

New Ideas On Super Con By Hyper Conceit Of Reverse Strict Connective In Recognition of Cancer With (Neutrosophic) SuperHyperGraph

Henry Garrett · Independent Researcher · Department of Mathematics ·
DrHenryGarrett@gmail.com · Manhattan, NY, USA

1 ABSTRACT

In this scientific research, (Different Neutrosophic Types of Neutrosophic SuperHyperReverse Strict Connective). Assume a Neutrosophic SuperHyperGraph (NSHG) S is a Reverse Strict Connective 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 Neutrosophic e-SuperHyperReverse Strict Connective if the following expression is called Neutrosophic e-SuperHyperReverse Strict Connective criteria holds

$\forall E_a \in E_{NSHG}, \exists E_b \in E' : \exists V_c \in V_{NSHG}, V_c \in E_a, E_b$
And $\forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$
maximum number of Neutrosophic strength of SuperHyperPath (NSHP)
from Neutrosophic SuperHyperVertex (NSHV) V_i
to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

Neutrosophic re-SuperHyperReverse Strict Connective if the following expression is called Neutrosophic e-SuperHyperReverse Strict Connective criteria holds

$\forall E_a \in E_{NSHG}, \exists E_b \in E' : \exists V_c \in V_{NSHG}, V_c \in E_a, E_b$
And $\forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$
maximum number of Neutrosophic strength of SuperHyperPath (NSHP)
from Neutrosophic SuperHyperVertex (NSHV) V_i
to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

and $|E_i|_{\text{NEUTROSOPHIC CARDINALITY}} = |E_j|_{\text{NEUTROSOPHIC CARDINALITY}}$;
Neutrosophic v-SuperHyperReverse Strict Connective if the following expression is called Neutrosophic v-SuperHyperReverse Strict Connective criteria holds

$\forall V_a, \exists V_b \in V' : \exists E_d \in E_{NSHG}, V_a, V_c \in E_d$
And $\forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$
maximum number of Neutrosophic strength of SuperHyperPath (NSHP)
from Neutrosophic SuperHyperVertex (NSHV) V_i
to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

Neutrosophic rv-SuperHyperReverse Strict Connective if the following expression is called
Neutrosophic v-SuperHyperReverse Strict Connective criteria holds

$$\forall V_a, \exists V_b \in V' : \exists E_d \in E_{NSHG}, V_a, V_c \in E_d$$

$$\text{And } \forall E_a \in E_{NSHG} : (T(E), I(E), F(E) <$$

maximum number of Neutrosophic strength of SuperHyperPath (NSHP)

from Neutrosophic SuperHyperVertex (NSHV) V_i

to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

and $|V_i|_{\text{NEUTROSOPHIC CARDINALITY}} = |V_j|_{\text{NEUTROSOPHIC CARDINALITY}}$; Neutrosophic
SuperHyperReverse Strict Connective if it's either of Neutrosophic e-SuperHyperReverse Strict
Connective, Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic
v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective.
((Neutrosophic) SuperHyperReverse Strict Connective). 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 an Extreme
SuperHyperReverse Strict Connective if it's either of Neutrosophic e-SuperHyperReverse Strict
Connective, Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic
v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective
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 consecutive Extreme sequence of Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme
SuperHyperReverse Strict Connective; a Neutrosophic SuperHyperReverse Strict Connective if it's
either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic
re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and
Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and Neutrosophic
SuperHyperVertices such that they form the Neutrosophic SuperHyperReverse Strict
Connective; an Extreme SuperHyperReverse Strict Connective SuperHyperPolynomial if it's either
of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse Strict
Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic
rv-SuperHyperReverse Strict Connective 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
consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they
form the Extreme SuperHyperReverse Strict Connective; and the Extreme power is
corresponded to its Extreme coefficient; a Neutrosophic SuperHyperReverse Strict Connective
SuperHyperPolynomial if it's either of Neutrosophic e-SuperHyperReverse Strict Connective,
Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict
Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective 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
consecutive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such
that they form the Neutrosophic SuperHyperReverse Strict Connective; and the Neutrosophic
power is corresponded to its Neutrosophic coefficient; an Extreme V-SuperHyperReverse
Strict Connective if it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic
re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and

Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperReverse Strict Connective; a Neutrosophic V-SuperHyperReverse Strict Connective if it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperReverse Strict Connective; an Extreme V-SuperHyperReverse Strict Connective SuperHyperPolynomial if it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperReverse Strict Connective; and the Extreme power is corresponded to its Extreme coefficient; a Neutrosophic SuperHyperReverse Strict Connective SuperHyperPolynomial if it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperReverse Strict Connective; and the Neutrosophic power is corresponded to its Neutrosophic coefficient. In this scientific research, new setting is introduced for new SuperHyperNotions, namely, a SuperHyperReverse Strict Connective and Neutrosophic SuperHyperReverse Strict Connective. 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 elegancy 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 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 -SuperHyperReverse Strict Connective 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 -SuperHyperReverse Strict Connective 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 SuperHyperReverse Strict Connective. Since there's more ways to get type-results to make a SuperHyperReverse Strict Connective more understandable. For the sake of having Neutrosophic SuperHyperReverse Strict Connective, there's a need to "redefine" the notion of a "SuperHyperReverse Strict Connective". 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 SuperHyperReverse Strict Connective. It's redefined a Neutrosophic SuperHyperReverse Strict Connective 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 SuperHyperReverse Strict Connective. 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 SuperHyperReverse Strict Connective until the SuperHyperReverse Strict Connective, then it's officially called a "SuperHyperReverse Strict Connective" but otherwise, it isn't a SuperHyperReverse Strict Connective. There are some instances about the clarifications for the main definition titled a "SuperHyperReverse Strict Connective". These two examples get more scrutiny and discernment since there are characterized in the disciplinary ways of the SuperHyperClass based on a SuperHyperReverse Strict Connective. For the sake of having a Neutrosophic SuperHyperReverse Strict Connective, there's a need to "redefine" the notion of a "Neutrosophic SuperHyperReverse Strict Connective" and a "Neutrosophic SuperHyperReverse Strict Connective". 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 SuperHyperReverse Strict Connective are redefined to a "Neutrosophic SuperHyperReverse Strict Connective" 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 SuperHyperReverse Strict Connective more understandable. Assume a Neutrosophic SuperHyperGraph. There are some Neutrosophic SuperHyperClasses if the intended Table holds. Thus SuperHyperPath, SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultiPartite, and SuperHyperWheel, are "Neutrosophic SuperHyperPath", "Neutrosophic SuperHyperReverse Strict Connective", "Neutrosophic SuperHyperStar", "Neutrosophic SuperHyperBipartite", "Neutrosophic SuperHyperMultiPartite", and "Neutrosophic

SuperHyperWheel” if the intended Table holds. A SuperHyperGraph has a “Neutrosophic SuperHyperReverse Strict Connective” where it’s the strongest [the maximum Neutrosophic value from all the SuperHyperReverse Strict Connective amid the maximum value amid all SuperHyperVertices from a SuperHyperReverse Strict Connective .] SuperHyperReverse Strict Connective . 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 SuperHyperReverse Strict Connective 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(-/SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the longest SuperHyperReverse Strict Connective or the strongest SuperHyperReverse Strict Connective in those Neutrosophic SuperHyperModels. For the longest SuperHyperReverse Strict Connective, called SuperHyperReverse Strict Connective, and the strongest SuperHyperReverse Strict Connective, called Neutrosophic SuperHyperReverse Strict Connective, 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 SuperHyperReverse Strict Connective. There isn’t any formation of any SuperHyperReverse Strict Connective but literarily, it’s the deformation of any SuperHyperReverse Strict Connective. It, literarily, deforms and it doesn’t form. A basic familiarity with Neutrosophic SuperHyperReverse Strict Connective theory, SuperHyperGraphs, and Neutrosophic SuperHyperGraphs theory are proposed.

Keywords: Extreme SuperHyperGraph, SuperHyperReverse Strict Connective, Cancer’s Extreme Recognition

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

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

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 "SuperHyperReverse Strict Connective" 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 (-/SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the optimal SuperHyperReverse Strict Connective or the Extreme SuperHyperReverse Strict Connective 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 SuperHyperReverse Strict Connective. There isn't any formation of any SuperHyperReverse Strict Connective but literarily, it's the deformation of any SuperHyperReverse Strict Connective. It, literarily, deforms and it doesn't form.

Question 2.1. *How to define the SuperHyperNotions and to do research on them to find the “amount of SuperHyperReverse Strict Connective” 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 SuperHyperReverse Strict Connective” based on the fixed groups of cells or the fixed groups of group of cells?*

