)_{NeutrosophicR-Quasi-Eulerian-Cycle-Decomposition} = \{V_i\}_{i=1}^s, \{V_j\}_{j=1}^t. \\
 & \mathcal{C}(NSHG)_{NeutrosophicR-Quasi-Eulerian-Cycle-DecompositionSuperHyperPolynomial} \\
 &= az^s + bz^t.
 \end{aligned}$$

In a connected Neutrosophic SuperHyperGraph $ESHG : (V, E)$.

■ 6397

The Neutrosophic Departures on The Theoretical Results Toward Theoretical Motivations

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The previous Neutrosophic approach apply on the upcoming Neutrosophic results on Neutrosophic SuperHyperClasses. 6402

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Proposition 31.0.1. Assume a connected Neutrosophic SuperHyperPath $ESH\mathcal{P} : (V, E)$. Then 6404

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

Proof. Let

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$$\begin{aligned} & P : \\ & V_1^{EXTERNAL}, E_1, \\ & V_2^{EXTERNAL}, E_2, \\ & \dots, \\ & V_{\lfloor \frac{|E_{NSHG}|}{3} \rfloor}^{EXTERNAL}, E_{\lfloor \frac{|E_{NSHG}|}{3} \rfloor} \end{aligned}$$

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$$\begin{aligned} & P : \\ & E_1, V_1^{EXTERNAL}, \\ & E_2, V_2^{EXTERNAL}, \\ & \dots, \\ & E_{\lfloor \frac{|E_{NSHG}|}{3} \rfloor}, V_{\lfloor \frac{|E_{NSHG}|}{3} \rfloor}^{EXTERNAL} \end{aligned}$$

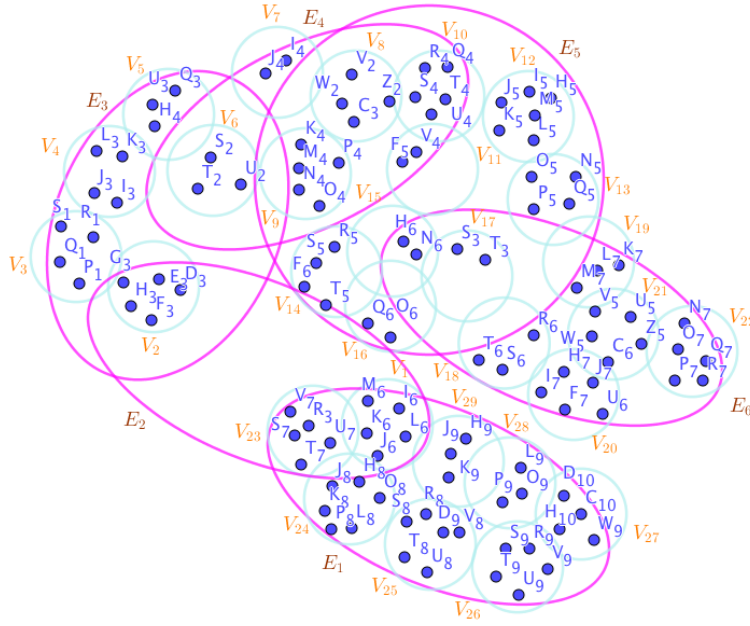


Figure 31.1: a Neutrosophic SuperHyperPath Associated to the Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Example (42.0.5)

136NSHG18

be a longest path taken from a connected Neutrosophic SuperHyperPath $ESHP : (V, E)$.
There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded
to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is
straightforward. ■

136EXM18a

Example 31.0.2. In the Figure (31.1), the connected Neutrosophic SuperHyperPath $ESHP : (V, E)$, is highlighted and featured. The Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.1), is the SuperHyperEulerian-Cycle-Decomposition.

Proposition 31.0.3. Assume a connected Neutrosophic SuperHyperCycle $ESHC : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Neutrosophic \text{ Eulerian-Cycle-Decomposition}} &= \{\{E_i \in E_{NSHG}\}\}. \\ \mathcal{C}(NSHG)_{Neutrosophic \text{ Eulerian-Cycle-Decomposition SuperHyperPolynomial}} &= z^{|E_{NSHG}|}. \\ \mathcal{C}(NSHG)_{Neutrosophic \text{ V-Eulerian-Cycle-Decomposition}} & \end{aligned}$$

$$\begin{aligned}
 &= \{\{V_{E_i \in E_{NSHG}}\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic } V\text{-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^{|V_{NSHG}|}.
 \end{aligned}$$

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(31.2)

Proof. Let

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$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &V_{\frac{|E_{NSHG}|}{3}}^{EXTERNAL}, E_{\frac{|E_{NSHG}|}{3}}
 \end{aligned}$$

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$$\begin{aligned}
 &P : \\
 &E_1, V_1^{EXTERNAL}, \\
 &E_2, V_2^{EXTERNAL}, \\
 &\dots, \\
 &E_{\frac{|E_{NSHG}|}{3}}, V_{\frac{|E_{NSHG}|}{3}}^{EXTERNAL}
 \end{aligned}$$

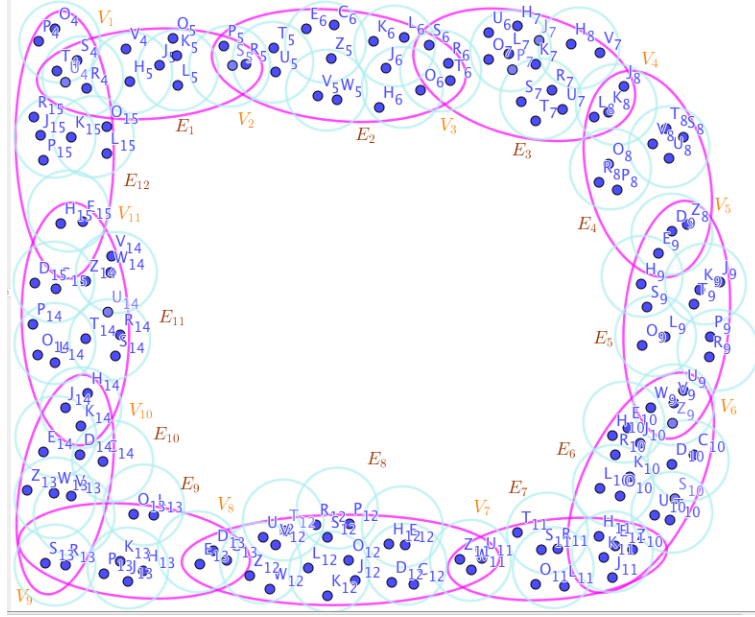
be a longest path taken from a connected Neutrosophic SuperHyperCycle $ESHC : (V, E)$. 6419
There's a new way to redefine as 6420

$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded 6421
to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is 6422
straightforward. ■ 6423

136EXM19a

Example 31.0.4. In the Figure (31.2), the connected Neutrosophic SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.2), is the Neutrosophic SuperHyperEulerian-Cycle-Decomposition. 6424
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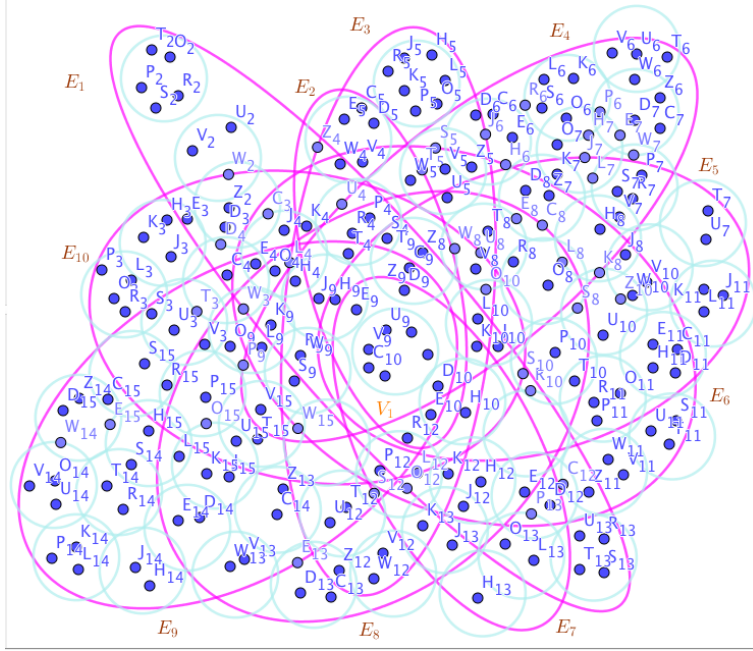


Figure 31.3: a Neutrosophic SuperHyperStar Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.9)

136NSHG20a

be a longest path taken a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. ■

136EXM20a

Example 31.0.6. In the Figure (31.3), the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, in the Neutrosophic SuperHyperModel (31.3), is the Neutrosophic SuperHyperEulerian-Cycle-Decomposition.

Proposition 31.0.7. Assume a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$.

Then

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$$\begin{aligned}
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition}} \\
 &= \{\{\}\}. \\
 &\mathcal{C}(NSHG)_{\text{Neutrosophic V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\
 &= z^0.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 &P : \\
 &V_1^{\text{EXTERNAL}}, E_1, \\
 &V_2^{\text{EXTERNAL}}, E_2, \\
 &\dots, \\
 &V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{\text{EXTERNAL}}, E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}.
 \end{aligned}$$

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$$\begin{aligned}
 &P : \\
 &E_1, V_1^{\text{EXTERNAL}}, \\
 &E_2, V_2^{\text{EXTERNAL}}, \\
 &\dots, \\
 &E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}, V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{\text{EXTERNAL}}
 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$.

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There's a new way to redefine as

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$$\begin{aligned}
 &V_i^{\text{EXTERNAL}} \sim V_j^{\text{EXTERNAL}} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{\text{EXTERNAL}})| \geq |N(V_j)|$ where V_j is corresponded to V_i^{EXTERNAL} in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. Then there's no at least one SuperHyperEulerian-Cycle-Decomposition. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperEulerian-Cycle-Decomposition could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned}
 &P : \\
 &V_1^{\text{EXTERNAL}}, E_1, \\
 &V_2^{\text{EXTERNAL}}, E_2
 \end{aligned}$$

136NSHG21a

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136EXM21a

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$$= z^0.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic } V\text{-Eulerian-Cycle-Decomposition}}$$

$$= \{\{\}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic } V\text{-Eulerian-Cycle-Decomposition SuperHyperPolynomial}}$$

$$= z^0.$$

Proof. Let

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{EXTERNAL}, E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}. \end{aligned}$$

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$$\begin{aligned} P : \\ E_1, V_1^{EXTERNAL}, \\ E_2, V_2^{EXTERNAL}, \\ \dots, \\ E_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}, V_{|P_i|=\min_{P_j \in E_{NSHG}} |P_j|}^{EXTERNAL} \end{aligned}$$

is a longest SuperHyperEulerian-Cycle-Decomposition taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. Then there's no at least one SuperHyperEulerian-Cycle-Decomposition. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperEulerian-Cycle-Decomposition could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart SuperHyperEdges are attained in any solution

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$$P :$$

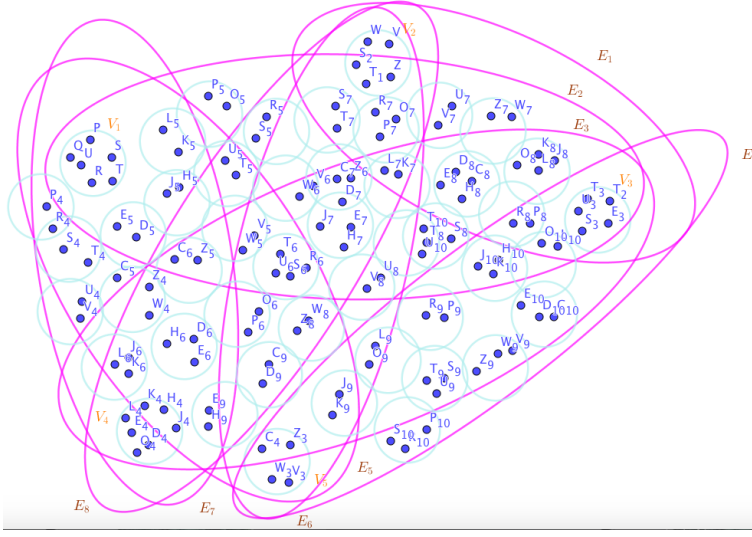


Figure 31.5: a Neutrosophic SuperHyperMultipartite Associated to the Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Example (42.0.13)

136NSHG22a

$$V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. 6478
The latter is straightforward. 6479

136EXM22a

Example 31.0.10. In the Figure (31.5), the connected Neutrosophic SuperHyperMultipartite 6480
 $ESHM : (V, E)$, is highlighted and Neutrosophic featured. The obtained Neutrosophic 6481
SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic 6482
SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, 6483
in the Neutrosophic SuperHyperModel (31.5), is the Neutrosophic SuperHyperEulerian-Cycle- 6484
Decomposition. 6485

Proposition 31.0.11. Assume a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. 6486
Then, 6487

$$\begin{aligned} &\mathcal{C}(NSHG)_{Neutrosophic \text{ Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{Neutrosophic \text{ Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \\ &\mathcal{C}(NSHG)_{Neutrosophic \text{ V-Eulerian-Cycle-Decomposition}} \\ &= \{\{\}\}. \\ &\mathcal{C}(NSHG)_{Neutrosophic \text{ V-Eulerian-Cycle-Decomposition SuperHyperPolynomial}} \\ &= z^0. \end{aligned}$$

Proof. Let

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1^*, \\ CENTER, E_2^* \end{aligned}$$

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$$\begin{aligned} P : \\ E_1^*, V_1^{EXTERNAL}, \\ E_2^*, CENTER \end{aligned}$$

is a longest SuperHyperEulerian-Cycle-Decomposition taken from a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperEulerian-Cycle-Decomposition. The latter is straightforward. Then there's at least one SuperHyperEulerian-Cycle-Decomposition. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperEulerian-Cycle-Decomposition could be applied. The unique embedded SuperHyperEulerian-Cycle-Decomposition proposes some longest SuperHyperEulerian-Cycle-Decomposition excerpt from some representatives. The latter is straightforward. ■

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136EXM23a

Example 31.0.12. In the Neutrosophic Figure (31.6), the connected Neutrosophic SuperHyperWheel $NSHW : (V, E)$, is Neutrosophic highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$, in the Neutrosophic SuperHyperModel (31.6), is the Neutrosophic SuperHyperEulerian-Cycle-Decomposition.

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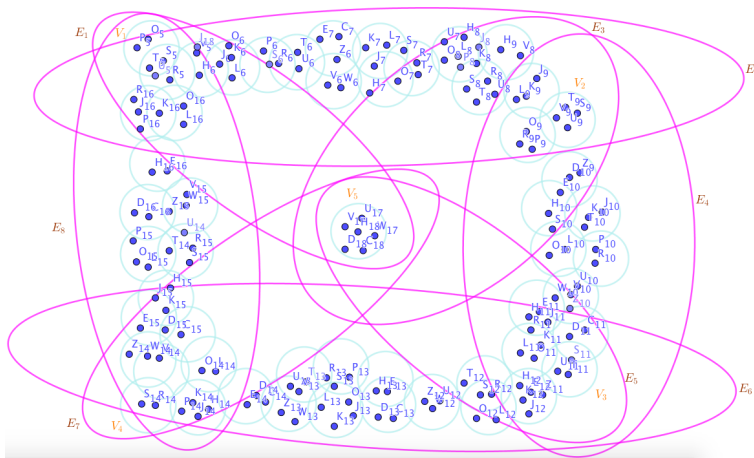


Figure 31.6: a Neutrosophic SuperHyperWheel Neutrosophic Associated to the Neutrosophic Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition in the Neutrosophic Example (42.0.15)

136NSHG23a

The Surveys of Mathematical Sets On The Results But As The Initial Motivation

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For the SuperHyperEulerian-Cycle-Decomposition, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, and the Neutrosophic SuperHyperEulerian-Cycle-Decomposition, some general results are introduced.

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Remark 32.0.1. Let remind that the Neutrosophic SuperHyperEulerian-Cycle-Decomposition is “redefined” on the positions of the alphabets.

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Corollary 32.0.2. Assume Neutrosophic SuperHyperEulerian-Cycle-Decomposition. Then

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$$\begin{aligned} & \text{Neutrosophic SuperHyperEulerian} - \text{Cycle} - \text{Decomposition} = \\ & \{ \text{the SuperHyperEulerian} - \text{Cycle} - \text{Decomposition of the SuperHyperVertices} \mid \\ & \max | \text{SuperHyperOffensive} \\ & \text{SuperHyperEulerian} - \text{Cycle} - \text{Decomposition} \\ & | \text{Neutrosophic cardinality amid those SuperHyperEulerian} - \text{Cycle} - \text{Decomposition}. \} \end{aligned}$$

plus one Neutrosophic SuperHyperNeighbor to one. Where σ_i is the unary operation on the SuperHyperVertices of the SuperHyperGraph to assign the determinacy, the indeterminacy and the neutrality, for $i = 1, 2, 3$, respectively.

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Corollary 32.0.3. Assume a Neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then the notion of Neutrosophic SuperHyperEulerian-Cycle-Decomposition and SuperHyperEulerian-Cycle-Decomposition coincide.

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Corollary 32.0.4. Assume a Neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then a conseNeighborive sequence of the SuperHyperVertices is a Neutrosophic SuperHyperEulerian-Cycle-Decomposition if and only if it's a SuperHyperEulerian-Cycle-Decomposition.

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Corollary 32.0.5. Assume a Neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then a conseNeighborive sequence of the SuperHyperVertices is a strongest SuperHyperEulerian-Cycle-Decomposition if and only if it's a longest SuperHyperEulerian-Cycle-Decomposition.

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Corollary 32.0.6. Assume SuperHyperClasses of a Neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition is its SuperHyperEulerian-Cycle-Decomposition and reversely.

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Corollary 32.0.7. Assume a Neutrosophic SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel) on the same identical letter of the alphabet. Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition is its SuperHyperEulerian-Cycle-Decomposition and reversely.

Corollary 32.0.8. Assume a Neutrosophic SuperHyperGraph. Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition isn't well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition isn't well-defined.

Corollary 32.0.9. Assume SuperHyperClasses of a Neutrosophic SuperHyperGraph. Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition isn't well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition isn't well-defined.

Corollary 32.0.10. Assume a Neutrosophic SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition isn't well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition isn't well-defined.

Corollary 32.0.11. Assume a Neutrosophic SuperHyperGraph. Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition is well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition is well-defined.

Corollary 32.0.12. Assume SuperHyperClasses of a Neutrosophic SuperHyperGraph. Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition is well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition is well-defined.

Corollary 32.0.13. Assume a Neutrosophic SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its Neutrosophic SuperHyperEulerian-Cycle-Decomposition is well-defined if and only if its SuperHyperEulerian-Cycle-Decomposition is well-defined.

Proposition 32.0.14. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph. Then V is

- (i) : the dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : the strong dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : the connected dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : the δ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (v) : the strong δ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (vi) : the connected δ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition.

Proposition 32.0.15. Let $NTG : (V, E, \sigma, \mu)$ be a Neutrosophic SuperHyperGraph. Then \emptyset is

- (i) : the SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (ii) : the strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iii) : the connected defensive SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;
- (iv) : the δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition;

(v) : the strong δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6563

(vi) : the connected δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6564

Proposition 32.0.16. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph. Then an independent SuperHyperSet is 6565
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(i) : the SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6567

(ii) : the strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6568

(iii) : the connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6569

(iv) : the δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6570

(v) : the strong δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6571

(vi) : the connected δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6572

Proposition 32.0.17. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperUniform SuperHyper-Graph which is a SuperHyperEulerian-Cycle-Decomposition/SuperHyperPath. Then V is a maximal 6573
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(i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6575

(ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6576

(iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6577

(iv) : $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6578

(v) : strong $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6579

(vi) : connected $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6580

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 6581

Proposition 32.0.18. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph which is a SuperHyperUniform SuperHyperWheel. Then V is a maximal 6582
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(i) : dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6584

(ii) : strong dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6585

(iii) : connected dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6586

(iv) : $\mathcal{O}(ESHG)$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6587

(v) : strong $\mathcal{O}(ESHG)$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6588

(vi) : connected $\mathcal{O}(ESHG)$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6589

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 6590

Proposition 32.0.19. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperUniform SuperHyper-Graph which is a SuperHyperEulerian-Cycle-Decomposition/SuperHyperPath. Then the number of 6591
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- (i) : the $SuperHyperEulerian-Cycle-Decomposition$; 6593
- (ii) : the $SuperHyperEulerian-Cycle-Decomposition$; 6594
- (iii) : the connected $SuperHyperEulerian-Cycle-Decomposition$; 6595
- (iv) : the $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$; 6596
- (v) : the strong $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$; 6597
- (vi) : the connected $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$. 6598
- is one and it's only V . Where the exterior $SuperHyperVertices$ and the interior $SuperHyperVertices$ coincide. 6599
- Proposition 32.0.20.** Let $ESHG : (V, E)$ be a Neutrosophic $SuperHyperUniform SuperHyper-$ 6601
 Graph which is a $SuperHyperWheel$. Then the number of 6602
- (i) : the dual $SuperHyperEulerian-Cycle-Decomposition$; 6603
- (ii) : the dual $SuperHyperEulerian-Cycle-Decomposition$; 6604
- (iii) : the dual connected $SuperHyperEulerian-Cycle-Decomposition$; 6605
- (iv) : the dual $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$; 6606
- (v) : the strong dual $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$; 6607
- (vi) : the connected dual $\mathcal{O}(ESHG)$ - $SuperHyperEulerian-Cycle-Decomposition$. 6608
- is one and it's only V . Where the exterior $SuperHyperVertices$ and the interior $SuperHyperVertices$ coincide. 6609
- Proposition 32.0.21.** Let $ESHG : (V, E)$ be a Neutrosophic $SuperHyperUniform SuperHyper-$ 6611
 perGraph which is a $SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyper-$ 6612
 Complete $SuperHyperMultipartite$. Then a $SuperHyperSet$ contains [the $SuperHyperCenter$ 6613
 and] the half of multiplying r with the number of all the $SuperHyperEdges$ plus one of all the 6614
 $SuperHyperVertices$ is a 6615
- (i) : dual $SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition$; 6616
- (ii) : strong dual $SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition$; 6617
- (iii) : connected dual $SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition$; 6618
- (iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual $SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition$; 6619
- (v) : strong $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual $SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition$; 6620
- (vi) : connected $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual $SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition$. 6621

Proposition 32.0.22. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperUniform SuperHyper- 6622
Graph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperCom- 6623
plete SuperHyperMultipartite. Then a SuperHyperSet contains the half of multiplying r with 6624
the number of all the SuperHyperEdges plus one of all the SuperHyperVertices in the biggest 6625
SuperHyperPart is a 6626

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6627
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6628
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6629
- (iv) : δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6630
- (v) : strong δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6631
- (vi) : connected δ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6632

Proposition 32.0.23. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperUniform SuperHyper- 6633
Graph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperCom- 6634
plete SuperHyperMultipartite. Then Then the number of 6635

- (i) : dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6636
- (ii) : strong dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6637
- (iii) : connected dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6638
- (iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6639
- (v) : strong $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6640
- (vi) : connected $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6641

is one and it's only S , a SuperHyperSet contains [the SuperHyperCenter and] the half of 6642
multiplying r with the number of all the SuperHyperEdges plus one of all the SuperHyperVertices. 6643
Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 6644

Proposition 32.0.24. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph. The number of 6645
connected component is $|V - S|$ if there's a SuperHyperSet which is a dual 6646

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6647
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6648
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6649
- (iv) : SuperHyperEulerian-Cycle-Decomposition; 6650
- (v) : strong 1-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6651
- (vi) : connected 1-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6652

Proposition 32.0.25. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph. Then the number is at most $\mathcal{O}(ESHG)$ and the Neutrosophic number is at most $\mathcal{O}_n(ESHG)$. 6653 6654

Proposition 32.0.26. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph which is SuperHyperComplete. The number is $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the Neutrosophic number is $\min \sum_{v \in \{v_1, v_2, \dots, v_t\}} \frac{\mathcal{O}(ESHG:(V,E))}{2} \subseteq V \sigma(v)$, in the setting of dual 6655 6656 6657

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6658
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6659
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6660
- (iv) : $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6661
- (v) : strong $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6662
- (vi) : connected $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6663

Proposition 32.0.27. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph which is \emptyset . The number is 0 and the Neutrosophic number is 0, for an independent SuperHyperSet in the setting of dual 6664 6665 6666

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6667
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6668
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6669
- (iv) : 0-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6670
- (v) : strong 0-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6671
- (vi) : connected 0-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6672

Proposition 32.0.28. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph which is SuperHyperComplete. Then there's no independent SuperHyperSet. 6673 6674

Proposition 32.0.29. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph which is SuperHyperEulerian-Cycle-Decomposition/SuperHyperPath/SuperHyperWheel. The number is $\mathcal{O}(ESHG : (V, E))$ and the Neutrosophic number is $\mathcal{O}_n(ESHG : (V, E))$, in the setting of a dual 6675 6676 6677 6678

- (i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6679
- (ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6680
- (iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6681
- (iv) : $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6682
- (v) : strong $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6683

(vi) : connected $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6684

Proposition 32.0.30. Let $ESHG : (V, E)$ be a Neutrosophic SuperHyperGraph which is SuperHyperStar/complete SuperHyperBipartite/complete SuperHyperMultiPartite. The number is $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the Neutrosophic number is $\min \Sigma_{v \in \{v_1, v_2, \dots, v_t\}} \subseteq V \sigma(v)$, in the setting of a dual 6685
6686
6687
6688

(i) : SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6689

(ii) : strong SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6690

(iii) : connected SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6691

(iv) : $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6692

(v) : strong $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6693

(vi) : connected $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6694

Proposition 32.0.31. Let $\mathcal{NSHF} : (V, E)$ be a SuperHyperFamily of the $ESHGs : (V, E)$ Neutrosophic SuperHyperGraphs which are from one-type SuperHyperClass which the result is obtained for the individuals. Then the results also hold for the SuperHyperFamily $\mathcal{NSHF} : (V, E)$ of these specific SuperHyperClasses of the Neutrosophic SuperHyperGraphs. 6695
6696
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Proposition 32.0.32. Let $ESHG : (V, E)$ be a strong Neutrosophic SuperHyperGraph. If S is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then $\forall v \in V \setminus S, \exists x \in S$ such that 6699
6700

(i) $v \in N_s(x)$; 6701

(ii) $vx \in E$. 6702

Proposition 32.0.33. Let $ESHG : (V, E)$ be a strong Neutrosophic SuperHyperGraph. If S is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then 6703
6704

(i) S is SuperHyperEulerian-Cycle-Decomposition set; 6705

(ii) there's $S \subseteq S'$ such that $|S'|$ is SuperHyperChromatic number. 6706

Proposition 32.0.34. Let $ESHG : (V, E)$ be a strong Neutrosophic SuperHyperGraph. Then 6707

(i) $\Gamma \leq \mathcal{O}$; 6708

(ii) $\Gamma_s \leq \mathcal{O}_n$. 6709

Proposition 32.0.35. Let $ESHG : (V, E)$ be a strong Neutrosophic SuperHyperGraph which is connected. Then 6710
6711

(i) $\Gamma \leq \mathcal{O} - 1$; 6712

(ii) $\Gamma_s \leq \mathcal{O}_n - \Sigma_{i=1}^3 \sigma_i(x)$. 6713

Proposition 32.0.36. Let $ESHG : (V, E)$ be an odd SuperHyperPath. Then 6714

- (i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_{n-1}\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6715
 6716
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ and corresponded SuperHyperSet is $S = \{v_2, v_4, \dots, v_{n-1}\}$; 6717
- (iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 6718
- (iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_{n-1}\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only a dual SuperHyperEulerian-Cycle-Decomposition. 6719
 6720
- Proposition 32.0.37.** Let $ESHG : (V, E)$ be an even SuperHyperPath. Then 6721
- (i) the set $S = \{v_2, v_4, \dots, v_n\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6722
 6723
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ and corresponded SuperHyperSets are $\{v_2, v_4, \dots, v_n\}$ and $\{v_1, v_3, \dots, v_{n-1}\}$; 6724
- (iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_n\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 6725
- (iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_n\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only dual SuperHyperEulerian-Cycle-Decomposition. 6726
 6727
- Proposition 32.0.38.** Let $ESHG : (V, E)$ be an even SuperHyperEulerian-Cycle-Decomposition. Then 6728
- (i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_n\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6729
 6730
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ and corresponded SuperHyperSets are $\{v_2, v_4, \dots, v_n\}$ and $\{v_1, v_3, \dots, v_{n-1}\}$; 6731
- (iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_n\}} \sigma(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sigma(s)\}$; 6732
- (iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_n\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only dual SuperHyperEulerian-Cycle-Decomposition. 6733
 6734
- Proposition 32.0.39.** Let $ESHG : (V, E)$ be an odd SuperHyperEulerian-Cycle-Decomposition. Then 6735
- (i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_{n-1}\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6736
 6737
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ and corresponded SuperHyperSet is $S = \{v_2, v_4, \dots, v_{n-1}\}$; 6738
- (iii) $\Gamma_s = \min\{\sum_{s \in S = \{v_2, v_4, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S = \{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 6739
- (iv) the SuperHyperSets $S_1 = \{v_2, v_4, \dots, v_{n-1}\}$ and $S_2 = \{v_1, v_3, \dots, v_{n-1}\}$ are only dual SuperHyperEulerian-Cycle-Decomposition. 6740
 6741
- Proposition 32.0.40.** Let $ESHG : (V, E)$ be SuperHyperStar. Then 6742
- (i) the SuperHyperSet $S = \{c\}$ is a dual maximal SuperHyperEulerian-Cycle-Decomposition; 6743
- (ii) $\Gamma = 1$; 6744
- (iii) $\Gamma_s = \sum_{i=1}^3 \sigma_i(c)$; 6745

(iv) the SuperHyperSets $S = \{c\}$ and $S \subset S'$ are only dual SuperHyperEulerian-Cycle-Decomposition. 6746

Proposition 32.0.41. Let $ESHG : (V, E)$ be SuperHyperWheel. Then 6747

(i) the SuperHyperSet $S = \{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6748
6749

(ii) $\Gamma = |\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}|$; 6750

(iii) $\Gamma_s = \sum_{\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}} \sum_{i=1}^3 \sigma_i(s)$; 6751

(iv) the SuperHyperSet $\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is only a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6752
6753

Proposition 32.0.42. Let $ESHG : (V, E)$ be an odd SuperHyperComplete. Then 6754

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6755
6756

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$; 6757

(iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$; 6758

(iv) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is only a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6759
6760

Proposition 32.0.43. Let $ESHG : (V, E)$ be an even SuperHyperComplete. Then 6761

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6762
6763

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$; 6764

(iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$; 6765

(iv) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is only a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6766
6767

Proposition 32.0.44. Let $\mathcal{NSHF} : (V, E)$ be a m -SuperHyperFamily of Neutrosophic SuperHyperStars with common Neutrosophic SuperHyperVertex SuperHyperSet. Then 6768
6769

(i) the SuperHyperSet $S = \{c_1, c_2, \cdots, c_m\}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition for \mathcal{NSHF} ; 6770
6771

(ii) $\Gamma = m$ for $\mathcal{NSHF} : (V, E)$; 6772

(iii) $\Gamma_s = \sum_{i=1}^m \sum_{j=1}^3 \sigma_j(c_i)$ for $\mathcal{NSHF} : (V, E)$; 6773

(iv) the SuperHyperSets $S = \{c_1, c_2, \cdots, c_m\}$ and $S \subset S'$ are only dual SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$. 6774
6775

Proposition 32.0.45. Let $\mathcal{NSHF} : (V, E)$ be an m -SuperHyperFamily of odd SuperHyperComplete SuperHyperGraphs with common Neutrosophic SuperHyperVertex SuperHyperSet. Then

- (i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual maximal SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition for \mathcal{NSHF} ; 6776
6779
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ for $\mathcal{NSHF} : (V, E)$; 6780
- (iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$ for $\mathcal{NSHF} : (V, E)$; 6781
- (iv) the SuperHyperSets $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ are only a dual maximal SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$. 6782
6783

Proposition 32.0.46. Let $\mathcal{NSHF} : (V, E)$ be a m -SuperHyperFamily of even SuperHyperComplete SuperHyperGraphs with common Neutrosophic SuperHyperVertex SuperHyperSet. Then

- (i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$; 6786
6787
- (ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ for $\mathcal{NSHF} : (V, E)$; 6788
- (iii) $\Gamma_s = \min\{\sum_{s \in S} \sum_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$ for $\mathcal{NSHF} : (V, E)$; 6789
- (iv) the SuperHyperSets $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ are only dual maximal SuperHyperEulerian-Cycle-Decomposition for $\mathcal{NSHF} : (V, E)$. 6790
6791

Proposition 32.0.47. Let $ESHG : (V, E)$ be a strong Neutrosophic SuperHyperGraph. Then following statements hold; 6792
6793

- (i) if $s \geq t$ and a SuperHyperSet S of SuperHyperVertices is an t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is an s -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6794
6795
6796
- (ii) if $s \leq t$ and a SuperHyperSet S of SuperHyperVertices is a dual t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is a dual s -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6797
6798
6799

Proposition 32.0.48. Let $ESHG : (V, E)$ be a strong Neutrosophic SuperHyperGraph. Then following statements hold; 6800
6801

- (i) if $s \geq t + 2$ and a SuperHyperSet S of SuperHyperVertices is an t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is an s -SuperHyperPowerful SuperHyperEulerian-Cycle-Decomposition; 6802
6803
6804
- (ii) if $s \leq t$ and a SuperHyperSet S of SuperHyperVertices is a dual t -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition, then S is a dual s -SuperHyperPowerful SuperHyperEulerian-Cycle-Decomposition. 6805
6806
6807

Proposition 32.0.49. Let $ESHG : (V, E)$ be a $[an]$ $[V-]$ SuperHyperUniform-strong-Neutrosophic SuperHyperGraph. Then following statements hold; 6808
6809

- (i) if $\forall a \in S, |N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6810
6811
- (ii) if $\forall a \in V \setminus S, |N_s(a) \cap S| > \lfloor \frac{r}{2} \rfloor + 1$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6812
6813
- (iii) if $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is an V-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6814
6815
- (iv) if $\forall a \in V \setminus S, |N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is a dual V-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6816
6817
- Proposition 32.0.50.** Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Neutrosophic SuperHyperGraph. Then following statements hold; 6818
6819
- (i) $\forall a \in S, |N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6820
6821
- (ii) $\forall a \in V \setminus S, |N_s(a) \cap S| > \lfloor \frac{r}{2} \rfloor + 1$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6822
6823
- (iii) $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an V-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6824
6825
- (iv) $\forall a \in V \setminus S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual V-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6826
6827
- Proposition 32.0.51.** Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Neutrosophic SuperHyperGraph which is a SuperHyperComplete. Then following statements hold; 6828
6829
- (i) $\forall a \in S, |N_s(a) \cap S| < \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6830
6831
- (ii) $\forall a \in V \setminus S, |N_s(a) \cap S| > \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6832
6833
- (iii) $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6834
6835
- (iv) $\forall a \in V \setminus S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6836
6837
- Proposition 32.0.52.** Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Neutrosophic SuperHyperGraph which is a SuperHyperComplete. Then following statements hold; 6838
6839
- (i) if $\forall a \in S, |N_s(a) \cap S| < \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6840
6841
- (ii) if $\forall a \in V \setminus S, |N_s(a) \cap S| > \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6842
6843
- (iii) if $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition; 6844
6845

(iv) if $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is a dual $(\mathcal{O} - 1)$ -
SuperHyperDefensive SuperHyperEulerian-Cycle-Decomposition. 6846
 6847

Proposition 32.0.53. Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Neutrosophic
 SuperHyperGraph which is SuperHyperEulerian-Cycle-Decomposition. Then following statements hold; 6848
 6849

(i) $\forall a \in S$, $|N_s(a) \cap S| < 2$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperEulerian-
 Cycle-Decomposition; 6850
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(ii) $\forall a \in V \setminus S$, $|N_s(a) \cap S| > 2$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 6852
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(iii) $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 6854
 6855

(iv) $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition. 6856
 6857

Proposition 32.0.54. Let $ESHG : (V, E)$ is a[an] [V-]SuperHyperUniform-strong-Neutrosophic
 SuperHyperGraph which is SuperHyperEulerian-Cycle-Decomposition. Then following statements hold; 6858
 6859

(i) if $\forall a \in S$, $|N_s(a) \cap S| < 2$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 6860
 6861

(ii) if $\forall a \in V \setminus S$, $|N_s(a) \cap S| > 2$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 6862
 6863

(iii) if $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition; 6864
 6865

(iv) if $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
 SuperHyperEulerian-Cycle-Decomposition. 6866
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Neutrosophic Applications in Cancer's Neutrosophic Recognition

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The cancer is the Neutrosophic disease but the Neutrosophic model is going to figure out what's going on this Neutrosophic phenomenon. The special Neutrosophic case of this Neutrosophic disease is considered and as the consequences of the model, some parameters are used. The cells are under attack of this disease but the moves of the cancer in the special region are the matter of mind. The Neutrosophic recognition of the cancer could help to find some Neutrosophic treatments for this Neutrosophic disease.

In the following, some Neutrosophic steps are Neutrosophic devised on this disease.

Step 1. (Neutrosophic Definition) *The Neutrosophic recognition of the cancer in the long-term Neutrosophic function.*

Step 2. (Neutrosophic Issue) *The specific region has been assigned by the Neutrosophic model [it's called Neutrosophic SuperHyperGraph] and the long Neutrosophic cycle of the move from the cancer is identified by this research. Sometimes the move of the cancer hasn't be easily identified since there are some determinacy, indeterminacy and neutrality about the moves and the effects of the cancer on that region; this event leads us to choose another model [it's said to be Neutrosophic SuperHyperGraph] to have convenient perception on what's happened and what's done.*

Step 3. (Neutrosophic Model) *There are some specific Neutrosophic models, which are well-known and they've got the names, and some general Neutrosophic models. The moves and the Neutrosophic traces of the cancer on the complex tracks and between complicated groups of cells could be fantasized by a Neutrosophic SuperHyperPath(-/SuperHyperEulerian-Cycle-Decomposition, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the Neutrosophic SuperHyperEulerian-Cycle-Decomposition or the Neutrosophic SuperHyperEulerian-Cycle-Decomposition in those Neutrosophic Neutrosophic SuperHyperModels.*

Case 1: The Initial Neutrosophic Steps Toward Neutrosophic SuperHyperBipartite as Neutrosophic SuperHyperModel

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Step 4. (Neutrosophic Solution) In the Neutrosophic Figure (34.1), the Neutrosophic SuperHyperBipartite is Neutrosophic highlighted and Neutrosophic featured.

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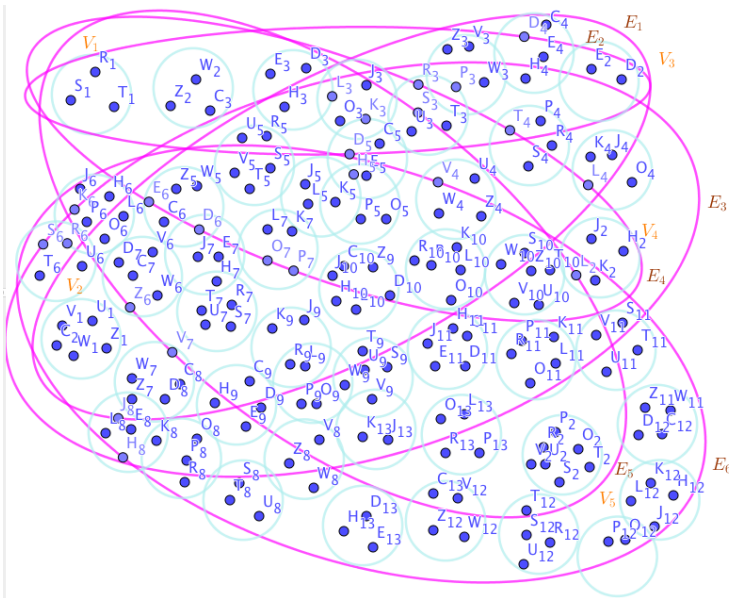


Figure 34.1: a Neutrosophic SuperHyperBipartite Associated to the Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition

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Table 34.1: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges
Belong to The Neutrosophic SuperHyperBipartite

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

By using the Neutrosophic Figure (34.1) and the Table (34.1), the Neutrosophic SuperHyperBipartite is obtained.
The obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, in the Neutrosophic SuperHyperModel (34.1), is the Neutrosophic SuperHyperEulerian-Cycle-Decomposition.

Case 2: The Increasing Neutrosophic Steps Toward Neutrosophic SuperHyperMultipartite as Neutrosophic SuperHyperModel

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Step 4. (Neutrosophic Solution) In the Neutrosophic Figure (35.1), the Neutrosophic SuperHyperMultipartite is Neutrosophic highlighted and Neutrosophic featured.

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By using the Neutrosophic Figure (35.1) and the Table (35.1), the Neutrosophic SuperHyperMultipartite is obtained.