Question 2.2. *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 “SuperHyperReverse Strict Connective” and “Extreme SuperHyperReverse Strict Connective” 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, SuperHyperReverse Strict Connective and Extreme SuperHyperReverse Strict Connective, are figured out in sections “SuperHyperReverse Strict Connective” and “Extreme SuperHyperReverse Strict Connective”. In the sense of tackling on getting results and in Reverse Strict Connective 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 new frameworks, SuperHyperGraph and Extreme SuperHyperGraph, in the sections “Results on SuperHyperClasses” and “Results on Extreme SuperHyperClasses”. The starter research about the general SuperHyperRelations and as concluding and closing section of theoretical research are contained in the section “General Results”. Some general SuperHyperRelations are fundamental and they are well-known as fundamental SuperHyperNotions as elicited and discussed in the sections, “General Results”, “SuperHyperReverse Strict Connective”, “Extreme SuperHyperReverse Strict Connective”, “Results on SuperHyperClasses” and “Results on Extreme SuperHyperClasses”. There are curious questions about what's done about the SuperHyperNotions to make sense about excellency of this research and going to figure out the word “best” as the description and adjective for this research as presented in section, “SuperHyperReverse Strict Connective”. The keyword of this research debut in the section “Applications in Cancer's Recognition” with two cases and subsections “Case 1: The Initial Steps Toward SuperHyperBipartite as SuperHyperModel” and “Case 2: The Increasing Steps Toward SuperHyperMultipartite as SuperHyperModel”. In the section, “Open Problems”, there are some scrutiny and discernment on what's done and what's

happened in this research in the terms of “questions” and “problems” to make sense to figure out this research in featured style. The advantages and the limitations of this research alongside about what’s done in this research to make sense and to get sense about what’s figured out are included in the section, “Conclusion and Closing Remarks”.

3 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. [1],Definition 2.2,p.2), [Neutrosophic Set](Ref. [1],Definition 2.1,p.1), [Neutrosophic SuperHyperGraph (NSHG)](Ref. [1],Definition 2.5,p.2), [Characterization of the Neutrosophic SuperHyperGraph (NSHG)](Ref. [1],Definition 2.7,p.3), [t-norm](Ref. [1], Definition 2.7, p.3), and [Characterization of the Neutrosophic SuperHyperGraph (NSHG)](Ref. [1],Definition 2.7,p.3), [Neutrosophic Strength of the Neutrosophic SuperHyperPaths] (Ref. [1],Definition 5.3,p.7), and [Different Neutrosophic Types of Neutrosophic SuperHyperEdges (NSHE)] (Ref. [1],Definition 5.4,p.7). Also, the new ideas and their clarifications are addressed to Ref. [222].

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

Let X be a Reverse Strict Connective 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 3.2 (Single Valued Neutrosophic Set). (Ref. [1],Definition 2.2,p.2).

Let X be a Reverse Strict Connective 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 3.3. The **degree of truth-membership**, **indeterminacy-membership** and **falsity-membership of the subset** $X \subset A$ of the single valued Neutrosophic set $A = \{ \langle x : T_A(x), I_A(x), F_A(x) \rangle, x \in X \}$:

$$\begin{aligned} T_A(X) &= \min[T_A(v_i), T_A(v_j)]_{v_i, v_j \in X}, \\ I_A(X) &= \min[I_A(v_i), I_A(v_j)]_{v_i, v_j \in X}, \\ \text{and } F_A(X) &= \min[F_A(v_i), F_A(v_j)]_{v_i, v_j \in X}. \end{aligned}$$

Definition 3.4. 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 3.5 (Neutrosophic SuperHyperGraph (NSHG)). (Ref. [1], Definition 2.5, p.2).

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

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

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 i' th element of the **Reverse Strict Connective** 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.

Definition 3.6 (Characterization of the Neutrosophic SuperHyperGraph (NSHG)). (Ref. [1], Definition 2.7, p.3).

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.

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

- (ii) if $|V_i| \geq 1$, then V_i is called **SuperVertex**; 381
- (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**; 382
- (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**; 383
- (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**; 385
- (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**. 387

If we choose different types of binary operations, then we could get hugely diverse types of general forms of Neutrosophic SuperHyperGraph (NSHG). 389

Definition 3.7 (t-norm). (Ref. [1], Definition 2.7, p.3). 391

A binary operation $\otimes : [0, 1] \times [0, 1] \rightarrow [0, 1]$ is a **t-norm** if it satisfies the following for $x, y, z, w \in [0, 1]$: 392

- (i) $1 \otimes x = x$; 394
- (ii) $x \otimes y = y \otimes x$; 395
- (iii) $x \otimes (y \otimes z) = (x \otimes y) \otimes z$; 396
- (iv) If $w \leq x$ and $y \leq z$ then $w \otimes y \leq x \otimes z$. 397

Definition 3.8. 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 3.9. 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 3.10. (General Forms of Neutrosophic SuperHyperGraph (NSHG)). 398

Assume V' is a given set. a **Neutrosophic SuperHyperGraph** (NSHG) S is a pair $S = (V, E)$, where 399

- (i) $V = \{V_1, V_2, \dots, V_n\}$ a finite set of finite single valued Neutrosophic subsets of V' ; 401
- (ii) $V = \{(V_i, T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i)) : T_{V'}(V_i), I_{V'}(V_i), F_{V'}(V_i) \geq 0\}$, $(i = 1, 2, \dots, n)$; 402
- (iii) $E = \{E_1, E_2, \dots, E_{n'}\}$ a finite set of finite single valued Neutrosophic subsets of V ; 404
- (iv) $E = \{(E_{i'}, T'_{V'}(E_{i'}), I'_{V'}(E_{i'}), F'_{V'}(E_{i'})) : T'_{V'}(E_{i'}), I'_{V'}(E_{i'}), F'_{V'}(E_{i'}) \geq 0\}$, $(i' = 1, 2, \dots, n')$; 406
- (v) $V_i \neq \emptyset$, $(i = 1, 2, \dots, n)$; 408
- (vi) $E_{i'} \neq \emptyset$, $(i' = 1, 2, \dots, n')$; 409

$$(vii) \sum_i \text{supp}(V_i) = V, (i = 1, 2, \dots, n);$$

$$(viii) \sum_{i'} \text{supp}(E_{i'}) = V, (i' = 1, 2, \dots, n').$$

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 i 'th element of the **Reverse Strict Connective** 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.

Definition 3.11 (Characterization of the Neutrosophic SuperHyperGraph (NSHG)). (Ref. [1], Definition 2.7, p.3).

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.

- (i) If $|V_i| = 1$, then V_i is called **vertex**;
- (ii) if $|V_i| \geq 1$, then V_i is called **SuperVertex**;
- (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**;
- (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**;
- (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**;
- (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**.

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.

Definition 3.12. A graph is **SuperHyperUniform** if it's SuperHyperGraph and the number of elements of SuperHyperEdges are the same.

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

Definition 3.13. 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 3.14. 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 3.15. (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 3.16 (Neutrosophic Strength of the Neutrosophic SuperHyperPaths).
(Ref. [1], 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 3.17 (Different Neutrosophic Types of Neutrosophic SuperHyperEdges (NSHE)). (Ref. [1], 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 3.18. (Different Neutrosophic Types of Neutrosophic SuperHyperReverse Strict Connective).

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-SuperHyperReverse Strict Connective** if the following expression is called **Neutrosophic e-SuperHyperReverse Strict Connective criteria** holds

$$\forall E_a \in E_{NSHG}, \exists E_b \in E' : \exists V_c \in V_{NSHG}, V_c \in E_a, E_b$$

$$\text{And } \forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$$

maximum number of Neutrosophic strength of SuperHyperPath (NSHP) from Neutrosophic SuperHyperVertex (NSHV) V_i to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

- (ii) **Neutrosophic re-SuperHyper**^{Reverse Strict Connective} if the following expression is called **Neutrosophic re-SuperHyper**^{Reverse Strict Connective} **criteria** holds

$\forall E_a \in E_{NSHG}, \exists E_b \in E' : \exists V_c \in V_{NSHG}, V_c \in E_a, E_b$
 And $\forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$
 maximum number of Neutrosophic strength of SuperHyperPath (NSHP)
 from Neutrosophic SuperHyperVertex (NSHV) V_i
 to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

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

- (iii) **Neutrosophic v-SuperHyper**^{Reverse Strict Connective} if the following expression is called **Neutrosophic v-SuperHyper**^{Reverse Strict Connective} **criteria** holds

$\forall V_a, \exists V_b \in V' : \exists E_d \in E_{NSHG}, V_a, V_c \in E_d$
 And $\forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$
 maximum number of Neutrosophic strength of SuperHyperPath (NSHP)
 from Neutrosophic SuperHyperVertex (NSHV) V_i
 to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

- (iv) **Neutrosophic rv-SuperHyper**^{Reverse Strict Connective} if the following expression is called **Neutrosophic v-SuperHyper**^{Reverse Strict Connective} **criteria** holds

$\forall V_a, \exists V_b \in V' : \exists E_d \in E_{NSHG}, V_a, V_c \in E_d$
 And $\forall E_a \in E_{NSHG} : (T(E), I(E), F(E)) <$
 maximum number of Neutrosophic strength of SuperHyperPath (NSHP)
 from Neutrosophic SuperHyperVertex (NSHV) V_i
 to Neutrosophic SuperHyperVertex (NSHV) V_j where $1 \leq i, j \leq s$;

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

- (v) **Neutrosophic SuperHyper**^{Reverse Strict Connective} if it's either of Neutrosophic e-SuperHyper^{Reverse Strict Connective}, Neutrosophic re-SuperHyper^{Reverse Strict Connective}, Neutrosophic v-SuperHyper^{Reverse Strict Connective}, and Neutrosophic rv-SuperHyper^{Reverse Strict Connective}.