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The obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous

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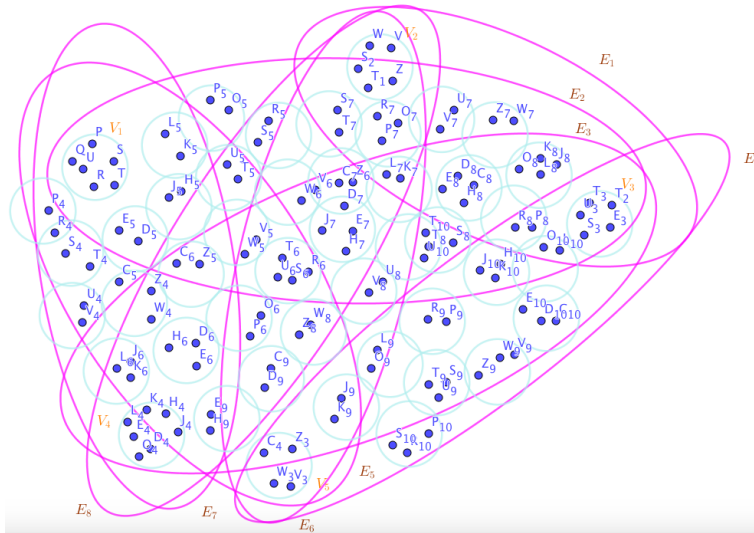


Figure 35.1: a Neutrosophic SuperHyperMultipartite Associated to the Notions of Neutrosophic SuperHyperEulerian-Cycle-Decomposition

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Table 35.1: The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges
Belong to The Neutrosophic SuperHyperMultipartite

The Values of The Vertices	The Number of Position in Alphabet
The Values of The SuperVertices	The maximum Values of Its Vertices
The Values of The Edges	The maximum Values of Its Vertices
The Values of The HyperEdges	The maximum Values of Its Vertices
The Values of The SuperHyperEdges	The maximum Values of Its Endpoints

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result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite ESHM : (V, E), in the Neutrosophic SuperHyperModel (35.1), is the Neutrosophic SuperHyperEulerian-Cycle-Decomposition.

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Wondering Open Problems But As The Directions To Forming The Motivations

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In what follows, some “problems” and some “questions” are proposed. 6924

The SuperHyperEulerian-Cycle-Decomposition and the Neutrosophic SuperHyperEulerian-Cycle-Decomposition are defined on a real-world application, titled “Cancer’s Recognitions”. 6925
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Question 36.0.1. *Which the else SuperHyperModels could be defined based on Cancer’s recognitions?* 6927
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Question 36.0.2. *Are there some SuperHyperNotions related to SuperHyperEulerian-Cycle-Decomposition and the Neutrosophic SuperHyperEulerian-Cycle-Decomposition?* 6929
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Question 36.0.3. *Are there some Algorithms to be defined on the SuperHyperModels to compute them?* 6931
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Question 36.0.4. *Which the SuperHyperNotions are related to beyond the SuperHyperEulerian-Cycle-Decomposition and the Neutrosophic SuperHyperEulerian-Cycle-Decomposition?* 6933
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Problem 36.0.5. *The SuperHyperEulerian-Cycle-Decomposition and the Neutrosophic SuperHyperEulerian-Cycle-Decomposition do a SuperHyperModel for the Cancer’s recognitions and they’re based on SuperHyperEulerian-Cycle-Decomposition, are there else?* 6935
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Problem 36.0.6. *Which the fundamental SuperHyperNumbers are related to these SuperHyper-Numbers types-results?* 6938
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Problem 36.0.7. *What’s the independent research based on Cancer’s recognitions concerning the multiple types of SuperHyperNotions?* 6940
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Conclusion and Closing Remarks

In this section, concluding remarks and closing remarks are represented. The drawbacks of this research are illustrated. Some benefits and some advantages of this research are highlighted. This research uses some approaches to make Neutrosophic SuperHyperGraphs more understandable. In this endeavor, two SuperHyperNotions are defined on the SuperHyperEulerian-Cycle-Decomposition. For that sake in the second definition, the main definition of the Neutrosophic SuperHyperGraph is redefined on the position of the alphabets. Based on the new definition for the Neutrosophic SuperHyperGraph, the new SuperHyperNotion, Neutrosophic SuperHyperEulerian-Cycle-Decomposition, finds the convenient background to implement some results based on that. Some SuperHyperClasses and some Neutrosophic SuperHyperClasses are the cases of this research on the modeling of the regions where are under the attacks of the cancer to recognize this disease as it's mentioned on the title "Cancer's Recognitions". To formalize the instances on the SuperHyperNotion, SuperHyperEulerian-Cycle-Decomposition, the new SuperHyperClasses and SuperHyperClasses, are introduced. Some general results are gathered in the section on the SuperHyperEulerian-Cycle-Decomposition and the Neutrosophic SuperHyperEulerian-Cycle-Decomposition. The clarifications, instances and literature reviews have taken the whole way through. In this research, the literature reviews have fulfilled the lines containing the notions and the results. The SuperHyperGraph and Neutrosophic SuperHyperGraph are the SuperHyperModels on the "Cancer's Recognitions" and both bases are the background of this research. Sometimes the cancer has been happened on the region, full of cells, groups of cells and embedded styles. In this segment, the SuperHyperModel proposes some SuperHyperNotions based on the connectivities of the moves of the cancer in the longest and strongest styles with the formation of the design and the architecture are formally called "SuperHyperEulerian-Cycle-Decomposition" in the themes of jargons and buzzwords. The prefix "SuperHyper" refers to the theme of the embedded styles to figure out the background for the SuperHyperNotions. In the Table (37.1), benefits and avenues for this research are, figured out, pointed out and spoken out.

Table 37.1: An Overlook On This Research And Beyond

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Advantages	Limitations
1. Redefining Neutrosophic SuperHyperGraph	1. General Results
2. SuperHyperEulerian-Cycle-Decomposition	
3. Neutrosophic SuperHyperEulerian-Cycle-Decomposition	2. Other SuperHyperNumbers
4. Modeling of Cancer’s Recognitions	
5. SuperHyperClasses	3. SuperHyperFamilies

Neutrosophic SuperHyperDuality But As The Extensions Excerpt From Dense And Super Forms

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Definition 38.0.1. (Different Neutrosophic Types of Neutrosophic SuperHyperDuality). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' or E' is called

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(i) **Neutrosophic e-SuperHyperDuality** if $\forall E_i \in E', \exists E_j \in E_{NSHG:(V,E)} \setminus E'$ such that $V_a \in E_i, E_j$;

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(ii) **Neutrosophic re-SuperHyperDuality** if $\forall E_i \in E', \exists E_j \in E_{NSHG:(V,E)} \setminus E'$ such that $V_a \in E_i, E_j$ and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$;

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(iii) **Neutrosophic v-SuperHyperDuality** if $\forall V_i \in V', \exists V_j \in V_{NSHG:(V,E)} \setminus V'$ such that $V_i, V_j \in E_a$;

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(iv) **Neutrosophic rv-SuperHyperDuality** if $\forall V_i \in V', \exists V_j \in V_{NSHG:(V,E)} \setminus V'$ such that $V_i, V_j \in E_a$ and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$;

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(v) **Neutrosophic SuperHyperDuality** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality.

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Definition 38.0.2. ((Neutrosophic) SuperHyperDuality).

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Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called

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(i) an **Extreme SuperHyperDuality** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality;

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- (ii) a **Neutrosophic SuperHyperDuality** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperDuality;
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- (iii) an **Extreme SuperHyperDuality SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded to its Extreme coefficient;
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- (iv) a **Neutrosophic SuperHyperDuality SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperDuality; and the Neutrosophic power is corresponded to its Neutrosophic coefficient;
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- (v) an **Extreme R-SuperHyperDuality** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality;
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- (vi) a **Neutrosophic R-SuperHyperDuality** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperDuality;
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 - 7032
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- (vii) an **Extreme R-SuperHyperDuality SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for an
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Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded to its Extreme coefficient;

(viii) a **Neutrosophic SuperHyperDuality SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperDuality, Neutrosophic re-SuperHyperDuality, Neutrosophic v-SuperHyperDuality, and Neutrosophic rv-SuperHyperDuality and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperDuality; and the Neutrosophic power is corresponded to its Neutrosophic coefficient.

Example 38.0.3. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Neutrosophic Figures in every Neutrosophic items.

- On the Figure (30.1), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. E_1 and E_3 are some empty Extreme SuperHyperEdges but E_2 is a loop Neutrosophic SuperHyperEdge and E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperDuality.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} = 3z.$$

- On the Figure (30.2), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. E_1, E_2 and E_3 are some empty Neutrosophic SuperHyperEdges but E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in

every given Neutrosophic SuperHyperDuality.

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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7076

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7078

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7080

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7082

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_{3i+1^3_{i=0}}, E_{3i+24^3_{i=0}}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 6z^8. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_{3i+1^7_{i=0}}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 6z^8.\end{aligned}$$

- On the Figure (30.7), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7084

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} = \{E_{15}, E_{16}, E_{17}\}.$$

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.8), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7086 7087

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.9), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7088 7089

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_{3i+1_{i=0}^3}, E_{23}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 3z^5. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_{3i+1_{i=0}^3}, V_{15}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 3z^5.\end{aligned}$$

- On the Figure (30.10), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7090 7091

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.11), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7092 7093

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_1, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_6, V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.12), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7094 7095

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_{i=4}^{i \neq 5,7,8}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (30.13), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7096 7097

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_5, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.14), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7098 7099

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7100 7101

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.16), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7102 7103

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= (2 \times 1 \times 2) + (2 \times 4 \times 5)z.\end{aligned}$$

- On the Figure (30.17), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7104 7105

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2)z.\end{aligned}$$

- On the Figure (30.18), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7106 7107

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= \\ (2 \times 2 \times 2)z.\end{aligned}$$

- On the Figure (30.19), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7108 7109

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_{3i+1_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 3z^4. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_{2i+1_{i=0}^5}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 2z^6.\end{aligned}$$

- On the Figure (30.20), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7110 7111

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7112 7113

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperDuality, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} &= 4z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} \\ &= 10 \times 9 + 10 \times 6 + 12 \times 9 + 12 \times 6z^2.\end{aligned}$$

The previous Neutrosophic approach apply on the upcoming Neutrosophic results on Neutrosophic SuperHyperClasses.

Proposition 38.0.4. Assume a connected Neutrosophic SuperHyperPath $ESHP : (V, E)$. Then

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} &= \\ &= \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} \\ &= 3z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} \\ &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} \\ &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}.\end{aligned}$$

Proof. Let

$$\begin{aligned}P : \\ V_1^{\text{EXTERNAL}}, E_1, \\ V_2^{\text{EXTERNAL}}, E_2, \\ \dots, \\ E_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}, V^{\text{EXTERNAL}}_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}.\end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperPath $ESHP : (V, E)$. There's a new way to redefine as

$$\begin{aligned}V_i^{\text{EXTERNAL}} &\sim V_j^{\text{EXTERNAL}} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}}\} &\subseteq E_z.\end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{\text{EXTERNAL}})| \geq |N(V_j)|$ where V_j is corresponded to V_i^{EXTERNAL} in the literatures of SuperHyperDuality. The latter is straightforward. ■

136EXM18a

Example 38.0.5. In the Figure (31.1), the connected Neutrosophic SuperHyperPath $ESHP : (V, E)$, is highlighted and featured. The Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.1), is the SuperHyperDuality. 7124
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Proposition 38.0.6. Assume a connected Neutrosophic SuperHyperCycle $ESHC : (V, E)$. Then 7127

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality}} = \\ & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperDuality SuperHyperPolynomial}} \\ & = 3z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality}} \\ & = \{V_i^{\text{EXTERNAL}}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperDuality SuperHyperPolynomial}} \\ & = \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \end{aligned}$$

Proof. Let

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$$\begin{aligned} & P : \\ & V_1^{\text{EXTERNAL}}, E_1, \\ & V_2^{\text{EXTERNAL}}, E_2, \\ & \dots, \\ & E_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}^{\text{EXTERNAL}}. \end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperCycle $ESHC : (V, E)$. 7129
There's a new way to redefine as 7130

$$\begin{aligned} & V_i^{\text{EXTERNAL}} \sim V_j^{\text{EXTERNAL}} \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}} \in E_z \equiv \\ & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{\text{EXTERNAL}})| \geq |N(V_j)|$ where V_j is corresponded to V_i^{EXTERNAL} in the literatures of SuperHyperDuality. The latter is straightforward. ■ 7131
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136EXM19a

Example 38.0.7. In the Figure (31.2), the connected Neutrosophic SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.2), is the Neutrosophic SuperHyperDuality. 7133
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Proposition 38.0.8. Assume a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. Then 7136

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperDuality}} = \{E \in E_{ESHG:(V,E)}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ & = |i| E_i \in E_{ESHG:(V,E)} |_{\text{Neutrosophic Cardinality}} |z|. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperDuality}} = \{CENTER \in V_{ESHG:(V,E)}\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperDuality SuperHyperPolynomial}} = z. \end{aligned}$$

Proof. Let

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$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

be a longest path taken a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. ■

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136EXM20a

Example 38.0.9. In the Figure (31.3), the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, in the Neutrosophic SuperHyperModel (31.3), is the Neutrosophic SuperHyperDuality.

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Proposition 38.0.10. Assume a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Then

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$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperDuality}} \\ &= \{E_i \in E_{P_i^{ESHG:(V,E)}}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose} |P_i^{ESHG:(V,E)}| \right) \\ &\quad \sim^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperDuality}} \\ &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, i \neq j\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

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$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. 7150
There's a new way to redefine as 7151

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded 7152
to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. 7153
Then there's at least one SuperHyperDuality. Thus the notion of quasi isn't up and the 7154
SuperHyperNotions based on SuperHyperDuality could be applied. There are only two 7155
SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the 7156
representative in the 7157

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest SuperHyperDuality taken from a connected Neutrosophic SuperHyperBipartite 7158
 $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of- 7159
SuperHyperPart SuperHyperEdges are attained in any solution 7160

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

The latter is straightforward. ■ 7161

136EXM21a

Example 38.0.11. In the Neutrosophic Figure (31.4), the connected Neutrosophic SuperHy- 7162
perBipartite $ESHB : (V, E)$, is Neutrosophic highlighted and Neutrosophic featured. The 7163
obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous Neutrosophic 7164
result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyper- 7165
Bipartite $ESHB : (V, E)$, in the Neutrosophic SuperHyperModel (31.4), is the Neutrosophic 7166
SuperHyperDuality. 7167

Proposition 38.0.12. Assume a connected Neutrosophic SuperHyperMultipartite $ESHM : 7168$

(V, E) . Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)^{Neutrosophic \text{ Quasi-SuperHyperDuality}} \\
 &= \{E_i \in E_{P_i^{ESHG:(V,E)}}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)^{Neutrosophic \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
 &= (\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) choose |P_i^{ESHG:(V,E)}|) \\
 & \quad z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \mathcal{C}(NSHG)^{Neutrosophic \text{ Quasi-SuperHyperDuality}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)^{Neutrosophic \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Neutrosophic \text{ Cardinality}}} = (\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| choose 2) = z^2.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperDuality taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. Then there's at least one SuperHyperDuality. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperDuality could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. 7179
Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart 7180
SuperHyperEdges are attained in any solution 7181

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. 7182
The latter is straightforward. ■ 7183

Example 38.0.13. In the Figure (31.5), the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, in the Neutrosophic SuperHyperModel (31.5), is the Neutrosophic SuperHyperDuality. 7184
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Proposition 38.0.14. Assume a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. 7189
Then, 7190

$$\begin{aligned} \mathcal{C}(NSHG)_{Neutrosophic \text{ Quasi-SuperHyperDuality}} &= \{E^* \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Neutrosophic \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= |i \mid E_i^* \in E_{ESHG:(V,E)}^*|_{Neutrosophic \text{ Cardinality}}|z. \\ \mathcal{C}(NSHG)_{Neutrosophic \text{ R-Quasi-SuperHyperDuality}} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Neutrosophic \text{ R-Quasi-SuperHyperDuality SuperHyperPolynomial}} &= z. \end{aligned}$$

Proof. Let 7191

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1^*, \\ V_2^{EXTERNAL}, E_2^*, \\ \dots, \\ E_{|E_{ESHG:(V,E)}^*|_{Neutrosophic \text{ Cardinality}}}, V_{|E_{ESHG:(V,E)}^*|_{Neutrosophic \text{ Cardinality}}+1}^{EXTERNAL} \end{aligned}$$

is a longest SuperHyperDuality taken from a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as 7192
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$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} &\equiv \\ \exists! E_z^* \in E_{ESHG:(V,E)}^*, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z^* \equiv \\ \exists! E_z^* \in E_{ESHG:(V,E)}^*, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z^*. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperDuality. The latter is straightforward. 7194
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Then there's at least one SuperHyperDuality. Thus the notion of quasi isn't up and the 7196
SuperHyperNotions based on SuperHyperDuality could be applied. The unique embedded 7197
SuperHyperDuality proposes some longest SuperHyperDuality excerpt from some representatives. 7198
The latter is straightforward. ■ 7199

136EXM23a

Example 38.0.15. In the Neutrosophic Figure (31.6), the connected Neutrosophic SuperHyper- 7200
Wheel $NSHW : (V, E)$, is Neutrosophic highlighted and featured. The obtained Neutrosophic 7201
SuperHyperSet, by the Algorithm in previous result, of the Neutrosophic SuperHyperVer- 7202
tices of the connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$, in the Neutrosophic 7203
SuperHyperModel (31.6), is the Neutrosophic SuperHyperDuality. 7204

Neutrosophic SuperHyperJoin But As The Extensions Excerpt From Dense And Super Forms

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Definition 39.0.1. (Different Neutrosophic Types of Neutrosophic SuperHyperJoin). 7209
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7210
Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' 7211
or E' is called 7212

- (i) **Neutrosophic e-SuperHyperJoin** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, such that 7213
 $V_a \in E_i, E_j$; and $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; 7214
- (ii) **Neutrosophic re-SuperHyperJoin** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, such that 7215
 $V_a \in E_i, E_j$; $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} =$ 7216
 $|E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7217
- (iii) **Neutrosophic v-SuperHyperJoin** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, such that 7218
 $V_i, V_j \notin E_a$; and $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; 7219
- (iv) **Neutrosophic rv-SuperHyperJoin** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, such that 7220
 $V_i, V_j \in E_a$; $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} =$ 7221
 $|V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7222
- (v) **Neutrosophic SuperHyperJoin** if it's either of Neutrosophic e-SuperHyperJoin, 7223
Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic 7224
rv-SuperHyperJoin. 7225

Definition 39.0.2. ((Neutrosophic) SuperHyperJoin). 7226
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7227
Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 7228

- (i) an **Extreme SuperHyperJoin** if it's either of Neutrosophic e-SuperHyperJoin, 7229
Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic 7230
rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 7231
is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 7232

- cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; 7233
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- (ii) a **Neutrosophic SuperHyperJoin** if it's either of Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperJoin; 7236
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- (iii) an **Extreme SuperHyperJoin SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme coefficient; 7243
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- (iv) a **Neutrosophic SuperHyperJoin SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperJoin; and the Neutrosophic power is corresponded to its Neutrosophic coefficient; 7252
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- (v) an **Extreme R-SuperHyperJoin** if it's either of Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; 7261
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- (vi) a **Neutrosophic R-SuperHyperJoin** if it's either of Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperJoin; 7268
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(vii) an **Extreme R-SuperHyperJoin SuperHyperPolynomial** if it's either of
Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-
SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for an Extreme
SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the
Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality
of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme
cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices
such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded
to its Extreme coefficient;

(viii) a **Neutrosophic SuperHyperJoin SuperHyperPolynomial** if it's either of
Neutrosophic e-SuperHyperJoin, Neutrosophic re-SuperHyperJoin, Neutrosophic v-
SuperHyperJoin, and Neutrosophic rv-SuperHyperJoin and $\mathcal{C}(NSHG)$ for a Neutrosophic
SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains
the Neutrosophic coefficients defined as the Neutrosophic number of the maximum
Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic
SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic Super-
HyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic
SuperHyperJoin; and the Neutrosophic power is corresponded to its Neutrosophic
coefficient.

Example 39.0.3. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in
the mentioned Neutrosophic Figures in every Neutrosophic items.

- On the Figure (30.1), the Neutrosophic SuperHyperNotion, namely, Neutrosophic
SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.
 E_1 and E_3 are some empty Neutrosophic SuperHyperEdges but E_2 is a loop Neutrosophic
SuperHyperEdge and E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of
Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge,
namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means
that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint.
Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given Neutrosophic
SuperHyperJoin.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1, V_2, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.2), the Neutrosophic SuperHyperNotion, namely, Neutrosophic
SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.
 E_1, E_2 and E_3 are some empty Neutrosophic SuperHyperEdges but E_4 is a Neutrosophic
SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only
one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3
is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as
a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in

every given Neutrosophic SuperHyperJoin.

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$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} = \{V_1, V_2, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} = z^3.$$

- On the Figure (30.3), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} = \{V_1, V_2, V_3\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} = z^3.$$

- On the Figure (30.4), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \{E_4, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} = 2z^2.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} = \{V_1, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} = 15z^2.$$

- On the Figure (30.5), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \{E_3\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} = 4z.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} = \{V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} = z.$$

- On the Figure (30.6), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \{E_{3i+1_{i=0}^3}, E_{3i+24_{i=0}^3}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} = 6z^8.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} = \{V_{3i+1_{i=0}^7}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} = 6z^8.$$

- On the Figure (30.7), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \{E_{15}, E_{16}, E_{17}\}.$$

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.8), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7323 7324

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.9), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7325 7326

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_{3i+1_{i=0}^3}, E_{23}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^5. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_{3i+1_{i=0}^3}, V_{15}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= 3z^5.\end{aligned}$$

- On the Figure (30.10), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7327 7328

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (30.11), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7329 7330

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_1, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_6, V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.12), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7331 7332

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1, V_{i=4}^{i \neq 5,7,8}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (30.13), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7333 7334

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_3, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.14), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7335 7336

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7337 7338

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.16), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7339 7340

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= (1 \times 5 \times 5) + (1 \times 2 + 1)z^3.\end{aligned}$$

- On the Figure (30.17), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7341 7342

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.18), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7343 7344

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.19), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7345 7346

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_{3i+1_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^4. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_{2i+1_{i=0}^5}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= 2z^6.\end{aligned}$$

- On the Figure (30.20), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7347 7348

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7349 7350

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperJoin, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7351 7352

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \{E_2, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} \\ &= 10 \times 6 + 10 \times 6 + 12 \times 6 + 12 \times 6z^2.\end{aligned}$$

The previous Neutrosophic approach apply on the upcoming Neutrosophic results on Neutrosophic SuperHyperClasses. 7353 7354

Proposition 39.0.4. Assume a connected Neutrosophic SuperHyperPath $ESHP : (V, E)$. Then 7355

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \\ &= \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} \\ &= 3z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} \\ &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} \\ &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}.\end{aligned}$$

Proof. Let 7356

$$\begin{aligned}P : \\ V_1^{\text{EXTERNAL}}, E_1, \\ V_2^{\text{EXTERNAL}}, E_2, \\ \dots, \\ E_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}, V^{\text{EXTERNAL}}_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}.\end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperPath $ESHP : (V, E)$. 7357
There's a new way to redefine as 7358

$$\begin{aligned}V_i^{\text{EXTERNAL}} &\sim V_j^{\text{EXTERNAL}} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}}\} &\subseteq E_z.\end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{\text{EXTERNAL}})| \geq |N(V_j)|$ where V_j is corresponded to V_i^{EXTERNAL} in the literatures of SuperHyperJoin. The latter is straightforward. ■ 7359 7360

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Example 39.0.5. In the Figure (31.1), the connected Neutrosophic SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.1), is the SuperHyperJoin. 7361
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Proposition 39.0.6. Assume a connected Neutrosophic SuperHyperCycle $ESH C : (V, E)$. Then 7364

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} &= \\ &= \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} &= \\ &= 3z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} &= \\ &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} &= \\ &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \end{aligned}$$

Proof. Let

7365

$$\begin{aligned} P : \\ V_1^{\text{EXTERNAL}}, E_1, \\ V_2^{\text{EXTERNAL}}, E_2, \\ \dots, \\ E_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}^{\text{EXTERNAL}} \end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperCycle $ESH C : (V, E)$. 7366
There's a new way to redefine as 7367

$$\begin{aligned} V_i^{\text{EXTERNAL}} &\sim V_j^{\text{EXTERNAL}} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{\text{EXTERNAL}})| \geq |N(V_j)|$ where V_j is corresponded to V_i^{EXTERNAL} in the literatures of SuperHyperJoin. The latter is straightforward. ■ 7368
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136EXM19a

Example 39.0.7. In the Figure (31.2), the connected Neutrosophic SuperHyperCycle $NSH C : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.2), is the Neutrosophic SuperHyperJoin. 7370
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Proposition 39.0.8. Assume a connected Neutrosophic SuperHyperStar $ESH S : (V, E)$. Then 7373

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} &= \{E \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin SuperHyperPolynomial}} &= \\ &= |i| \mid E_i \in E_{ESHG:(V,E)} |_{\text{Neutrosophic Cardinality}} |z|. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperJoin}} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperJoin SuperHyperPolynomial}} &= z. \end{aligned}$$

Proof. Let

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$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

be a longest path taken a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. ■

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Example 39.0.9. In the Figure (31.3), the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, in the Neutrosophic SuperHyperModel (31.3), is the Neutrosophic SuperHyperJoin.

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Proposition 39.0.10. Assume a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Then

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$$\begin{aligned} &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} \\ &= (PERFECT MATCHING). \\ &\{E_i \in E_{P_i^{ESHG:(V,E)}}, \\ &\quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} \\ &= (OTHERWISE). \\ &\{\}, \\ &\text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} \\ &= (PERFECT MATCHING). \\ &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\ &\quad \sim \min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}| \\ &\quad \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} \\ &= (OTHERWISE)0. \\ &\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} \end{aligned}$$

$$\begin{aligned}
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, i \neq j\}. \\
 &\mathcal{C}(NSHG)^{Neutrosophic \text{ } Quasi-SuperHyperJoin \text{ } SuperHyperPolynomial} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|^{Neutrosophic \text{ } Cardinality}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$.
There's a new way to redefine as

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$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. Then there's no at least one SuperHyperJoin. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperJoin could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperJoin taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of SuperHyperPart SuperHyperEdges are attained in any solution

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$$\begin{aligned}
 &P : \\
 &V_1^{EXTERNAL}, E_1, \\
 &V_2^{EXTERNAL}, E_2, \\
 &\dots, \\
 &E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

The latter is straightforward.

■ 7397

Example 39.0.11. In the Neutrosophic Figure (31.4), the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, is Neutrosophic highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, in the Neutrosophic SuperHyperModel (31.4), is the Neutrosophic SuperHyperJoin.

Proposition 39.0.12. Assume a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} \\
 &= (PERFECT MATCHING). \\
 & \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
 & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} \\
 &= (OTHERWISE). \\
 & \{\}, \\
 & \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & \quad z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} \\
 &= (OTHERWISE)0. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperJoin SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperJoin taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperJoin. The latter is straightforward. Then there's no at least one SuperHyperJoin. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperJoin could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

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Example 39.0.13. In the Figure (31.5), the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, in the Neutrosophic SuperHyperModel (31.5), is the Neutrosophic SuperHyperJoin.

Proposition 39.0.14. Assume a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$.

Then,

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin}} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperJoin SuperHyperPolynomial}} \\
 & = 3z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin}} \\
 & = \{V_i^{\text{EXTERNAL}}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperJoin SuperHyperPolynomial}} \\
 & = \prod |V_i^{\text{EXTERNAL}}|_{ESHG:(V,E)}^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}} z^{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{\text{EXTERNAL}}, E_1, \\
 & V_2^{\text{EXTERNAL}}, E_2, \\
 & \dots, \\
 & E_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}, V^{\text{EXTERNAL}}_{\frac{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}}}{3}}.
 \end{aligned}$$

is a longest SuperHyperJoin taken from a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 & V_i^{\text{EXTERNAL}} \sim V_j^{\text{EXTERNAL}} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{\text{EXTERNAL}}, V_j^{\text{EXTERNAL}}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{\text{EXTERNAL}})| \geq |N(V_j)|$ where V_j is corresponded to V_i^{EXTERNAL} in the literatures of SuperHyperJoin. The latter is straightforward. Then there's at least one SuperHyperJoin. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperJoin could be applied. The unique embedded SuperHyperJoin proposes some longest SuperHyperJoin excerpt from some representatives. The latter is straightforward. ■

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136EXM23a

Example 39.0.15. In the Neutrosophic Figure (31.6), the connected Neutrosophic SuperHyperWheel $NSHW : (V, E)$, is Neutrosophic highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$, in the Neutrosophic SuperHyperModel (31.6), is the Neutrosophic SuperHyperJoin.

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Neutrosophic SuperHyperPerfect But As The Extensions Excerpt From Dense And Super Forms

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Definition 40.0.1. (Different Neutrosophic Types of Neutrosophic SuperHyperPerfect). 7443
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7444
Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' 7445
or E' is called 7446

- (i) **Neutrosophic e-SuperHyperPerfect** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists! E_j \in E'$, such that 7447
 $V_a \in E_i, E_j$; 7448
- (ii) **Neutrosophic re-SuperHyperPerfect** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists! E_j \in E'$, such 7449
that $V_a \in E_i, E_j$; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7450
- (iii) **Neutrosophic v-SuperHyperPerfect** if $\forall V_i \in V_{NSHG:(V,E)} \setminus V', \exists! V_j \in V'$, such that 7451
 $V_i, V_j \in E_a$; 7452
- (iv) **Neutrosophic rv-SuperHyperPerfect** if $\forall V_i \in V_{NSHG:(V,E)} \setminus V', \exists! V_j \in V'$, such that 7453
 $V_i, V_j \in E_a$; and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7454
- (v) **Neutrosophic SuperHyperPerfect** if it's either of Neutrosophic e-SuperHyperPerfect, 7455
Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic 7456
rv-SuperHyperPerfect. 7457

Definition 40.0.2. ((Neutrosophic) SuperHyperPerfect). 7458
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7459
Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 7460

- (i) an **Extreme SuperHyperPerfect** if it's either of Neutrosophic e-SuperHyperPerfect, 7461
Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic 7462
rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 7463
is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 7464
cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence 7465
of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the 7466
Extreme SuperHyperPerfect; 7467

- (ii) a **Neutrosophic SuperHyperPerfect** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperPerfect; 7468-7474
- (iii) an **Extreme SuperHyperPerfect SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded to its Extreme coefficient; 7475-7483
- (iv) a **Neutrosophic SuperHyperPerfect SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperPerfect; and the Neutrosophic power is corresponded to its Neutrosophic coefficient; 7484-7493
- (v) an **Extreme R-SuperHyperPerfect** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; 7494-7500
- (vi) a **Neutrosophic R-SuperHyperPerfect** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperPerfect; 7501-7507
- (vii) an **Extreme R-SuperHyperPerfect SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains 7508-7511

the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded to its Extreme coefficient;

- (viii) a **Neutrosophic SuperHyperPerfect SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperPerfect, Neutrosophic re-SuperHyperPerfect, Neutrosophic v-SuperHyperPerfect, and Neutrosophic rv-SuperHyperPerfect and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperPerfect; and the Neutrosophic power is corresponded to its Neutrosophic coefficient.

Example 40.0.3. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Neutrosophic Figures in every Neutrosophic items.

- On the Figure (30.1), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. E_1 and E_3 are some empty Neutrosophic SuperHyperEdges but E_2 is a loop Neutrosophic SuperHyperEdge and E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperPerfect.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.2), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. E_1, E_2 and E_3 are some empty Neutrosophic SuperHyperEdges but E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperPerfect.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7546 7547

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7548 7549

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7550 7551

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7552 7553

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_{3i+1_{i=0}^3}, E_{3i+24_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 6z^8. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_{3i+1_{i=0}^7}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 6z^8.\end{aligned}$$

- On the Figure (30.7), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7554 7555

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_{15}, E_{16}, E_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.8), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7556 7557

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} = \{E_4\}.$$

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.9), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7558 7559

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} &= \{E_{3i+1^3_{i=0}}, E_{23}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 3z^5. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect}} &= \{V_{3i+1^3_{i=0}}, V_{15}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 3z^5.\end{aligned}$$

- On the Figure (30.10), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7560 7561

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (30.11), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7562 7563

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_1, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_6, V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= \\ 3 \times 2z^2.\end{aligned}$$

- On the Figure (30.12), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7564 7565

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1, V_{i=4}^{i \neq 5,7,8}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (30.13), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7566 7567

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_3, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 3z^2.\end{aligned}$$

- On the Figure (30.14), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7568 7569

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7570 7571

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.16), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7572 7573

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect}} &= \{V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= (1 \times 5 \times 5) + (1 \times 2 + 1)z^3.\end{aligned}$$

- On the Figure (30.17), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7574 7575

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.18), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (30.19), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_{3i+1_{i=0}^3}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 3z^4. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect}} &= \{V_{2i+1_{i=0}^5}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 2z^6.\end{aligned}$$

- On the Figure (30.20), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= 2z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperPerfect SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperPerfect, is up. The Neutrosophic Algorithm is Neutrosophically straightforward.

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= 10 \times 6 + 10 \times 6 + 12 \times 6 + 12 \times 6z^2.\end{aligned}$$

The previous Neutrosophic approach apply on the upcoming Neutrosophic results on Neutrosophic SuperHyperClasses.

Proposition 40.0.4. Assume a connected Neutrosophic SuperHyperPath $ESH P : (V, E)$. Then 7588

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperPerfect} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperPerfect\ SuperHyperPolynomial} \\
 & = 3\mathcal{Z}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperPerfect} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperPerfect\ SuperHyperPolynomial} \\
 & = \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality} \mathcal{Z}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}.
 \end{aligned}$$

Proof. Let

7589

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}^{EXTERNAL}.
 \end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperPath $ESH P : (V, E)$. 7590
There's a new way to redefine as 7591

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 7592
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. ■ 7593

136EXM18a

Example 40.0.5. In the Figure (31.1), the connected Neutrosophic SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Neutrosophic SuperHyperSet, in the Neutrosophic 7594
SuperHyperModel (31.1), is the SuperHyperPerfect. 7595
7596

Proposition 40.0.6. Assume a connected Neutrosophic SuperHyperCycle $ESH C : (V, E)$. Then 7597

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperPerfect} = \\
 & = \{E_i\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperPerfect\ SuperHyperPolynomial} \\
 & = 3\mathcal{Z}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}}{3}}. \\
 & \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperPerfect}
 \end{aligned}$$

$$= \{V_i^{EXTERNAL}\}_{i=1}^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}}{3}}.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperPerfect \ SuperHyperPolynomial}$$

$$= \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality} z^{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}}{3}}.$$

Proof. Let

7598

$$P :$$

$$V_1^{EXTERNAL}, E_1,$$

$$V_2^{EXTERNAL}, E_2,$$

$$\dots,$$

$$E_{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}}{3}}, V_{\frac{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}}{3}}^{EXTERNAL}.$$

be a longest path taken from a connected Neutrosophic SuperHyperCycle $ESHG : (V, E)$. 7599

There's a new way to redefine as

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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. ■

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Example 40.0.7. In the Figure (31.2), the connected Neutrosophic SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.2), is the Neutrosophic SuperHyperPerfect.

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Proposition 40.0.8. Assume a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. Then

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$$\mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperPerfect} = \{E \in E_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperPerfect \ SuperHyperPolynomial}$$

$$= |i \mid E_i \in E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality} |z|.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperPerfect} = \{CENTER \in V_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperPerfect \ SuperHyperPolynomial} = z.$$

Proof. Let

7607

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

be a longest path taken a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. There's a

7608

new way to redefine as

7609

$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. ■

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Example 40.0.9. In the Figure (31.3), the connected Neutrosophic SuperHyperStar $ESH S : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperStar $ESH S : (V, E)$, in the Neutrosophic SuperHyperModel (31.3), is the Neutrosophic SuperHyperPerfect.

Proposition 40.0.10. Assume a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$.
Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} \\
 &= (PERFECT MATCHING). \\
 & \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
 & \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} \\
 &= (OTHERWISE). \\
 & \{\}, \\
 & \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & z^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (OTHERWISE)0. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. 7620
There's a new way to redefine as 7621

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 7622
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. Then 7623
there's no at least one SuperHyperPerfect. Thus the notion of quasi may be up but the 7624
SuperHyperNotions based on SuperHyperPerfect could be applied. There are only two 7625
SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the 7626
representative in the 7627

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

is a longest SuperHyperPerfect taken from a connected Neutrosophic SuperHyperBipartite 7628
 $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of- 7629
SuperHyperPart SuperHyperEdges are attained in any solution 7630

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

The latter is straightforward. ■ 7631

136EXM21a

Example 40.0.11. In the Neutrosophic Figure (31.4), the connected Neutrosophic SuperHy- 7632
perBipartite $ESHB : (V, E)$, is Neutrosophic highlighted and Neutrosophic featured. The 7633
obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous Neutrosophic 7634
result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyper- 7635
Bipartite $ESHB : (V, E)$, in the Neutrosophic SuperHyperModel (31.4), is the Neutrosophic 7636
SuperHyperPerfect. 7637

Proposition 40.0.12. Assume a connected Neutrosophic SuperHyperMultipartite $ESHM : 7638$

(V, E) . Then

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$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} \\
 &= (PERFECT MATCHING). \\
 & \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
 & \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} \\
 &= (OTHERWISE). \\
 & \{\}, \\
 & \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (PERFECT MATCHING). \\
 &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose } |P_i^{ESHG:(V,E)}| \right) \\
 & z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperPerfect SuperHyperPolynomial}} \\
 &= (OTHERWISE)0. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect}} \\
 &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperPerfect SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

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$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2, \\
 & \dots, \\
 & E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperPerfect taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. Then there’s no at least one SuperHyperPerfect. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperPerfect could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|}, V_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|}, V_{\min_i |P_i^{ESHG:(V,E)} \in PESHG:(V,E)|+1}^{EXTERNAL} \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

136EXM22a

Example 40.0.13. In the Figure (31.5), the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, in the Neutrosophic SuperHyperModel (31.5), is the Neutrosophic SuperHyperPerfect.

Proposition 40.0.14. Assume a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. Then,

$$\begin{aligned} \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperPerfect} &= \{E \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperPerfect\ SuperHyperPolynomial} \\ &= |i \mid E_i \in E_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality} |z|. \\ \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperPerfect} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperPerfect\ SuperHyperPolynomial} &= z. \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

is a longest SuperHyperPerfect taken from a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperPerfect. The latter is straightforward. Then there's at least one SuperHyperPerfect. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperPerfect could be applied. The unique embedded SuperHyperPerfect proposes some longest SuperHyperPerfect excerpt from some representatives. The latter is straightforward. ■

136EXM23a

Example 40.0.15. In the Neutrosophic Figure (31.6), the connected Neutrosophic SuperHyperWheel $NSHW : (V, E)$, is Neutrosophic highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$, in the Neutrosophic SuperHyperModel (31.6), is the Neutrosophic SuperHyperPerfect.

Neutrosophic SuperHyperTotal But As The Extensions Excerpt From Dense And Super Forms

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Definition 41.0.1. (Different Neutrosophic Types of Neutrosophic SuperHyperTotal). 7679
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7680
Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' 7681
or E' is called 7682

- (i) **Neutrosophic e-SuperHyperTotal** if $\forall E_i \in E_{NSHG:(V,E)}, \exists! E_j \in E'$, such that 7683
 $V_a \in E_i, E_j$; 7684
- (ii) **Neutrosophic re-SuperHyperTotal** if $\forall E_i \in E_{NSHG:(V,E)}, \exists! E_j \in E'$, such that 7685
 $V_a \in E_i, E_j$; and $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7686
- (iii) **Neutrosophic v-SuperHyperTotal** if $\forall V_i \in V_{NSHG:(V,E)}, \exists! V_j \in V'$, such that 7687
 $V_i, V_j \in E_a$; 7688
- (iv) **Neutrosophic rv-SuperHyperTotal** if $\forall V_i \in V_{NSHG:(V,E)}, \exists! V_j \in V'$, such that 7689
 $V_i, V_j \in E_a$; and $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7690
- (v) **Neutrosophic SuperHyperTotal** if it's either of Neutrosophic e-SuperHyperTotal, 7691
Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic 7692
rv-SuperHyperTotal. 7693

Definition 41.0.2. ((Neutrosophic) SuperHyperTotal). 7694
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7695
Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 7696

- (i) an **Extreme SuperHyperTotal** if it's either of Neutrosophic e-SuperHyperTotal, 7697
Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic 7698
rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ 7699
is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme 7700
cardinality of the Extreme SuperHyperEdges in the conseNeighborive Extreme sequence 7701
of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the 7702
Extreme SuperHyperTotal; 7703

- (ii) a **Neutrosophic SuperHyperTotal** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperTotal;
- (iii) an **Extreme SuperHyperTotal SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient;
- (iv) a **Neutrosophic SuperHyperTotal SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperTotal; and the Neutrosophic power is corresponded to its Neutrosophic coefficient;
- (v) an **Extreme R-SuperHyperTotal** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperVertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal;
- (vi) a **Neutrosophic R-SuperHyperTotal** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperTotal;
- (vii) an **Extreme R-SuperHyperTotal SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for an Extreme

SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial contains the Extreme coefficients defined as the Extreme number of the maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient;

(viii) a **Neutrosophic SuperHyperTotal SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperTotal, Neutrosophic re-SuperHyperTotal, Neutrosophic v-SuperHyperTotal, and Neutrosophic rv-SuperHyperTotal and $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperTotal; and the Neutrosophic power is corresponded to its Neutrosophic coefficient.

Example 41.0.3. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Neutrosophic Figures in every Neutrosophic items.

- On the Figure (30.1), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophicly straightforward. E_1 and E_3 are some empty Neutrosophic SuperHyperEdges but E_2 is a loop Neutrosophic SuperHyperEdge and E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperTotal.

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal SuperHyperPolynomial}} = 3z.$$

- On the Figure (30.2), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophicly straightforward. E_1, E_2 and E_3 are some empty Neutrosophic SuperHyperEdges but E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in

every given Neutrosophic SuperHyperTotal.

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$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7782 7783

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7784 7785

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-}} &= \{E_4, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7786 7787

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7788 7789

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} &= \{E_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} &= 20z^{10}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal}} &= \{V_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal SuperHyperPolynomial}} &= 20z^{10}.\end{aligned}$$

- On the Figure (30.7), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7790 7791

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_{12}, E_{13}, E_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = z^3.$$

- On the Figure (30.8), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7792 7793

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.9), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7794 7795

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} 10z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal}} = \{V_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (30.10), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7796 7797

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.11), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7798 7799

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_1, E_6, E_7, E_8\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = 2z^4.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (30.12), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7800 7801

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_1, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = 5z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_1, V_{i=1}^{i \neq 4,5,6}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = z^5.$$

- On the Figure (30.13), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7802 7803

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_3, E_9, E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 3z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 3z^2.\end{aligned}$$

- On the Figure (30.14), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7804 7805

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_1, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 2z^2.\end{aligned}$$

- On the Figure (30.15), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7806 7807

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_2, V_3, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.16), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7808 7809

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 4 \times 3z^3.\end{aligned}$$

- On the Figure (30.17), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7810 7811

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 4 \times 3z^4.\end{aligned}$$

- On the Figure (30.18), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7812 7813

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\ 2 \times 4 \times 3z^4.\end{aligned}$$

- On the Figure (30.19), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7814 7815

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} &= \{E_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} &= 11z^{10}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal}} &= \{V_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 11z^{10}.\end{aligned}$$

- On the Figure (30.20), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7816 7817

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_6, E_{10}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 9z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= (|V| - 1)z^2.\end{aligned}$$

- On the Figure (30.21), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7818 7819

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} &= \{E_1, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal}} &= \{V_1, V_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal SuperHyperPolynomial}} &= 9z^2.\end{aligned}$$

- On the Figure (30.22), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperTotal, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 7820 7821

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_3, V_{10}, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3 \times 6z^3.\end{aligned}$$

The previous Neutrosophic approach apply on the upcoming Neutrosophic results on Neutrosophic SuperHyperClasses. 7822 7823

Proposition 41.0.4. Assume a connected Neutrosophic SuperHyperPath $ESH P : (V, E)$. Then 7824

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} = \\
 & = \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} \\
 & = z^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal}} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal SuperHyperPolynomial}} \\
 & = \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} z^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}
 \end{aligned}$$

Proof. Let 7825

$$\begin{aligned}
 & P : \\
 & V_2^{EXTERNAL}, E_2, \\
 & V_3^{EXTERNAL}, E_3, \\
 & \dots
 \end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperPath $ESH P : (V, E)$. 7826
There's a new way to redefine as 7827

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. ■ 7828 7829

136EXM18a

Example 41.0.5. In the Figure (31.1), the connected Neutrosophic SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.1), is the SuperHyperTotal. 7830 7831 7832

Proposition 41.0.6. Assume a connected Neutrosophic SuperHyperCycle $ESH C : (V, E)$. Then 7833

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} = \\
 & = \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} \\
 & = (|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 1) \\
 & z^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperTotal}}
 \end{aligned}$$

$$= \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-2}.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperTotal \ SuperHyperPolynomial}$$

$$= \prod |V^{EXTERNAL}_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality} z^{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-2}$$

Proof. Let

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$$P :$$

$$V_2^{EXTERNAL}, E_2,$$

$$V_3^{EXTERNAL}, E_3,$$

$$\dots,$$

$$\frac{E_{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-1}}{,} V^{EXTERNAL}_{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-1}.$$

be a longest path taken from a connected Neutrosophic SuperHyperCycle $ESHG : (V, E)$. 7835
There's a new way to redefine as 7836

$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. ■ 7838

136EXM19a

Example 41.0.7. In the Figure (31.2), the connected Neutrosophic SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.2), is the Neutrosophic SuperHyperTotal. 7839
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Proposition 41.0.8. Assume a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. Then 7842

$$\mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperTotal} = \{E_i, E_j \in E_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperTotal \ SuperHyperPolynomial}$$

$$= |i(i-1)| \mid E_i \in E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}| z^2.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperTotal} = \{CENTER, V_j \in V_{ESHG:(V,E)}\}.$$

$$\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperTotal \ SuperHyperPolynomial} =$$

$$(|V_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}) \text{ choose } (|V_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality} - 1)$$

$$z^2.$$

Proof. Let

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$$P : V_i^{EXTERNAL}, E_i, CENTER, E_j.$$

be a longest path taken a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as 7844
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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv$$

$$\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. ■

136EXM20a

Example 41.0.9. In the Figure (31.3), the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, in the Neutrosophic SuperHyperModel (31.3), is the Neutrosophic SuperHyperTotal.

Proposition 41.0.10. Assume a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} \\
 &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\
 & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal SuperHyperPolynomial}} \\
 &= z^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperTotal}} \\
 &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_b^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperTotal SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. There’s a new way to redefine as

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. Then there’s no at least one SuperHyperTotal. Thus the notion of quasi may be up but the SuperHyperNotions

based on SuperHyperTotal could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest SuperHyperTotal taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

The latter is straightforward. ■ 7866

136EXM21a

Example 41.0.11. In the Neutrosophic Figure (31.4), the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, is Neutrosophic highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, in the Neutrosophic SuperHyperModel (31.4), is the Neutrosophic SuperHyperTotal.

Proposition 41.0.12. Assume a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Then

$$\begin{aligned} & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperTotal} \\ &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\ & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperTotal} \\ & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperTotal\ SuperHyperPolynomial} \\ &= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperTotal} \\ &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}}, i \neq j\}. \\ & \mathcal{C}(NSHG)_{Neutrosophic\ Quasi-SuperHyperTotal\ SuperHyperPolynomial} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Neutrosophic\ Cardinality}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{ choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

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$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest SuperHyperTotal taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

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$$V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. Then there's no at least one SuperHyperTotal. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperTotal could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

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$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart SuperHyperEdges are attained in any solution

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$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

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136EXM22a

Example 41.0.13. In the Figure (31.5), the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, in the Neutrosophic SuperHyperModel (31.5), is the Neutrosophic SuperHyperTotal.

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Proposition 41.0.14. Assume a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. Then,

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$$\mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperTotal} = \{E_i, E_j \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Neutrosophic\ SuperHyperTotal\ SuperHyperPolynomial} \\ = |i(i-1) \mid E_i \in E_{ESHG:(V,E)}^*|_{Neutrosophic\ Cardinality} z^2.$$

$$\begin{aligned} \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperTotal} &= \{CENTER, V_j \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Neutrosophic\ R-SuperHyperTotal\ SuperHyperPolynomial} &= \\ (|V_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality}) \text{ choose } (|V_{ESHG:(V,E)}|_{Neutrosophic\ Cardinality} - 1) \\ &z^2. \end{aligned}$$

Proof. Let

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$$P : V_i^{EXTERNAL}, E_i^*, CENTER, E_j.$$

is a longest SuperHyperTotal taken from a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

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$$\begin{aligned} V_i^{EXTERNAL} \sim V_j^{EXTERNAL} &\equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z &\equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperTotal. The latter is straightforward. Then there's at least one SuperHyperTotal. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperTotal could be applied. The unique embedded SuperHyperTotal proposes some longest SuperHyperTotal excerpt from some representatives. The latter is straightforward. ■

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136EXM23a

Example 41.0.15. In the Neutrosophic Figure (31.6), the connected Neutrosophic SuperHyperWheel $NSHW : (V, E)$, is Neutrosophic highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$, in the Neutrosophic SuperHyperModel (31.6), is the Neutrosophic SuperHyperTotal.

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Neutrosophic SuperHyperConnected But As The Extensions Excerpt From Dense And Super Forms

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Definition 42.0.1. (Different Neutrosophic Types of Neutrosophic SuperHyperConnected). 7913
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7914
Neutrosophic SuperHyperSet $V' = \{V_1, V_2, \dots, V_s\}$ and $E' = \{E_1, E_2, \dots, E_z\}$. Then either V' 7915
or E' is called 7916

- (i) **Neutrosophic e-SuperHyperConnected** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, such 7917
that $V_a \in E_i, E_j$; and $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; 7918
- (ii) **Neutrosophic re-SuperHyperConnected** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in$ 7919
 E' , such that $V_a \in E_i, E_j$; $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$; and 7920
 $|E_i|_{\text{NEUTROSOPIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7921
- (iii) **Neutrosophic v-SuperHyperConnected** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, such 7922
that $V_i, V_j \notin E_a$; and $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; 7923
- (iv) **Neutrosophic rv-SuperHyperConnected** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in$ 7924
 V' , such that $V_i, V_j \in E_a$; $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$; and 7925
 $|V_i|_{\text{NEUTROSOPIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPIC CARDINALITY}}$; 7926
- (v) **Neutrosophic SuperHyperConnected** if it's either of Neutrosophic e-SuperHyperConnected, 7927
Neutrosophic re-SuperHyperConnected, Neutrosophic v-SuperHyperConnected, and Neut- 7928
rosophic rv-SuperHyperConnected. 7929

Definition 42.0.2. ((Neutrosophic) SuperHyperConnected). 7930
Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider a 7931
Neutrosophic SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 7932

- (i) an **Extreme SuperHyperConnected** if it's either of Neutrosophic e-SuperHyperConnected, 7933
Neutrosophic re-SuperHyperConnected, Neutrosophic v-SuperHyperConnected, and Neut- 7934
rosophic rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph 7935
 $NSHG : (V, E)$ is the maximum Extreme cardinality of an Extreme SuperHyperSet S 7936

- of high Extreme cardinality of the Extreme SuperHyperEdges in the conseNeighborive
Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such
that they form the Extreme SuperHyperConnected; 7937
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- (ii) a **Neutrosophic SuperHyperConnected** if it's either of Neutrosophic e-
SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neutrosophic v-
SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and $\mathcal{C}(NSHG)$
for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic
cardinality of the Neutrosophic SuperHyperEdges of a Neutrosophic SuperHyperSet S
of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and
Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperCon-
nected; 7940
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- (iii) an **Extreme SuperHyperConnected SuperHyperPolynomial** if it's either of Neut-
rosophic e-SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neutrosophic
v-SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ for
an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme SuperHyperPolynomial
contains the Extreme coefficients defined as the Extreme number of the maximum Ex-
treme cardinality of the Extreme SuperHyperEdges of an Extreme SuperHyperSet S
of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and Extreme
SuperHyperVertices such that they form the Extreme SuperHyperConnected; and the
Extreme power is corresponded to its Extreme coefficient; 7948
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- (iv) a **Neutrosophic SuperHyperConnected SuperHyperPolynomial** if it's either of 7957
Neutrosophic e-SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neut-
rosophic v-SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and 7958
 $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic 7959
SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic 7960
number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperEdges 7961
of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive 7962
Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form 7963
the Neutrosophic SuperHyperConnected; and the Neutrosophic power is corresponded to 7964
its Neutrosophic coefficient; 7965
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- (v) an **Extreme R-SuperHyperConnected** if it's either of Neutrosophic e- 7967
SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neutrosophic v- 7968
SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ 7969
for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the maximum Extreme cardinality 7970
of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyper- 7971
Vertices in the conseNeighborive Extreme sequence of Extreme SuperHyperEdges and 7972
Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected; 7973
- (vi) a **Neutrosophic R-SuperHyperConnected** if it's either of Neutrosophic e- 7974
SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neutrosophic v- 7975
SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and $\mathcal{C}(NSHG)$ 7976
for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum Neutrosophic 7977
cardinality of the Neutrosophic SuperHyperVertices of a Neutrosophic SuperHyperSet S 7978
of high Neutrosophic cardinality conseNeighborive Neutrosophic SuperHyperEdges and 7979

Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperCon- 7980
nected; 7981

(vii) an **Extreme R-SuperHyperConnected SuperHyperPolynomial** if it's either of 7982
Neutrosophic e-SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neut- 7983
rosophic v-SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and 7984
 $\mathcal{C}(NSHG)$ for an Extreme SuperHyperGraph $NSHG : (V, E)$ is the Extreme Super- 7985
HyperPolynomial contains the Extreme coefficients defined as the Extreme number of the 7986
maximum Extreme cardinality of the Extreme SuperHyperVertices of an Extreme Super- 7987
HyperSet S of high Extreme cardinality conseNeighborive Extreme SuperHyperEdges and 7988
Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected; 7989
and the Extreme power is corresponded to its Extreme coefficient; 7990

(viii) a **Neutrosophic SuperHyperConnected SuperHyperPolynomial** if it's either of 7991
Neutrosophic e-SuperHyperConnected, Neutrosophic re-SuperHyperConnected, Neut- 7992
rosophic v-SuperHyperConnected, and Neutrosophic rv-SuperHyperConnected and 7993
 $\mathcal{C}(NSHG)$ for a Neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the Neutrosophic 7994
SuperHyperPolynomial contains the Neutrosophic coefficients defined as the Neutrosophic 7995
number of the maximum Neutrosophic cardinality of the Neutrosophic SuperHyperVertices 7996
of a Neutrosophic SuperHyperSet S of high Neutrosophic cardinality conseNeighborive 7997
Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form 7998
the Neutrosophic SuperHyperConnected; and the Neutrosophic power is corresponded to 7999
its Neutrosophic coefficient. 8000

Example 42.0.3. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in 8001
the mentioned Neutrosophic Figures in every Neutrosophic items. 8002

- On the Figure (30.1), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8003
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8004
 E_1 and E_3 are some empty Neutrosophic SuperHyperEdges but E_2 is a loop Neutrosophic 8005
SuperHyperEdge and E_4 is a Neutrosophic SuperHyperEdge. Thus in the terms of Neutro- 8006
sophic SuperHyperNeighbor, there's only one Neutrosophic SuperHyperEdge, namely, E_4 . 8007
The Neutrosophic SuperHyperVertex, V_3 is Neutrosophic isolated means that there's no 8008
Neutrosophic SuperHyperEdge has it as a Neutrosophic endpoint. Thus the Neutrosophic 8009
SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperConnected. 8010

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected SuperHyperPolynomial}} = 3z.$$

- On the Figure (30.2), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8011
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8012
 E_1, E_2 and E_3 are some empty Neutrosophic SuperHyperEdges but E_4 is a Neutrosophic 8013
SuperHyperEdge. Thus in the terms of Neutrosophic SuperHyperNeighbor, there's only 8014
one Neutrosophic SuperHyperEdge, namely, E_4 . The Neutrosophic SuperHyperVertex, V_3 8015
is Neutrosophic isolated means that there's no Neutrosophic SuperHyperEdge has it as 8016

a Neutrosophic endpoint. Thus the Neutrosophic SuperHyperVertex, V_3 , is excluded in every given Neutrosophic SuperHyperConnected. 8017 8018

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.3), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8019 8020

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected}} &= \{V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected SuperHyperPolynomial}} &= 3z.\end{aligned}$$

- On the Figure (30.4), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8021 8022

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected}} &= \{E_1, E_2, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected}} &= \{V_1, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 15z^2.\end{aligned}$$

- On the Figure (30.5), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8023 8024

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected}} &= \{E_3\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected SuperHyperPolynomial}} &= 4z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected}} &= \{V_5\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.6), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8025 8026

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} &= \{E_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 20z^{10}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected}} &= \{V_{i+1}_{i=0}^9\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 20z^{10}.\end{aligned}$$

- On the Figure (30.7), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8027 8028

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_{12}, E_{13}, E_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

- On the Figure (30.8), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8029 8030

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.9), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8031 8032

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} 10z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected}} = \{V_{i+1}_{i=11}^{19}, V_{22}\}.$$

$$\mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (30.10), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8033 8034

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (30.11), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8035 8036

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_1, E_6, E_7, E_8\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = 2z^4.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (30.12), the Neutrosophic SuperHyperNotion, namely, Neutrosophic SuperHyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8037 8038

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_1, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = 5z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_{i=1}^{i \neq 4,5,6}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^5.$$

- On the Figure (30.13), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8039
 HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8040

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_3, E_9, E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 3z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_1, V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= 3z^2.\end{aligned}$$

- On the Figure (30.14), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8041
 HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8042

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.15), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8043
 HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8044

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_2, V_3, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (30.16), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8045
 HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8046

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= \\ 4 \times 3z^3.\end{aligned}$$

- On the Figure (30.17), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8047
 HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8048

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= \\ 4 \times 3z^4.\end{aligned}$$

- On the Figure (30.18), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8049
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8050

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= \\ 2 \times 4 \times 3z^4.\end{aligned}$$

- On the Figure (30.19), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8051
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8052

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} &= \{E_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 11z^{10}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected}} &= \{V_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 11z^{10}.\end{aligned}$$

- On the Figure (30.20), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8053
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8054

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= 10z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= z.\end{aligned}$$

- On the Figure (30.21), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8055
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8056

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected}} &= \{E_2\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic SuperHyperConnected SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected}} &= \{V_1\}. \\ \mathcal{C}(NSHG)_{\text{Neutrosophic R-SuperHyperConnected SuperHyperPolynomial}} &= 10z.\end{aligned}$$

- On the Figure (30.22), the Neutrosophic SuperHyperNotion, namely, Neutrosophic Super- 8057
HyperConnected, is up. The Neutrosophic Algorithm is Neutrosophically straightforward. 8058

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_3, V_{10}, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= \\ = 3 \times 6z^3.\end{aligned}$$

*The previous Neutrosophic approach apply on the upcoming Neutrosophic results on 8059
Neutrosophic SuperHyperClasses. 8060*

Proposition 42.0.4. Assume a connected Neutrosophic SuperHyperPath $ESH P : (V, E)$. Then 8061

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} = \\
 & = \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 & = z^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected}} \\
 & = \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 & = \prod |V^{EXTERNAL}_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} z^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}
 \end{aligned}$$

Proof. Let

8062

$$\begin{aligned}
 & P : \\
 & V_2^{EXTERNAL}, E_2, \\
 & V_3^{EXTERNAL}, E_3, \\
 & \dots, \\
 & E_{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 1}, V^{EXTERNAL}_{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 1}.
 \end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperPath $ESH P : (V, E)$. 8063
There's a new way to redefine as 8064

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to 8065
 $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. ■ 8066

136EXM18a

Example 42.0.5. In the Figure (31.1), the connected Neutrosophic SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Neutrosophic SuperHyperSet, in the Neutrosophic 8067
SuperHyperModel (31.1), is the SuperHyperConnected. 8068
8069

Proposition 42.0.6. Assume a connected Neutrosophic SuperHyperCycle $ESH C : (V, E)$. Then 8070

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} = \\
 & = \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 & = (|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 1) \\
 & z^{|E_{ESHG:(V,E)}|_{\text{Neutrosophic Cardinality}} - 2}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic R-Quasi-SuperHyperConnected}}
 \end{aligned}$$

$$\begin{aligned}
 &= \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-2}. \\
 &\mathcal{C}(NSHG)_{Neutrosophic \ R-Quasi-SuperHyperConnected \ SuperHyperPolynomial} \\
 &= \prod |V_i^{EXTERNAL}_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality} z^{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-2}
 \end{aligned}$$

Proof. Let

8071

$$\begin{aligned}
 &P : \\
 &V_2^{EXTERNAL}, E_2, \\
 &V_3^{EXTERNAL}, E_3, \\
 &\dots, \\
 &E_{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-1}, V_{|E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality}-1}^{EXTERNAL}.
 \end{aligned}$$

be a longest path taken from a connected Neutrosophic SuperHyperCycle $ESHG : (V, E)$. 8072

There's a new way to redefine as

8073

$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. ■ 8075

136EXM19a

Example 42.0.7. In the Figure (31.2), the connected Neutrosophic SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, in the Neutrosophic SuperHyperModel (31.2), is the Neutrosophic SuperHyperConnected. 8076
8077
8078

Proposition 42.0.8. Assume a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. Then 8079

$$\begin{aligned}
 &\mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperConnected} = \{E_i \in E_{ESHG:(V,E)}\}. \\
 &\mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperConnected \ SuperHyperPolynomial} \\
 &= |i| \mid E_i \in |E_{ESHG:(V,E)}|_{Neutrosophic \ Cardinality} z. \\
 &\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperConnected} = \{CENTER \in V_{ESHG:(V,E)}\}. \\
 &\mathcal{C}(NSHG)_{Neutrosophic \ R-SuperHyperConnected \ SuperHyperPolynomial} = z.
 \end{aligned}$$

Proof. Let

8080

$$P : V_i^{EXTERNAL}, E_i, CENTER, E_j.$$

be a longest path taken a connected Neutrosophic SuperHyperStar $ESHS : (V, E)$. There's a new way to redefine as 8081
8082

$$\begin{aligned}
 &V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 &\exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. ■ 8083
8084

Example 42.0.9. In the Figure (31.3), the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperStar $ESHS : (V, E)$, in the Neutrosophic SuperHyperModel (31.3), is the Neutrosophic SuperHyperConnected.

Proposition 42.0.10. Assume a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} \\
 &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\
 & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} \\
 &= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic V-SuperHyperConnected}} \\
 &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Neutrosophic V-SuperHyperConnected SuperHyperPolynomial}} \\
 &= \sum_{\substack{|V_{ESHG:(V,E)}^{EXTERNAL}| \\ \text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

$$\begin{aligned}
 & P : \\
 & V_1^{EXTERNAL}, E_1, \\
 & V_2^{EXTERNAL}, E_2
 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. There's a new way to redefine as

$$\begin{aligned}
 & V_i^{EXTERNAL} \sim V_j^{EXTERNAL} \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\
 & \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z.
 \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. Then there's no at least one SuperHyperConnected. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperConnected could be applied. There are only two SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$P :$$

$$V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest SuperHyperConnected taken from a connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of SuperHyperPart SuperHyperEdges are attained in any solution

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

The latter is straightforward. ■ 8104

Example 42.0.11. In the Neutrosophic Figure (31.4), the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, is Neutrosophic highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Neutrosophic Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperBipartite $ESHB : (V, E)$, in the Neutrosophic SuperHyperModel (31.4), is the Neutrosophic SuperHyperConnected. 8105
8106
8107
8108
8109
8110

Proposition 42.0.12. Assume a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Then 8111
8112

$$\begin{aligned} & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected}} \\ &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\ & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic Quasi-SuperHyperConnected SuperHyperPolynomial}} \\ &= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ & \quad \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-SuperHyperConnected}} \\ &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}}, i \neq j\}. \\ & \mathcal{C}(NSHG)_{\text{Neutrosophic V-SuperHyperConnected SuperHyperPolynomial}} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Neutrosophic Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{ choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let 8113

$$P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2$$

is a longest SuperHyperConnected taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, & V_i^{EXTERNAL}, V_j^{EXTERNAL} \in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, & \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} \subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. Then there's no at least one SuperHyperConnected. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperConnected could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only minimum-Neutrosophic-of-SuperHyperPart SuperHyperEdges are attained in any solution

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2 \end{aligned}$$

is a longest path taken from a connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. ■

136EXM22a

Example 42.0.13. In the Figure (31.5), the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and Neutrosophic featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous Neutrosophic result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperMultipartite $ESHM : (V, E)$, in the Neutrosophic SuperHyperModel (31.5), is the Neutrosophic SuperHyperConnected.

Proposition 42.0.14. Assume a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. Then,

$$\begin{aligned} \mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperConnected} &= \{E_i \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Neutrosophic \ SuperHyperConnected \ SuperHyperPolynomial} \\ &= |i \mid E_i \in |E_{ESHG:(V,E)}^*|_{Neutrosophic \ Cardinality}|z. \\ \mathcal{C}(NSHG)_{Neutrosophic \ V-SuperHyperConnected} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Neutrosophic \ V-SuperHyperConnected \ SuperHyperPolynomial} &= z. \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i^*, CENTER, E_j.$$

is a longest SuperHyperConnected taken from a connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

$$\begin{aligned} V_i^{EXTERNAL} &\sim V_j^{EXTERNAL} \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, V_i^{EXTERNAL}, V_j^{EXTERNAL} &\in E_z \equiv \\ \exists! E_z \in E_{ESHG:(V,E)}, \{V_i^{EXTERNAL}, V_j^{EXTERNAL}\} &\subseteq E_z. \end{aligned}$$

The term “EXTERNAL” implies $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. Then there's at least one SuperHyperConnected. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperConnected could be applied. The unique embedded SuperHyperConnected proposes some longest SuperHyperConnected excerpt from some representatives. The latter is straightforward. ■

136EXM23a

Example 42.0.15. In the Neutrosophic Figure (31.6), the connected Neutrosophic SuperHyperWheel $NSHW : (V, E)$, is Neutrosophic highlighted and featured. The obtained Neutrosophic SuperHyperSet, by the Algorithm in previous result, of the Neutrosophic SuperHyperVertices of the connected Neutrosophic SuperHyperWheel $ESHW : (V, E)$, in the Neutrosophic SuperHyperModel (31.6), is the Neutrosophic SuperHyperConnected.

Background

There are some scientific researches covering the topic of this research. In what follows, there are some discussion and literature reviews about them. 8150

The seminal paper and groundbreaking article is titled “Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes” in **Ref. [HG1]** by Henry Garrett (2022). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental SuperHyperNumber and using neutrosophic SuperHyperClasses of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “Journal of Mathematical Techniques and Computational Mathematics(JMTCM)” with ISO abbreviation “J Math Techniques Comput Math” in volume 1 and issue 3 with pages 242-263. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers. 8151 8152 8153 8154 8155 8156 8157 8158 8159 8160 8161 8162

The seminal paper and groundbreaking article is titled “Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer’s Treatments” in **Ref. [HG2]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental notions and using vital tools in Cancer’s Treatments. It’s published in prestigious and fancy journal is entitled “Journal of Mathematical Techniques and Computational Mathematics(JMTCM)” with ISO abbreviation “J Math Techniques Comput Math” in volume 2 and issue 1 with pages 35-47. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers. 8163 8164 8165 8166 8167 8168 8169 8170 8171 8172

The seminal paper and groundbreaking article is titled “A Research on Cancer’s Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations” in **Ref. [HG3]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on fundamental notions and using vital tools in Cancer’s Recognition. It’s published in prestigious and fancy journal is entitled “Journal of Mathematical Techniques and Computational Mathematics(JMTCM)” with ISO abbreviation “J Math Techniques Comput Math” in volume 2 and issue 3 with pages 136-148. The research article studies deeply with choosing directly neutrosophic SuperHyperGraph and SuperHyperGraph. It’s the breakthrough toward independent results based on initial background and fundamental SuperHyperNumbers. 8173 8174 8175 8176 8177 8178 8179 8180 8181 8182

The seminal paper and groundbreaking article is titled “neutrosophic co-degree and neutrosophic degree alongside chromatic numbers in the setting of some classes related to neutrosophic hypergraphs” in **Ref. [HG93]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on general forms without using neutrosophic classes of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “Journal of Current Trends in Computer Science Research (JCTCSR)” with ISO abbreviation “J Curr Trends Comp Sci Res” in volume 2 and issue 1 with pages 16-24. The research article studies deeply with choosing neutrosophic hypergraphs instead of neutrosophic SuperHyperGraph. It’s the breakthrough toward independent results based on initial background. In some articles are titled “0039 | Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph” in **Ref. [HG4]** by Henry Garrett (2022), “0049 | (Failed)1-Zero-Forcing Number in Neutrosophic Graphs” in **Ref. [HG5]** by Henry Garrett (2022), “Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs” in **Ref. [HG6]** by Henry Garrett (2022), “Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition” in **Ref. [HG7]** by Henry Garrett (2022), “Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs” in **Ref. [HG8]** by Henry Garrett (2022), “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph” in **Ref. [HG9]** by Henry Garrett (2022), “Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs” in **Ref. [HG10]** by Henry Garrett (2022), “Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs” in **Ref. [HG11]** by Henry Garrett (2022), “Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs” in **Ref. [HG12]** by Henry Garrett (2022), “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG13]** by Henry Garrett (2022), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. [HG14]** by Henry Garrett (2022), “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond” in **Ref. [HG15]** by Henry Garrett (2022), “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs ” in **Ref. [HG16]** by Henry Garrett (2022), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. [HG12]** by Henry Garrett (2022), “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG17]** by Henry Garrett (2022), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints” in **Ref. [HG18]** by Henry Garrett (2022), “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances” in

Ref. [HG19] by Henry Garrett (2022), “(Neutrosophic) SuperHyperAlliances With SuperHyper- 8229
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With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) 8231
SuperHyperClasses” in **Ref. [HG20]** by Henry Garrett (2022), “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s 8232
Recognitions” in **Ref. [HG21]** by Henry Garrett (2022), “Some SuperHyperDegrees and 8233
Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside 8234
Applications in Cancer’s Treatments” in **Ref. [HG22]** by Henry Garrett (2022), “SuperHyper- 8235
Dominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions 8236
in Game Theory and Neutrosophic SuperHyperClasses” in **Ref. [HG23]** by Henry Garrett 8237
(2022), “SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer’s Recog- 8238
nition In Neutrosophic SuperHyperGraphs” in **Ref. [HG24]** by Henry Garrett (2023), “The 8239
Focus on The Partitions Obtained By Parallel Moves In The Cancer’s Extreme Recognition With 8240
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HyperGraphs” in **Ref. [HG25]** by Henry Garrett (2023), “Extreme Failed SuperHyperClique 8242
Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks 8243
By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs” in **Ref. [HG26]** by Henry 8244
Garrett (2023), “Indeterminacy On The All Possible Connections of Cells In Front of Can- 8245
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called Neutrosophic SuperHyperGraphs” in **Ref. [HG27]** by Henry Garrett (2023), “Perfect 8247
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(2023), “Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in 8250
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SuperHyperClique” in **Ref. [HG29]** by Henry Garrett (2023), “Different Neutrosophic Types 8252
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Recognition modeled in the Form of Neutrosophic SuperHyperGraphs” in **Ref. [HG30]** by 8254
Henry Garrett (2023), “Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHy- 8255
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Henry Garrett (2023), “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic 8257
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[HG32]** by Henry Garrett (2023), “(Neutrosophic) SuperHyperStable on Cancer’s Recognition 8259
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Garrett (2023), “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use 8261
Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond” in **Ref. 8262
[HG34]** by Henry Garrett (2022), “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s 8263
Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG35]** by Henry Garrett (2022), 8264
“Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModel- 8265
ing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs” in **Ref. [HG36]** by 8266
Henry Garrett (2022), “Basic Neutrosophic Notions Concerning SuperHyperDominating and 8267
Neutrosophic SuperHyperResolving in SuperHyperGraph” in **Ref. [HG37]** by Henry Garrett 8268
(2022), “Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions 8269
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in **Ref. [HG38]** by Henry Garrett (2022), and **[HG4; HG5; HG6; HG7; HG8; HG9; 8271
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in **Ref. [HG71b]** by Henry Garrett (2023) which is indexed by Google Scholar and has more 8308
than 4331 readers in Scribd. It's titled "Beyond Neutrosophic Graphs" and published by Dr. 8309
Henry Garrett. This research book covers different types of notions and settings in neutrosophic 8310
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has more than 5327 readers in Scribd. It's titled "Neutrosophic Duality" and published by Dr. 8314
Henry Garrett. This research book presents different types of notions SuperHyperResolving and 8315
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Bibliography

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HG1	[1]	Henry Garrett, "Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes", <i>J Math Techniques Comput Math</i> 1(3) (2022) 242-263. (doi: 10.33140/JMTCM.01.03.09)	8357 8358 8359 8360
HG2	[2]	Henry Garrett, "Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer's Treatments", <i>J Math Techniques Comput Math</i> 2(1) (2023) 35-47. (https://www.opastpublishers.com/open-access-articles/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a.pdf)	8361 8362 8363 8364 8365 8366
HG3	[3]	Henry Garrett, "A Research on Cancer's Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations", <i>J Math Techniques Comput Math</i> 2(3) (2023) 136-148. (https://www.opastpublishers.com/open-access-articles/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-.pdf)	8367 8368 8369 8370 8371 8372
HG93	[4]	Henry Garrett, "Neutrosophic Co-degree and Neutrosophic Degree alongside Chromatic Numbers in the Setting of Some Classes Related to Neutrosophic Hypergraphs", <i>J Curr Trends Comp Sci Res</i> 2(1) (2023) 16-24. (https://www.opastpublishers.com/open-access-articles/neutrosophic-codegree-and-neutrosophic-degree-alongside-chromatic-numbers-in-the-setting-of-some-classes-related-to-neut.pdf)	8373 8374 8375 8376 8377
HG4	[5]	Garrett, Henry. "0039 Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph." CERN European Organization for Nuclear Research - Zenodo, Nov. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.5281/zenodo.6319942 . https://oa.mg/work/10.5281/zenodo.6319942	8378 8379 8380 8381 8382
HG5	[6]	Garrett, Henry. "0049 (Failed)1-Zero-Forcing Number in Neutrosophic Graphs." CERN European Organization for Nuclear Research - Zenodo, Feb. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.13140/rg.2.2.35241.26724 . https://oa.mg/work/10.13140/rg.2.2.35241.26724	8383 8384 8385 8386

HG6	[7]	Henry Garrett, “Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010308 (doi: 10.20944/preprints202301.0308.v1).	8387 8388 8389
HG7	[8]	Henry Garrett, “Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition”, <i>Preprints 2023</i> , 2023010282 (doi: 10.20944/preprints202301.0282.v1).	8390 8391 8392 8393
HG8	[9]	Henry Garrett, “Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010267 (doi: 10.20944/preprints202301.0267.v1).	8394 8395 8396
HG9	[10]	Henry Garrett, “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph”, <i>Preprints 2023</i> , 2023010265 (doi: 10.20944/preprints202301.0265.v1).	8397 8398 8399 8400 8401
HG10	[11]	Henry Garrett, “Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010262, (doi: 10.20944/preprints202301.0262.v1).	8402 8403 8404 8405
HG11	[12]	Henry Garrett, “Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010240 (doi: 10.20944/preprints202301.0240.v1).	8406 8407 8408
HG12	[13]	Henry Garrett, “Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010224, (doi: 10.20944/preprints202301.0224.v1).	8409 8410 8411
HG13	[14]	Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010105 (doi: 10.20944/preprints202301.0105.v1).	8412 8413 8414
HG14	[15]	Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, <i>Preprints 2023</i> , 2023010088 (doi: 10.20944/preprints202301.0088.v1).	8415 8416 8417
HG15	[16]	Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, <i>Preprints 2023</i> , 2023010044	8418 8419 8420
HG16	[17]	Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010043 (doi: 10.20944/preprints202301.0043.v1).	8421 8422 8423
HG17	[18]	Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>Preprints 2023</i> , 2023010105 (doi: 10.20944/preprints202301.0105.v1).	8424 8425 8426

HG18	[19] Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	8427 8428 8429
HG19	[20] Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).	8430 8431 8432
HG20	[21] Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, Preprints 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).	8433 8434 8435 8436
HG21	[22] Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).	8437 8438 8439
HG22	[23] Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, Preprints 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).	8440 8441 8442
HG23	[24] Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).	8443 8444 8445
HG253	[25] Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7853867).	8446 8447 8448
HG252	[26] Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7853922).	8449 8450 8451
HG251	[27] Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7851519).	8452 8453 8454
HG250	[28] Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Type-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7851550).	8455 8456 8457
HG249	[29] Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7839333).	8458 8459 8460
HG248	[30] Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Type-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7840206).	8461 8462 8463

HG247	[31]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Path-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7834229).	8464 8465 8466
HG246	[32]	Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Type-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7834261).	8467 8468 8469
HG245	[33]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7824560).	8470 8471 8472
HG244	[34]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7824623).	8473 8474 8475
HG243	[35]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7819531).	8476 8477 8478
HG242	[36]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7819579).	8479 8480 8481
HG241	[37]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot”, Zenodo 2023, (doi: 10.5281/zenodo.7812236).	8482 8483
HG240	[38]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By initial Eulerian-Path-Cut As Hyper initial Eulogy On Super initial EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7809365).	8484 8485 8486
HG239	[39]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Cut As Hyper Eulogy-Path-Cut On Super EULA-Path-Cut”, Zenodo 2023, (doi: 10.5281/zenodo.7809358).	8487 8488 8489
HG238	[40]	Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7809219).	8490 8491 8492
HG237	[41]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyper-Graph By Eulerian-Path-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7809328).	8493 8494 8495
HG236	[42]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7806767).	8496 8497 8498
HG235	[43]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Type-Cycle-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7806838).	8499 8500 8501

HG234	[44]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Decomposition As Hyper Decompress On Super Decompen- sation”, Zenodo 2023, (doi: 10.5281/zenodo.7804238).	8502 8503 8504
HG233	[45]	Henry Garrett, “New Ideas On Super Decompression By Hyper Decompress Of Hamiltonian-Type-Cycle-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7804228).	8505 8506 8507
HG232	[46]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7799902).	8508 8509 8510
HG231	[47]	Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Type- Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7804218).	8511 8512 8513
HG230	[48]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7796334).	8514 8515 8516
HG228	[49]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Decomposition As Hyper Decompress On Super Decompen- sation”, Zenodo 2023, (doi: 10.5281/zenodo.7793372).	8517 8518 8519
HG226	[50]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7791952).	8520 8521 8522
HG225	[51]	Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cycle- Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7791982).	8523 8524 8525
HG224	[52]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7790026).	8526 8527 8528
HG223	[53]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7790052).	8529 8530 8531
HG222	[54]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Decomposition As Hyper Decompress On Super Decompen- sation”, Zenodo 2023, (doi: 10.5281/zenodo.7787066).	8532 8533 8534
HG221	[55]	Henry Garrett, “New Ideas On Super Decompression By Hyper Decompress Of Hamiltonian-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHy- perGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7787094).	8535 8536 8537
HG220	[56]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7781476).	8538 8539 8540

HG219	[57]	Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7783082).	8541 8542 8543
HG218	[58]	Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyper-Graph By Trace-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7777857).	8544 8545 8546
HG217	[59]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Trace-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7779286).	8547 8548 8549
HG215	[60]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7771831).	8550 8551 8552
HG214	[61]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Trace-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7772468).	8553 8554 8555
HG213	[62]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Cut As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20913.25446).	8556 8557 8558
HG212	[63]	Henry Garrett, “New Ideas On Super Tract By Hyper Track Of Trace-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7764916).	8559 8560 8561
HG211	[64]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11770.98247).	8562 8563 8564
HG210	[65]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Edge-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12400.12808).	8565 8566 8567
HG209	[66]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Decomposition As Hyper Decompress On Super Decomensation”, ResearchGate 2023, (doi: 10.13140/RG.2.2.22545.10089).	8568 8569 8570
HG208	[67]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Edge-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29544.34564).	8571 8572 8573
HG207	[68]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Edge-Cut As Hyper Edify On Super Eddy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11377.76644).	8574 8575 8576
HG206	[69]	Henry Garrett, “New Ideas On Super Eddy By Hyper Edify Of Edge-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23750.96329).	8577 8578 8579

HG205	[70]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31366.24641).	8580 8581 8582
HG204	[71]	Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Vertex-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34721.68960).	8583 8584 8585
HG203	[72]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Decomposition As Hyper Decompress On Super Decomensation”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30212.81289).	8586 8587 8588
HG202	[73]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Vertex-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18468.76169).	8589 8590 8591
HG201	[74]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Cut As Hyper Vertu On Super Vertigo”, ResearchGate 2023, (doi: 10.13140/RG.2.2.24288.35842).	8592 8593 8594
HG200	[75]	Henry Garrett, “New Ideas On Super Vertigo By Hyper Vertu Of Vertex-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32467.25124).	8595 8596 8597
HG199	[76]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31025.45925).	8598 8599 8600
HG198	[77]	Henry Garrett, “New Ideas On Super Nebulizer By Hyper Nub Of Stable-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17184.25602).	8601 8602 8603
HG197	[78]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Decompositions As Hyper Stain On Super Stagy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23423.28327).	8604 8605 8606
HG196	[79]	Henry Garrett, “New Ideas On Super Stale By Hyper Stalk Of Stable-Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28456.44805).	8607 8608 8609
HG195	[80]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Cut As Hyper Stain On Super Stagy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23525.68320).	8610 8611 8612
HG194	[81]	Henry Garrett, “New Ideas On Super Stale By Hyper Stalk Of Stable-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20170.24000).	8613 8614 8615
HG193	[82]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Neighbors As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.36475.59683).	8616 8617 8618