Definition 3.19. ((Neutrosophic) SuperHyper^{Reverse Strict Connective}).

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 SuperHyper**^{Reverse Strict Connective} if it's either of Neutrosophic e-SuperHyper^{Reverse Strict Connective}, Neutrosophic re-SuperHyper^{Reverse Strict Connective}, Neutrosophic v-SuperHyper^{Reverse Strict Connective}, and Neutrosophic rv-SuperHyper^{Reverse Strict Connective} 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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyper^{Reverse Strict Connective};
- (ii) a **Neutrosophic SuperHyper**^{Reverse Strict Connective} if it's either of Neutrosophic e-SuperHyper^{Reverse Strict Connective}, Neutrosophic re-SuperHyper^{Reverse Strict Connective},

- Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic
rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and
Neutrosophic SuperHyperVertices such that they form the Neutrosophic
SuperHyperReverse Strict Connective;
- (iii) an **Extreme SuperHyperReverse Strict Connective SuperHyperPolynomial** if it's
either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic
re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective,
and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperReverse Strict Connective; and the Extreme power is corresponded
to its Extreme coefficient;
- (iv) a **Neutrosophic SuperHyperReverse Strict Connective SuperHyperPolynomial**
if it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic
re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective,
and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and
Neutrosophic SuperHyperVertices such that they form the Neutrosophic
SuperHyperReverse Strict Connective; and the Neutrosophic power is corresponded to its
Neutrosophic coefficient;
- (v) an **Extreme V-SuperHyperReverse Strict Connective** if it's either of Neutrosophic
e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse Strict Connective,
Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic
rv-SuperHyperReverse Strict Connective 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 consecutive Extreme sequence of Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperReverse Strict Connective;
- (vi) a **Neutrosophic V-SuperHyperReverse Strict Connective** if it's either of
Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse
Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic
rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and
Neutrosophic SuperHyperVertices such that they form the Neutrosophic
SuperHyperReverse Strict Connective;
- (vii) an **Extreme V-SuperHyperReverse Strict Connective SuperHyperPolynomial** if
it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic

re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperReverse Strict Connective; and the Extreme power is corresponded to its Extreme coefficient;

- (viii) a **Neutrosophic SuperHyperReverse Strict Connective SuperHyperPolynomial** if it's either of Neutrosophic e-SuperHyperReverse Strict Connective, Neutrosophic re-SuperHyperReverse Strict Connective, Neutrosophic v-SuperHyperReverse Strict Connective, and Neutrosophic rv-SuperHyperReverse Strict Connective 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 consecutive Neutrosophic SuperHyperEdges and Neutrosophic SuperHyperVertices such that they form the Neutrosophic SuperHyperReverse Strict Connective; and the Neutrosophic power is corresponded to its Neutrosophic coefficient.

Definition 3.20. ((Extreme/Neutrosophic) δ –SuperHyperReverse Strict Connective).

Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Then

- (i) an δ –**SuperHyperReverse Strict Connective** is a Neutrosophic kind of Neutrosophic SuperHyperReverse Strict Connective such that either of the following expressions hold for the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$:

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

The Expression (3.1), holds if S is an δ –**SuperHyperOffensive**. And the Expression (3.1), holds if S is an δ –**SuperHyperDefensive**;

- (ii) a **Neutrosophic δ –SuperHyperReverse Strict Connective** is a Neutrosophic kind of Neutrosophic SuperHyperReverse Strict Connective such that either of the following Neutrosophic expressions hold for the Neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$:

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

The Expression (3.1), holds if S is a **Neutrosophic δ –SuperHyperOffensive**. And the Expression (3.1), holds if S is a **Neutrosophic δ –SuperHyperDefensive**.

For the sake of having a Neutrosophic SuperHyperReverse Strict Connective, 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.

Definition 3.21. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. It's redefined **Neutrosophic SuperHyperGraph** if the Table (1) holds.

Table 1. The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph Mentioned in the Definition (3.23)

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

Table 2. The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph, Mentioned in the Definition (3.22)

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

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.

Definition 3.22. Assume a Neutrosophic SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. There are some **Neutrosophic SuperHyperClasses** if the Table (2) holds. Thus Neutrosophic SuperHyperPath, SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultiPartite, and SuperHyperWheel, are **Neutrosophic SuperHyperPath**, **Neutrosophic SuperHyperCycle**, **Neutrosophic SuperHyperStar**, **Neutrosophic SuperHyperBipartite**, **Neutrosophic SuperHyperMultiPartite**, and **Neutrosophic SuperHyperWheel** if the Table (2) holds.