HG192	[83]	Henry Garrett, “New Ideas On Super Nebulizer By Hyper Nub Of Clique-Neighbors In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29764.71046).	8619 8620 8621
HG191	[84]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Decompositions As Hyper Decompile On Super Decommission”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18780.87683).	8622 8623 8624
HG190	[85]	Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Clique- Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27169.48487).	8625 8626 8627
HG189	[86]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Clique-Cut As Hyper Click On Super Cliche”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26134.01603).	8628 8629 8630
HG188	[87]	Henry Garrett, “New Ideas On Super Cliff By Hyper Cling Of Clique-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27392.30721).	8631 8632 8633
HG187	[88]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Space As Hyper Spin On Super Spacy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33028.40321).	8634 8635 8636
HG186	[89]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By List- Coloring As Hyper List On Super Lisle”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21389.20966).	8637 8638 8639
HG185	[90]	Henry Garrett, “New Ideas On Super Lith By Hyper Lite Of List-Coloring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16356.04489).	8640 8641 8642
HG184	[91]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Space As Hyper Sparse On Super Spark”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21756.21129).	8643 8644 8645
HG183	[92]	Henry Garrett, “New Ideas On Super Solidarity By Hyper Soul Of Space In Cancer’s Recognition With (Extreme) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30983.68009).	8646 8647 8648
HG182	[93]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Connectivity As Hyper Disclosure On Super Closure”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28552.29445).	8649 8650 8651
HG181	[94]	Henry Garrett, “New Ideas On Super Uniform By Hyper Deformation Of Edge-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.10936.21761).	8652 8653 8654
HG180	[95]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Connectivity As Hyper Leak On Super Structure”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35105.89447).	8655 8656 8657

HG179	[96]	Henry Garrett, “New Ideas On Super System By Hyper Explosions Of Vertex-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.30072.72960).	8658 8659 8660
HG178	[97]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Tree-Decomposition As Hyper Forward On Super Returns”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.31147.52003).	8661 8662 8663
HG177	[98]	Henry Garrett, “New Ideas On Super Nodes By Hyper Moves Of Tree-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.32825.24163).	8664 8665 8666
HG176	[99]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyper-Graph By Chord As Hyper Excellence On Super Excess”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.13059.58401).	8667 8668 8669
HG175	[100]	Henry Garrett, “New Ideas On Super Gap By Hyper Navigations Of Chord In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.11172.14720).	8670 8671 8672
HG174	[101]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyper(i,j)-Domination As Hyper Controller On Super Waves”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.22011.80165).	8673 8674 8675
HG173	[102]	Henry Garrett, “New Ideas On Super Coincidence By Hyper Routes Of SuperHyper(i,j)-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.30819.84003).	8676 8677 8678
HG172	[103]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperEdge-Domination As Hyper Reversion On Super Indirection”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.10493.84962).	8679 8680 8681
HG171	[104]	Henry Garrett, “New Ideas On Super Obstacles By Hyper Model Of SuperHyperEdge-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.13849.29280).	8682 8683 8684
HG170	[105]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Domination As Hyper k-Actions On Super Patterns”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.19944.14086).	8685 8686 8687
HG169	[106]	Henry Garrett, “New Ideas On Super Harmony By Hyper k-Function Of SuperHyperK-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.23299.58404).	8688 8689 8690
HG168	[107]	Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Number As Hyper k-Partition On Super Layers”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.33103.76968).	8691 8692 8693
HG167	[108]	Henry Garrett, “New Ideas On Super Gradient By Hyper k-Class Of SuperHyperK-Number In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, <i>ResearchGate 2023</i> , (doi: 10.13140/RG.2.2.23037.44003).	8694 8695 8696

HG166	[109] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperOrder As Hyper Enumerations On Super Landmarks”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35646.56641).	8697 8698 8699
HG165	[110] Henry Garrett, “New Ideas On Super Analogous By Hyper Visions Of SuperHyperOrder In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18030.48967).	8700 8701 8702
HG164	[111] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperColoring As Hyper Categories On Super Neighbors”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13973.81121).	8703 8704 8705
HG163	[112] Henry Garrett, “New Ideas On Super Relations By Hyper Identifications Of SuperHyperColoring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34106.47047).	8706 8707 8708
HG162	[113] Henry Garrett, “New Ideas On Super Contradiction By Hyper Detection of SuperHyperDefensive In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13397.09446).	8709 8710 8711
HG161	[114] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDimension As Hyper Distinguishing On Super Distances”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31956.88961).	8712 8713 8714
HG160	[115] Henry Garrett, “New Ideas On Super Locations By Hyper Differing Of SuperHyperDimension In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15179.67361).	8715 8716 8717
HG159	[116] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDominating As Hyper Closing On Super Messy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21510.45125).	8718 8719 8720
HG158	[117] Henry Garrett, “New Ideas On Super Missing By Hyper Searching Of SuperHyperDominating In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13121.84321).	8721 8722 8723
HG157	[118] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperConnected As Hyper Group On Super Surge”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11758.69441).	8724 8725 8726
HG156	[119] Henry Garrett, “New Ideas On Super Outbreak By Hyper Collections Of SuperHyperConnected In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31891.35367).	8727 8728 8729
HG155	[120] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperTotal As Hyper Covering On Super Infections”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19360.87048).	8730 8731 8732
HG154	[121] Henry Garrett, “New Ideas On Super Extremism By Hyper Treatments Of SuperHyperTotal In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32363.21286).	8733 8734 8735

HG153	[122] Henry Garrett, “New Ideas On Super Isolation By Hyper Perfectness Of SuperHyperPerfect In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.23266.81602).	8736 8737 8738
HG152	[123] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperPerfect As Hyper Idealism On Super Vacancy”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.19911.37285).	8739 8740 8741
HG151	[124] Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperJoin As Hyper Separations On Super Sorts”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.11050.90569).	8742 8743 8744
HG150	[125] Henry Garrett, “New Ideas On Super connections By Hyper disconnections Of SuperHyperJoin In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.17761.79206).	8745 8746 8747
HG149	[126] Henry Garrett, “New Ideas On Super Mixed-Devastations By Hyper Decisions Of SuperHyperDuality In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.34953.52320).	8748 8749 8750
HG148	[127] Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By SuperHyperDuality As Hyper Imaginations On Super Mixed-Illustrations”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.33275.80161).	8751 8752 8753
HG147	[128] Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By Path SuperHyperColoring As Hyper Correction On Super Faults”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.30182.50241).	8754 8755 8756
HG146	[129] Henry Garrett, “New Ideas On Super Reflections By Hyper Rotations Of Path SuperHyperColoring In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.33459.30243).	8757 8758 8759
HG145	[130] Henry Garrett, “New Ideas As Hyper Deformations On Super Chains In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph By SuperHyperDensity”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.13444.60806).	8760 8761 8762
HG144	[131] Henry Garrett, “New Ideas As Hyper Ignorance By SuperHyperDensity On Super Resistances In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, <i>ResearchGate</i> 2023, (doi:10.13140/RG.2.2.16800.05123).	8763 8764 8765
HG143	[132] Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-VI”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.29913.80482).	8766 8767 8768
HG142	[133] Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-V”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.33269.24809).	8769 8770 8771
HG141	[134] Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-IV”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.34946.96960).	8772 8773 8774

HG140	[135] Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-III”, ResearchGate 2023, (doi: 10.13140/RG.2.2.14814.31040).	8775 8776 8777
HG139	[136] Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-II”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15653.17125).	8778 8779 8780
HG138	[137] Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-I”, ResearchGate 2023, (doi: 10.13140/RG.2.2.25719.50089).	8781 8782 8783
HG137	[138] Henry Garrett, “New Ideas On Super Disruptions In Cancer’s Extreme Recognition As Neutrosophic SuperHyperGraph By Hyper Plans Called SuperHyperConnectivities”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29441.94562).	8784 8785 8786
HG136	[139] Henry Garrett, “Cancer’s Neutrosophic Recognition As Neutrosophic SuperHyperGraph By SuperHyperConnectivities As Hyper Diagnosis On Super Mechanism”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17252.24968).	8787 8788 8789
HG135	[140] Henry Garrett, “Cancer’s Recognition and (Neutrosophic) SuperHyperGraph By the Criteria of Eulerian and Hamiltonian Type-Sets As Hyper Modified Cycles On Super Mess”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16652.59525).	8790 8791 8792
HG134	[141] Henry Garrett, “Eulerian and Hamiltonian In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph On Super Interactions By Hyper Extensions of Cycles”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34583.24485).	8793 8794 8795
HG132	[142] Henry Garrett, “SuperHyperGirth Type-Results on extreme SuperHyperGirth theory and (Neutrosophic) SuperHyperGraphs Toward Cancer’s extreme Recognition”, Preprints 2023, 2023010396 (doi: 10.20944/preprints202301.0396.v1).	8796 8797 8798
HG131	[143] Henry Garrett, “Neutrosophic SuperHyperGraphs Warns Hyper Landmark of neutrosophic SuperHyperGirth In Super Type-Versions of Cancer’s neutrosophic Recognition”, Preprints 2023, 2023010395 (doi: 10.20944/preprints202301.0395.v1).	8799 8800 8801
HG130	[144] Henry Garrett, “The Constructions of (Neutrosophic) SuperHyperGraphs on the Cancer’s Recognition in The Confrontation With Super Attacks In Hyper Situations By Implementing (Neutrosophic) 1-Failed SuperHyperForcing in The Technical Approaches to Neutralize SuperHyperViews”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26240.51204).	8802 8803 8804 8805
HG129	[145] Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing As the Entrepreneurs on Cancer’s Recognitions To Fail Forcing Style As the Super Classes With Hyper Effects In The Background of the Framework is So-Called (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12818.73925).	8806 8807 8808 8809
HG128	[146] Henry Garrett, “Super Actions On The Types of Hyper Levels In The Sensible Neutrosophic SuperHyperGirth On Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26836.88960).	8810 8811 8812

HG127	[147] Henry Garrett, “SuperHyperGirth Approaches on the Super Challenges on the Cancer’s Recognition In the Hyper Model of (Neutrosophic) SuperHyperGraph”, <i>ResearchGate</i> 2023,(doi: 10.13140/RG.2.2.36745.93289).	8813 8814 8815
HG126	[148] Henry Garrett, “Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010308 (doi: 10.20944/preprints202301.0308.v1).	8816 8817 8818
HG125	[149] Henry Garrett, “Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition”, <i>Preprints</i> 2023, 2023010282 (doi: 10.20944/preprints202301.0282.v1).	8819 8820 8821 8822
HG124	[150] Henry Garrett, “Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010267 (doi: 10.20944/preprints202301.0267.v1).	8823 8824 8825
HG123	[151] Henry Garrett, “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph”, <i>Preprints</i> 2023, 2023010265 (doi: 10.20944/preprints202301.0265.v1).	8826 8827 8828 8829 8830
HG122	[152] Henry Garrett, “Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer’s Recognition Applied in (Neutrosophic) SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010262,(doi: 10.20944/preprints202301.0262.v1).	8831 8832 8833 8834
HG121	[153] Henry Garrett, “Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer’s Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010240 (doi: 10.20944/preprints202301.0240.v1).	8835 8836 8837
HG120	[154] Henry Garrett, “Extremism of the Attacked Body Under the Cancer’s Circumstances Where Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, <i>Preprints</i> 2023, 2023010224, (doi: 10.20944/preprints202301.0224.v1).	8838 8839 8840
HG24	[155] Henry Garrett, “SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer’s Recognition In Neutrosophic SuperHyperGraphs”, <i>ResearchGate</i> 2023,(doi: 10.13140/RG.2.2.35061.65767).	8841 8842 8843
HG25	[156] Henry Garrett, “The Focus on The Partitions Obtained By Parallel Moves In The Cancer’s Extreme Recognition With Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.18494.15680).	8844 8845 8846 8847
HG26	[157] Henry Garrett, “Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.32530.73922).	8848 8849 8850 8851

HG27	[158] Henry Garrett, “Indeterminacy On The All Possible Connections of Cells In Front of Cancer’s Attacks In The Terms of Neutrosophic Failed SuperHyperClique on Cancer’s Recognition called Neutrosophic SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15897.70243).	8852 8853 8854 8855
HG116	[159] Henry Garrett, “Extreme Failed SuperHyperClique Decides the Failures on the Cancer’s Recognition in the Perfect Connections of Cancer’s Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32530.73922).	8856 8857 8858 8859
HG115	[160] Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	8860 8861 8862
HG28	[161] Henry Garrett, “Perfect Directions Toward Idealism in Cancer’s Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30092.80004).	8863 8864 8865
HG29	[162] Henry Garrett, “Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in the Terms of Cancer’s Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) SuperHyperClique”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23172.19849).	8866 8867 8868 8869
HG112	[163] Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).	8870 8871 8872
HG111	[164] Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).	8873 8874 8875
HG30	[165] Henry Garrett, “Different Neutrosophic Types of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer’s Neutrosophic Recognition modeled in the Form of Neutrosophic SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17385.36968).	8876 8877 8878 8879
HG107	[166] Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, Preprints 2023, 2023010044	8880 8881 8882
HG106	[167] Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1).	8883 8884 8885
HG31	[168] Henry Garrett, “Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28945.92007).	8886 8887 8888
HG32	[169] Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11447.80803).	8889 8890 8891

HG33	[170] Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2023, (doi: 10.13140/RG.2.2.35774.77123).	8892 8893 8894
HG34	[171] Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.36141.77287).	8895 8896 8897
HG35	[172] Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.29430.88642).	8898 8899 8900
HG36	[173] Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.11369.16487).	8901 8902 8903
HG982	[174] Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, <i>Preprints</i> 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).	8904 8905 8906
HG98	[175] Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.19380.94084).	8907 8908 8909
HG972	[176] Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, <i>Preprints</i> 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).	8910 8911 8912 8913
HG97	[177] Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, <i>ResearchGate</i> 2022, (doi: 10.13140/RG.2.2.14426.41923).	8914 8915 8916 8917
HG962	[178] Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, <i>Preprints</i> 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).	8918 8919 8920
HG96	[179] Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, <i>ResearchGate</i> 2022 (doi: 10.13140/RG.2.2.20993.12640).	8921 8922 8923
HG952	[180] Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, <i>Preprints</i> 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).	8924 8925 8926
HG95	[181] Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs And SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, <i>ResearchGate</i> 2022 (doi: 10.13140/RG.2.2.23123.04641).	8927 8928 8929

HG942	[182] Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic Super-HyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).	8930 8931 8932
HG94	[183] Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic Super-HyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23324.56966).	8933 8934 8935
HG37	[184] Henry Garrett, “Basic Neutrosophic Notions Concerning SuperHyperDominating and Neutrosophic SuperHyperResolving in SuperHyperGraph”, ResearchGate 2022 (doi: 10.13140/RG.2.2.29173.86244).	8936 8937 8938
HG38	[185] Henry Garrett, “Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyperGraph (NSHG)”, ResearchGate 2022 (doi: 10.13140/RG.2.2.25385.88160).	8939 8940 8941
HG166b	[186] Henry Garrett, “Eulerian-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7856329).	8942 8943
HG165b	[187] Henry Garrett, “Eulerian-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7854561).	8944 8945
HG164b	[188] Henry Garrett, “Eulerian-Type-Path-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7851893).	8946 8947
HG163b	[189] Henry Garrett, “Eulerian-Type-Path-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7848019).	8948 8949
HG162b	[190] Henry Garrett, “Eulerian-Type-Path-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7835063).	8950 8951
HG161b	[191] Henry Garrett, “Eulerian-Path-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7826705).	8952 8953
HG160b	[192] Henry Garrett, “Eulerian-Path-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7820680).	8954 8955
HG159b	[193] Henry Garrett, “Eulerian-Path-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812750).	8956 8957
HG158b	[194] Henry Garrett, “Hamiltonian-Type-Cycle-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812142).	8958 8959
HG157b	[195] Henry Garrett, “Hamiltonian-Type-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7810394).	8960 8961
HG156b	[196] Henry Garrett, “Hamiltonian-Type-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7807782).	8962 8963
HG155b	[197] Henry Garrett, “Hamiltonian-Cycle-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7804449).	8964 8965

HG154b	[198] Henry Garrett, “Hamiltonian-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7793875).	8966 8967
HG153b	[199] Henry Garrett, “Hamiltonian-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7792307).	8968 8969
HG152b	[200] Henry Garrett, “Hamiltonian-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7790728).	8970 8971
HG151b	[201] Henry Garrett, “Hamiltonian-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7787712).	8972 8973
HG150b	[202] Henry Garrett, “Hamiltonian-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7783791).	8974 8975
HG149b	[203] Henry Garrett, “Trace-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7780123).	8976 8977
HG148b	[204] Henry Garrett, “Trace-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7773119).	8978 8979
HG147b	[205] Henry Garrett, “SuperHyperDuality”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7637762).	8980 8981
HG146b	[206] Henry Garrett, “Trace-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7766174).	8982 8983
HG145b	[207] Henry Garrett, “Edge-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7762232).	8984 8985
HG144b	[208] Henry Garrett, “Edge-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7758601).	8986 8987
HG143b	[209] Henry Garrett, “Edge-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7754661).	8988 8989
HG142b	[210] Henry Garrett, “Vertex-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7750995) .	8990 8991
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HG139b	[213] Henry Garrett, “Stable-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7742587).	8996 8997
HG138b	[214] Henry Garrett, “Stable-Decompositions In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7738635).	8998 8999
HG137b	[215] Henry Garrett, “Stable-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7734719).	9000 9001

HG136b	[216] Henry Garrett, “Clique-Neighbors In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730484).	9002 9003
HG135b	[217] Henry Garrett, “Clique-Decompositions In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730469).	9004 9005
HG134b	[218] Henry Garrett, “Clique-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7722865).	9006 9007
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HG132b	[220] Henry Garrett, “Space In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7709116).	9010 9011
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HG129b	[223] Henry Garrett, “Tree-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7701906).	9016 9017
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HG124b	[228] Henry Garrett, “K-Number In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7672388).	9026 9027
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HG118b	[234] Henry Garrett, “SuperHyperMultipartite”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653142).	9038 9039
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HG112b	[240] Henry Garrett, “SuperHyperDominating”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7650729).	9050 9051
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HG108b	[244] Henry Garrett, “SuperHyperJoin”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7641880).	9058 9059
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HG104b	[248] Henry Garrett, “Extreme SuperHyperConnectivities”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416).	9066 9067
HG103b	[249] Henry Garrett, “SuperHyperConnectivities”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606404).	9068 9069
HG102b	[250] Henry Garrett, “Neutrosophic SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	9070 9071
HG101b	[251] Henry Garrett, “Extreme SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	9072 9073

HG100b	[252] Henry Garrett, “Extreme SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).	9074 9075
HG99b	[253] Henry Garrett, “SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7579929).	9076 9077
HG98b	[254] Henry Garrett, “Neutrosophic SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563170).	9078 9079
HG97b	[255] Henry Garrett, “Extreme SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563164).	9080 9081
HG96b	[256] Henry Garrett, “SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	9082 9083
HG95b	[257] Henry Garrett, “Extreme SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	9084 9085
HG94b	[258] Henry Garrett, “Overlook On SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).	9086 9087
HG93b	[259] Henry Garrett, “Neutrosophic SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557063).	9088 9089
HG92b	[260] Henry Garrett, “Extreme SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557009).	9090 9091
HG91b	[261] Henry Garrett, “Overlook On SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).	9092 9093
HG90b	[262] Henry Garrett, “Neutrosophic Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	9094 9095
HG89b	[263] Henry Garrett, “Extreme Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	9096 9097
HG88b	[264] Henry Garrett, “Overlook On Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	9098 9099
HG87b	[265] Henry Garrett, “Extreme SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574952).	9100 9101
HG86b	[266] Henry Garrett, “Neutrosophic SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574992).	9102 9103
HG85b	[267] Henry Garrett, “Extreme SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	9104 9105
HG84b	[268] Henry Garrett, “Overlook On SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	9106 9107
HG83b	[269] Henry Garrett, “Neutrosophic Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	9108 9109

HG82b	[270] Henry Garrett, “Extreme Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	9110 9111
HG81b	[271] Henry Garrett, “Overlook On Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	9112 9113
HG80b	[272] Henry Garrett, “Neutrosophic SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	9114 9115
HG79b	[273] Henry Garrett, “Extreme SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	9116 9117
HG78b	[274] Henry Garrett, “Overlook On SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	9118 9119
HG77b	[275] Henry Garrett, “Neutrosophic Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	9120 9121
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HG74b	[278] Henry Garrett, “Extreme SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	9126 9127
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HG70b	[282] Henry Garrett, “Overlook On SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	9134 9135
HG69b	[283] Henry Garrett, “SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).	9136 9137
HG68b	[284] Henry Garrett, “Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).	9138 9139
HG67b	[285] Henry Garrett, “SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).	9140 9141
HG66b	[286] Henry Garrett, “Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).	9142 9143
HG65b	[287] Henry Garrett, “SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).	9144 9145

HG64b	[288] Henry Garrett, “Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	9146 9147
HG63b	[289] Henry Garrett, “SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	9148 9149
HG62b	[290] Henry Garrett, “SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	9150 9151
HG61b	[291] Henry Garrett, “SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7480110).	9152 9153
HG60b	[292] Henry Garrett, “Neut. SuperHyperEdges”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7378758).	9154 9155
HG32b	[293] Henry Garrett, “Beyond Neutrosophic Graphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6320305).	9156 9157
HG44b	[294] Henry Garrett, “Neutrosophic Duality”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6677173).	9158 9159

CHAPTER 44

9146

Books' Contributions

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"Books' Contributions": | Featured Threads
The following references are cited by chapters.

9148

9149

9150

[Ref254]

9151

Henry Garrett, "New Ideas On Super Decomposition By Hyper Decompress Of Eulerian-Cycle-
Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph", Zenodo 2023,
(doi: 10.5281/zenodo.7855637).

9154

9155

[Ref255]

9156

Henry Garrett, "New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By
Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decomposition", Zenodo 2023,
(doi: 10.5281/zenodo.7855661).

9157

9158

9159

9160

The links to the contributions of this scientific research book are listed below.

9161

[HG254]

9162

Henry Garrett, "New Ideas On Super Decomposition By Hyper Decompress Of Eulerian-Cycle-
Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph", Zenodo 2023,
(doi: 10.5281/zenodo.7855637).

9163

9164

9165

9166

[TITLE] "New Ideas On Super Decomposition By Hyper Decompress Of Eulerian-Cycle-
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9167

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[ADDRESSED CITATION]

Henry Garrett, “New Ideas On Super Decompenation By Hyper Decompress Of Eulerian-Cycle-
 Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023,
 (doi: 10.5281/zenodo.7855637).

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Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By
 Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decompenation”, Zenodo 2023,
 (doi: 10.5281/zenodo.7855661).

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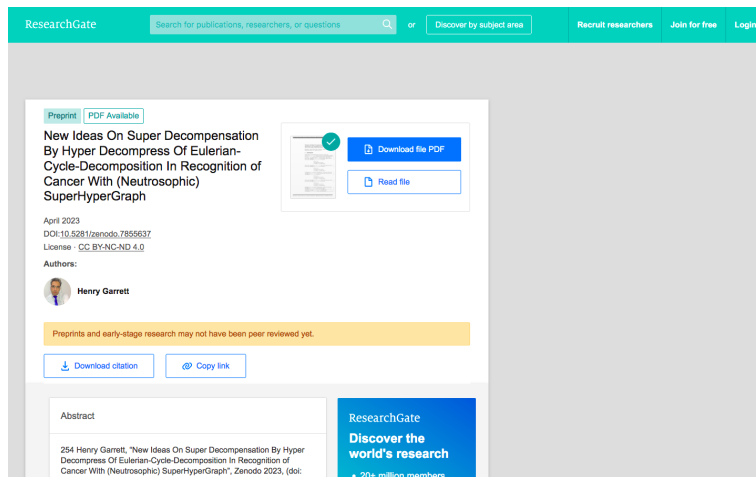


Figure 44.2: Henry Garrett, “New Ideas On Super Decomposition By Hyper Decompress Of Eulerian-Cycle-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyper-Graph”, Zenodo 2023, (doi: 10.5281/zenodo.7855637).

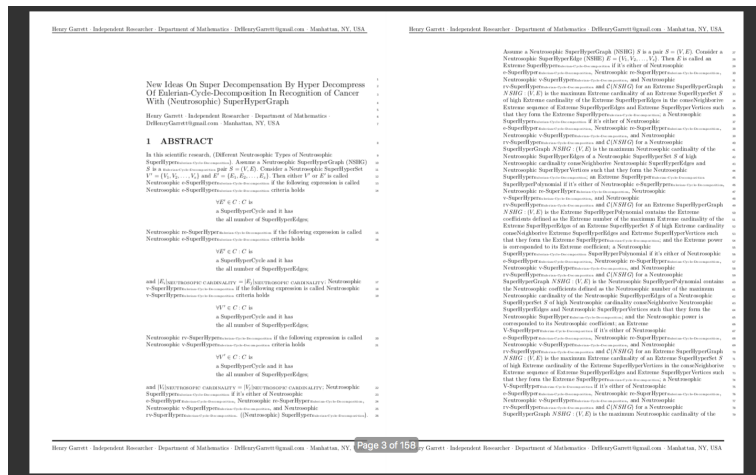


Figure 44.3: Henry Garrett, “New Ideas On Super Decomposition By Hyper Decompress Of Eulerian-Cycle-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyper-Graph”, Zenodo 2023, (doi: 10.5281/zenodo.7855637).

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Figure 44.4: Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decompensation”, Zenodo 2023, (doi: 10.5281/zenodo.7855661).

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Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decompensation”, Zenodo 2023, (doi: 10.5281/zenodo.7855661).

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Henry Garrett, “Eulerian-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7856329).

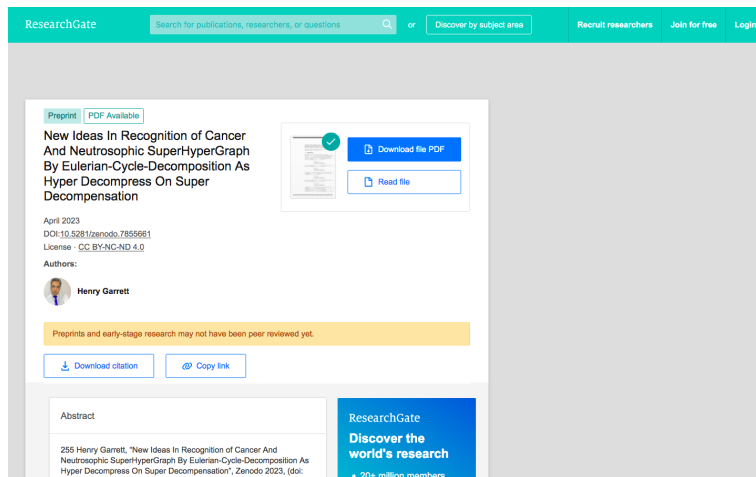


Figure 44.5: Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decompression”, Zenodo 2023, (doi: 10.5281/zenodo.7855661).

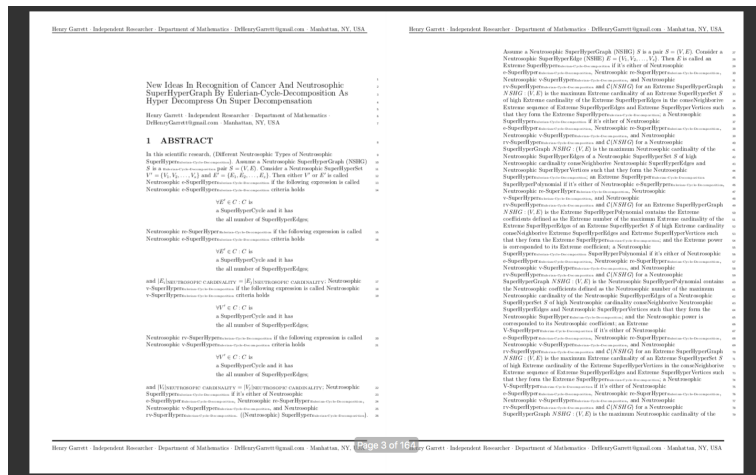


Figure 44.6: Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decompression”, Zenodo 2023, (doi: 10.5281/zenodo.7855661).

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<i>[THE DOWNLOAD-ABLE LINK TO TWITTER'S ID "GooglePlay"]</i>	9291
<i>https://play.google.com/store/books/details?id=-</i>	9292
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<i>[TITLE] Eulerian-Cycle-Decomposition In SuperHyperGraphs (Published Version)</i>	9300
	9301
<i>[THE DOWNLOAD-ABLE LINK TO TWITTER'S ID "WordPress"]</i>	9302
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<i>https://drhenrygarrett.wordpress.com/2023/07/22/ Eulerian-Cycle-Decomposition-In-SuperHyperGraphs/</i>	9304
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<i>[POSTED BY] Dr. Henry Garrett</i>	9309
	9310
<i>[DATE] April 023, 2023</i>	9311
	9312
<i>[POSTED IN] 166 Eulerian-Cycle-Decomposition In SuperHyperGraphs</i>	9313
	9314
<i>[TAGS]</i>	9315
<i>Applications, Applied Mathematics, Applied Research, Cancer, Cancer's Recognitions, Combinatorics, Edge, Edges, Graph Theory, Graphs, Latest Research, Literature Reviews, Modeling, Neutrosophic Graph, Neutrosophic Graph Theory, Neutrosophic Science, Neutrosophic SuperHyperClasses, Neutrosophic SuperHyperGraph, Neutrosophic SuperHyperGraph Theory, neutrosophic SuperHyperGraphs, Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs, Open Problems, Open Questions, Problems, Pure Math, Pure Mathematics, Questions, Real-World Applications, Recent Research, Recognitions, Research, scientific research Article, scientific research Articles, scientific research Book, scientific research Chapter, scientific research Chapters, Review, SuperHyperClasses, SuperHyperEdges, SuperHyperGraph, SuperHyperGraph Theory, SuperHyperGraphs, Eulerian-Cycle-Decomposition In SuperHyperGraphs, SuperHyperModeling, SuperHyperVertices, Theoretical Research, Vertex, Vertices.</i>	9316
<i>In this scientific research book, there are some scientific research chapters on "Extreme Eulerian-Cycle-Decomposition In SuperHyperGraphs" and "Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs" about some scientific research on Eulerian-Cycle-Decomposition In SuperHyperGraphs by two (Extreme/Neutrosophic) notions, namely, Extreme Eulerian-Cycle-Decomposition In SuperHyperGraphs and Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs. With scientific research on the basic scientific research properties, the scientific research book starts to make Extreme Eulerian-Cycle-Decomposition In SuperHyperGraphs theory and Neutrosophic Eulerian-Cycle-Decomposition In SuperHyperGraphs theory more (Extremely/Neutrosophicly) understandable.</i>	9317
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CHAPTER 45

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“SuperHyperGraph-Based Books”: | Featured Tweets

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“SuperHyperGraph-Based Books”: | Featured Tweets

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Project

ResearchGate

Neutrosophic SuperHyperGraphs and SuperHyperGraphs

 Henry Garrett

Goal: The aim of this project is to contribute some research articles and some research books in that subject. Finding tools and notions to define in this structure to make this structure more understandable. Clarifications are presented in oversimplified ways. There are well-defined efforts to get more sensible results.

Sometimes, I post one part of book at my website. After that, I put that link in this project. Some research articles and some research books are excerpt from these posts.

Instance updates are on my accounts, simultaneously [Website, Scribd, Twitter, Amazon, Academia, LinkedIn, Twitter, ResearchGate.].

I've listed my accounts below.

-My website [Covering all my contributions containing articles and books as free access to download with PDF extension and more]: <https://drhenrygarrett.wordpress.com>

-Amazon [Some of my all books, here]: <https://www.amzn.com/author/drhenrygarrett>

-Twitter: @DrHenryGarrett (www.twitter.com/DrHenryGarrett)

-ResearchGate: <https://www.researchgate.net/profile/Henry-Garrett-2>

-Academia: <https://independent.academia.edu/drhenrygarrett/>

-Scribd: <https://www.scribd.com/user/596815491/Henry-Garrett>

-Scholar: https://scholar.google.com/citations?hl=en&user=SUjFCmcAAAAJ&view_op=list_works&sortby=pubdate

-LinkedIn: <https://www.linkedin.com/in/drhenrygarrett/>

Figure 45.1: “SuperHyperGraph-Based Books”: | Featured Tweets

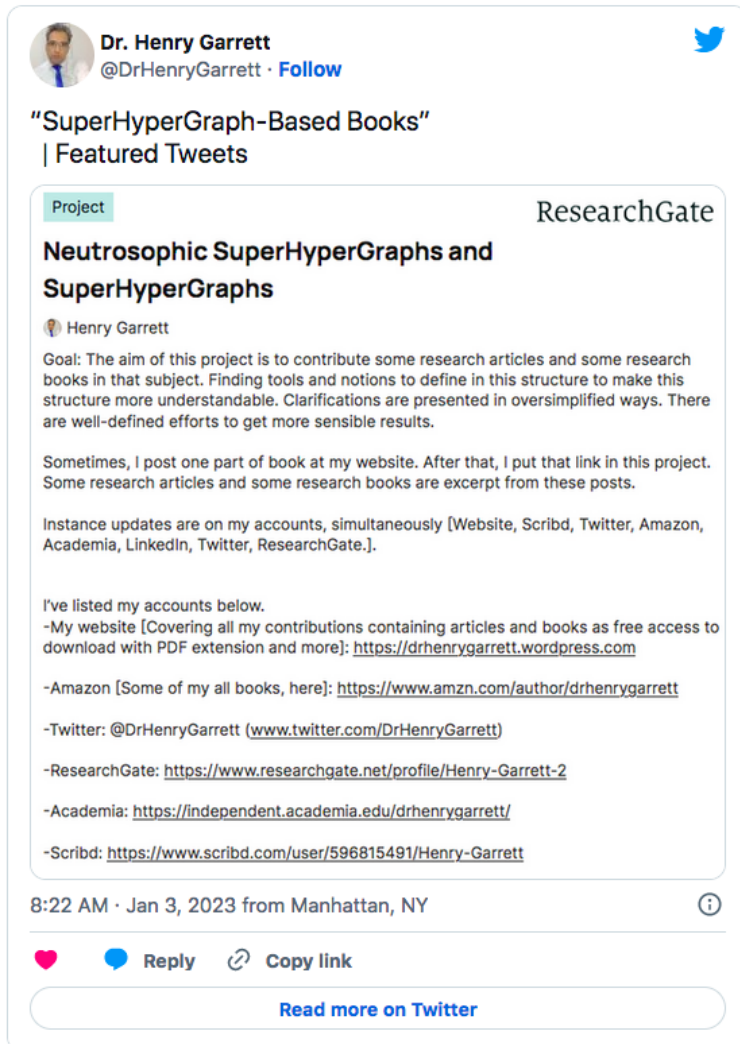


Figure 45.2: “SuperHyperGraph-Based Books”: | Featured Tweets



Figure 45.3: "SuperHyperGraph-Based Books": | Featured Tweets #69



Figure 45.4: "SuperHyperGraph-Based Books": | Featured Tweets #69

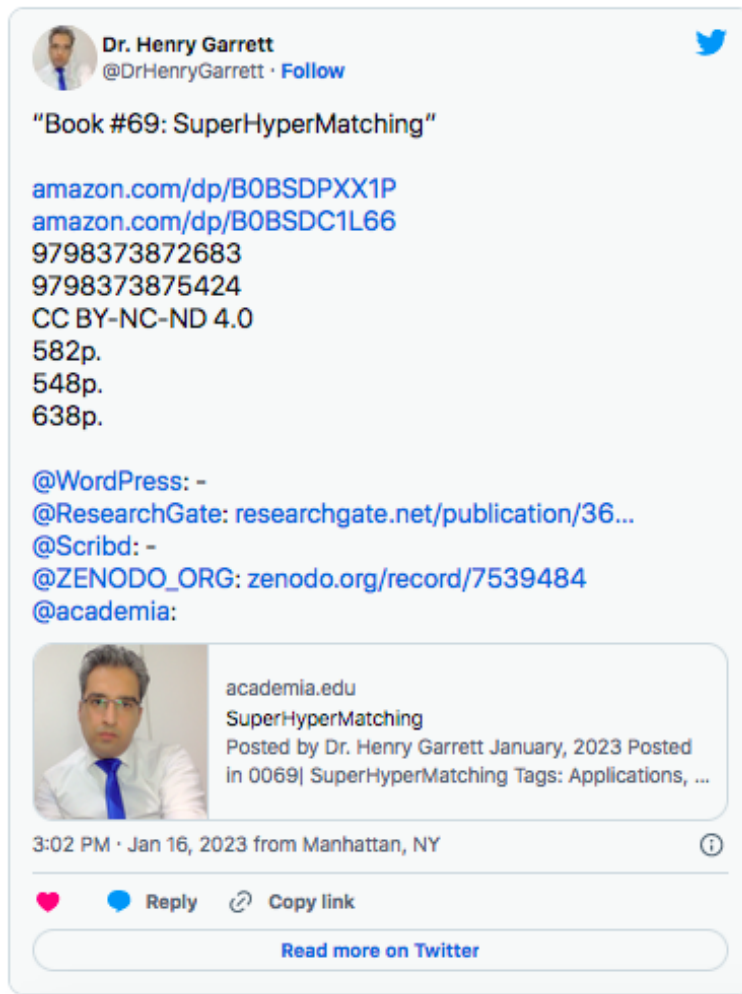


Figure 45.5: "SuperHyperGraph-Based Books": | Featured Tweets #69



Figure 45.6: "SuperHyperGraph-Based Books": | Featured Tweets #68



Figure 45.7: "SuperHyperGraph-Based Books": | Featured Tweets #68



Figure 45.8: "SuperHyperGraph-Based Books": | Featured Tweets #68

Publications: Books

2023	0068 Failed SuperHyperClique	Amazon
» ASIN : B0BRZ67NYN Publisher : Independently published (January 10, 2023) Language : English Paperback : 454 pages ISBN-13 : 979-8373274227 Item Weight : 2.83 pounds Dimensions : 8.5 x 1.07 x 11 inches		
» ASIN : B0BRYZTK24 Publisher : Independently published (January 10, 2023) Language : English Hardcover : 460 pages ISBN-13 : 979-8373277273 Item Weight : 2.78 pounds Dimensions : 8.25 x 1.27 x 11 inches		

Figure 45.9: “SuperHyperGraph-Based Books”: | Featured Tweets #68

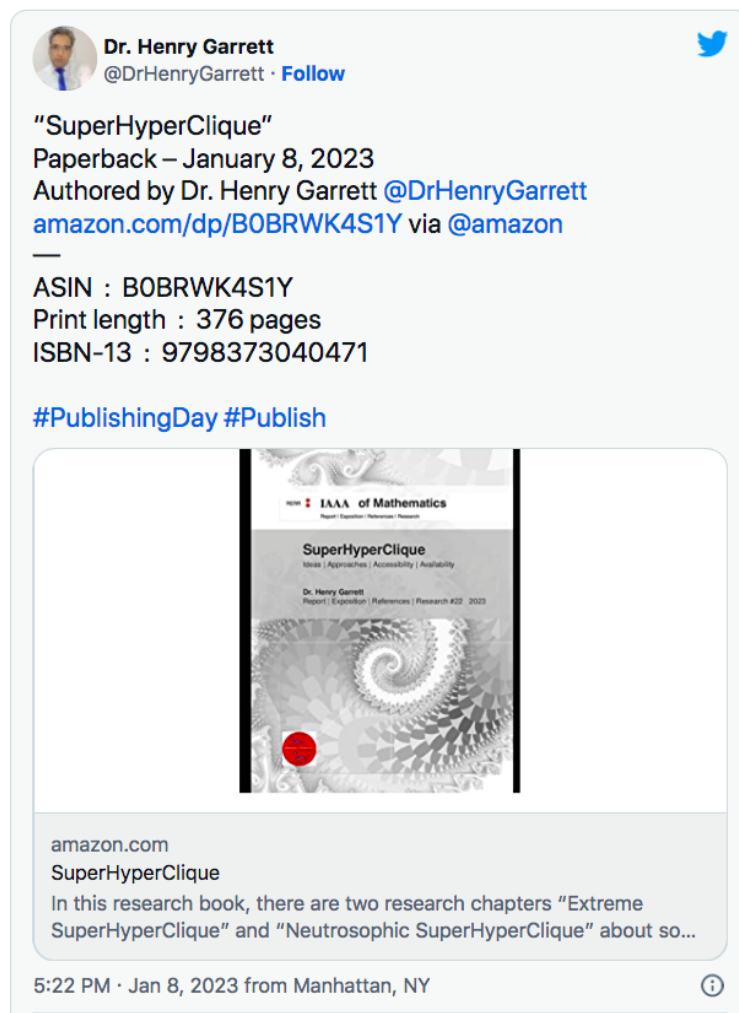


Figure 45.10: “SuperHyperGraph-Based Books”: | Featured Tweets #67



Figure 45.11: "SuperHyperGraph-Based Books": | Featured Tweets #67

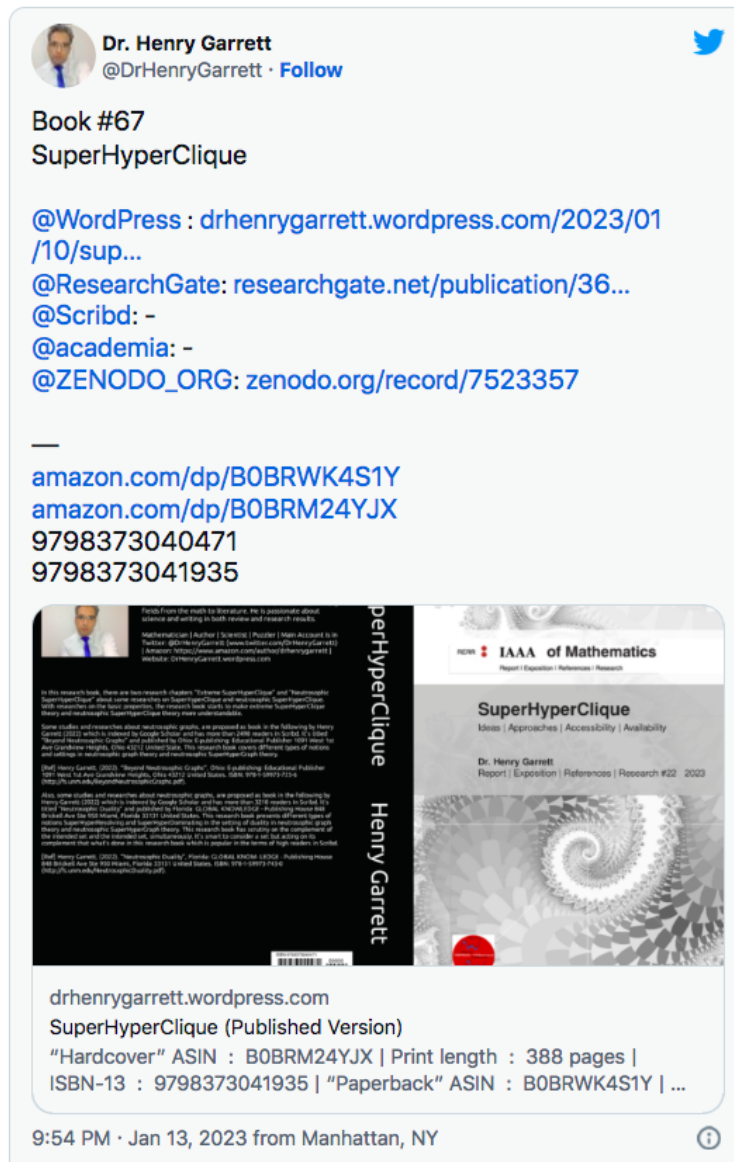


Figure 45.12: “SuperHyperGraph-Based Books”: | Featured Tweets #67

Publications: Books

2023	0067 SuperHyperClique	Amazon
» ASIN : B0BRWK4S1Y Publisher : Independently published (January 8, 2023) Language : English Paperback : 376 pages ISBN-13 : 979-8373040471 Item Weight : 2.36 pounds Dimensions : 8.5 x 0.89 x 11 inches		
» ASIN : B0BRM24YJX Publisher : Independently published (January 8, 2023) Language : English Hardcover : 388 pages ISBN-13 : 979-8373041935 Item Weight : 2.36 pounds Dimensions : 8.25 x 1.1 x 11 inches		

Figure 45.13: “SuperHyperGraph-Based Books”: | Featured Tweets #67



Figure 45.14: “SuperHyperGraph-Based Books”: | Featured Tweets #66



Figure 45.15: “SuperHyperGraph-Based Books”: | Featured Tweets #66

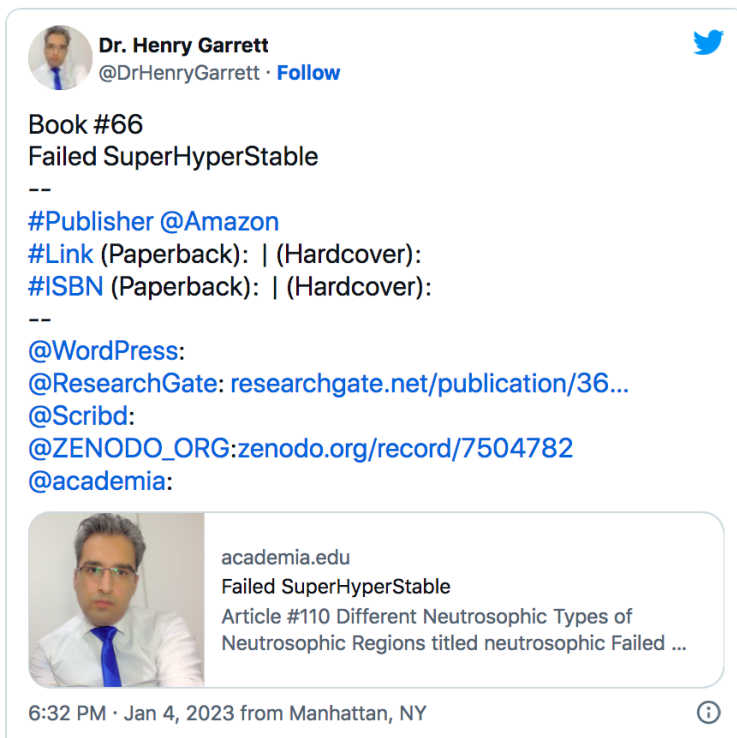


Figure 45.16: “SuperHyperGraph-Based Books”: | Featured Tweets #66

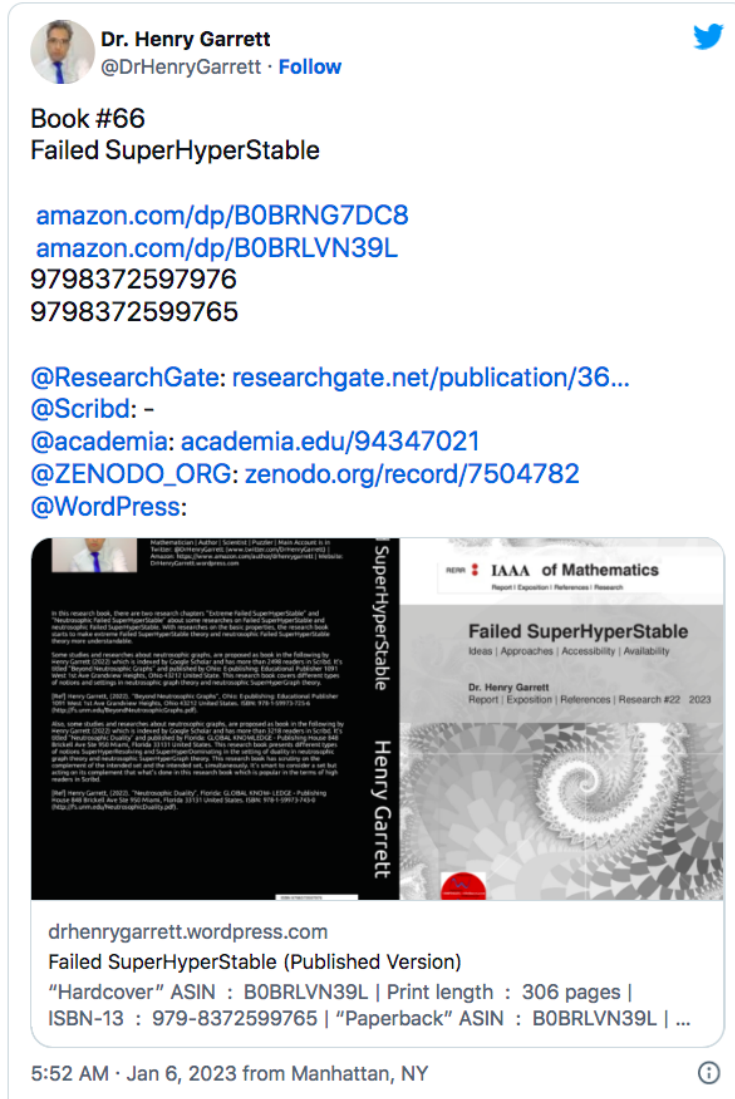


Figure 45.17: "SuperHyperGraph-Based Books": | Featured Tweets #66

Publications: Books		
2023	0066 Failed SuperHyperStable	Amazon
» ASIN : B0BRNG7DC8 Publisher : Independently published (January 4, 2023) Language : English Paperback : 304 pages ISBN-13 : 979-8372597976 Item Weight : 1.93 pounds Dimensions : 8.5 x 0.72 x 11 inches		
» ASIN : B0BRLVN39L Publisher : Independently published (January 4, 2023) Language : English Hardcover : 306 pages ISBN-13 : 979-8372599765 Item Weight : 1.89 pounds Dimensions : 8.25 x 0.91 x 11 inches		

Figure 45.18: "SuperHyperGraph-Based Books": | Featured Tweets #66



Figure 45.19: “SuperHyperGraph-Based Books”: | Featured Tweets #65

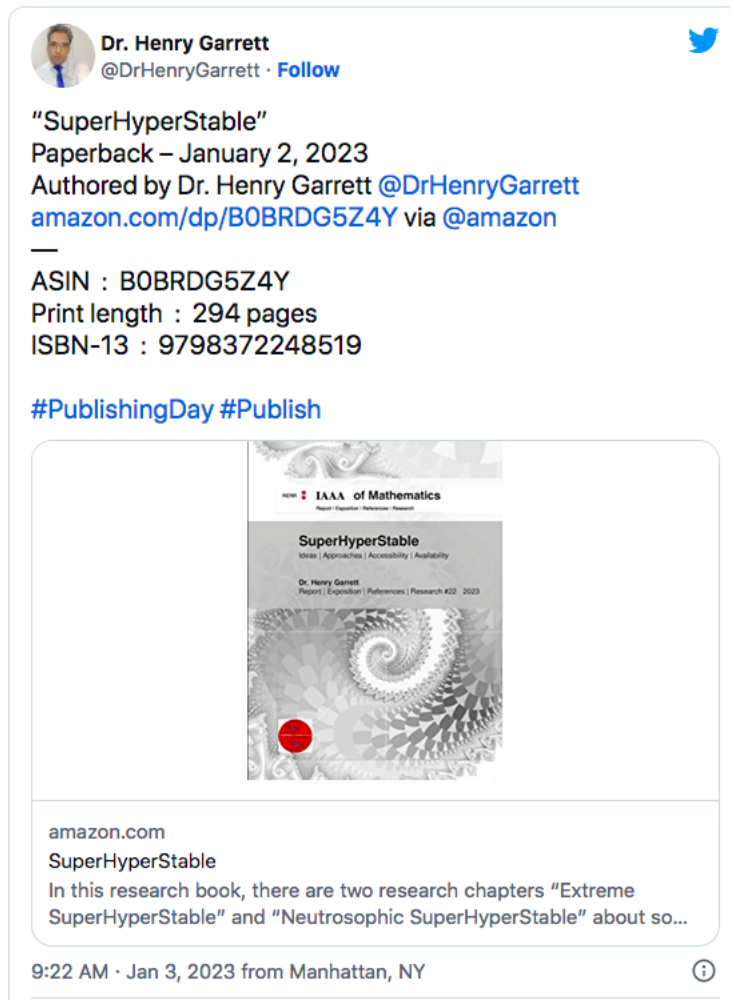


Figure 45.20: “SuperHyperGraph-Based Books”: | Featured Tweets #65

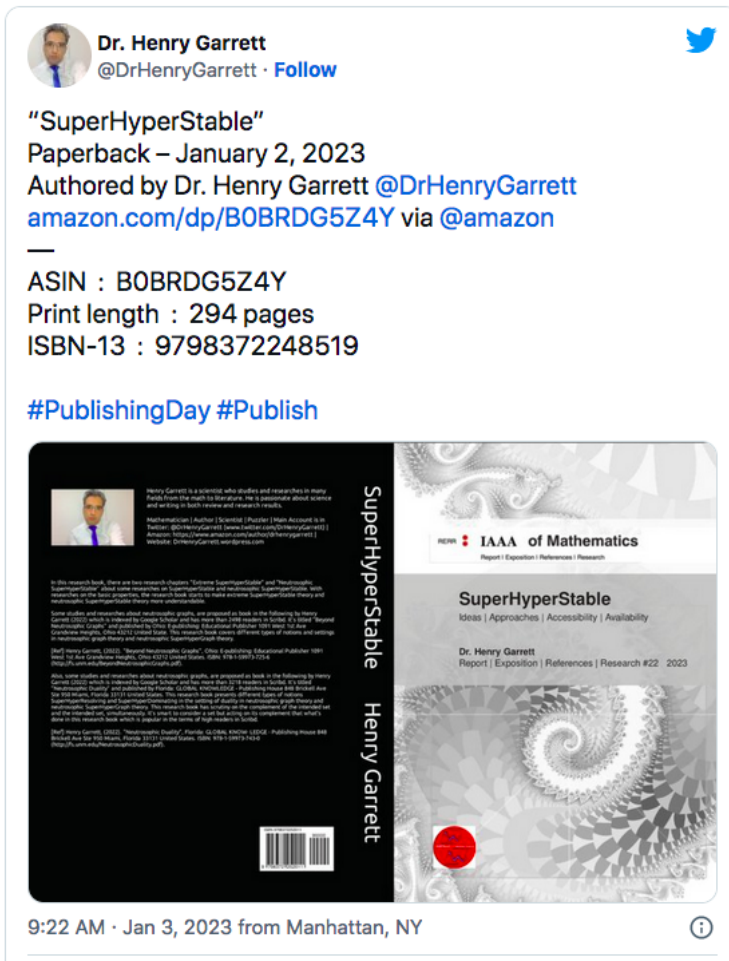


Figure 45.21: “SuperHyperGraph-Based Books”: | Featured Tweets #65



Figure 45.22: “SuperHyperGraph-Based Books”: | Featured Tweets #65

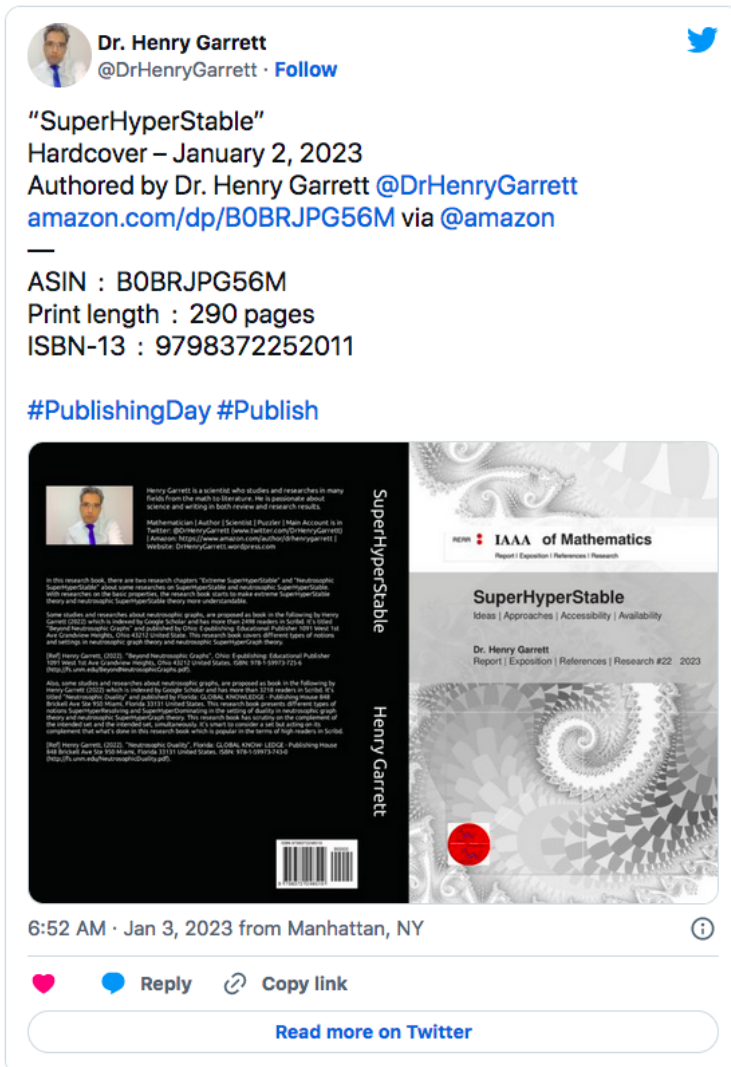


Figure 45.23: “SuperHyperGraph-Based Books”: | Featured Tweets #65



Figure 45.24: “SuperHyperGraph-Based Books”: | Featured Tweets #65



Figure 45.25: “SuperHyperGraph-Based Books”: | Featured Tweets #64



Figure 45.26: “SuperHyperGraph-Based Books”: | Featured Tweets #63



Figure 45.27: “SuperHyperGraph-Based Books”: | Featured Tweets #62

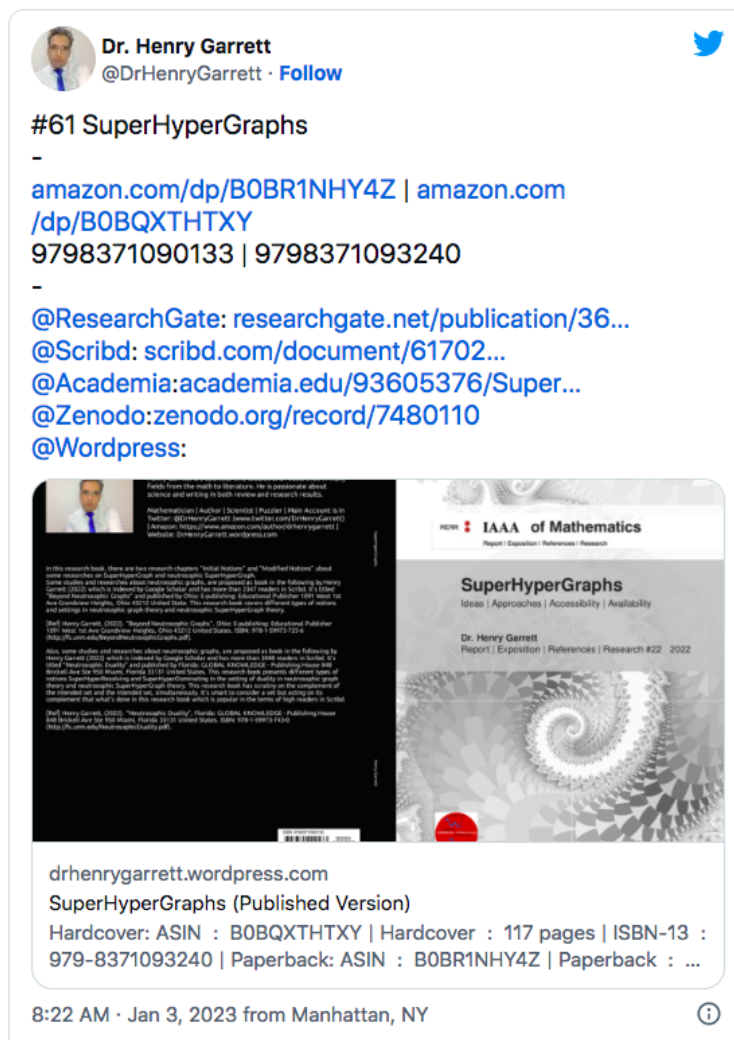


Figure 45.28: “SuperHyperGraph-Based Books”: | Featured Tweets #61

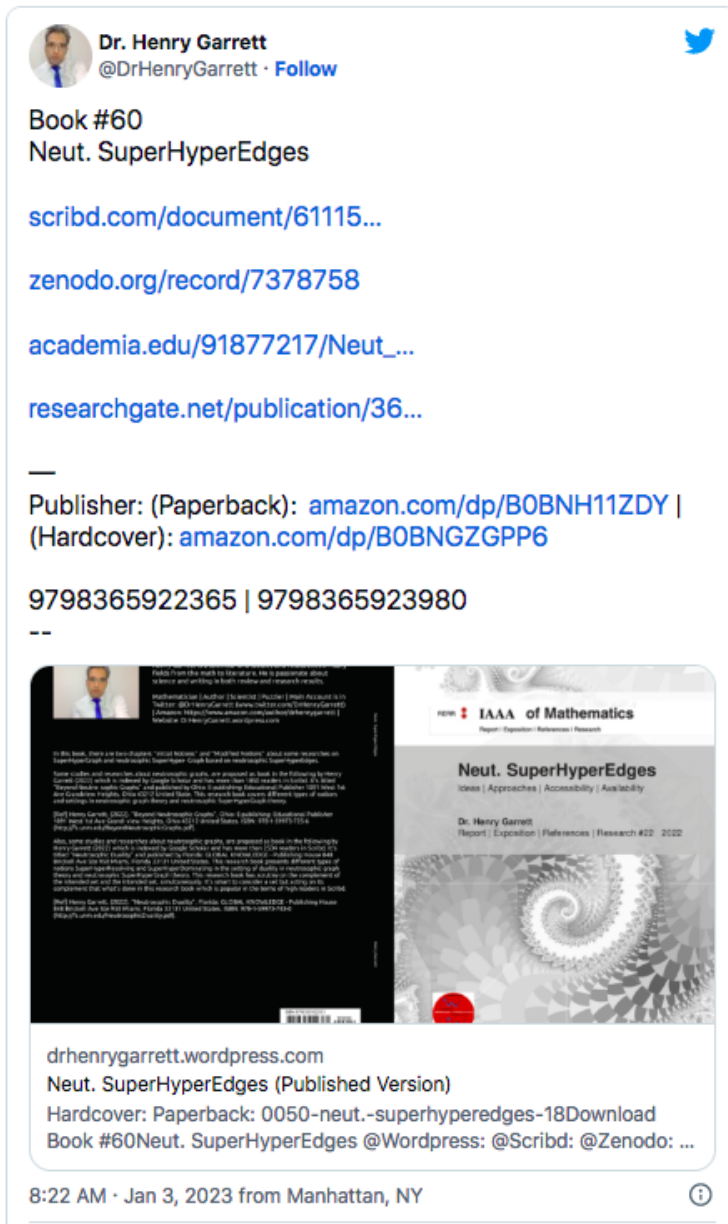


Figure 45.29: “SuperHyperGraph-Based Books”: | Featured Tweets #60

CHAPTER 46

9340

CV

9341

Henry Garrett | CV

- » **Status:** Known As Henry Garrett With Highly Productive Style.
- » **Fields:** Combinatorics, Algebraic Structures, Algebraic Hyperstructures, Fuzzy Logic
- » **Prefers:** Graph Theory, Domination, Metric Dimension, Neutrosophic Graph Theory, Neutrosophic Domination, Lattice Theory, Groups and Hypergroups
- » **Activities:** Traveling, Painting, Writing, Reading books and Papers



Professional Experiences

- | | | |
|----------------|---|---------------------|
| 2017 - Present | Continuous Member | AMS |
| | <ul style="list-style-type: none"> » I tried to show them that Science is not only interesting, it's beautiful and exciting. » Participating in the academic space of the largest mathematical Society gave me valuable experiences. The use of Bulletin and Notice of the American Mathematical Society is another benefit of this presence. | |
| 2017 - 2019 | Continuous Member | EMS |
| | <ul style="list-style-type: none"> » The use Newsletter of the European Mathematical Society is benefit of this membership. » I am interested in giving a small, though small, effect on math epidemic progress | |

Awards and Achievements

- | | | |
|--------------|--|--|
| Dec 2022 | Award: Selected as a Reviewer | @SciencePG |
| | <ul style="list-style-type: none"> » Award: Selected as Reviewer to Journal of American Journal of Computer Science and Technology, Science Publishing Group, USA, @SciencePG: https://www.sciencepublishinggroup.com/journal/index?journalid=303 » American Journal of Computer Science and Technology, Science Publishing Group, USA, @SciencePG My name and affiliation is listed on the journal's reviewer page: http://www.sciencepg.com/journal/peerreviewers?journalid=303. My name and affiliation is listed on the journal's personal page: https://membership.sciencepg.com/DrHenryGarrett PDF: https://drhenrygarrett.files.wordpress.com/2023/04/certificate_for_reviewer.pdf | |
| Sep 2022 | Award: Selected as an Editorial Board Member to JMTCM | JMTCM |
| | <ul style="list-style-type: none"> » Award: Selected as an Editorial Board Member to Journal of Mathematical Techniques and Computational Mathematics(JMTCM) » Journal of Mathematical Techniques and Computational Mathematics(JMTCM) | |
| Jun 2022 | Award: Selected as an Editorial Board Member to JCTCSR | JCTCSR |
| | <ul style="list-style-type: none"> » Award: Selected as an Editorial Board Member to Journal of Current Trends in Computer Science Research(JCTCSR) » Journal of Current Trends in Computer Science Research(JCTCSR) | |
| Jan 23, 2022 | Award: Diploma By Neutrosophic Science International Association | Neutrosophic Science International Association |
| | <ul style="list-style-type: none"> » Award: Distinguished Achievements » Honorary Membership; PDF: https://drhenrygarrett.files.wordpress.com/2023/02/neutrosophicdiploma-henry-garrett.pdf | |

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

Journal Referee

Sep 2022	Editorial Board Member to JMTCM	JMTCM
	» Editorial Board Member to Journal of Mathematical Techniques and Computational Mathematics(JMTCM)	
	» Journal of Mathematical Techniques and Computational Mathematics(JMTCM)	
Jun 2022	Editorial Board Member to JCTCSR	JCTCSR
	» Editorial Board Member to Journal of Current Trends in Computer Science Research(JCTCSR)	
	» Journal of Current Trends in Computer Science Research(JCTCSR)	

Publications: Articles

2023	245	Manuscript
<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7824560).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369977142 @Scribd: https://www.scribd.com/document/637993759 @ZENODO_ORG: https://zenodo.org/record/7824560 @academia: https://www.academia.edu/100136177</p>		
2023	244	Manuscript
<p>» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Path-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7824623).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369976979 @Scribd: https://www.scribd.com/document/637997066 @ZENODO_ORG: https://zenodo.org/record/7824623 @academia: https://www.academia.edu/100136682</p>		
2023	243	Manuscript
<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7819531).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369943811 @Scribd: https://www.scribd.com/document/637634566 @ZENODO_ORG: https://zenodo.org/record/7819531 @academia: https://www.academia.edu/100061928</p>		
2023	242	Manuscript
<p>» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Path-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7819579).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369943967 @Scribd: https://www.scribd.com/document/637637760 @ZENODO_ORG: https://zenodo.org/record/7819579 @academia: https://www.academia.edu/100062693</p>		
2023	241	Manuscript
<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot”, Zenodo 2023, (doi: 10.5281/zenodo.7812236).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369908111 @Scribd: https://www.scribd.com/document/637139359 @ZENODO_ORG: https://zenodo.org/record/7812236 @academia: https://www.academia.edu/99935992</p>		
2023	240	Manuscript

		<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By initial Eulerian-Path-Cut As Hyper initial Eulogy On Super initial EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7809365).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369881613 @Scribd: https://www.scribd.com/document/636782511 @ZENODO_ORG: https://zenodo.org/record/7809365 @academia: https://www.academia.edu/99838444</p>
2023	239	Manuscript
		<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Cut As Hyper Eulogy-Path-Cut On Super EULA-Path-Cut”, Zenodo 2023, (doi: 10.5281/zenodo.7809358).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369881604 @Scribd: https://www.scribd.com/document/636781093 @ZENODO_ORG: https://zenodo.org/record/7809358 @academia: https://www.academia.edu/99838133</p>
2023	238	Manuscript
		<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Path-Cut As Hyper Eulogy On Super EULA”, Zenodo 2023, (doi: 10.5281/zenodo.7809328).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369881578 @Scribd: https://www.scribd.com/document/636776004 @ZENODO_ORG: https://zenodo.org/record/7809328 @academia: https://www.academia.edu/99837015</p>
2023	237	Manuscript
		<p>» Henry Garrett, “New Ideas On Super EULA By Hyper Eulogy Of Eulerian-Path-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7809219).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369881480 @Scribd: https://www.scribd.com/document/636774108 @ZENODO_ORG: https://zenodo.org/record/7809219 @academia: https://www.academia.edu/99836723</p>
2023	236	Manuscript
		<p>» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7806767).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369850330 @Scribd: https://www.scribd.com/document/636575409 @ZENODO_ORG: https://zenodo.org/record/7806767 @academia: https://www.academia.edu/99784641</p>
2023	235	Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Type-Cycle-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7806838).

»
 @ResearchGate: <https://www.researchgate.net/publication/369850360>
 @Scribd: <https://www.scribd.com/document/636580529>
 @ZENODO_ORG: <https://zenodo.org/record/7806838>
 @academia: <https://www.academia.edu/99785941>

2023 234 Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7804238).

»
 @ResearchGate: <https://www.researchgate.net/publication/369825816>
 @Scribd: <https://www.scribd.com/document/636442135>
 @ZENODO_ORG: <https://zenodo.org/record/7804238>
 @academia: <https://www.academia.edu/99745312>

2023 233 Manuscript

» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Hamiltonian-Type-Cycle-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7804228).

»
 @ResearchGate: <https://www.researchgate.net/publication/369825614>
 @Scribd: <https://www.scribd.com/document/636441206>
 @ZENODO_ORG: <https://zenodo.org/record/7804228>
 @academia: <https://www.academia.edu/99744986>

2023 232 Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Type-Cycle-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7799902).

»
 @ResearchGate: <https://www.researchgate.net/publication/369787658>
 @Scribd: <https://www.scribd.com/document/636114181>
 @ZENODO_ORG: <https://zenodo.org/record/7799902>
 @academia: <https://www.academia.edu/99665864>

2023 231 Manuscript

» Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Type-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7804218).

»
 @ResearchGate: <https://www.researchgate.net/publication/369825403>
 @Scribd: <https://www.scribd.com/document/636440183>
 @ZENODO_ORG: <https://zenodo.org/record/7804218>
 @academia: <https://www.academia.edu/99744710>

2023 230 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7796334).

»
 @ResearchGate: <https://www.researchgate.net/publication/369754406>
 @Scribd: <https://www.scribd.com/document/635863463>
 @ZENODO_ORG: <https://zenodo.org/record/7796334>
 @academia: <https://www.academia.edu/99599161>

2023 229 Manuscript

» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Cycle-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7796354).

»
 @ResearchGate: <https://www.researchgate.net/publication/369754679>
 @Scribd: <https://www.scribd.com/document/635866644>
 @ZENODO_ORG: <https://zenodo.org/record/7796354>
 @academia: <https://www.academia.edu/99599873>

2023 228 Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7793372).

»
 @ResearchGate: <https://www.researchgate.net/publication/369737369>
 @Scribd: <https://www.scribd.com/document/635618214>
 @ZENODO_ORG: <https://zenodo.org/record/7793372>
 @academia: <https://www.academia.edu/99526305>

2023 227 Manuscript

» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Hamiltonian-Cycle-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7793410).

»
 @ResearchGate: <https://www.researchgate.net/publication/369737397>
 @Scribd: <https://www.scribd.com/document/635620581>
 @ZENODO_ORG: <https://zenodo.org/record/7793410>
 @academia: <https://www.academia.edu/99527181>

2023 226 Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cycle-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7791952).

»
 @ResearchGate: <https://www.researchgate.net/publication/369707997>
 @Scribd: <https://www.scribd.com/document/635433286>
 @ZENODO_ORG: <https://zenodo.org/record/7791952>
 @academia: <https://www.academia.edu/99472453>

2023 225 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7791982).

»

@ResearchGate: <https://www.researchgate.net/publication/369708364>

@Scribd: <https://www.scribd.com/document/635437195>

@ZENODO_ORG: <https://zenodo.org/record/7791982>

@academia: <https://www.academia.edu/99473852>

2023

224

Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7790026).

»

@ResearchGate: <https://www.researchgate.net/publication/369682453>

@Scribd: <https://www.scribd.com/document/635234698>

@ZENODO_ORG: <https://zenodo.org/record/7790026>

@academia: <https://www.academia.edu/99417596>

2023

223

Manuscript

» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Hamiltonian-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7790052).

»

@ResearchGate: <https://www.researchgate.net/publication/369684142>

@Scribd: <https://www.scribd.com/document/635237764>

@ZENODO_ORG: <https://zenodo.org/record/7790052>

@academia: <https://www.academia.edu/99418509>

2023

222

Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7787066).

»

@ResearchGate: <https://www.researchgate.net/publication/369650008>

@Scribd: <https://www.scribd.com/document/634996748>

@ZENODO_ORG: <https://zenodo.org/record/7787066>

@academia: <https://www.academia.edu/99351320>

2023

221

Manuscript

» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Hamiltonian-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7787094).

»

@ResearchGate: <https://www.researchgate.net/publication/369650238>

@Scribd: <https://www.scribd.com/document/634999745>

@ZENODO_ORG: <https://zenodo.org/record/7787094>

@academia: <https://www.academia.edu/99351951>

2023

220

Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Hamiltonian-Cut As Hyper Hamper On Super Hammy”, Zenodo 2023, (doi: 10.5281/zenodo.7781476).

»

@ResearchGate: <https://www.researchgate.net/publication/369596826>

@Scribd: <https://www.scribd.com/document/634609670>

@ZENODO_ORG: <https://zenodo.org/record/7781476>

@academia: <https://www.academia.edu/99267882>

2023

219

Manuscript

» Henry Garrett, “New Ideas On Super Hammy By Hyper Hamper Of Hamiltonian-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7783082).

»

@ResearchGate: <https://www.researchgate.net/publication/369619224>

@Scribd: <https://www.scribd.com/document/634699251>

@ZENODO_ORG: <https://zenodo.org/record/7783082>

@academia: <https://www.academia.edu/99283965>

2023

218

Manuscript

» Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Trace-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7777857).

»

@ResearchGate: <https://www.researchgate.net/publication/369561067>

@Scribd: <https://www.scribd.com/document/634317561>

@ZENODO_ORG: <https://zenodo.org/record/7777857>

@academia: <https://www.academia.edu/99219432>

2023

217

Manuscript

» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Trace-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7779286).

»

@ResearchGate: <https://www.researchgate.net/publication/369588536>

@Scribd: <https://www.scribd.com/document/634422675>

@ZENODO_ORG: <https://zenodo.org/record/7779286>

@academia: <https://www.academia.edu/99237492>

2023

216

Article

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “A Research on Cancers Recognition and Neutrosophic Super Hypergraph by Eulerian Super Hyper Cycles and Hamiltonian Sets as Hyper Covering Versus Super separations”, J Math Techniques Comput Math 2(3) (2023) 136-148. (<https://www.opastpublishers.com/open-access-articles/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-.pdf>)

»

The links to PDF, its abstract, its citation and the volume are as follows.

PDF: <https://www.opastpublishers.com/open-access-articles/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-.pdf>

Abstract: <https://www.opastpublishers.com/peer-review/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-5309.html>

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Volume: <https://www.opastpublishers.com/journal/journal-of-mathematics-techniques/articles-in-press>

JMTCM: <https://www.opastpublishers.com/open-access-articles/a-research-on-cancers-recognition-and-neutrosophic-super-hypergraph-by-eulerian-super-hyper-cycles-and-hamiltonian-sets-.pdf>

@ResearchGate: <https://www.researchgate.net/publication/369550013>

@Scribd: <https://www.scribd.com/document/634032452>

@ZENODO_ORG: <https://zenodo.org/record/7774581>

@academia: <https://www.academia.edu/99171142>

2023

215

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7771831).

»

@ResearchGate: <https://www.researchgate.net/publication/369537379>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7771831>

@academia: <https://www.academia.edu/99117000>

2023

214

Manuscript

» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Trace-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7772468).

»

@ResearchGate: <https://www.researchgate.net/publication/369539123>

@Scribd: <https://www.scribd.com/document/633864390>

@ZENODO_ORG: <https://zenodo.org/record/7772468>

@academia: <https://www.academia.edu/99132436>

2023

213

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Trace-Cut As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20913.25446).

»

@ResearchGate: <https://www.researchgate.net/publication/369456588>

@Scribd: <https://www.scribd.com/document/633165164>

@ZENODO_ORG: <https://zenodo.org/record/7763661>

@academia: <https://www.academia.edu/98987491>

2023	212	Manuscript
<p>» Henry Garrett, “New Ideas On Super Tract By Hyper Track Of Trace-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7764916).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369475240 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7764916 @academia: https://www.academia.edu/99003070</p>		
2023	211	Manuscript
<p>» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11770.98247).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369422667 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7760212 @academia: https://www.academia.edu/98943519</p>		
2023	210	Manuscript
<p>» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Edge-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12400.12808).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369440337 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7761479 @academia: https://www.academia.edu/98956543</p>		
2023	209	Manuscript
<p>» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Decomposition As Hyper Decompress On Super Decomensation”, ResearchGate 2023, (doi: 10.13140/RG.2.2.22545.10089).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369385213 @Scribd: https://www.scribd.com/document/632697126 @ZENODO_ORG: https://zenodo.org/record/7756528 @academia: https://www.academia.edu/98896282</p>		
2023	208	Manuscript
<p>» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Edge-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29544.34564).</p> <p>»</p> <p>@ResearchGate: https://www.researchgate.net/publication/369402546 @Scribd: https://www.scribd.com/document/632779196 @ZENODO_ORG: https://zenodo.org/record/7757802 @academia: https://www.academia.edu/98911823</p>		
2023	207	Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Decomposition By Hyper Decompress Of Edge-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29544.34564).

»
 @ResearchGate: <https://www.researchgate.net/publication/369402546>
 @Scribd: <https://www.scribd.com/document/632779196>
 @ZENODO_ORG: <https://zenodo.org/record/7757802>
 @academia: <https://www.academia.edu/98911823>

2023 207 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Cut As Hyper Edify On Super Eddy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11377.76644).

»
 @ResearchGate: <https://www.researchgate.net/publication/369374430>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7752592>
 @academia: <https://www.academia.edu/98839726>

2023 206 Manuscript

» Henry Garrett, “New Ideas On Super Eddy By Hyper Edify Of Edge-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23750.96329).

»
 @ResearchGate: <https://www.researchgate.net/publication/369374477>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7752721>
 @academia: <https://www.academia.edu/98842223>

2023 205 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31366.24641).

»
 @ResearchGate: <https://www.researchgate.net/publication/369365026>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7750194>
 @academia: <https://www.academia.edu/98781256>

2023 204 Manuscript

» Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Vertex-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34721.68960).

»
 @ResearchGate: <https://www.researchgate.net/publication/369365539>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7750225>
 @academia: <https://www.academia.edu/98782337>

2023 203 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Decomposition As Hyper Decompress On Super Decompensation”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30212.81289).

»

@ResearchGate: <https://www.researchgate.net/publication/369335397>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7748755>

@academia: <https://www.academia.edu/98734865>

2023

202

Manuscript

» Henry Garrett, “New Ideas On Super Decompensation By Hyper Decompress Of Vertex-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18468.76169).

»

@ResearchGate: <https://www.researchgate.net/publication/369340345>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7748817>

@academia: <https://www.academia.edu/98735229>

2023

201

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Cut As Hyper Vertu On Super Vertigo”, ResearchGate 2023, (doi: 10.13140/RG.2.2.24288.35842).

»

@ResearchGate: <https://www.researchgate.net/publication/369322064>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7745834>

@academia: <https://www.academia.edu/98688581>

2023

200

Manuscript

» Henry Garrett, “New Ideas On Super Vertigo By Hyper Vertu Of Vertex-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32467.25124).

»

@ResearchGate: <https://www.researchgate.net/publication/369327937>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7747096>

@academia: <https://www.academia.edu/98705974>

2023

199

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Neighbor As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31025.45925).

»

@ResearchGate: <https://www.researchgate.net/publication/369274134>

@Scribd: <https://www.scribd.com/document/631665626>

@ZENODO_ORG: <https://zenodo.org/record/7741133>

@academia: <https://www.academia.edu/98631043>

2023

198

Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Nebulizer By Hyper Nub Of Stable-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17184.25602).

»
 @ResearchGate: <https://www.researchgate.net/publication/369284173>
 @Scribd: <https://www.scribd.com/document/631671733>
 @ZENODO_ORG: <https://zenodo.org/record/7741293>
 @academia: <https://www.academia.edu/98634171>

2023 197 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Decompositions As Hyper Stain On Super Stagy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23423.28327).

»
 @ResearchGate: <https://www.researchgate.net/publication/369245279>
 @Scribd: <https://www.scribd.com/document/631523400>
 @ZENODO_ORG: <https://zenodo.org/record/7737369>
 @academia: <https://www.academia.edu/98568607>

2023 196 Manuscript

» Henry Garrett, “New Ideas On Super Stale By Hyper Stalk Of Stable-Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28456.44805).

»
 @ResearchGate: <https://www.researchgate.net/publication/369245643>
 @Scribd: <https://www.scribd.com/document/631525857>
 @ZENODO_ORG: <https://zenodo.org/record/7737444>
 @academia: <https://www.academia.edu/98569557>

2023 195 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Stable-Cut As Hyper Stain On Super Stagy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23525.68320).

»
 @ResearchGate: <https://www.researchgate.net/publication/369211168>
 @Scribd: <https://www.scribd.com/document/631425638>
 @ZENODO_ORG: <https://zenodo.org/record/7734654>
 @academia: <https://www.academia.edu/98524882>

2023 194 Manuscript

» Henry Garrett, “New Ideas On Super Stale By Hyper Stalk Of Stable-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.20170.24000).

»
 @ResearchGate: <https://www.researchgate.net/publication/369214553>
 @Scribd: <https://www.scribd.com/document/631425179>
 @ZENODO_ORG: <https://zenodo.org/record/7734645>
 @academia: <https://www.academia.edu/98524637>

2023 193 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Neighbors As Hyper Nebbish On Super Nebulous”, ResearchGate 2023, (doi: 10.13140/RG.2.2.36475.59683).

»

@ResearchGate: <https://www.researchgate.net/publication/369196398>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7730378>

@academia: <https://www.academia.edu/98458444>

2023

192

Manuscript

» Henry Garrett, “New Ideas On Super Nebulizer By Hyper Nub Of Clique-Neighbors In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29764.71046).

»

@ResearchGate: <https://www.researchgate.net/publication/369196478>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7730148>

@academia: <https://www.academia.edu/98458038>

2023

191

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Decompositions As Hyper Decomp On Super Decommission”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18780.87683).

»

@ResearchGate: <https://www.researchgate.net/publication/369187021>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7728608>

@academia: <https://www.academia.edu/98437657>

2023

190

Manuscript

» Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Clique-Decompositions In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27169.48487).

»

@ResearchGate: <https://www.researchgate.net/publication/369186444>

@Scribd: <https://www.scribd.com/document/630547839>

@ZENODO_ORG: <https://zenodo.org/record/7728571>

@academia: <https://www.academia.edu/98437046>

2023

189

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Clique-Cut As Hyper Click On Super Cliche”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26134.01603).