It's useful to define a "Neutrosophic" version of a Neutrosophic SuperHyperReverse Strict Connective. Since there's more ways to get type-results to make a Neutrosophic SuperHyperReverse Strict Connective more Neutrosophically understandable.

For the sake of having a Neutrosophic SuperHyperReverse Strict Connective, there's a need to "redefine" the Neutrosophic notion of "Neutrosophic SuperHyperReverse Strict Connective". 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.

Definition 3.23. Assume a SuperHyperReverse Strict Connective. It's redefined a **Neutrosophic SuperHyperReverse Strict Connective** if the Table (3) holds.

Table 3. The Values of Vertices, SuperVertices, Edges, HyperEdges, and SuperHyperEdges Belong to The Neutrosophic SuperHyperGraph Mentioned in the Definition (3.23)

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

4 Extreme SuperHyper_{Reverse Strict Connective} But As The Extensions Excerpt From Dense And Super Forms

Definition 4.1. (Extreme event).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability _{Reverse Strict Connective}. 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 .

$$E(A) = \sum_{a \in A} E(a). \quad (4.1)$$

Definition 4.2. (Extreme Independent).

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

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

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

$$E(A \cap B) = P(A)P(B). \quad (4.2)$$

Definition 4.3. (Extreme Variable).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability _{Reverse Strict Connective}. Any k -function _{Reverse Strict Connective} like E is called **Extreme k -Variable**. If $k = 2$, then any 2-function _{Reverse Strict Connective} like E is called **Extreme Variable**.

The notion of independent on Extreme Variable is likewise.

Definition 4.4. (Extreme Expectation).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability _{Reverse Strict Connective}. 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 4.5. (Extreme Crossing).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability _{Reverse Strict Connective}. 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 4.6. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability _{Reverse Strict Connective}. Let m and n propose special _{Reverse Strict Connective}. 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 $p := 4n/m$, 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:

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

□ 690

Theorem 4.7. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. 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 $1 \leq k \leq 2\sqrt{2n}$. Then $l < 32n^2/k^3$.

Proof. Form an Extreme SuperHyperGraph G with SuperHyperVertex SuperHyperSet P whose SuperHyperEdge are the segments between consecutive 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 4.8. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. 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 Reverse Strict Connective. 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 $k = \frac{1}{2} \sum i = 0^{n-1}in_i$. Now form an Extreme SuperHyperGraph H with SuperHyperVertex SuperHyperSet P whose SuperHyperEdges are the SuperHyperArcs between consecutive SuperHyperPoints on the SuperHyperCircles that pass through at least three SuperHyperPoints of P . Then

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

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 $k < 4n^{4/3} + n < 5n^{4/3}$. $\square$

Proposition 4.9. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. Let X be a nonnegative Extreme Variable and t a positive real number. Then

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

Proof.

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

Dividing the first and last members by t yields the asserted inequality. $\square$

Corollary 4.10. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. Let X_n be a nonnegative integer-valued variable in a probability Reverse Strict Connective $(V_n, E_n), n \geq 1$. If $E(X_n) \rightarrow 0$ as $n \rightarrow \infty$, then $P(X_n = 0) \rightarrow 1$ as $n \rightarrow \infty$.

Proof.

Theorem 4.11. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. 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 Reverse Strict Connective. 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 $E(X)$.

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

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 . $\square$

Definition 4.12. (Extreme Variance).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. 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 4.13. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. 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 Reverse Strict Connective. Let X be an Extreme Variable and let t be a positive real number. Then

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

$\square$ 761

Corollary 4.14. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. Let X_n be an Extreme Variable in a probability Reverse Strict Connective $(V_n, E_n), n \geq 1$. 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 Reverse Strict Connective. 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 $X_n = 0$. $\square$

Theorem 4.15. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. 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 an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability Reverse Strict Connective. As in the proof of related Theorem, the result is straightforward. $\square$

Corollary 4.16. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability *Reverse Strict Connective*. 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 an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability *Reverse Strict Connective*. The latter is straightforward. $\square$

Definition 4.17. (Extreme Threshold).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability *Reverse Strict Connective*. 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:

(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 4.18. (Extreme Balanced).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability *Reverse Strict Connective*. Let F be a fixed Extreme SuperHyperGraph. Then there is a threshold function for the property of containing a copy of F as an Extreme SubSuperHyperGraph is called **Extreme Balanced**.

Theorem 4.19. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability *Reverse Strict Connective*. Let F be a nonempty balanced Extreme SubSuperHyperGraph with k SuperHyperVertices and l SuperHyperEdges. Then $n^{-k/l}$ is a threshold function for the property of containing F as an Extreme SubSuperHyperGraph.