»

@ResearchGate: <https://www.researchgate.net/publication/369147477>

@Scribd: <https://www.scribd.com/document/630547839>

@ZENODO_ORG: <https://zenodo.org/record/7722788>

@academia: <https://www.academia.edu/98323588>

2023

188

Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Cliff By Hyper Cling Of Clique-Cut In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.27392.30721).

»
 @ResearchGate: <https://www.researchgate.net/publication/369151536>
 @Scribd: <https://www.scribd.com/document/630547839>
 @ZENODO_ORG: <https://zenodo.org/record/7722833>
 @academia: <https://www.academia.edu/98324424>

2023 187 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Space As Hyper Spin On Super Spacy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33028.40321).

»
 @ResearchGate: <https://www.researchgate.net/publication/369118224>
 @Scribd: <https://www.scribd.com/document/630547839>
 @ZENODO_ORG: <https://zenodo.org/record/7714718>
 @academia: <https://www.academia.edu/98256482>

2023 186 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By List-Coloring As Hyper List On Super Lisle”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21389.20966).

»
 @ResearchGate: <https://www.researchgate.net/publication/369111929>
 @Scribd: <https://www.scribd.com/document/630424177>
 @ZENODO_ORG: <https://zenodo.org/record/7713262>
 @academia: <https://www.academia.edu/98228831>

2023 185 Manuscript

» Henry Garrett, “New Ideas On Super Lith By Hyper Lite Of List-Coloring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.16356.04489).

»
 @ResearchGate: <https://www.researchgate.net/publication/369113233>
 @Scribd: <https://www.scribd.com/document/630429081>
 @ZENODO_ORG: <https://zenodo.org/record/7713362>
 @academia: <https://www.academia.edu/98230329>

2023 184 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Space As Hyper Sparse On Super Spark”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21756.21129).

»
 @ResearchGate: <https://www.researchgate.net/publication/369086888>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7708851>
 @academia: <https://www.academia.edu/98165095>

2023 183 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Solidarity By Hyper Soul Of Space In Cancer’s Recognition With (Extreme) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30983.68009).

»
 @ResearchGate: <https://www.researchgate.net/publication/369087468>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7709005>
 @academia: <https://www.academia.edu/98167776>

2023 182 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Edge-Connectivity As Hyper Disclosure On Super Closure”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28552.29445).

»
 @ResearchGate: <https://www.researchgate.net/publication/369058636>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7706177>
 @academia: <https://www.academia.edu/98107686>

2023 181 Manuscript

» Henry Garrett, “New Ideas On Super Uniform By Hyper Deformation Of Edge-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.10936.21761).

»
 @ResearchGate: <https://www.researchgate.net/publication/369059966>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7706254>
 @academia: <https://www.academia.edu/98108721>

2023 180 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Vertex-Connectivity As Hyper Leak On Super Structure”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35105.89447).

»
 @ResearchGate: <https://www.researchgate.net/publication/369051049>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7705887>
 @academia: <https://www.academia.edu/98103871>

2023 179 Manuscript

» Henry Garrett, “New Ideas On Super System By Hyper Explosions Of Vertex-Connectivity In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30072.72960).

»
 @ResearchGate: <https://www.researchgate.net/publication/369052717>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7705951>
 @academia: <https://www.academia.edu/98104801>

2023 178 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Tree-Decomposition As Hyper Forward On Super Returns”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31147.52003).

»
 @ResearchGate: <https://www.researchgate.net/publication/369029627>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7701758>
 @academia: <https://www.academia.edu/98023078>

2023 177 Manuscript

» Henry Garrett, “New Ideas On Super Nodes By Hyper Moves Of Tree-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32825.24163).

»
 @ResearchGate: <https://www.researchgate.net/publication/369030046>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7701796>
 @academia: <https://www.academia.edu/98024333>

2023 176 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By Chord As Hyper Excellence On Super Excess”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13059.58401).

»
 @ResearchGate: <https://www.researchgate.net/publication/369019923>
 @Scribd: <https://www.scribd.com/document/629520682>
 @ZENODO_ORG: <https://zenodo.org/record/7699943>
 @academia: <https://www.academia.edu/97971843>

2023 175 Manuscript

» Henry Garrett, “New Ideas On Super Gap By Hyper Navigations Of Chord In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11172.14720).

»
 @ResearchGate: <https://www.researchgate.net/publication/369020072>
 @Scribd: <https://www.scribd.com/document/->
 @ZENODO_ORG: <https://zenodo.org/record/7700125>
 @academia: <https://www.academia.edu/97976111>

2023 174 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyper(i,j)-Domination As Hyper Controller On Super Waves”, ResearchGate 2023, (doi: 10.13140/RG.2.2.22011.80165).

»
 @ResearchGate: <https://www.researchgate.net/publication/368922546>
 @Scribd: <https://www.scribd.com/document/628952478>
 @ZENODO_ORG: <https://zenodo.org/record/7692323>
 @academia: <https://www.academia.edu/97805753>

2023 173 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Coincidence By Hyper Routes Of SuperHyper(i,j)-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30819.84003).

»

@ResearchGate: <https://www.researchgate.net/publication/368923375>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7692540>

@academia: <https://www.academia.edu/97808461>

2023

172

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperEdge-Domination As Hyper Reversion On Super Indirection”, ResearchGate 2023, (doi: 10.13140/RG.2.2.10493.84962).

»

@ResearchGate: <https://www.researchgate.net/publication/368824400>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7679016>

@academia: <https://www.academia.edu/97569540>

2023

171

Manuscript

» Henry Garrett, “New Ideas On Super Obstacles By Hyper Model Of SuperHyperEdge-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13849.29280).

»

@ResearchGate: <https://www.researchgate.net/publication/368824505>

@Scribd: <https://www.scribd.com/document/->

@ZENODO_ORG: <https://zenodo.org/record/7679054>

@academia: <https://www.academia.edu/97569904>

2023

170

Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Domination As Hyper k-Actions On Super Patterns”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19944.14086).

»

@ResearchGate: <https://www.researchgate.net/publication/368781100>

@Scribd: <https://www.scribd.com/document/627821588>

@ZENODO_ORG: <https://zenodo.org/record/7675903>

@academia: <https://www.academia.edu/97484903>

2023

169

Manuscript

» Henry Garrett, “New Ideas On Super Harmony By Hyper k-Function Of SuperHyperK-Domination In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23299.58404).

»

@ResearchGate: <https://www.researchgate.net/publication/368786722>

@Scribd: <https://www.scribd.com/document/627821272>

@ZENODO_ORG: <https://zenodo.org/record/7675943>

@academia: <https://www.academia.edu/97485466>

2023

168

Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperK-Number As Hyper k-Partition On Super Layers”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33103.76968).

»
 @ResearchGate: <https://www.researchgate.net/publication/368752952>
 @Scribd: <https://www.scribd.com/document/627632376>
 @ZENODO_ORG: <https://zenodo.org/record/7672331>
 @academia: <https://www.academia.edu/97431255>

2023 167 Manuscript

» Henry Garrett, “New Ideas On Super Gradient By Hyper k-Class Of SuperHyperK-Number In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23037.44003).

»
 @ResearchGate: <https://www.researchgate.net/publication/368753609>
 @Scribd: <https://www.scribd.com/document/627635276>
 @ZENODO_ORG: <https://zenodo.org/record/7672351>
 @academia: <https://www.academia.edu/97431782>

2023 166 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperOrder As Hyper Enumerations On Super Landmarks”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35646.56641).

»
 @ResearchGate: <https://www.researchgate.net/publication/368717242>
 @Scribd: <https://www.scribd.com/document/627431073>
 @ZENODO_ORG: <https://zenodo.org/record/97377500>
 @academia: <https://www.academia.edu/97377500>

2023 165 Manuscript

» Henry Garrett, “New Ideas On Super Analogous By Hyper Visions Of SuperHyperOrder In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.18030.48967).

»
 @ResearchGate: <https://www.researchgate.net/publication/368717426>
 @Scribd: <https://www.scribd.com/document/627435127>
 @ZENODO_ORG: <https://zenodo.org/record/7668620>
 @academia: <https://www.academia.edu/97378363>

2023 164 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperColoring As Hyper Categories On Super Neighbors”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13973.81121).

»
 @ResearchGate: <https://www.researchgate.net/publication/368686241>
 @Scribd: <https://www.scribd.com/document/627159268>
 @ZENODO_ORG: <https://zenodo.org/record/7662771>
 @academia: <https://www.academia.edu/97306994>

2023 163 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas On Super Relations By Hyper Identifications Of SuperHyperColoring In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34106.47047).

»
 @ResearchGate: <https://www.researchgate.net/publication/368686111>
 @Scribd: <https://www.scribd.com/document/627162153>
 @ZENODO_ORG: <https://zenodo.org/record/7662798>
 @academia: <https://www.academia.edu/97307446>

2023 162 Manuscript

» Henry Garrett, “New Ideas On Super Contradiction By Hyper Detection of SuperHyperDefensive In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13397.09446).

»
 @ResearchGate: <https://www.researchgate.net/publication/368654749>
 @ZENODO_ORG: <https://zenodo.org/record/7656758>
 @academia: <https://www.academia.edu/97211570>

2023 161 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDimension As Hyper Distinguishing On Super Distances”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31956.88961).

»
 @ResearchGate: <https://www.researchgate.net/publication/368663284>
 @Scribd: <https://www.scribd.com/document/626941521>
 @ZENODO_ORG: <https://zenodo.org/record/7659101>
 @academia: <https://www.academia.edu/97244153>

2023 160 Manuscript

» Henry Garrett, “New Ideas On Super Locations By Hyper Differing Of SuperHyperDimension In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.15179.67361).

»
 @ResearchGate: <https://www.researchgate.net/publication/368663387>
 @Scribd: <https://www.scribd.com/document/626943597>
 @ZENODO_ORG: <https://zenodo.org/record/7659125>
 @academia: <https://www.academia.edu/97244962>

2023 159 Manuscript

» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperDominating As Hyper Closing On Super Messy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.21510.45125).

»
 @ResearchGate: <https://www.researchgate.net/publication/368599405>
 @Scribd: <https://www.scribd.com/document/626381737>
 @ZENODO_ORG: <https://zenodo.org/record/7650464>
 @academia: <https://www.academia.edu/97068321>

2023 158 Manuscript

» Henry Garrett, “New Ideas On Super Missing By Hyper Searching Of SuperHyperDominating In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13121.84321).

»
 @ResearchGate: <https://www.researchgate.net/publication/368599585>
 @Scribd: <https://www.scribd.com/document/626385255>
 @ZENODO_ORG: <https://zenodo.org/record/7650563>
 @academia: <https://www.academia.edu/97069463>

2023	157	Manuscript
<p>» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperConnected As Hyper Group On Super Surge”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11758.69441).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368571428 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7647825 @academia: https://www.academia.edu/97032199</p>		
2023	156	Manuscript
<p>» Henry Garrett, “New Ideas On Super Outbreak By Hyper Collections Of SuperHyperConnected In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.31891.35367).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368571754 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7647834 @academia: https://www.academia.edu/97032546</p>		
2023	155	Manuscript
<p>» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperTotal As Hyper Covering On Super Infections”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19360.87048).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368567448 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7646887 @academia: https://www.academia.edu/97011284</p>		
2023	154	Manuscript
<p>» Henry Garrett, “New Ideas On Super Extremism By Hyper Treatments Of SuperHyperTotal In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.32363.21286).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368568084 @Scribd: https://www.scribd.com/document/- @ZENODO_ORG: https://zenodo.org/record/7646950 @academia: https://www.academia.edu/97012331</p>		
2023	153	Manuscript
<p>» Henry Garrett, “New Ideas On Super Isolation By Hyper Perfectness Of SuperHyperPerfect In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.23266.81602).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368505978 @Scribd: https://www.scribd.com/document/626054425 @ZENODO_ORG: https://zenodo.org/record/7644841 @academia: https://www.academia.edu/96975382</p>		
2023	152	Manuscript
<p>» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperPerfect As Hyper Idealism On Super Vacancy”, ResearchGate 2023, (doi: 10.13140/RG.2.2.19911.37285).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368537004 @Scribd: https://www.scribd.com/publication/368537004 @ZENODO_ORG: https://zenodo.org/record/7644822 @academia: https://www.academia.edu/96974987</p>		
2023	151	Manuscript

		<p>» Henry Garrett, “New Ideas In Cancer’s Recognition And Neutrosophic SuperHyperGraph By SuperHyperJoin As Hyper Separations On Super Sorts”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11050.90569).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368504049</p> <p>@Scribd: https://www.scribd.com/document/625849647</p> <p>@ZENODO_ORG: https://zenodo.org/record/7641835</p> <p>@academia: https://www.academia.edu/96920275</p>
2023	150	Manuscript
		<p>» Henry Garrett, “New Ideas On Super connections By Hyper disconnections Of SuperHyperJoin In Cancer’s Recognition with (Neutrosophic) SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.17761.79206).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368505978</p> <p>@Scribd: https://www.scribd.com/document/625851794</p> <p>@ZENODO_ORG: https://zenodo.org/record/7641856</p> <p>@academia: https://www.academia.edu/96920884</p>
2023	149	Manuscript
		<p>» Henry Garrett, “New Ideas On Super Mixed-Devastations By Hyper Decisions Of SuperHyperDuality In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34953.52320).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368472959</p> <p>@Scribd: https://www.scribd.com/document/625624015</p> <p>@ZENODO_ORG: https://zenodo.org/record/7637677</p> <p>@academia: https://www.academia.edu/96855185</p>
2023	148	Manuscript
		<p>» Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By SuperHyperDuality As Hyper Imaginations On Super Mixed-Illustrations”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33275.80161).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368473015</p> <p>@Scribd: https://www.scribd.com/document/625629651</p> <p>@ZENODO_ORG: https://zenodo.org/record/7637699</p> <p>@academia: https://www.academia.edu/96856241</p>
2023	147	Manuscript
		<p>» Henry Garrett, “New Ideas In Cancer’s Recognition As (Neutrosophic) SuperHyperGraph By Path SuperHyperColoring As Hyper Correction On Super Faults”, ResearchGate 2023, (doi: 10.13140/RG.2.2.30182.50241).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368451328</p> <p>@Scribd: https://www.scribd.com/document/625250582</p> <p>@ZENODO_ORG: https://zenodo.org/record/7632880</p> <p>@academia: https://www.academia.edu/96735840</p>
2023	146	Manuscript
		<p>» Henry Garrett, “New Ideas On Super Reflections By Hyper Rotations Of Path SuperHyperColoring In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33459.30243).</p> <p>» @ResearchGate: https://www.researchgate.net/publication/368451019</p> <p>@Scribd: https://www.scribd.com/document/625247178</p> <p>@ZENODO_ORG: https://zenodo.org/record/7632855</p> <p>@academia: https://www.academia.edu/96734741</p>
2023	145	Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett, “New Ideas As Hyper Deformations On Super Chains In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph By SuperHyperDensity”, ResearchGate 2023, (doi: 10.13140/RG.2.2.13444.60806).

» @ResearchGate: <https://www.researchgate.net/publication/368360212>

@ZENODO_ORG: <https://zenodo.org/record/96569022>

@academia: <https://www.academia.edu/96567710>

2023 144 Manuscript

» Henry Garrett, “New Ideas As Hyper Ignorance By SuperHyperDensity On Super Resistances In Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023, (doi:10.13140/RG.2.2.16800.05123).

» @ResearchGate: <https://www.researchgate.net/publication/368359455>

@ZENODO_ORG: <https://zenodo.org/record/7623324>

@academia: <https://www.academia.edu/96567710>

2023 143 Manuscript

» Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-VI”, ResearchGate 2023, (doi: 10.13140/RG.2.2.29913.80482).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/368291720>

@Scribd: <https://www.scribd.com/document/624027069>

@ZENODO_ORG: <https://zenodo.org/record/7608740>

@academia: <https://www.academia.edu/96375324>

2023 142 Manuscript

» Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-V”, ResearchGate 2023, (doi: 10.13140/RG.2.2.33269.24809).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/368291539>

@Scribd: <https://www.scribd.com/document/624023778>

@ZENODO_ORG: <https://zenodo.org/record/7608672>

@academia: <https://www.academia.edu/96374297>

2023 141 Manuscript

» Henry Garrett, “New Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-IV”, ResearchGate 2023, (doi: 10.13140/RG.2.2.34946.96960).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/368291452>

@Scribd: <https://www.scribd.com/document/624020887>

@ZENODO_ORG: <https://zenodo.org/record/7608627>

@academia: <https://www.academia.edu/96373214>

2023 140 Manuscript

» Henry Garrett, “A Research On Cancer’s Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-III”, ResearchGate 2023, (doi: 10.13140/RG.2.2.14814.31040).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/368291252>

@Scribd: <https://www.scribd.com/document/624016701>

@ZENODO_ORG: <https://zenodo.org/record/7608572>

@academia: <https://www.academia.edu/96372008>

2023 139 Manuscript

		<p>» Henry Garrett, "A Research On Cancer's Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-II", ResearchGate 2023, (doi: 10.13140/RG.2.2.15653.17125).</p> <p>» @WordPress: -</p> <p>@ResearchGate: https://www.researchgate.net/publication/368291112</p> <p>@Scribd: https://www.scribd.com/document/624011527</p> <p>@ZENODO_ORG: https://zenodo.org/record/7608521</p> <p>@academia: https://www.academia.edu/96370816</p>
2023	138	Manuscript
		<p>» Henry Garrett, "A Research On Cancer's Recognition and Neutrosophic SuperHyperGraph By Eulerian SuperHyperCycles and Hamiltonian Sets As Hyper Covering Versus Super separations-I", ResearchGate 2023, (doi: 10.13140/RG.2.2.25719.50089).</p> <p>» @WordPress: -</p> <p>@ResearchGate: https://www.researchgate.net/publication/368290537</p> <p>@Scribd: https://www.scribd.com/document/624009023</p> <p>@ZENODO_ORG: https://zenodo.org/record/7608491</p> <p>@academia: https://www.academia.edu/96370160</p>
2023	137	Manuscript
		<p>» Henry Garrett, "New Ideas On Super Disruptions In Cancer's Extreme Recognition As Neutrosophic SuperHyperGraph By Hyper Plans Called SuperHyperConnectivities", ResearchGate 2023, (doi: 10.13140/RG.2.2.29441.94562).</p> <p>» @WordPress: -</p> <p>@ResearchGate: https://www.researchgate.net/publication/368275564</p> <p>@Scribd: https://www.scribd.com/document/623818360</p> <p>@ZENODO_ORG: https://zenodo.org/record/7606366</p> <p>@academia: https://www.academia.edu/96303538</p>
2023	136	Manuscript
		<p>» Henry Garrett, "Cancer's Neutrosophic Recognition As Neutrosophic SuperHyperGraph By SuperHyperConnectivities As Hyper Diagnosis On Super Mechanism", ResearchGate 2023, (doi: 10.13140/RG.2.2.17252.24968).</p> <p>» @WordPress: -</p> <p>@ResearchGate: https://www.researchgate.net/publication/368145050</p> <p>@Scribd: https://www.scribd.com/document/623487116</p> <p>@ZENODO_ORG: https://zenodo.org/record/7601136</p> <p>@academia: https://www.academia.edu/96199009</p>
2023	135	Manuscript
		<p>» Henry Garrett, "Cancer's Recognition and (Neutrosophic) SuperHyperGraph By the Criteria of Eulerian and Hamiltonian Type-Sets As Hyper Modified Cycles On Super Mess", ResearchGate 2023, (doi: 10.13140/RG.2.2.16652.59525).</p> <p>» @WordPress: -</p> <p>@ResearchGate: https://www.researchgate.net/publication/367510970</p> <p>@Scribd: https://www.scribd.com/document/622449802</p> <p>@academia: https://www.academia.edu/95863072</p> <p>@ZENODO_ORG: https://zenodo.org/record/7579699</p>
2023	134	Manuscript
		<p>» Henry Garrett, "Eulerian and Hamiltonian In Cancer's Neutrosophic Recognition and Neutrosophic SuperHyperGraph On Super Interactions By Hyper Extensions of Cycles", ResearchGate 2023, (doi: 10.13140/RG.2.2.34583.24485).</p> <p>» @WordPress: -</p> <p>@ResearchGate: https://www.researchgate.net/publication/367487872</p> <p>@Scribd: https://www.scribd.com/document/622345752</p> <p>@academia: https://www.academia.edu/95825118</p> <p>@ZENODO_ORG: https://zenodo.org/record/7577878</p>

» Henry Garrett, “Some Super Hyper Degrees and Co-Super Hyper Degrees on Neutrosophic Super Hyper Graphs And Super Hyper Graphs Alongside Applications in Cancer's Treatments”, J Math Techniques Comput Math 2(1) (2023) 35-47.

» (<https://www.opastpublishers.com/open-access-articles/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a.pdf>)

The links to PDF, its abstract, its citation and the volume are as follows.

PDF:<https://www.opastpublishers.com/open-access-articles/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a.pdf>

Abstract:<https://www.opastpublishers.com/peer-review/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a-5009.html>

Citation:<https://www.opastpublishers.com/citation/some-super-hyper-degrees-and-cosuper-hyper-degrees-on-neutrosophic-super-hyper-graphs-and-super-hyper-graphs-alongside-a-5009.html>

Volume:<https://www.opastpublishers.com/table-contents/jmtcm-volume-2-issue-1-year-2023>

2023 132 Manuscript

» Henry Garrett, “SuperHyperGirth Type-Results on extreme SuperHyperGirth theory and (Neutrosophic) SuperHyperGraphs Toward Cancer's extreme Recognition”, Preprints 2023, 2023010396 (doi: 10.20944/preprints202301.0396.v1).

» @WordPress: -

@PrePrints_ORG: <https://www.preprints.org/manuscript/202301.0396/v1>

@ResearchGate: <https://www.researchgate.net/publication/367339379>

@Scribd: <https://www.scribd.com/document/621318391>

@academia: <https://www.academia.edu/95502099>

@ZENODO_ORG: <https://zenodo.org/record/7559540>

2023 131 Manuscript

» Henry Garrett, “Neutrosophic SuperHyperGraphs Warns Hyper Landmark of neutrosophic SuperHyperGirth In Super Type-Versions of Cancer's neutrosophic Recognition”, Preprints 2023, 2023010395 (doi: 10.20944/preprints202301.0395.v1).

» @WordPress: -

@PrePrints_ORG: <https://www.preprints.org/manuscript/202301.0395/v1>

@ResearchGate: <https://www.researchgate.net/publication/367339286>

@Scribd: <https://www.scribd.com/document/621318365>

@academia: <https://www.academia.edu/95500542>

@ZENODO_ORG: <https://zenodo.org/record/7559490>

2023 130 Manuscript

» Henry Garrett, “The Constructions of (Neutrosophic) SuperHyperGraphs on the Cancer's Recognition in The Confrontation With Super Attacks In Hyper Situations By Implementing (Neutrosophic) 1-Failed SuperHyperForcing in The Technical Approaches to Neutralize SuperHyperViews”, ResearchGate 2023, (doi: 10.13140/RG.2.2.26240.51204).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/367298521>

@Scribd: <https://www.scribd.com/document/620971287>

@ZENODO_ORG: <https://zenodo.org/record/7555616>

@academia: <https://www.academia.edu/95379594>

2023 129 Manuscript

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

» Henry Garrett,“(Neutrosophic) 1-Failed SuperHyperForcing As the Entrepreneurs on Cancer’s Recognitions To Fail Forcing Style As the Super Classes With Hyper Effects In The Background of the Framework is So-Called (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.12818.73925).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/367298409>

@Scribd: <https://www.scribd.com/document/620966787>

@ZENODO_ORG: <https://zenodo.org/record/7555558>

@academia: <https://www.academia.edu/95378699>

2023

128

Manuscript

» Henry Garrett,“Super Actions On The Types of Hyper Levels In The Sensible Neutrosophic SuperHyperGirth On Cancer’s Neutrosophic Recognition and Neutrosophic SuperHyperGraph”, ResearchGate 2023,(doi: 10.13140/RG.2.2.26836.88960).

» @WordPress: -

@ResearchGate: <https://www.researchgate.net/publication/367336596>

@Scribd: <https://www.scribd.com/document/621281512>

@academia: <https://www.academia.edu/95490090>

@ZENODO_ORG: <https://zenodo.org/record/7559351>

2023

127

Manuscript

» Henry Garrett,“SuperHyperGirth Approaches on the Super Challenges on the Cancer’s Recognition In the Hyper Model of (Neutrosophic) SuperHyperGraph”, ResearchGate 2023,(doi: 10.13140/RG.2.2.36745.93289).

» @WordPress: -

@ResearchGate:<https://www.researchgate.net/publication/367336398>

@Scribd: <https://www.scribd.com/document/621280166>

@academia: <https://www.academia.edu/95488505>

@ZENODO_ORG: <https://zenodo.org/record/7559313>

2023

0126 | Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs

Manuscript

» Henry Garrett,“Extreme SuperHyperClique as the Firm Scheme of Confrontation under Cancer’s Recognition as the Model in The Setting of (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010308 (doi: 10.20944/preprints202301.0308.v1).

» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn

2023

0125 | Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition

Manuscript

» Henry Garrett,“Uncertainty On The Act And Effect Of Cancer Alongside The Foggy Positions Of Cells Toward Neutrosophic Failed SuperHyperClique inside Neutrosophic SuperHyperGraphs Titled Cancer’s Recognition”, Preprints 2023, 2023010282 (doi: 10.20944/preprints202301.0282.v1).

» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn

2023

0124 | Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs

Manuscript

» Henry Garrett,“Neutrosophic Version Of Separates Groups Of Cells In Cancer’s Recognition On Neutrosophic SuperHyperGraphs”, Preprints 2023, 2023010267 (doi: 10.20944/preprints202301.0267.v1).).

» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn

2023

0123 | The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph

Manuscript

» Henry Garrett, “The Shift Paradigm To Classify Separately The Cells and Affected Cells Toward The Totality Under Cancer’s Recognition By New Multiple Definitions On the Sets Polynomials Alongside Numbers In The (Neutrosophic) SuperHyperMatching Theory Based on SuperHyperGraph and Neutrosophic SuperHyperGraph”, Preprints 2023, 2023010265 (doi: 10.20944/preprints202301.0265.v1).

» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn

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2023	0122 Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer's Recognition Applied in (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer's Recognition Applied in (Neutrosophic) SuperHyperGraphs", Preprints 2023, 2023010262, (doi: 10.20944/preprints202301.0262.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0121 Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer's Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "Neutrosophic Failed SuperHyperStable as the Survivors on the Cancer's Neutrosophic Recognition Based on Uncertainty to All Modes in Neutrosophic SuperHyperGraphs", Preprints 2023, 2023010240 (doi: 10.20944/preprints202301.0240.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0120 Extremism of the Attacked Body Under the Cancer's Circumstances Where Cancer's Recognition Titled (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "Extremism of the Attacked Body Under the Cancer's Circumstances Where Cancer's Recognition Titled (Neutrosophic) SuperHyperGraphs", Preprints 2023, 2023010224, (doi: 10.20944/preprints202301.0224.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0119 SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer's Recognition In Neutrosophic SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer's Recognition In Neutrosophic SuperHyperGraphs", ResearchGate 2023, (doi: 10.13140/RG.2.2.35061.65767).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0118 The Focus on The Partitions Obtained By Parallel Moves In The Cancer's Extreme Recognition With Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "The Focus on The Partitions Obtained By Parallel Moves In The Cancer's Extreme Recognition With Different Types of Extreme SuperHyperMatching Set and Polynomial on (Neutrosophic) SuperHyperGraphs", ResearchGate 2023, (doi: 10.13140/RG.2.2.18494.15680).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0117 Indeterminacy On The All Possible Connections of Cells In Front of Cancer's Attacks In The Terms of Neutrosophic Failed SuperHyperClique on Cancer's Recognition called Neutrosophic SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "Extreme Failed SuperHyperClique Decides the Failures on the Cancer's Recognition in the Perfect Connections of Cancer's Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs", ResearchGate 2023, (doi: 10.13140/RG.2.2.15897.70243).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0116 Extreme Failed SuperHyperClique Decides the Failures on the Cancer's Recognition in the Perfect Connections of Cancer's Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "Extreme Failed SuperHyperClique Decides the Failures on the Cancer's Recognition in the Perfect Connections of Cancer's Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs", ResearchGate 2023, (doi: 10.13140/RG.2.2.32530.73922).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0115 (Neutrosophic) 1-Failed SuperHyperForcing in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, "(Neutrosophic) 1-Failed SuperHyperForcing in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs", Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0114 Perfect Directions Toward Idealism in Cancer's Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs	Manuscript

	<p>» Henry Garrett, "Perfect Directions Toward Idealism in Cancer's Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs", ResearchGate 2023, (doi: 10.13140/RG.2.2.30092.80004).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	<p>0113 Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in the Terms of Cancer's Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) SuperHyperClique</p> <p>» Henry Garrett, "Demonstrating Complete Connections in Every Embedded Regions and Sub-Regions in the Terms of Cancer's Recognition and (Neutrosophic) SuperHyperGraphs With (Neutrosophic) SuperHyperClique", ResearchGate 2023, (doi: 10.13140/RG.2.2.23172.19849).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2023	<p>0112 Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs</p> <p>» Henry Garrett, "Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs", Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2023	<p>0111 Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer's Neutrosophic Recognitions In Special ViewPoints</p> <p>» Henry Garrett, "Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer's Neutrosophic Recognitions In Special ViewPoints", Preprints 2023, 2023010088 (doi: 10.20944/preprints202301.0088.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2023	<p>0110 Different Neutrosophic Types of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer's Neutrosophic Recognition modeled in the Form of Neutrosophic SuperHyperGraphs</p> <p>» Henry Garrett, "Different Neutrosophic Types of Neutrosophic Regions titled neutrosophic Failed SuperHyperStable in Cancer's Neutrosophic Recognition modeled in the Form of Neutrosophic SuperHyperGraphs", ResearchGate 2023, (doi: 10.13140/RG.2.2.17385.36968).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0109 0039 Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph</p> <p>» Garrett, Henry. "0039 Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph." CERN European Organization for Nuclear Research - Zenodo, Nov. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.5281/zenodo.6319942.</p> <p>https://oa.mg/work/10.5281/zenodo.6319942</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0108 0049 (Failed)1-Zero-Forcing Number in Neutrosophic Graphs</p> <p>» Garrett, Henry. "0049 (Failed)1-Zero-Forcing Number in Neutrosophic Graphs." CERN European Organization for Nuclear Research - Zenodo, Feb. 2022. CERN European Organization for Nuclear Research, https://doi.org/10.13140/rg.2.2.35241.26724.</p> <p>https://oa.mg/work/10.13140/rg.2.2.35241.26724</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2023	<p>0107 Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer's Neutrosophic Recognition And Beyond</p> <p>» Henry Garrett, "Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer's Neutrosophic Recognition And Beyond", Preprints 2023, 2023010044</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2023	<p>0106 (Neutrosophic) SuperHyperStable on Cancer's Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs</p>	Manuscript

	<p>» Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	Article105 (JMTCM)	Article
	<p>» Henry Garrett, “Super Hyper Dominating and Super Hyper Resolving on Neutrosophic Super Hyper Graphs and Their Directions in Game Theory and Neutrosophic Super Hyper Classes”, J Math Techniques Comput Math 1(3) (2022) 242-263. (doi: 10.33140/JMTCM.01.03.09).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0104 Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, “Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer’s Recognition Titled (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.28945.92007).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0103 Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints	Manuscript
	<p>» Henry Garrett, “Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer’s Neutrosophic Recognitions In Special ViewPoints”, ResearchGate 2023, (doi: 10.13140/RG.2.2.11447.80803).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2023	0102 (Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35774.77123).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0101 Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond	Manuscript
	<p>» Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, ResearchGate 2022, (doi: 10.13140/RG.2.2.36141.77287).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0100 (Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, ResearchGate 2022, (doi: 10.13140/RG.2.2.29430.88642).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0099 Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs	Manuscript
	<p>» Henry Garrett, “Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, ResearchGate 2022, (doi: 10.13140/RG.2.2.11369.16487).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0098 (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances	Manuscript
	<p>» Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0098 (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances	Manuscript

	<p>» Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, ResearchGate 2022, (doi: 10.13140/RG.2.2.19380.94084).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	<p>0097 (Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses</p> <p>» Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, Preprints 2022, 2022120540 (doi: 10.20944/preprints202212.0540.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0097 (Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses</p> <p>» Henry Garrett, “(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer’s Recognitions And Related (Neutrosophic) SuperHyperClasses”, ResearchGate 2022, (doi: 10.13140/RG.2.2.14426.41923).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0096 SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions</p> <p>» Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0096 SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions</p> <p>» Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, ResearchGate 2022 (doi: 10.13140/RG.2.2.20993.12640).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0095 Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments</p> <p>» Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, Preprints 2022, 2022120324 (doi: 10.20944/preprints202212.0324.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0095 Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer’s Treatments</p> <p>» Henry Garrett, “Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs And SuperHyperGraphs Alongside Applications in Cancer’s Treatments”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23123.04641).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0094 SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses</p> <p>» Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, Preprints 2022, 2022110576 (doi: 10.20944/preprints202211.0576.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript
2022	<p>0094 SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses</p> <p>» Henry Garrett, “SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23324.56966).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	Manuscript

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2022	0093 Neutrosophic Co-degree and Neutrosophic Degree alongside Chromatic Numbers in the Setting of Some Classes Related to Neutrosophic Hypergraphs	Article
	<p>» Henry Garrett, “Neutrosophic Co-degree and Neutrosophic Degree alongside Chromatic Numbers in the Setting of Some Classes Related to Neutrosophic Hypergraphs”, J Curr Trends Comp Sci Res 1(1) (2022) 06-14. PDF,Abstract,Issue.</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0092 Recognition of the Pattern for Vertices to Make Dimension by Resolving in some Classes of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Recognition of the Pattern for Vertices to Make Dimension by Resolving in some Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.27281.51046).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0091 Regularity of Every Element to Function in the Type of Domination in Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Regularity of Every Element to Function in the Type of Domination in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.22861.10727).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0090 Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyperGraph (NSHG)	Manuscript
	<p>» Henry Garrett, “Initial Material of Neutrosophic Preliminaries to Study Some Neutrosophic Notions Based on Neutrosophic SuperHyperEdge (NSHE) in Neutrosophic SuperHyperGraph (NSHG)”, ResearchGate 2022 (doi: 10.13140/RG.2.2.25385.88160).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0089 Basic Neutrosophic Notions Concerning Neutrosophic SuperHyperDominating and Neutrosophic SuperHyperResolving in Neutrosophic SuperHyperGraph	Manuscript
	<p>» Henry Garrett, “Basic Neutrosophic Notions Concerning Neutrosophic SuperHyperDominating and Neutrosophic SuperHyperResolving in Neutrosophic SuperHyperGraph”, ResearchGate 2022 (doi: 10.13140/RG.2.2.29173.86244).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0088 Seeking Empty Subgraphs To Determine Different Measurements in Some Classes of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Seeking Empty Subgraphs To Determine Different Measurements in Some Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.30448.53766).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0087 Impacts of Isolated Vertices To Cover Other Vertices in Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Impacts of Isolated Vertices To Cover Other Vertices in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.16185.44647).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0086 Perfect Locating of All Vertices in Some Classes of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Perfect Locating of All Vertices in Some Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.23971.12326).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0085 Complete Connections Between Vertices in Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Complete Connections Between Vertices in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.28860.10885).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0084 Unique Distance Differentiation By Collection of Vertices in Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Unique Distance Differentiation By Collection of Vertices in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.17692.77449).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	

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2022	0083 Single Connection Amid Vertices From Two Given Sets Partitioning Vertex Set in Some Classes of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Single Connection Amid Vertices From Two Given Sets Partitioning Vertex Set in Some Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.32189.33764).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0082 Separate Joint-Sets Representing Separate Numbers Where Classes of Neutrosophic Graphs and Applications are Cases of Study	Manuscript
	<p>» Henry Garrett, “Separate Joint-Sets Representing Separate Numbers Where Classes of Neutrosophic Graphs and Applications are Cases of Study”, ResearchGate 2022 (doi: 10.13140/RG.2.2.22666.95686).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0081 Repetitive Joint-Sets Featuring Multiple Numbers For Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Repetitive Joint-Sets Featuring Multiple Numbers For Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.15113.93283).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0080 Dual-Resolving Numbers Excerpt from Some Classes of Neutrosophic Graphs With Some Applications	Manuscript
	<p>» Henry Garrett, “Dual-Resolving Numbers Excerpt from Some Classes of Neutrosophic Graphs With Some Applications”, ResearchGate 2022 (doi: 10.13140/RG.2.2.14971.39200).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0079 Dual-Dominating Numbers in Neutrosophic Setting and Crisp Setting Obtained From Classes of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Dual-Dominating Numbers in Neutrosophic Setting and Crisp Setting Obtained From Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.19925.91361).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0078 Neutrosophic Path-Coloring Numbers BasedOn Endpoints In Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Neutrosophic Path-Coloring Numbers BasedOn Endpoints In Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.27990.11845).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0077 Neutrosophic Dominating Path-Coloring Numbers in New Visions of Classes of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Neutrosophic Dominating Path-Coloring Numbers in New Visions of Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.32151.65445).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0076 Path Coloring Numbers of Neutrosophic Graphs Based on Shared Edges and Neutrosophic Cardinality of Edges With Some Applications from Real-World Problems	Manuscript
	<p>» Henry Garrett, “Path Coloring Numbers of Neutrosophic Graphs Based on Shared Edges and Neutrosophic Cardinality of Edges With Some Applications from Real-World Problems”, ResearchGate 2022 (doi: 10.13140/RG.2.2.30105.70244).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0075 Neutrosophic Collapsed Numbers in the Viewpoint of Neutrosophic Graphs	Manuscript
	<p>» Henry Garrett, “Neutrosophic Collapsed Numbers in the Viewpoint of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.27962.67520).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2022	0074 Bulky Numbers of Classes of Neutrosophic Graphs Based on Neutrosophic Edges	Manuscript
	<p>» Henry Garrett, “Bulky Numbers of Classes of Neutrosophic Graphs Based on Neutrosophic Edges”, ResearchGate 2022 (doi: 10.13140/RG.2.2.24204.18564).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	

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2022	0073 Dense Numbers and Minimal Dense Sets of Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Dense Numbers and Minimal Dense Sets of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.28044.59527). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0072 Connectivities of Neutrosophic Graphs in the terms of Crisp Cycles	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Connectivities of Neutrosophic Graphs in the terms of Crisp Cycles”, ResearchGate 2022 (doi: 10.13140/RG.2.2.31917.77281). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0071 Strong Paths Defining Connectivities in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Strong Paths Defining Connectivities in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.17311.43682). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0070 Finding Longest Weakest Paths assigning numbers to some Classes of Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Finding Longest Weakest Paths assigning numbers to some Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.35579.59689). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0068 Relations and Notions amid Hamiltonicity and Eulerian Notions in Some Classes of Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Relations and Notions amid Hamiltonicity and Eulerian Notions in Some Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.35579.59689). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0067 Eulerian Results In Neutrosophic Graphs With Applications	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Eulerian Results In Neutrosophic Graphs With Applications”, ResearchGate 2022 (doi: 10.13140/RG.2.2.34203.34089). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0066 Finding Hamiltonian Neutrosophic Cycles in Classes of Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Finding Hamiltonian Neutrosophic Cycles in Classes of Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.29071.87200). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0065 Extending Sets Type-Results in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Extending Sets Type-Results in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.13317.01767). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0064 Some Polynomials Related to Numbers in Classes of (Strong) Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Some Polynomials Related to Numbers in Classes of (Strong) Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.36280.83204). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0063 Finding Shortest Sequences of Consecutive Vertices in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Finding Shortest Sequences of Consecutive Vertices in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.22924.59526). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0062 Neutrosophic Girth Based On Crisp Cycle in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Neutrosophic Girth Based On Crisp Cycle in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.14011.69923). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	

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2022	0061 e-Matching Number and e-Matching Polynomials in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “e-Matching Number and e-Matching Polynomials in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.32516.60805). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0060 Matching Polynomials in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Matching Polynomials in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.33630.72002). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0059 Some Results in Classes Of Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Some Results in Classes Of Neutrosophic Graphs”, Preprints 2022, 2022030248 (doi: 10.20944/preprints202203.0248.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0058 Matching Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Matching Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.18609.86882). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0055 (Failed) 1-clique Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “(Failed) 1-Clique Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.14241.89449). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0054 Failed Clique Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Failed Clique Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.36039.16800). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0053 Clique Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Clique Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.28338.68800). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0052 (Failed) 1-independent Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “(Failed) 1-Independent Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.30593.12643). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0051 Failed Independent Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Failed Independent Number in Neutrosophic Graphs”, Preprints 2022, 2022020334 (doi: 10.20944/preprints202202.0334.v2) » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0051 Failed Independent Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Failed Independent Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.31196.05768). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0050 Independent Set in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Independent Set in Neutrosophic Graphs”, Preprints 2022, 2022020334 (doi: 10.20944/preprints202202.0334.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	

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2022	0050 Independent Set in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Independent Set in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.17472.81925). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0049 (Failed)1-Zero-Forcing Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “(Failed)1-Zero-Forcing Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.35241.26724). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0048 Failed Zero-Forcing Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Failed Zero-Forcing Number in Neutrosophic Graphs”, Preprints 2022, 2022020343 (doi: 10.20944/preprints202202.0343.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0048 Failed Zero-Forcing Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Failed Zero-Forcing Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.24873.47209). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0047 Zero Forcing Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Zero Forcing Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.32265.93286). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0046 Quasi-Number in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Quasi-Number in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.18470.60488). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0045 Quasi-Degree in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Quasi-Degree in Neutrosophic Graphs”, Preprints 2022, 2022020100 (doi: 10.20944/preprints202202.0100.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0045 Quasi-Degree in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Quasi-Degree in ResearchGate 2022 (doi: 10.13140/RG.2.2.25460.01927). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0044 Co-Neighborhood in Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Co-Neighborhood in Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.17687.44964). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0043 Global Powerful Alliance in Strong Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Global Powerful Alliance in Strong Neutrosophic Graphs”, Preprints 2022, 2022010429 (doi: 10.20944/preprints202201.0429.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0043 Global Powerful Alliance in Strong Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Global Powerful Alliance in Strong Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.31784.24322). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	

2022	0042 Global Offensive Alliance in Strong Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Global Offensive Alliance in Strong Neutrosophic Graphs”, Preprints 2022, 2022010429 (doi: 10.20944/preprints202201.0429.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0042 Global Offensive Alliance in Strong Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Global Offensive Alliance in Strong Neutrosophic Graphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.26541.20961). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0041 Three Types of Neutrosophic Alliances based on Connectedness and (Strong) Edges	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Three Types of Neutrosophic Alliances based on Connectedness and (Strong) Edges”, Preprints 2022, 2022010239 (doi: 10.20944/preprints202201.0239.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0041 Three Types of Neutrosophic Alliances based on Connectedness and (Strong) Edges	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Three Types of Neutrosophic Alliances based on Connectedness and (Strong) Edges”, ResearchGate 2022 (doi: 10.13140/RG.2.2.18486.83521). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0040 Three types of neutrosophic alliances based of connectedness and (strong) edges (In-Progress)	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Three types of neutrosophic alliances based of connectedness and (strong) edges (In-Progress)”, ResearchGate 2022 (doi: 10.13140/RG.2.2.27570.12480). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0039 Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph”, Preprints 2022, 2022010145 (doi: 10.20944/preprints202201.0145.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0039 Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Closing Numbers and Super-Closing Numbers as (Dual)Resolving and (Dual)Coloring alongside (Dual)Dominating in (Neutrosophic)n-SuperHyperGraph”, ResearchGate 2022 (doi: 10.13140/RG.2.2.18909.54244/1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0038 Co-degree and Degree of classes of Neutrosophic Hypergraphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Co-degree and Degree of classes of Neutrosophic Hypergraphs”, Preprints 2022, 2022010027 (doi: 10.20944/preprints202201.0027.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2022	0038 Co-degree and Degree of classes of Neutrosophic Hypergraphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Co-degree and Degree of classes of Neutrosophic Hypergraphs”, ResearchGate 2022 (doi: 10.13140/RG.2.2.32672.10249). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0037 Dimension and Coloring alongside Domination in Neutrosophic Hypergraphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Dimension and Coloring alongside Domination in Neutrosophic Hypergraphs”, Preprints 2021, 2021120448 (doi: 10.20944/preprints202112.0448.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0037 Dimension and Coloring alongside Domination in Neutrosophic Hypergraphs	Manuscript

	<p>» Henry Garrett, “Dimension and Coloring alongside Domination in Neutrosophic Hypergraphs”, ResearchGate 2021 (doi: 10.13140/RG.2.2.13070.28483).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0036 Different Types of Neutrosophic Chromatic Number	Manuscript
	<p>» Henry Garrett, “Different Types of Neutrosophic Chromatic Number”, Preprints 2021, 2021120335 (doi: 10.20944/preprints202112.0335.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0036 Different Types of Neutrosophic Chromatic Number	Manuscript
	<p>» Henry Garrett, “Different Types of Neutrosophic Chromatic Number”, ResearchGate 2021 (doi: 10.13140/RG.2.2.19068.46723).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0035 Neutrosophic Chromatic Number Based on Connectedness	Manuscript
	<p>» Henry Garrett, “Neutrosophic Chromatic Number Based on Connectedness”, Preprints 2021, 2021120226 (doi: 10.20944/preprints202112.0226.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0035 Neutrosophic Chromatic Number Based on Connectedness	Manuscript
	<p>» Henry Garrett, “Neutrosophic Chromatic Number Based on Connectedness”, ResearchGate 2021 (doi: 10.13140/RG.2.2.18563.84001).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0034 Chromatic Number and Neutrosophic Chromatic Number	Manuscript
	<p>» Henry Garrett, “Chromatic Number and Neutrosophic Chromatic Number”, Preprints 2021, 2021120177 (doi: 10.20944/preprints202112.0177.v1).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0034 Chromatic Number and Neutrosophic Chromatic Number	Manuscript
	<p>» Henry Garrett, “Chromatic Number and Neutrosophic Chromatic Number”, ResearchGate 2021 (doi: 10.13140/RG.2.2.36035.73766).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0033 Metric Dimension in fuzzy(neutrosophic) Graphs #12	Manuscript
	<p>» Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs #12”, ResearchGate 2021 (doi: 10.13140/RG.2.2.20690.48322).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0032 Metric Dimension in fuzzy(neutrosophic) Graphs #11	Manuscript
	<p>» Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs #11”, ResearchGate 2021 (doi: 10.13140/RG.2.2.29308.46725).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0031 Metric Dimension in fuzzy(neutrosophic) Graphs #10	Manuscript
	<p>» Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs #10”, ResearchGate 2021 (doi: 10.13140/RG.2.2.21614.54085).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	
2021	0030 Metric Dimension in fuzzy(neutrosophic) Graphs #9	Manuscript
	<p>» Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs #9”, ResearchGate 2021 (doi: 10.13140/RG.2.2.34040.16648).</p> <p>» Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn</p>	

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2021	0029 Metric Dimension in fuzzy(neutrosophic) Graphs #8	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs #8”, ResearchGate 2021 (doi: 10.13140/RG.2.2.19464.96007). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0028 Metric Dimension in fuzzy(neutrosophic) Graphs-VII	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-VII”, ResearchGate 2021 (doi: 10.13140/RG.2.2.14667.72481). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0028 Metric Dimension in fuzzy(neutrosophic) Graphs-VII	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-VII”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v7). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0027 Metric Dimension in fuzzy(neutrosophic) Graphs-VI	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-VI”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v6). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0026 Metric Dimension in fuzzy(neutrosophic) Graphs-V	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-V”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v5). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0025 Metric Dimension in fuzzy(neutrosophic) Graphs-IV	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-IV”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v4). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0024 Metric Dimension in fuzzy(neutrosophic) Graphs-III	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-III”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v3). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0023 Metric Dimension in fuzzy(neutrosophic) Graphs-II	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in fuzzy(neutrosophic) Graphs-II”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v2). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0022 Metric Dimension in Fuzzy Graphs and Neutrosophic Graphs	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Metric Dimension in Fuzzy Graphs and Neutrosophic Graphs”, Preprints 2021, 2021110142 (doi: 10.20944/preprints202111.0142.v1) » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0021 Valued Number And Set	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Valued Number And Set”, Preprints 2021, 2021080229 (doi: 10.20944/preprints202108.0229.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	
2021	0020 Notion of Valued Set	Manuscript
	<ul style="list-style-type: none"> » Henry Garrett, “Notion of Valued Set”, Preprints 2021, 2021070410 (doi: 10.20944/preprints202107.0410.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn 	

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2021	0019 Set And Its Operations	Manuscript
	» Henry Garrett, “Set And Its Operations”, Preprints 2021, 2021060508 (doi: 10.20944/preprints202106.0508.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0018 Metric Dimensions Of Graphs	Manuscript
	» Henry Garrett, “Metric Dimensions Of Graphs”, Preprints 2021, 2021060392 (doi: 10.20944/preprints202106.0392.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0017 New Graph Of Graph	Manuscript
	» Henry Garrett, “New Graph Of Graph”, Preprints 2021, 2021060323 (doi: 10.20944/preprints202106.0323.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0016 Numbers Based On Edges	Manuscript
	» Henry Garrett, “Numbers Based On Edges”, Preprints 2021, 2021060315 (doi: 10.20944/preprints202106.0315.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0015 Locating And Location Number	Manuscript
	» Henry Garrett, “Locating And Location Number”, Preprints 2021, 2021060206 (doi: 10.20944/preprints202106.0206.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0014 Big Sets Of Vertices	Manuscript
	» Henry Garrett, “Big Sets Of Vertices”, Preprints 2021, 2021060189 (doi: 10.20944/preprints202106.0189.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0013 Matroid And Its Outlines	Manuscript
	» Henry Garrett, “Matroid And Its Outlines”, Preprints 2021, 2021060146 (doi: 10.20944/preprints202106.0146.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0012 Matroid And Its Relations	Manuscript
	» Henry Garrett, “Matroid And Its Relations”, Preprints 2021, 2021060080 (doi: 10.20944/preprints202106.0080.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	
2021	0011 Metric Number in Dimension	Manuscript
	» Henry Garrett, “Metric Number in Dimension”, Preprints 2021, 2021060004 (doi: 10.20944/preprints202106.0004.v1). » Available at Twitter, ResearchGate, Scribd, Academia, Zenodo, LinkedIn	

- 2023 161 | Eulerian-Path-Neighbor In SuperHyperGraphs Amazon
- »
[ADDRESSED CITATION]
[HG161b] Henry Garrett, "Eulerian-Path-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7826705).
@googlebooks:<https://books.google.com/books/about?id=7165EAAAQBAJ>
@GooglePlay:<https://play.google.com/store/books/details?id=7165EAAAQBAJ>
@ResearchGate: <https://www.researchgate.net/publication/7165EAAAQBAJ>
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- 2023 160 | Eulerian-Path-Decomposition In SuperHyperGraphs Amazon
- »
[ADDRESSED CITATION]
[HG160b] Henry Garrett, "Eulerian-Path-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7820680).
@googlebooks:<https://books.google.com/books/about?id=v624EAAAQBAJ>
@GooglePlay:<https://play.google.com/store/books/details?id=v624EAAAQBAJ>
@ResearchGate: <https://www.researchgate.net/publication/369949640>
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- 2023 159 | Eulerian-Path-Cut In SuperHyperGraphs Amazon



[ADDRESSED CITATION]

[HG159b] Henry Garrett, "Eulerian-Path-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812750).

@googlebooks:<https://books.google.com/books/about?id=kju4EAAAQBAJ>

@GooglePlay:<https://play.google.com/store/books/details?id=kju4EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369912676>

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@Scribd: <https://www.scribd.com/document/637223333>

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158 | Hamiltonian-Type-Cycle-Neighbor In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG158b] Henry Garrett, "Hamiltonian-Type-Cycle-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812142).

@googlebooks:<https://books.google.com/books/about?id=CDW4EAAAQBAJ>

@GooglePlay:<https://play.google.com/store/books/details?id=CDW4EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369908076>

@WordPress:<https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Type-Cycle-Neighbor-In-SuperHyperGraphs/>

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2023

157 | Hamiltonian-Type-Cycle-Decomposition In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG157b] Henry Garrett, "Hamiltonian-Type-Cycle-Decomposition In SuperHyperGraphs". Dr.

Henry Garrett, 2023 (doi: 10.5281/zenodo.7810394).

@googlebooks:<https://books.google.com/books/about?id=Nhu4EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=Nhu4EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369885235>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Type-Cycle-Decomposition-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/636874559>@ZENODO_ORG: <https://zenodo.org/record/7810394>@academia:<https://www.academia.edu/99861160>(Paperback): <https://www.amazon.com/dp/B0C1JK83H9>(Hardcover): <https://www.amazon.com/dp/B0C1J3J6GZ>(Kindle Edition): <https://www.amazon.com/dp/B0C1VXHLJ>

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156 | Hamiltonian-Type-Cycle-Cut In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG156b] Henry Garrett, " ". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7807782).

@googlebooks:<https://books.google.com/books/about?id=pu-3EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=pu-3EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369857622>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Type-Cycle-Cut-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/636653594>@ZENODO_ORG: <https://zenodo.org/record/7807782>@academia:<https://www.academia.edu/99803953>(Paperback): <https://www.amazon.com/dp/B0C1J1PBHJ>(Hardcover): <https://www.amazon.com/dp/B0C1HVLCSV>(Kindle Edition): <https://www.amazon.com/dp/B0C1SZJYH8>

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2023

155 | SuperHyperDuality

[Amazon](#)



[ADDRESSED CITATION]

[HG155b] Henry Garrett, "Hamiltonian-Cycle-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7804449).

@googlebooks:<https://books.google.com/books/about?id=u7u3EAAAQBAJ>

@GooglePlay:<https://play.google.com/store/books/details?id=u7u3EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369826341>

@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Cycle-Neighbor-In-SuperHyperGraphs/>

@Scribd: <https://www.scribd.com/document/636459571>

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2023

154 | Hamiltonian-Cycle-Decomposition In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG154b] Henry Garrett, "Hamiltonian-Cycle-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7793875).

@googlebooks:<https://books.google.com/books/about?id=Xy23EAAAQBAJ>

@GooglePlay:<https://play.google.com/store/books/details?id=Xy23EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369742888>

@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Cycle-Decomposition-In-SuperHyperGraphs/>

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2023

153 | SuperHyperDuality

[Amazon](#)



[ADDRESSED CITATION]

[HG153b] Henry Garrett, "Hamiltonian-Cycle-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7792307).

@googlebooks: <https://books.google.com/books/about?id=4By3EAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=4By3EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369721379>

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2023

152 | Hamiltonian-Neighbor In SuperHyperGraphs

Amazon



[ADDRESSED CITATION]

[HG152b] Henry Garrett, "Hamiltonian-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7790728).

@googlebooks: <https://books.google.com/books/about?id=hA63EAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=hA63EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369691497>

@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Neighbor-In-SuperHyperGraphs/>

@Scribd: <https://www.scribd.com/document/635332600>

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2023

151 | Hamiltonian-Decomposition In SuperHyperGraphs

Amazon



[ADDRESSED CITATION]

[HG151b] Henry Garrett, "Hamiltonian-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7787712).

@googlebooks:<https://books.google.com/books/about?id=84u2EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=84u2EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369657862>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Decomposition-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/635103994>@ZENODO_ORG: <https://zenodo.org/record/7787712>@academia:<https://www.academia.edu/99377984>(Paperback): <https://www.amazon.com/dp/B0C12D3JBS>(Hardcover): <https://www.amazon.com/dp/B0C12D3K6P>(Kindle Edition): <https://www.amazon.com/dp/B0C147QGJC>

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2023

150 | Hamiltonian-Cut In SuperHyperGraphs

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[ADDRESSED CITATION]

[HG150b] Henry Garrett, "Hamiltonian-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7783791).

@googlebooks:<https://books.google.com/books/about?id=3Gy2EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=3Gy2EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369625364>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Hamiltonian-Cut-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/634825531>@ZENODO_ORG: <https://zenodo.org/record/7783791>@academia:<https://www.academia.edu/99305399>(Paperback): <https://www.amazon.com/dp/B0BZFPJTY4>(Hardcover): <https://www.amazon.com/dp/B0C12528LZ>(Kindle Edition): <https://www.amazon.com/dp/B0BZYLSS8NZ>

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2023

149 | Trace-Neighbor In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG149b] Henry Garrett, "Trace-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7780123).

@googlebooks: <https://books.google.com/books/about?id=Tie2EAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=Tie2EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369594512>

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@Scribd: <https://www.scribd.com/document/634551459>

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2023

148 | Trace-Decomposition In SuperHyperGraphs

Amazon



[ADDRESSED CITATION]

[HG148b] Henry Garrett, "Trace-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7773119).

@googlebooks: <https://books.google.com/books/about?id=y8a1EAAAQBAJ>

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@ResearchGate: <https://www.researchgate.net/publication/369541486>

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2023

147 | SuperHyperDuality

Amazon



[ADDRESSED CITATION]

[HG147b] Henry Garrett, "SuperHyperDuality". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7637762).

@googlebooks: <https://books.google.com/books/about?id=jLcTEAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=jLcTEAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368473083>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/14/superhyperduality>@Scribd: <https://www.scribd.com/document/625758800>@ZENODO_ORG: <https://zenodo.org/record/7637762>@academia: <https://www.academia.edu/96858234>(Paperback): <https://www.amazon.com/dp/B0BVPXM6C4>(Hardcover): <https://www.amazon.com/dp/B0BVNTYX6M>(Kindle Edition): <https://www.amazon.com/dp/->

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2023

146 | Trace-Cut In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG146b] Henry Garrett, "Trace-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7766174).

@googlebooks: <https://books.google.com/books/about?id=8oW1EAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=8oW1EAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369479895>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Trace-Cut-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7766174>@academia: <https://www.academia.edu/99022111>(Paperback): <https://www.amazon.com/dp/B0BZJ5ZL59>(Hardcover): <https://www.amazon.com/dp/B0BZFJ46Q6>(Kindle Edition): <https://www.amazon.com/dp/B0BZF75SF2>

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2023

145 | Edge-Decomposition In SuperHyperGraphs

[Amazon](#)

»

[ADDRESSED CITATION]

[HG145b] Henry Garrett, "Edge-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7762232).

@googlebooks:<https://books.google.com/books/about?id=q021EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=q021EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369452146>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Edge-Neighbor-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7762232>@academia:<https://www.academia.edu/98969900>

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2023

144 | Edge-Decomposition In SuperHyperGraphs

[Amazon](#)

»

[ADDRESSED CITATION]

[HG144b] Henry Garrett, "Edge-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7758601).

@googlebooks:<https://books.google.com/books/about?id=5Pm0EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=5Pm0EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369415896>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Edge-Decomposition-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7758601>@academia:<https://www.academia.edu/98923026>

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2023

143 | Edge-Cut In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG143b] Henry Garrett, "Edge-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7754661).

@googlebooks: <https://books.google.com/books/about?id=Lu0EAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=Lu0EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369382238>

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2023

142 | Vertex-Neighbor In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG142b] Henry Garrett, "Vertex-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7750995).

@googlebooks: <https://books.google.com/books/about?id=5JO0EAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=5JO0EAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369369191>

@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Vertex-Neighbor-In-SuperHyperGraphs/>

@Scribd: <https://www.scribd.com/document/->

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2023

141 | Vertex-Decomposition In SuperHyperGraphs

[Amazon](#)

»

[ADDRESSED CITATION]

[HG141b] Henry Garrett, "Vertex-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7749875).

@googlebooks:<https://books.google.com/books/about?id=-oS0EAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=-oS0EAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369361689>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Vertex-Decomposition-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7749875>@academia:<https://www.academia.edu/98766669>

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2023

140 | Vertex-Cut In SuperHyperGraphs

[Amazon](#)

»

[ADDRESSED CITATION]

[HG140b] Henry Garrett, "Vertex-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7747236).

@googlebooks:<https://books.google.com/books/about?id=fnC0EAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=fnC0EAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369328181>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Vertex-Cut-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7747236>@academia:<https://www.academia.edu/98708467>

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2023

139 | Stable-Neighbor In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG139b] Henry Garrett, "Stable-Neighbor In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7742587).

@googlebooks:<https://books.google.com/books/about?id=5y60EAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=5y60EAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369299197>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Stable-Neighbor-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7742587>@academia:<https://www.academia.edu/98651864>(Paperback): <https://www.amazon.com/dp/B0BYR5PWBJ>(Hardcover): <https://www.amazon.com/dp/B0BYRBV5KL>(Kindle Edition): <https://www.amazon.com/dp/B0BYVK1CCH>

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2023

138 | Stable-Decompositions In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG138b] Henry Garrett, "Stable-Decompositions In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7738635).

@googlebooks:<https://books.google.com/books/about?id=q-CzEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=q-CzEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369261059>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Stable-Decompositions-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7738635>@academia:<https://www.academia.edu/98588820>(Paperback): <https://www.amazon.com/dp/B0BYR86GDV>(Hardcover): <https://www.amazon.com/dp/B0BYR5GCRQ>(Kindle Edition): <https://www.amazon.com/dp/B0BYVFCCRJ3>

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2023

137 | Stable-Cut In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG137b] Henry Garrett, "Stable-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7734719).

@googlebooks: <https://books.google.com/books/about?id=oKmzEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=oKmzEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369218730>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Stable-Cut-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7734719>@academia: <https://www.academia.edu/98525953>(Paperback): <https://www.amazon.com/dp/B0BYRNDT1Z>(Hardcover): <https://www.amazon.com/dp/B0BYR5GF4P>(Kindle Edition): <https://www.amazon.com/dp/B0BY8MJJD6>

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2023

136 | Clique-Neighbors In SuperHyperGraphs

Amazon



[ADDRESSED CITATION]

[HG136b] Henry Garrett, "Clique-Neighbors In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730484).

@googlebooks: <https://books.google.com/books/about?id=NXyzEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=NXyzEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369197009>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Clique-Neighbors-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7730484>@academia: <https://www.academia.edu/98461177>(Paperback): <https://www.amazon.com/dp/B0BYM8JSFJ>(Hardcover): <https://www.amazon.com/dp/B0BYLPSR1C>(Kindle Edition): <https://www.amazon.com/dp/B0BYBQK51T>

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2023

135 | Clique-Decompositions In SuperHyperGraphs

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[ADDRESSED CITATION]

[HG135b] Henry Garrett, "Clique-Decompositions In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730469).

@googlebooks:<https://books.google.com/books/about?id=D3yzEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=D3yzEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369196874>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Clique-Decompositions-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7730469>@academia:<https://www.academia.edu/98460405>(Paperback): <https://www.amazon.com/dp/B0BYM1CV3S>(Hardcover): <https://www.amazon.com/dp/B0BYLXRXTJ>(Kindle Edition): <https://www.amazon.com/dp/B0BY5R8ZGJ>

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134 | Clique-Cut In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG134b] Henry Garrett, "Clique-Cut In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7722865).

@googlebooks:<https://books.google.com/books/about?id=BEuzEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=BEuzEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369158764>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Clique-Cut-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7722865>@academia:<https://www.academia.edu/98325436>(Paperback): <https://www.amazon.com/dp/B0BYLPSHS5>(Hardcover): <https://www.amazon.com/dp/B0BYM4QTKG>(Kindle Edition): <https://www.amazon.com/dp/B0BY5R8ZGJ>

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2023

133 | Space In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG133b] Henry Garrett, "Space In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7713563).

@googlebooks: <https://books.google.com/books/about?id=je-yEAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=je-yEAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369113296>

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2023

0132 | Space In SuperHyperGraphs

Amazon



[ADDRESSED CITATION]

[HG132b] Henry Garrett, "Space In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7709116).

@googlebooks: <https://books.google.com/books/about?id=M56yEAAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=M56yEAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/369088066>

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2023

131 | Edge-Connectivity In SuperHyperGraphs

Amazon

»

[ADDRESSED CITATION]

[HG131b] Henry Garrett, "Edge-Connectivity In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706415).

@googlebooks:<https://books.google.com/books/about?id=9XKyEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=9XKyEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369061525>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Edge-Connectivity-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7706415>@academia:<https://www.academia.edu/98110249>

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2023

130 | Vertex-Connectivity In SuperHyperGraphs

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»

[ADDRESSED CITATION]

[HG130b] Henry Garrett, "Vertex-Connectivity In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706063).

@googlebooks:<https://books.google.com/books/about?id=12myEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=12myEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369056407>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Vertex-Connectivity-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7706063>@academia:<https://www.academia.edu/98106677>

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2023

129 | Tree-Decomposition In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG129b] Henry Garrett, "Tree-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7701906).

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2023

128 | Chord In SuperHyperGraphs

[Amazon](#)

[ADDRESSED CITATION]

[HG128b] Henry Garrett, "Chord In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7700205).

@googlebooks:<https://books.google.com/books/about?id=mfSxEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=mfSxEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/369020170>@WordPress: <https://drhenrygarrett.wordpress.com/2023/04/22/Chord-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7700205>@academia:<https://www.academia.edu/97979798>(Paperback): <https://www.amazon.com/dp/B0BW3HR3CT>(Hardcover): <https://www.amazon.com/dp/B0BW2KMGVJ>(Kindle Edition): <https://www.amazon.com/dp/B0BXJYTWD3>

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2023

127 | (i,j)-Domination In SuperHyperGraphs

[Amazon](#)

»

[ADDRESSED CITATION]

[HG127b] Henry Garrett, “(i,j)-Domination In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7694876).

@googlebooks:<https://books.google.com/books/about?id=QoexEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=QoexEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368926300>@WordPress: [https://drhenrygarrett.wordpress.com/2023/04/22/\(i,j\)-Number-In-SuperHyperGraphs/](https://drhenrygarrett.wordpress.com/2023/04/22/(i,j)-Number-In-SuperHyperGraphs/)@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7694876>@academia:<https://www.academia.edu/97844412>

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0126 | Edge-Domination In SuperHyperGraphs

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»

[ADDRESSED CITATION]

[HG126b] Henry Garrett, “Edge-Domination In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7679410).

@googlebooks:<https://books.google.com/books/about?id=PEiwEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=PEiwEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368825019>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/28/Edge-Domination-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7679410>@academia:<https://www.academia.edu/97585794>

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2023

0125 | K-Domination In SuperHyperGraphs

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»

[ADDRESSED CITATION]

[HG125b] Henry Garrett, "K-Domination In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7675982).

@googlebooks:<https://books.google.com/books/about?id=WyKwEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=WyKwEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368786505>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/27/K-Number-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7675982>@academia:<https://www.academia.edu/97486391>

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124 | K-Number In SuperHyperGraphs

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»

[ADDRESSED CITATION]

[HG124b] Henry Garrett, "K-Number In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7672388).

@googlebooks:<https://books.google.com/books/about?id=TtCvEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=TtCvEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368754006>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/25/K-Number-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/-> @ZENODO_ORG: <https://zenodo.org/record/7672388>@academia:<https://www.academia.edu/97432495>

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2023

123 | Order In SuperHyperGraphs

[Amazon](#)



[ADDRESSED CITATION]

[HG123b] Henry Garrett, “Order In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7668648).

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2023

122 | Coloring In SuperHyperGraphs

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[ADDRESSED CITATION]

[HG122b] Henry Garrett, “Coloring In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7662810).

@googlebooks:<https://books.google.com/books/about?id=jGavEAAAQBAJ>@GooglePlay:<https://play.google.com/store/books/details?id=jGavEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368686304>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/22/Coloring-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7662810>@academia:<https://www.academia.edu/97307977>(Paperback): <https://www.amazon.com/dp/B0BW28MKQP>(Hardcover): <https://www.amazon.com/dp/B0BW35Y9YW>(Kindle Edition): <https://www.amazon.com/dp/B0BWN81GT3>

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121 || “Dimension In SuperHyperGraphs”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG9121b] Henry Garrett, “Dimension In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7659162).

»

@googlebooks: <https://books.google.com/books/about?id=nAOvEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=nAOvEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368663443>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/22/Dimension-In-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7659162>@academia: <https://www.academia.edu/97246270>(Paperback): <https://www.amazon.com/dp/B0BW38DB6M>(Hardcover): <https://www.amazon.com/dp/B0BW2KMB1J>(Kindle Edition): <https://www.amazon.com/dp/B0BWCW6KJL>

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120 || “Cancer In SuperHyperGraphs”

Amazon

»

[ADDRESSED CITATION]

[HG120b] Henry Garrett, “Cancer In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653233).

»

@googlebooks: <https://books.google.com/books/about?id=ZdmuEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=ZdmuEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368635240>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/19/Cancer-in-SuperHyperGraphs/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7653233>@academia: <https://www.academia.edu/97119655>

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0119 || “SuperHyperWheel”

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»

[ADDRESSED CITATION]

[HG119b] Henry Garrett, “SuperHyperWheel”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653204).

» SuperHyperWheel

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0118 || “SuperHyperMultipartite”

[Amazon](#)

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[ADDRESSED CITATION]

[HG118b] Henry Garrett, “SuperHyperMultipartite”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653142).

»

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0117 || “SuperHyperBipartite”

[Amazon](#)

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[ADDRESSED CITATION]

[HG117b] Henry Garrett, “SuperHyperBipartite”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653117).

»

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0116 || “SuperHyperStar”

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[ADDRESSED CITATION]

[HG116b] Henry Garrett, “SuperHyperStar”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653089).

»

SuperHyperStar

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»

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[HG115b] Henry Garrett, “SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651687).

» SuperHyperCycle

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0114 || “SuperHyperPath”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG114b] Henry Garrett, “SuperHyperPath”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651619).

»

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0113 || “SuperHyperDomination”

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[HG113b] Henry Garrett, “SuperHyperDomination”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651439).

» SuperHyperDomination

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0112 || “SuperHyperDominating”

[Amazon](#)

[ADDRESSED CITATION]

[HG112b] Henry Garrett, “SuperHyperDominating”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7650729).



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0111 || “SuperHyperConnected”

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»

[ADDRESSED CITATION]

[HG111b] Henry Garrett, “SuperHyperConnected”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647868).

» SuperHyperConnected

@googlebooks:<https://books.google.com/books/about?id=AmquEAAAQBAJ>

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0110 || “SuperHyperTotal”

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»

[ADDRESSED CITATION]

[HG110b] Henry Garrett, “SuperHyperTotal”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647017).

»

SuperHyperTotal

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@ResearchGate: <https://www.researchgate.net/publication/368569569>

@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/17/superhypertotal/>

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2023

0109 || “SuperHyperPerfect”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG109b] Henry Garrett, “SuperHyperPerfect”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7644894).

»

SuperHyperPerfect

@googlebooks: <https://books.google.com/books/about?id=JymuEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=JymuEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368537745>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/16/SuperHyperPerfect/>@Scribd: <https://www.scribd.com/document/->@ZENODO_ORG: <https://zenodo.org/record/7644894>@academia: <https://www.academia.edu/96976482>

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2023

0108 || “SuperHyperJoin”

Amazon

»

[ADDRESSED CITATION]

[HG108b] Henry Garrett, “SuperHyperJoin”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7641880).

»

SuperHyperJoin

@googlebooks: <https://books.google.com/books/about?id=TeStEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=TeStEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368507224>@WordPress: <https://drhenrygarrett.wordpress.com/2023/02/15/superhyperjoin/>@Scribd: <https://www.scribd.com/document/625861795>@ZENODO_ORG: <https://zenodo.org/record/7641880>@academia: <https://www.academia.edu/96922889>

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2023

0107 || “Path SuperHyperColoring”

Amazon

»

[ADDRESSED CITATION]

[HG107b] Henry Garrett, “Path SuperHyperColoring”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7632923).

»

|| Path SuperHyperColoring

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2023	0106 "SuperHyperDensity"	Amazon
<p>»</p> <p>[ADDRESSED CITATION]</p> <p>[HG106b] Henry Garrett, "SuperHyperDensity". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7623459).</p> <p>»</p> <p> SuperHyperDensity</p> <p>Link (Paperback): https://www.amazon.com/dp/B0BV49Y61R (Hardcover): https://www.amazon.com/dp/B0BV4DYQZL (Kindle Edition): ISBN (Paperback): 9798376742822 (Hardcover): 9798376743706 (Kindle Edition): CC BY-NC-ND 4.0</p> <p>@googlebooks: https://books.google.com/books/about?id=HdusEAAAQBAJ</p> <p>@GooglePlay: https://play.google.com/store/books/details?id=HdusEAAAQBAJ</p> <p>@ResearchGate: https://www.researchgate.net/publication/368361919</p> <p>@ZENODO_ORG: https://zenodo.org/record/7623459</p> <p>@academia: https://www.academia.edu/96571852</p>		
2023	0105 "Neutrosophic SuperHyperConnectivities"	Amazon
<p>»</p> <p>[ADDRESSED CITATION]</p> <p>[HG105b] Henry Garrett, "Neutrosophic SuperHyperConnectivities". Dr. Henry Garrett, 2023.</p> <p>»</p> <p>Link (Paperback): https://www.amazon.com/dp/B0BTXCX57J (Hardcover): https://www.amazon.com/dp/B0BTRXKGTX (Kindle Edition): ISBN (Paperback): 9798376198186 (Hardcover): 9798376200612 (Kindle Edition): CC BY-NC-ND 4.0</p> <p>CC BY-NC-ND 4.0</p> <p>@googlebooks: https://books.google.com/books/about?id=YeurEAAAQBAJ</p> <p>@GooglePlay: https://play.google.com/store/books/details?id=YeurEAAAQBAJ</p> <p>@ResearchGate: https://www.researchgate.net/publication/368275740</p> <p>@Scribd: https://www.scribd.com/document/623824611</p> <p>@ZENODO_ORG: https://zenodo.org/record/7606434</p> <p>@academia: https://www.academia.edu/96305174</p>		
2023	Book 104 "Extreme SuperHyperConnectivities"	Amazon
<p>»</p> <p>[ADDRESSED CITATION]</p> <p>[HG104b] Henry Garrett, "Extreme SuperHyperConnectivities". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416).</p> <p>»</p> <p>Link (Paperback): https://www.amazon.com/dp/B0BTRYB2S4 (Hardcover): https://www.amazon.com/dp/B0BTT6VT96 (Kindle Edition): ISBN (Paperback): 9798376198131 (Hardcover): 9798376200353 (Kindle Edition): CC BY-NC-ND 4.0</p> <p>CC BY-NC-ND 4.0</p> <p>@googlebooks: https://books.google.com/books/about?id=X-urEAAAQBAJ</p> <p>@GooglePlay: https://play.google.com/store/books/details?id=X-urEAAAQBAJ</p> <p>@ResearchGate: https://www.researchgate.net/publication/368275596</p> <p>@Scribd: https://www.scribd.com/document/623823150</p> <p>@ZENODO_ORG: https://zenodo.org/record/7606416</p> <p>@academia: https://www.academia.edu/96304920</p>		
2023	Book 103 "SuperHyperConnectivities"	Amazon

»

[ADDRESSED CITATION]

[HG103b] Henry Garrett, “SuperHyperConnectivities”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606404).

»

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@googlebooks: <https://books.google.com/books/about?id=UeurEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=UeurEAAAQBAJ>@ResearchGate: <https://www.researchgate.net/publication/368275728>@Scribd: <https://www.scribd.com/document/623822143>@ZENODO_ORG: <https://zenodo.org/record/7606404>@academia: <https://www.academia.edu/96304608>

2023

Book 102 || “Neutrosophic SuperHyperCycle”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG102b] Henry Garrett, “Neutrosophic SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).

»

Link (Paperback): <https://www.amazon.com/dp/B0BT6ZXQ8V> (Hardcover): <https://www.amazon.com/dp/B0BT7DZTBW> (Kindle Edition):

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2023

Book 101 || “Extreme SuperHyperCycle”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG101b] Henry Garrett, “Extreme SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).

»

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@WordPress: -

2023

Book 100 || “Extreme SuperHyperCycle”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG100b] Henry Garrett, “Extreme SuperHyperCycle”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018).

»

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[ADDRESSED CITATION]

[HG99b] Henry Garrett, "SuperHyperCycle". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7579929).

»

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@googlebooks: <https://books.google.com/books/about?id=LieqEAAAQBAJ>

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@ResearchGate: <https://www.researchgate.net/publication/367511616>

@Scribd: <https://www.scribd.com/document/623691106>

@ZENODO_ORG: <https://zenodo.org/record/7579929>

@academia: <https://www.academia.edu/95868812>

@WordPress: -

2023

0098 | Neutrosophic SuperHyperGirth

[Amazon](#)

»

[ADDRESSED CITATION]

[HG98b] Henry Garrett, "Neutrosophic SuperHyperGirth". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563170).

»

<https://amazon.com/dp/B0BSV66BWV>

<https://amazon.com/dp/B0BSV7CZH4>

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@academia: <https://www.academia.edu/95563414>

2023

0097 | Extreme SuperHyperGirth

[Amazon](#)

»

[ADDRESSED CITATION]

[HG97b] Henry Garrett, "Extreme SuperHyperGirth". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563164).

» <https://www.amazon.com/dp/B0BSJPZV9J>

<https://www.amazon.com/dp/B0BSJPYVWJ>

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0096 | "SuperHyperGirth"

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»
 [ADDRESSED CITATION]
 [HG96b] Henry Garrett, “SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160).
 »
<https://www.amazon.com/dp/B0BSLKY69Q>
<https://www.amazon.com/dp/B0BT3S4ZP5>
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 @ResearchGate: <https://www.researchgate.net/publication/367351521>

2023	0095 “Extreme SuperHyperGirth”	Amazon
	» [ADDRESSED CITATION] [HG95b] Henry Garrett, “Extreme SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160). » @googlebooks: http://books.google.com/books/about?id=vL-qEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=vL-qEAAAQBAJ	
2023	0094 “Overlook On SuperHyperGirth”	Amazon
	» [ADDRESSED CITATION] [HG94b] Henry Garrett, “Overlook On SuperHyperGirth”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160). » @googlebooks: http://books.google.com/books/about?id=rr-qEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=rr-qEAAAQBAJ	
2023	0093 “Neutrosophic SuperHyperMatching”	Amazon
	» [ADDRESSED CITATION] [HG93b] Henry Garrett, “Neutrosophic SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557063). » @googlebooks: http://books.google.com/books/about?id=6bmqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=6bmqEAAAQBAJ https://www.amazon.com/dp/B0BSJPZT7B https://www.amazon.com/dp/B0BSR4XZH5 9798374564273 9798374564792 CC BY-NC-ND 4.0 @ResearchGate: https://www.researchgate.net/publication/367326889 @Scribd: - @ZENODO_ORG: https://zenodo.org/record/7557063 @academia: https://www.academia.edu/95421010 @WordPress: -	
2023	0092 “Extreme SuperHyperMatching”	Amazon

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»

[ADDRESSED CITATION]

[HG92b] Henry Garrett, “Extreme SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557009).

»

@googlebooks: <http://books.google.com/books/about?id=47mqEAAAQBAJ>

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@WordPress: -

2023

0091 | “Overlook On SuperHyperMatching”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG91b] Henry Garrett, “Overlook On SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).

»

@googlebooks: <http://books.google.com/books/about?id=kC-oEAAAQBAJ>

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2023

0090 | “Neutrosophic Failed SuperHyperClique”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG90b] Henry Garrett, “Neutrosophic Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).

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@googlebooks: <http://books.google.com/books/about?id=h7qqEAAAQBAJ>

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2023

0089 | “Extreme Failed SuperHyperClique”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG89b] Henry Garrett, “Extreme Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).

»

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2023

0088 | “Overlook On Failed SuperHyperClique”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG88b] Henry Garrett, “Overlook On Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).

»

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0087 | “Extreme SuperHyperClique”

[Amazon](#)

»

[ADDRESSED CITATION]

[HG87b] Henry Garrett, "Extreme SuperHyperClique". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574952).

»

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2023

0086 | "Neutrosophic SuperHyperClique"

Amazon

»

[ADDRESSED CITATION]

[HG86b] Henry Garrett, "Neutrosophic SuperHyperClique". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574992).

»

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2023

0085 | "Extreme SuperHyperClique"

Amazon

»

[ADDRESSED CITATION]

[HG85b] Henry Garrett, "Extreme SuperHyperClique". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).

»

@googlebooks: <http://books.google.com/books/about?id=52pEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=52pEAAAQBAJ>

2023

0084 | "Overlook On SuperHyperClique"

Amazon

»

[ADDRESSED CITATION]

[HG84b] Henry Garrett, "Overlook On SuperHyperClique". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).

»

@googlebooks: <http://books.google.com/books/about?id=Cf6pEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=Cf6pEAAAQBAJ>

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2023	0083 “Neutrosophic Failed SuperHyperStable”	Amazon
	<p>»</p> <p>[ADDRESSED CITATION] [HG83b] Henry Garrett, “Neutrosophic Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).</p> <p>»</p> <p>@googlebooks: http://books.google.com/books/about?id=cLuqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=cLuqEAAAQBAJ</p>	
2023	0082 “Extreme Failed SuperHyperStable”	Amazon
	<p>»</p> <p>[ADDRESSED CITATION] [HG82b] Henry Garrett, “Extreme Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).</p> <p>»</p> <p>@googlebooks: http://books.google.com/books/about?id=aruqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=aruqEAAAQBAJ</p>	
2023	0081 “Overlook On Failed SuperHyperStable”	Amazon
	<p>»</p> <p>[ADDRESSED CITATION] [HG81b] Henry Garrett, “Overlook On Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).</p> <p>»</p> <p>@googlebooks: http://books.google.com/books/about?id=YruqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=YruqEAAAQBAJ</p>	
2023	0080 “Neutrosophic SuperHyperStable”	Amazon
	<p>»</p> <p>[ADDRESSED CITATION] [HG80b] Henry Garrett, “Neutrosophic SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).</p> <p>»</p> <p>@googlebooks: http://books.google.com/books/about?id=gLyqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=gLyqEAAAQBAJ</p>	
2023	0079 “Extreme SuperHyperStable”	Amazon
	<p>»</p> <p>[ADDRESSED CITATION] [HG79b] Henry Garrett, “Extreme SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).</p> <p>»</p> <p>@googlebooks: http://books.google.com/books/about?id=CryqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=CryqEAAAQBAJ</p>	
2023	0078 “Overlook On SuperHyperStable”	Amazon
	<p>»</p> <p>[ADDRESSED CITATION] [HG78b] Henry Garrett, “Overlook On SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).</p> <p>»</p> <p>@googlebooks: http://books.google.com/books/about?id=hLuqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=hLuqEAAAQBAJ</p>	
2023	0077 Neutrosophic Failed SuperHyperForcing	Amazon

	» “Neutrosophic Failed SuperHyperForcing” » [ADDRESSED CITATION] [HG77b] Henry Garrett, “Neutrosophic Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450). @googlebooks: http://books.google.com/books/about?id=yLyqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=yLyqEAAAQBAJ	
2023	0076 Extreme Failed SuperHyperForcing	Amazon
	» [ADDRESSED CITATION] [HG76b] Henry Garrett, “Extreme Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450). “Extreme Failed SuperHyperForcing” » @googlebooks: http://books.google.com/books/about?id=wLyqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=wLyqEAAAQBAJ	
2023	0075 Neutrosophic SuperHyperForcing	Amazon
	» [ADDRESSED CITATION] [HG75b] Henry Garrett, “Neutrosophic SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862). “Neutrosophic SuperHyperForcing” » @googlebooks: http://books.google.com/books/about?id=5LyqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=5LyqEAAAQBAJ	
2023	0074 Extreme SuperHyperForcing	Amazon
	» [ADDRESSED CITATION] [HG74b] Henry Garrett, “Extreme SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862). “Extreme SuperHyperForcing” » @googlebooks: http://books.google.com/books/about?id=3ryqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=3ryqEAAAQBAJ Other Publishers: @googlebooks @GooglePlay @AmazonKindle Available at @WordPress @ResearchGate @Scribd @academia @ZENODO_ORG @Twitter @facebook @LinkedIn @Amazon @googlebooks @GooglePlay @AmazonKindle	
2023	0073 Overlook On SuperHyperForcing	Amazon
	» [ADDRESSED CITATION] [HG73b] Henry Garrett, “Overlook On SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862). “Overlook On SuperHyperForcing” » @googlebooks: http://books.google.com/books/about?id=zryqEAAAQBAJ @GooglePlay: https://play.google.com/store/books/details?id=zryqEAAAQBAJ Other Publishers: @googlebooks @GooglePlay @AmazonKindle Available at @WordPress @ResearchGate @Scribd @academia @ZENODO_ORG @Twitter @facebook @LinkedIn @Amazon @googlebooks @GooglePlay @AmazonKindle	
2023	0072 Neutrosophic SuperHyperAlliances	Amazon

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

»

[ADDRESSED CITATION]

[HG72b] Henry Garrett, “Neutrosophic SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).