Proof. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider $S = (V, E)$ is a probability *Reverse Strict Connective*. The latter is straightforward. $\square$

Example 4.20. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Extreme Figures in every Extreme items.

- On the Figure (1), the Extreme SuperHyperNotion, namely, Extreme SuperHyper*Reverse Strict Connective*, 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 SuperHyper*Reverse Strict Connective*.

$$\mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} = \{\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} = 0z^0.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} = \{\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} = 0z^0.$$

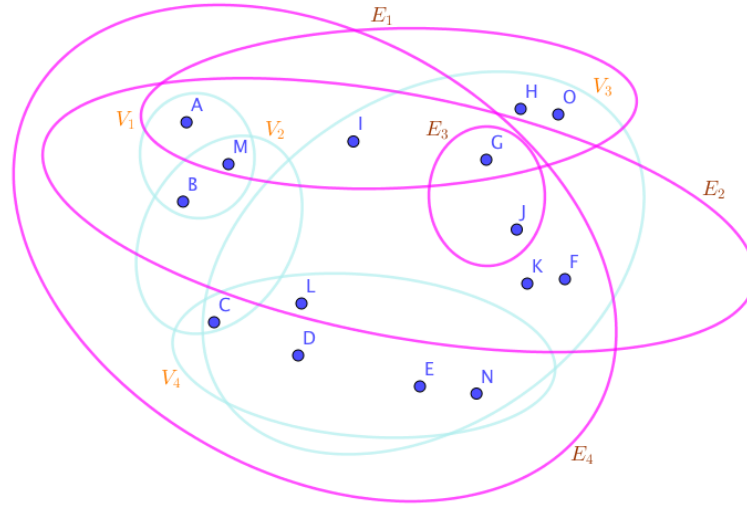


Figure 1. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (2), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, 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 SuperHyperReverse Strict Connective.

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

- On the Figure (3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely

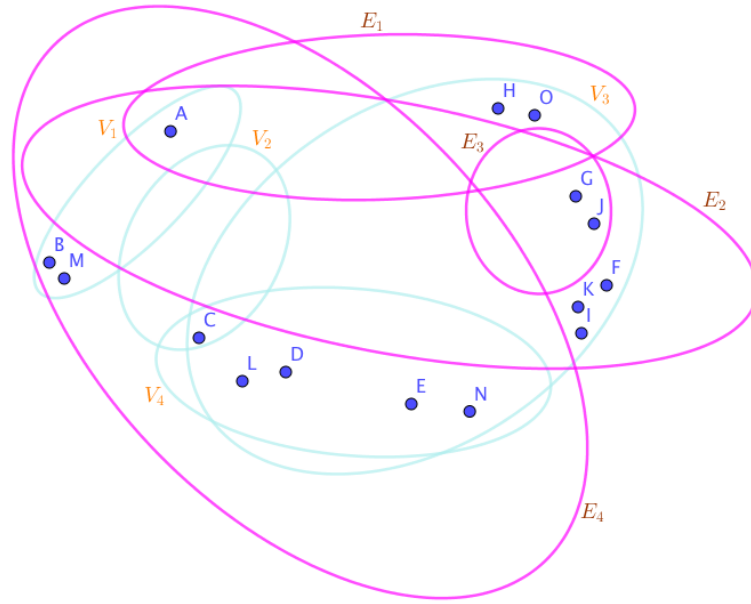


Figure 2. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

straightforward.