“Neutrosophic SuperHyperAlliances”

»

@googlebooks: <http://books.google.com/books/about?id=cr2qEAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=cr2qEAAQBAJ>

2023

0071 | Extreme SuperHyperAlliances

[Amazon](#)

»

[ADDRESSED CITATION]

[HG71b] Henry Garrett, “Extreme SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).

“Extreme SuperHyperAlliances”

»

@googlebooks: <http://books.google.com/books/about?id=ZL2qEAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=ZL2qEAAQBAJ>

2023

0070 | Overlook On SuperHyperAlliances

[Amazon](#)

»

[ADDRESSED CITATION]

[HG70b] Henry Garrett, “Overlook On SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).

“Overlook On SuperHyperAlliances”

»

@googlebooks: <http://books.google.com/books/about?id=Sr2qEAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=Sr2qEAAQBAJ>

2023

0069 | SuperHyperMatching

[Amazon](#)

»

[ADDRESSED CITATION]

[HG69b] Henry Garrett, “SuperHyperMatching”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484).

»

@googlebooks: <https://books.google.com/books/about?id=kC-oEAAQBAJ>

@GooglePlay: <https://play.google.com/store/books/details?id=kC-oEAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/367165374>

@Scribd: <https://www.scribd.com/document/623688320>

@ZENODO: <https://zenodo.org/record/7539484>

@academia: <https://www.academia.edu/95049063>

@WordPress: <https://drhenrygarrett.wordpress.com/2023/01/16/superhypermatching-published-version/>

Link

(Paperback): <https://www.amazon.com/dp/B0BSDPXX1P>

(Hardcover): <https://www.amazon.com/dp/B0BSDC1L66>

(Kindle Edition):

ISBN

(Paperback): 9798373872683

(Hardcover): 9798373875424

(Kindle Edition): CC BY-NC-ND 4.0

ASIN : B0BSDPXX1P Publisher : Independently published (January 15, 2023) Language

: English Paperback : 582 pages ISBN-13 : 979-8373872683 Item Weight : 3.6 pounds

Dimensions : 8.5 x 1.37 x 11 inches

ASIN : B0BSDC1L66 Publisher : Independently published (January 16, 2023) Language

: English Hardcover : 548 pages ISBN-13 : 979-8373875424 Item Weight : 3.3 pounds

Dimensions : 8.25 x 1.48 x 11 inches

Other Publishers: @googlebooks @GooglePlay @AmazonKindle

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Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA
 2023 0068 | Failed SuperHyperClique [Amazon](#)

»
 [ADDRESSED CITATION]
 [HG68b] Henry Garrett, “Failed SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390).
 »
<https://www.amazon.com/dp/B0BRZ67NYN>
<https://www.amazon.com/dp/B0BRYZTK24>
 9798373274227
 9798373277273
 @ResearchGate:<https://www.researchgate.net/publication/366991079>
 @Scribd:<https://www.scribd.com/document/623687651>
 @academia:<https://www.academia.edu/94736027>
 @ZENODO_ORG : <https://zenodo.org/record/7523390>
 @WordPress:<https://drhenrygarrett.wordpress.com/2023/01/11/failed-superhyperclique-published-version>
 ASIN : B0BRZ67NYN Publisher : Independently published (January 10, 2023) Language : English Paperback : 454 pages ISBN-13 : 979-8373274227 Item Weight : 2.83 pounds Dimensions : 8.5 x 1.07 x 11 inches
 ASIN : B0BRYZTK24 Publisher : Independently published (January 10, 2023) Language : English Hardcover : 460 pages ISBN-13 : 979-8373277273 Item Weight : 2.78 pounds Dimensions : 8.25 x 1.27 x 11 inches
 Other Publishers: @googlebooks @GooglePlay @AmazonKindle
 Available at @WordPress @ResearchGate @Scribd @academia @ZENODO_ORG @Twitter @facebook @LinkedIn @Amazon @googlebooks @GooglePlay @AmazonKindle

2023 0067 | SuperHyperClique [Amazon](#)

»
 [ADDRESSED CITATION]
 [HG67b] Henry Garrett, “SuperHyperClique”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357).
 »
<https://www.amazon.com/dp/B0BRWK4S1Y>
<https://www.amazon.com/dp/B0BRM24YJX>
 9798373040471
 9798373041935
 @ResearchGate: <https://www.researchgate.net/publication/366956533>
 @Scribd: <https://www.scribd.com/document/623686486>
 @academia:<https://www.academia.edu/96257928>
 @ZENODO_ORG : zenodo.org/record/7523357
 @WordPress:<https://drhenrygarrett.wordpress.com/2023/01/10/superhyperclique-published-version-2/>
 ASIN : B0BRWK4S1Y Publisher : Independently published (January 8, 2023) Language : English Paperback : 376 pages ISBN-13 : 979-8373040471 Item Weight : 2.36 pounds Dimensions : 8.5 x 0.89 x 11 inches
 ASIN : B0BRM24YJX Publisher : Independently published (January 8, 2023) Language : English Hardcover : 388 pages ISBN-13 : 979-8373041935 Item Weight : 2.36 pounds Dimensions : 8.25 x 1.1 x 11 inches
 Other Publishers: @googlebooks @GooglePlay @AmazonKindle
 Available at @WordPress @ResearchGate @Scribd @academia @ZENODO_ORG @Twitter @facebook @LinkedIn @Amazon @googlebooks @GooglePlay @AmazonKindle

2023 0066 | Failed SuperHyperStable [Amazon](#)

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

»

[ADDRESSED CITATION]

[HG66b] Henry Garrett, “Failed SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782).

»

<https://www.amazon.com/dp/B0BRNG7DC8>

<https://www.amazon.com/dp/B0BRLVN39L>

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9798372599765

@ResearchGate:<https://www.researchgate.net/publication/366867409>

@Scribd:<https://www.scribd.com/document/623685007>

@academia:<https://www.academia.edu/94347021>

@ZENODO_{ORG} : <https://zenodo.org/record/7504782>

@WordPress:<https://drhenrygarrett.wordpress.com/2023/01/06/failed-superhyperstable-published-version/>

ASIN : B0BRNG7DC8 Publisher : Independently published (January 4, 2023) Language : English Paperback : 304 pages ISBN-13 : 979-8372597976 Item Weight : 1.93 pounds Dimensions : 8.5 x 0.72 x 11 inches

ASIN : B0BRLVN39L Publisher : Independently published (January 4, 2023) Language : English Hardcover : 306 pages ISBN-13 : 979-8372599765 Item Weight : 1.89 pounds Dimensions : 8.25 x 0.91 x 11 inches

Other Publishers: @googlebooks @GooglePlay @AmazonKindle

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2023

0065 | SuperHyperStable

[Amazon](#)

»

[ADDRESSED CITATION]

[HG65b] Henry Garrett, “SuperHyperStable”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395).

»

<https://www.amazon.com/dp/B0BRDG5Z4Y>

<https://www.amazon.com/dp/B0BRJPG56M>

9798372248519

9798372252011

@ResearchGate:<https://www.researchgate.net/publication/366809008>

@Scribd:<https://www.scribd.com/document/617440737>

@academia:<https://www.academia.edu/94165188>

@ZENODO_{ORG} : <https://zenodo.org/record/7499395>

@WordPress:<https://drhenrygarrett.wordpress.com/2023/01/03/superhyperstable-published-version/>

ASIN : B0BRDG5Z4Y Publisher : Independently published (January 2, 2023) Language : English Paperback : 294 pages ISBN-13 : 979-8372248519 Item Weight : 1.93 pounds Dimensions : 8.27 x 0.7 x 11.69 inches

ASIN : B0BRJPG56M Publisher : Independently published (January 2, 2023) Language : English Hardcover : 290 pages ISBN-13 : 979-8372252011 Item Weight : 1.79 pounds Dimensions : 8.25 x 0.87 x 11 inches

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2023

0064 | Failed SuperHyperForcing

[Amazon](#)

»

[ADDRESSED CITATION]

[HG64b] Henry Garrett, “Failed SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).

»

@googlebooks: <http://books.google.com/books/about?id=vryqEAAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=vryqEAAAQBAJ><https://www.amazon.com/dp/B0BRH5B4QM><https://www.amazon.com/dp/B0BRGX4DBJ>

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@ResearchGate:<https://www.researchgate.net/publication/366734162>@Scribd:<https://www.scribd.com/document/61724247>@academia:<https://www.academia.edu/94069071>@ZENODO_ORG : <https://zenodo.org/record/7497450>@WordPress:<https://drhenrygarrett.wordpress.com/2023/01/01/failed-superhyperforcing-published-version/>

ASIN : B0BRH5B4QM Publisher : Independently published (January 1, 2023) Language : English Paperback : 337 pages ISBN-13 : 979-8372123649 Item Weight : 2.13 pounds Dimensions : 8.5 x 0.8 x 11 inches

ASIN : B0BRGX4DBJ Publisher : Independently published (January 1, 2023) Language : English Hardcover : 337 pages ISBN-13 : 979-8372124509 Item Weight : 2.07 pounds Dimensions : 8.25 x 0.98 x 11 inches

Other Publishers: @googlebooks @GooglePlay @AmazonKindle

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2022

0063 | SuperHyperForcing

Amazon

»

[ADDRESSED CITATION]

[HG63b] Henry Garrett, “SuperHyperForcing”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).

»

ASIN : B0BRDG1KN1 Publisher : Independently published (December 30, 2022) Language : English Paperback : 285 pages ISBN-13 : 979-8371873347 Item Weight : 1.82 pounds Dimensions : 8.5 x 0.67 x 11 inches

ASIN : B0BRDFFQMF Publisher : Independently published (December 30, 2022) Language : English Hardcover : 285 pages ISBN-13 : 979-8371874092 Item Weight : 1.77 pounds Dimensions : 8.25 x 0.86 x 11 inches

<https://www.amazon.com/dp/B0BRDG1KN1> <https://www.amazon.com/dp/B0BRDFFQMF>

9798371873347 9798371874092

@ResearchGate:<https://www.researchgate.net/publication/366696469>@Scribd:<https://www.scribd.com/document/617079885>@academia:<https://www.academia.edu/93995226>@ZENODO_ORG : <https://zenodo.org/record/7494862>@WordPress:<https://drhenrygarrett.wordpress.com/2022/12/30/superhyperforcing-published-version/>

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2022

0062 | SuperHyperAlliances

Amazon

»

[ADDRESSED CITATION]

[HG62b] Henry Garrett, “SuperHyperAlliances”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).

»

ASIN : B0BR6YC3HG Publisher : Independently published (December 27, 2022) Language : English Paperback : 189 pages ISBN-13 : 979-8371488343 Item Weight : 1.24 pounds Dimensions : 8.5 x 0.45 x 11 inches

ASIN : B0BR7CBTC6 Publisher : Independently published (December 27, 2022) Language : English Hardcover : 189 pages ISBN-13 : 979-8371494849 Item Weight : 1.21 pounds Dimensions : 8.25 x 0.64 x 11 inches

<https://www.amazon.com/dp/B0BR6YC3HG> <https://www.amazon.com/dp/B0BR7CBTC6>
9798371488343 9798371494849@ResearchGate:<https://www.researchgate.net/publication/366621489>@Scribd:<https://www.scribd.com/document/617024953>@academia:<https://www.academia.edu/93968814>@ZENODO_{ORG} : <https://zenodo.org/record/7493845>@WordPress:<https://drhenrygarrett.wordpress.com/2022/12/28/superhyperalliances-published-version/>

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2022

0061 | SuperHyperGraphs

Amazon

»

[ADDRESSED CITATION]

[HG61b] Henry Garrett, “SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7480110).

»

@googlebooks: <http://books.google.com/books/about?id=iL2qEAAQBAJ>@GooglePlay: <https://play.google.com/store/books/details?id=iL2qEAAQBAJ>@ResearchGate:<https://www.researchgate.net/publication/366565820>@Scribd:<https://www.scribd.com/document/617022135>@academia:<https://www.academia.edu/93605376>@ZENODO_{ORG} : <https://zenodo.org/record/7480110>@WordPress:<https://drhenrygarrett.wor>

ASIN : B0BR1NHY4Z Publisher : Independently published (December 24, 2022) Language : English Paperback : 117 pages ISBN-13 : 979-8371090133 Item Weight : 13 ounces Dimensions : 8.5 x 0.28 x 11 inches

ASIN : B0BQXTHTXY Publisher : Independently published (December 24, 2022) Language : English Hardcover : 117 pages ISBN-13 : 979-8371093240 Item Weight : 12.6 ounces Dimensions : 8.25 x 0.47 x 11 inches

Link (Paperback): <https://www.amazon.com/dp/B0BR1NHY4Z> (Hardcover):<https://www.amazon.com/dp/B0BQXTHTXY> (Kindle Edition):

ISBN (Paperback): 9798371090133 (Hardcover): 9798371093240 (Kindle Edition): CC BY-NC-ND 4.0

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0060 | Neut. SuperHyperEdges

Amazon

Henry Garrett · Independent Researcher · Department of Mathematics · DrHenryGarrett@gmail.com · Manhattan, NY, USA

»

[ADDRESSED CITATION]

[HG60b] Henry Garrett, "Neut. SuperHyperEdges". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7378758).

»

@GooglePlay: <https://play.google.com/store/books/details?id=rr2qEAAAQBAJ>

@ResearchGate: <https://www.researchgate.net/publication/365780867>

@Scribd: <https://www.scribd.com/document/611152330>

@academia: <https://www.academia.edu/91877217>

@ZENODO_O_RG : <https://zenodo.org/record/7378758>

@WordPress: <https://drhenrygarrett.wordpress.com/2022/11/29/neut-superhyperedges-published-version/>

ASIN : B0BNH1ZDY Publisher : Independently published (November 27, 2022) Language : English Paperback : 107 pages ISBN-13 : 979-8365922365 Item Weight : 12 ounces Dimensions : 8.5 x 0.26 x 11 inches

ASIN : B0BNGZGPP6 Publisher : Independently published (November 27, 2022) Language : English Hardcover : 107 pages ISBN-13 : 979-8365923980 Item Weight : 11.7 ounces Dimensions : 8.25 x 0.45 x 11 inches

Link (Paperback): <https://www.amazon.com/dp/B0BNH1ZDY> (Hardcover): <https://www.amazon.com/dp/B0BNGZGPP6>

ISBN (Paperback): 9798365922365 (Hardcover): 9798365923980 (Kindle Edition): CC BY-NC-ND 4.0

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2022	0059 Neutrosophic k-Number	Amazon
	<p>» ASIN : B0BF3P5X4N Publisher : Independently published (September 14, 2022) Language : English Paperback : 159 pages ISBN-13 : 979-8352590843 Item Weight : 1.06 pounds Dimensions : 8.5 x 0.38 x 11 inches</p> <p>» ASIN : B0BF2XCDZM Publisher : Independently published (September 14, 2022) Language : English Hardcover : 159 pages ISBN-13 : 979-8352593394 Item Weight : 1.04 pounds Dimensions : 8.25 x 0.57 x 11 inches</p>	
2022	0058 Neutrosophic Schedule	Amazon
	<p>» ASIN : B0BBJWJJZF Publisher : Independently published (August 22, 2022) Language : English Paperback : 493 pages ISBN-13 : 979-8847885256 Item Weight : 3.07 pounds Dimensions : 8.5 x 1.16 x 11 inches</p> <p>» ASIN : B0BBJLPWKH Publisher : Independently published (August 22, 2022) Language : English Hardcover : 493 pages ISBN-13 : 979-8847886055 Item Weight : 2.98 pounds Dimensions : 8.25 x 1.35 x 11 inches</p>	
2022	0057 Neutrosophic Wheel	Amazon
	<p>» ASIN : B0BBJRHXG Publisher : Independently published (August 22, 2022) Language : English Paperback : 195 pages ISBN-13 : 979-8847865944 Item Weight : 1.28 pounds Dimensions : 8.5 x 0.46 x 11 inches</p> <p>» ASIN : B0BBK3KG82 Publisher : Independently published (August 22, 2022) Language : English Hardcover : 195 pages ISBN-13 : 979-8847867016 Item Weight : 1.25 pounds Dimensions : 8.25 x 0.65 x 11 inches</p>	
2022	0056 Neutrosophic t-partite	Amazon
	<p>» ASIN : B0BBJLZCHS Publisher : Independently published (August 22, 2022) Language : English Paperback : 235 pages ISBN-13 : 979-8847834957 Item Weight : 1.52 pounds Dimensions : 8.5 x 0.56 x 11 inches</p> <p>» ASIN : B0BBJDFGJS Publisher : Independently published (August 22, 2022) Language : English Hardcover : 235 pages ISBN-13 : 979-8847838337 Item Weight : 1.48 pounds Dimensions : 8.25 x 0.75 x 11 inches</p>	
2022	0055 Neutrosophic Bipartite	Amazon

		<p>» ASIN : B0BB5Z9GHW Publisher : Independently published (August 22, 2022) Language : English Paperback : 225 pages ISBN-13 : 979-8847820660 Item Weight : 1.46 pounds Dimensions : 8.5 x 0.53 x 11 inches</p> <p>» ASIN : B0BBGG9RDZ Publisher : Independently published (August 22, 2022) Language : English Hardcover : 225 pages ISBN-13 : 979-8847821667 Item Weight : 1.42 pounds Dimensions : 8.25 x 0.72 x 11 inches</p>	
2022	0054 Neutrosophic Star		Amazon
		<p>» ASIN : B0BB5ZHSSZ Publisher : Independently published (August 22, 2022) Language : English Paperback : 215 pages ISBN-13 : 979-8847794374 Item Weight : 1.4 pounds Dimensions : 8.5 x 0.51 x 11 inches</p> <p>» ASIN : B0BBC4BL9P Publisher : Independently published (August 22, 2022) Language : English Hardcover : 215 pages ISBN-13 : 979-8847796941 Item Weight : 1.36 pounds Dimensions : 8.25 x 0.7 x 11 inches</p>	
2022	0053 Neutrosophic Cycle		Amazon
		<p>» ASIN : B0BB62NZQK Publisher : Independently published (August 22, 2022) Language : English Paperback : 343 pages ISBN-13 : 979-8847780834 Item Weight : 2.17 pounds Dimensions : 8.5 x 0.81 x 11 inches</p> <p>» ASIN : B0BB65QMKQ Publisher : Independently published (August 22, 2022) Language : English Hardcover : 343 pages ISBN-13 : 979-8847782715 Item Weight : 2.11 pounds Dimensions : 8.25 x 1 x 11 inches</p>	
2022	0052 Neutrosophic Path		Amazon
		<p>» ASIN : B0BB67WCXL Publisher : Independently published (August 8, 2022) Language : English Paperback : 315 pages ISBN-13 : 979-8847730570 Item Weight : 2 pounds Dimensions : 8.5 x 0.74 x 11 inches</p> <p>» ASIN : B0BB5Z9FXL Publisher : Independently published (August 8, 2022) Language : English Hardcover : 315 pages ISBN-13 : 979-8847731263 Item Weight : 1.95 pounds Dimensions : 8.25 x 0.93 x 11 inches</p>	
2022	0051 Neutrosophic Complete		Amazon
		<p>» ASIN : B0BB6191KN Publisher : Independently published (August 8, 2022) Language : English Paperback : 227 pages ISBN-13 : 979-8847720878 Item Weight : 1.47 pounds Dimensions : 8.5 x 0.54 x 11 inches</p> <p>» ASIN : B0BB5RRQN7 Publisher : Independently published (August 8, 2022) Language : English Hardcover : 227 pages ISBN-13 : 979-8847721844 Item Weight : 1.43 pounds Dimensions : 8.25 x 0.73 x 11 inches</p>	
2022	0050 Neutrosophic Dominating		Amazon
		<p>» ASIN : B0BB5QV8WT Publisher : Independently published (August 8, 2022) Language : English Paperback : 357 pages ISBN-13 : 979-8847592000 Item Weight : 2.25 pounds Dimensions : 8.5 x 0.84 x 11 inches</p> <p>» ASIN : B0BB61WL9M Publisher : Independently published (August 8, 2022) Language : English Hardcover : 357 pages ISBN-13 : 979-8847593755 Item Weight : 2.19 pounds Dimensions : 8.25 x 1.03 x 11 inches</p>	
2022	0049 Neutrosophic Resolving		Amazon
		<p>» ASIN : B0BBCJMRH8 Publisher : Independently published (August 8, 2022) Language : English Paperback : 367 pages ISBN-13 : 979-8847587891 Item Weight : 2.31 pounds Dimensions : 8.5 x 0.87 x 11 inches</p> <p>» ASIN : B0BBCB6DFC Publisher : Independently published (August 8, 2022) Language : English Hardcover : 367 pages ISBN-13 : 979-8847589987 Item Weight : 2.25 pounds Dimensions : 8.25 x 1.06 x 11 inches</p>	
2022	0048 Neutrosophic Stable		Amazon

		<p>» ASIN : B0B7QGTNFW Publisher : Independently published (July 28, 2022) Language : English Paperback : 133 pages ISBN-13 : 979-8842880348 Item Weight : 14.6 ounces Dimensions : 8.5 x 0.32 x 11 inches</p> <p>» ASIN : B0B7QJWQ35 Publisher : Independently published (July 28, 2022) Language : English Hardcover : 133 pages ISBN-13 : 979-8842881659 Item Weight : 14.2 ounces Dimensions : 8.25 x 0.51 x 11 inches</p>	
2022		0047 Neutrosophic Total	Amazon
		<p>» ASIN : B0B7GLB23F Publisher : Independently published (July 25, 2022) Language : English Paperback : 137 pages ISBN-13 : 979-8842357741 Item Weight : 14.9 ounces Dimensions : 8.5 x 0.33 x 11 inches</p> <p>» ASIN : B0B6XVTDYC Publisher : Independently published (July 25, 2022) Language : English Hardcover : 137 pages ISBN-13 : 979-8842358915 Item Weight : 14.6 ounces Dimensions : 8.25 x 0.52 x 11 inches</p>	
2022		0046 Neutrosophic Perfect	Amazon
		<p>» ASIN : B0B7CJHCYZ Publisher : Independently published (July 22, 2022) Language : English Paperback : 127 pages ISBN-13 : 979-8842027330 Item Weight : 13.9 ounces Dimensions : 8.5 x 0.3 x 11 inches</p> <p>» ASIN : B0B7C732Z1 Publisher : Independently published (July 22, 2022) Language : English Hardcover : 127 pages ISBN-13 : 979-8842028757 Item Weight : 13.6 ounces Dimensions : 8.25 x 0.49 x 11 inches</p>	
2022		0045 Neutrosophic Joint Set	Amazon
		<p>» ASIN : B0B6L8WJ77 Publisher : Independently published (July 15, 2022) Language : English Paperback : 139 pages ISBN-13 : 979-8840802199 Item Weight : 15 ounces Dimensions : 8.5 x 0.33 x 11 inches</p> <p>» ASIN : B0B6L9GJWR Publisher : Independently published (July 15, 2022) Language : English Hardcover : 139 pages ISBN-13 : 979-8840803295 Item Weight : 14.7 ounces Dimensions : 8.25 x 0.52 x 11 inches</p>	
August 2022	30,	0044 Neutrosophic Duality	GLOBAL KNOWLEDGE - Publishing House&Amazon&Google Scholar&UNM
		<p>» [ADDRESSED CITATION] [HG44b] H. Garrett, "Neutrosophic Duality". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6677173). Neutrosophic Duality, GLOBAL KNOWLEDGE - Publishing House: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. ISBN: 978-1-59973-743-0 Henry Garrett, (2022). "Neutrosophic Duality", Florida: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. ISBN: 978-1-59973-743-0 (http://fs.unm.edu/NeutrosophicDuality.pdf).</p> <p>» ASIN : B0B4SJ8Y44 Publisher : Independently published (June 22, 2022) Language : English Paperback : 115 pages ISBN-13 : 979-8837647598 Item Weight : 12.8 ounces Dimensions : 8.5 x 0.27 x 11 inches</p> <p>ASIN : B0B46B4CXT Publisher : Independently published (June 22, 2022) Language : English Hardcover : 115 pages ISBN-13 : 979-8837649981 Item Weight : 12.5 ounces Dimensions : 8.25 x 0.46 x 11 inches</p> <p>GLOBAL KNOWLEDGE - Publishing House: http://fs.unm.edu/NeutrosophicDuality.pdf UNM: http://fs.unm.edu/NeutrosophicDuality.pdf Google Scholar: https://books.google.com/books?id=dWWkEAAAQBAJ Paperback: https://www.amazon.com/dp/B0B4SJ8Y44 Hardcover: https://www.amazon.com/dp/B0B46B4CXT</p>	
2022		0043 Neutrosophic Path-Coloring	Amazon

	<p>» ASIN : B0B3F2BZC4 Publisher : Independently published (June 7, 2022) Language : English Paperback : 161 pages ISBN-13 : 979-8834894469 Item Weight : 1.08 pounds Dimensions : 8.5 x 0.38 x 11 inches</p> <p>» ASIN : B0B3FGPGQ3 Publisher : Independently published (June 7, 2022) Language : English Hardcover : 161 pages ISBN-13 : 979-8834895954 Item Weight : 1.05 pounds Dimensions : 8.25 x 0.57 x 11 inches</p>	
2022	0042 Neutrosophic Density	Amazon
	<p>» ASIN : B0B19CDX7W Publisher : Independently published (May 15, 2022) Language : English Paperback : 145 pages ISBN-13 : 979-8827498285 Item Weight : 15.7 ounces Dimensions : 8.5 x 0.35 x 11 inches</p> <p>» ASIN : B0B14PLPGL Publisher : Independently published (May 15, 2022) Language : English Hardcover : 145 pages ISBN-13 : 979-8827502944 Item Weight : 15.4 ounces Dimensions : 8.25 x 0.53 x 11 inches</p>	
2022	0041 Properties of SuperHyperGraph and Neutrosophic SuperHyperGraph	Google Commerce Ltd
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2022	0040 Neutrosophic Connectivity	Amazon
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2022	0039 Neutrosophic Cycles	Amazon
	<p>» ASIN : B09X4KVLQG Publisher : Independently published (April 8, 2022) Language : English Paperback : 169 pages ISBN-13 : 979-8449137098 Item Weight : 1.12 pounds Dimensions : 8.5 x 0.4 x 11 inches</p> <p>» ASIN : B09X4LZ3HL Publisher : Independently published (April 8, 2022) Language : English Hardcover : 169 pages ISBN-13 : 979-8449144157 Item Weight : 1.09 pounds Dimensions : 8.25 x 0.59 x 11 inches</p>	
2022	0038 Girth in Neutrosophic Graphs	Amazon
	<p>» ASIN : B09WQ5PFV8 Publisher : Independently published (March 29, 2022) Language : English Paperback : 163 pages ISBN-13 : 979-8442380538 Item Weight : 1.09 pounds Dimensions : 8.5 x 0.39 x 11 inches</p> <p>» ASIN : B09WQQGXPZ Publisher : Independently published (March 29, 2022) Language : English Hardcover : 163 pages ISBN-13 : 979-8442386592 Item Weight : 1.06 pounds Dimensions : 8.25 x 0.58 x 11 inches</p>	
2022	0037 Matching Number in Neutrosophic Graphs	Amazon
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2022 0035 | Independence in Neutrosophic Graphs [Amazon](#)

» ASIN : B09TF227GG Publisher : Independently published (February 27, 2022) Language : English Paperback : 149 pages ISBN-13 : 979-8424231681 Item Weight : 1 pounds Dimensions : 8.5 x 0.35 x 11 inches

» ASIN : B09TL1LSKD Publisher : Independently published (February 27, 2022) Language : English Hardcover : 149 pages ISBN-13 : 979-8424234187 Item Weight : 15.7 ounces Dimensions : 8.25 x 0.54 x 11 inches

2022 0034 | Zero Forcing Number in Neutrosophic Graphs [Amazon](#)

» ASIN : B09SW2YVKB Publisher : Independently published (February 18, 2022) Language : English Paperback : 147 pages ISBN-13 : 979-8419302082 Item Weight : 15.8 ounces Dimensions : 8.5 x 0.35 x 11 inches

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2022 0031 | Neutrosophic Alliances [Amazon](#)

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2022	0030 Neutrosophic Hypergraphs		Amazon
		» ASIN : B09PMBKVD4 Publisher : Independently published (January 7, 2022) Language : English Paperback : 79 pages ISBN-13 : 979-8797327974 Item Weight : 9.3 ounces Dimensions : 8.5 x 0.19 x 11 inches » ASIN : B09PP8VZ3D Publisher : Independently published (January 7, 2022) Language : English Hardcover : 79 pages ISBN-13 : 979-8797331483 Item Weight : 9.1 ounces Dimensions : 8.25 x 0.38 x 11 inches	
2022	0029 Collections of Articles		Amazon
		» - » ASIN : B09PHHDDQK Publisher : Independently published (January 2, 2022) Language : English Hardcover : 543 pages ISBN-13 : 979-8794267204 Item Weight : 3.27 pounds Dimensions : 8.25 x 1.47 x 11 inches	
2022	0028 Collections of Math		Amazon
		» - » ASIN : B09PHBWT5D Publisher : Independently published (January 1, 2022) Language : English Hardcover : 461 pages ISBN-13 : 979-8793793339 Item Weight : 2.8 pounds Dimensions : 8.25 x 1.28 x 11 inches	
2022	0027 Collections of US		Amazon
		» - » ASIN : B09PHBT924 Publisher : Independently published (December 31, 2021) Language : English Hardcover : 261 pages ISBN-13 : 979-8793629645 Item Weight : 1.63 pounds Dimensions : 8.25 x 0.81 x 11 inches	
2021	0026 Neutrosophic Chromatic Number		Amazon
		» ASIN : B09NRD25MG Publisher : Independently published (December 20, 2021) Language : English Paperback : 67 pages ISBN-13 : 979-8787858174 Item Weight : 8.2 ounces Dimensions : 8.5 x 0.16 x 11 inches Language : English » -	
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2021	0018 Number Graphs And Numbers	Amazon
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2021	0017 First Place Is Reserved	Amazon
	<p>» ASIN : B098CWD5PT Publisher : Independently published (June 30, 2021) Language : English Paperback : 55 pages ISBN-13 : 979-8529508497 Item Weight : 7 ounces Dimensions : 8.5 x 0.13 x 11 inches</p> <p>» -</p>	
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» Analizy modelowe i wytyczne wykraczające poza: Podejście i problemy w dwóch modelach (Polish Edition) Publisher : Wydawnictwo Nasza Wiedza (April 6, 2021) Language : Polish Paperback : 64 pages ISBN-10 : 6203599069 ISBN-13 : 978-6203599060 Item Weight : 3.67 ounces Dimensions : 5.91 x 0.15 x 8.66 inches

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0005 | Modelanalyses en begeleiding daarna

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» Modelanalyses en begeleiding daarna Aanpak en problemen in twee modellen Uitgeverij Onze Kennis (2021-04-06) eligible for voucher ISBN-13: 978-620-3-59905-3 ISBN-10:6203599050EAN:9786203599053Book language:Blurb/Shorttext:De aanpak voor het oplossen van problemen is een voor de hand liggende keuze voor het doen van onderzoek en het analyseren van de situatie die de vage perspectieven kan oproepen die we niet willen zijn voor het extraheren van creatieve en nieuwe ideeën die we willen zijn. Ik bestudeer tegelijkertijd twee modellen. Deze studie is gebaseerd op zowel onderzoek als discussie waarvan de auteur denkt dat ze nuttig kunnen zijn voor het begrijpen en laten groeien van onze fantasieën en de werkelijkheid samen.Publishing house: Uitgeverij Onze Kennis Website: <https://sciencia-scripts.com> By (author) : Henry Garrett Number of pages:64Published on:2021-04-06Stock:Available Category: Mathematics Price:39.90 Keywords:Two modellen, optimalisering van routes en transport, Two Models, Optimizing Routes and Transportation MoreBooks

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0004 | Analisi dei modelli e guida oltre

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L'approccio per risolvere i problemi è una selezione ovvia per fare ricerca e analisi della situazione che può suscitare le prospettive vaghe che non vogliamo essere per estrarre idee creative e nuove che vogliamo essere. Studio contemporaneamente due modelli. Questo studio si basa sia sulla ricerca che sulla discussione che l'autore pensa possa essere utile per capire e far crescere insieme la nostra fantasia e la realtà. Analisi dei modelli e guida oltre (Paperback) We aim to show you accurate product information. Manufacturers, suppliers and others provide what you see here, and we have not verified it. See our disclaimer Specifications Publisher KS Omniscryptum Publishing Book Format Paperback Number of Pages 60 Author Henry Garrett Title Analisi dei modelli e guida oltre ISBN-13 9786203599046 Publication Date April, 2021 Assembled Product Dimensions (L x W x H) 9.00 x 6.00 x 1.50 Inches ISBN-10 6203599042 Walmart

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0003 | Analyses de modèles et orientations au-delà

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» Analyses de modèles et orientations au-delà Approche et problèmes dans deux modèles Editions Notre Savoir (2021-04-06) eligible for voucher eligible for voucher ISBN-13: 978-620-3-59903-9 ISBN-10:6203599034EAN:9786203599039Book language: French Blurb/Shorttext:L'approche pour résoudre les problèmes est une sélection évidente pour faire la recherche et l'analyse de la situation qui peut éliciter les perspectives vagues que nous ne voulons pas être pour extraire des idées créatives et nouvelles que nous voulons être. J'étudie simultanément deux modèles. Cette étude est basée à la fois sur la recherche et la discussion, ce qui, selon l'auteur, peut être utile pour comprendre et développer nos fantasmes et la réalité ensemble.Publishing house: Editions Notre Savoir Website: <https://scienza-scripts.com> By (author) : Henry Garrett Number of pages:64Published on:2021-04-06Stock:Available Category: Mathematics Price:39.90 Keywords:Two Models, Optimizing Routes and Transportation, Deux modèles, optimisation des itinéraires et des transports

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0001 | Model Analyses and Guidance Beyond

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Participating in Seminars

I've participated in all virtual conferences which are listed below [Some of them without selective process].

–<https://web.math.princeton.edu/pds/onlinetalks/talks.html>

...

Also, I've participated in following events [Some of them without selective process]:

–The Hidden NORMS seminar

–Talk Math With Your Friends (TMWYF)

–MATHEMATICS COLLOQUIUM: <https://www.csulb.edu/mathematics-statistics/mathematics-colloquium>

–Lathisms: Cafe Con Leche

–Big Math network

...

I'm in mailing list in following [Some of them without selective process] organizations:

–[Algebraic-graph-theory] AGT Seminar ([lists-uwaterloo-ca](https://lists.uwaterloo.ca))

–Combinatorics Lectures Online (<https://web.math.princeton.edu/pds/onlinetalks/talks.html>)

–Women in Combinatorics

–CMSA-Seminar ([unsw-au](https://www.unsw.edu.au))

–OURFA2M2 Online Undergraduate Resource Fair for the Advancement and Alliance of Marginalized Mathematicians

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»»» Social Accounts

I've listed my accounts below.

-My website [Covering all my contributions containing articles and books as free access to download with PDF extension and more]: <https://drhenrygarrett.wordpress.com>

-Amazon [Some of my all books, here]: <https://www.amzn.com/author/drhenrygarrett>

-Twitter: @DrHenryGarrett (www.twitter.com/DrHenryGarrett)

- ResearchGate: <https://www.researchgate.net/profile/Henry-Garrett-2>

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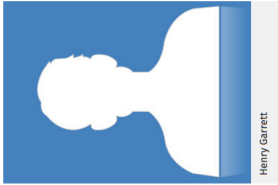


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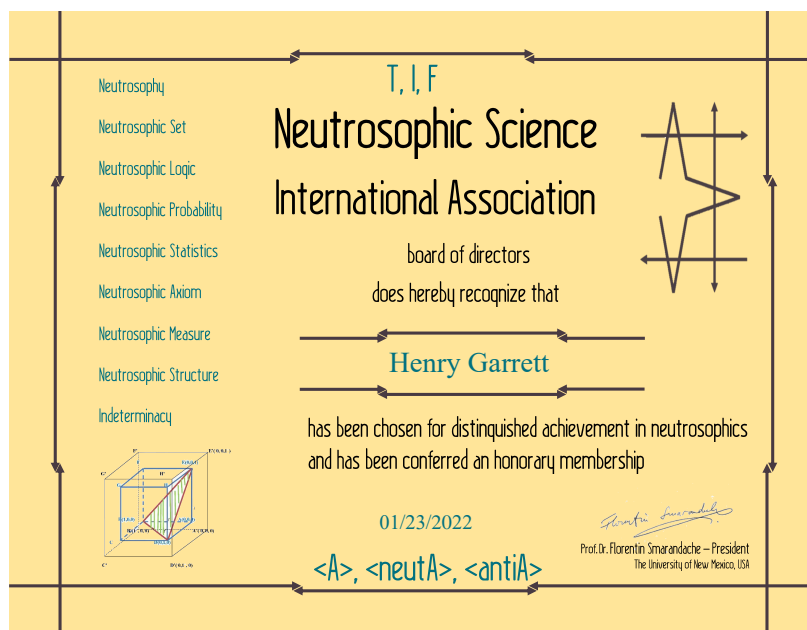
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[HG166b] Henry Garrett, "Eulerian-Cycle-Decomposition In SuperHyperGraphs". Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7856329).

In this scientific research book, there are some scientific research chapters on "Extreme Eulerian-Type-Path-Decomposition In SuperHyperGraphs" and "Neutrosophic Eulerian-Type-Path-Decomposition In SuperHyperGraphs" about some scientific researches on Eulerian-Type-Path-Decomposition In SuperHyperGraphs by two (Extreme/Neutrosophic) notions, namely, Extreme Eulerian-Type-Path-Decomposition In SuperHyperGraphs and Neutrosophic Eulerian-Type-Path-Decomposition In SuperHyperGraphs. With scientific research on the basic scientific research properties, the scientific research book starts to make Extreme Eulerian-Type-Path-Decomposition In SuperHyperGraphs theory and Neutrosophic Eulerian-Type-Path-Decomposition In SuperHyperGraphs theory more (Extremely/Neutrosophically) understandable.

Some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in the following by Henry Garrett (2022) which is indexed by Google Scholar and has more than 4048 readers in Scribd. It's titled "Beyond Neutrosophic Graphs" and published by Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United State. This research book covers different types of notions and settings in neutrosophic graph theory and neutrosophic SuperHyperGraph theory.

[Ref] Henry Garrett, (2022). "Beyond Neutrosophic Graphs", Ohio: E-publishing: Educational Publisher 1091 West 1st Ave Grandview Heights, Ohio 43212 United States. ISBN: 978-1-59973-725-6 (<http://fs.unm.edu/BeyondNeutrosophicGraphs.pdf>).

Also, some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in the following by Henry Garrett (2022) which is indexed by Google Scholar and has more than 5046 readers in Scribd. It's titled "Neutrosophic Duality" and published by Florida: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. This research book presents different types of notions SuperHyperResolving and Eulerian-Type-Path-Decomposition In SuperHyperGraphs in the setting of duality in neutrosophic graph theory and neutrosophic SuperHyperGraph theory. This research book has scrutiny on the complement of the intended set and the intended set, simultaneously. It's smart to consider a set but acting on its complement that what's done in this research book which is popular in the terms of high readers in Scribd.

[Ref] Henry Garrett, (2022). "Neutrosophic Duality", Florida: GLOBAL KNOWLEDGE - Publishing House 848 Brickell Ave Ste 950 Miami, Florida 33131 United States. ISBN: 978-1-59973-743-0 (<http://fs.unm.edu/NeutrosophicDuality.pdf>).