828

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

829

- On the Figure (4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

830

831

832

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

833

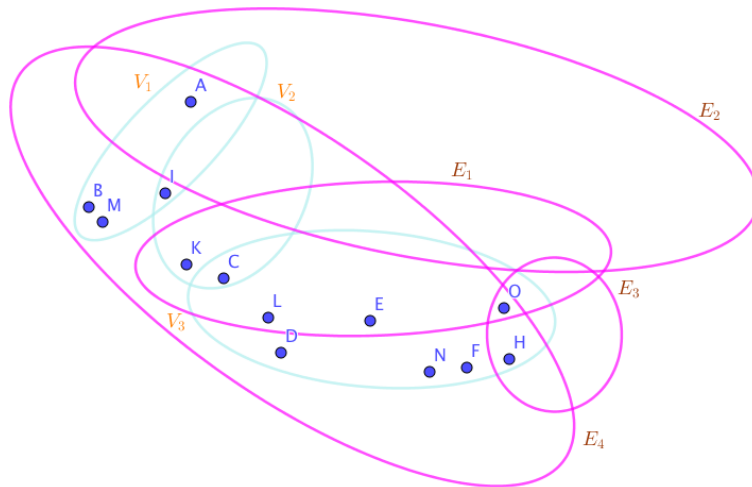


Figure 3. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

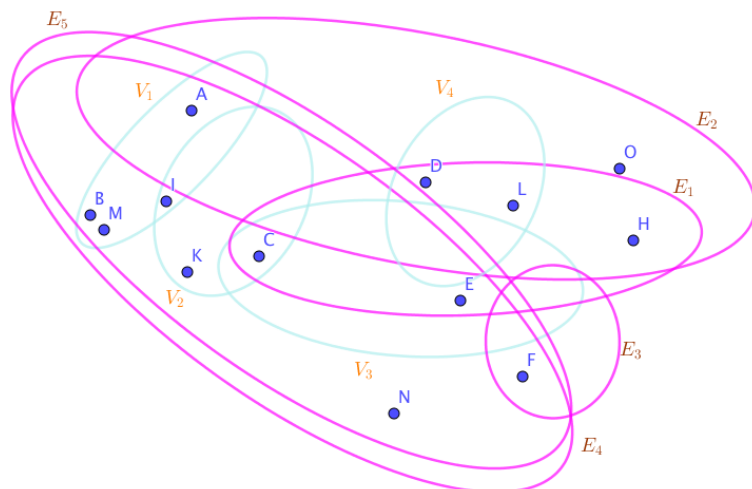


Figure 4. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

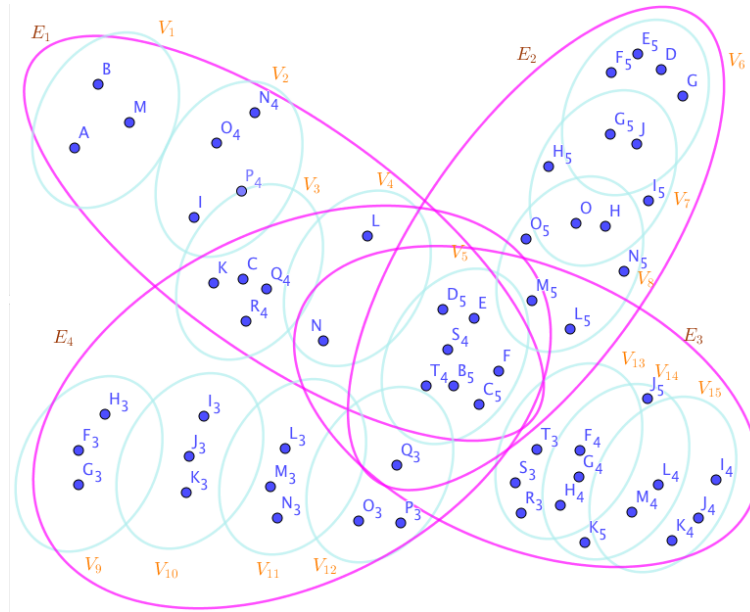


Figure 5. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_2\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{6-c}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_5\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{7-c}.
 \end{aligned}$$

- On the Figure (6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_i\}_{i=12}^{22}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{3-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_i, V_{21}\}_{i=1}^{10}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{3-a}.
 \end{aligned}$$

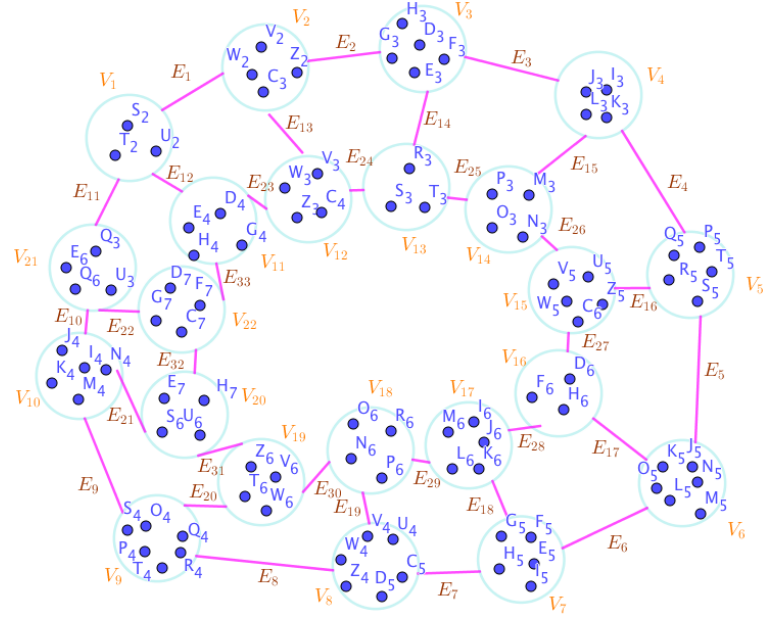


Figure 6. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_{15}, E_{16}, E_{17}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_{12}, V_{13}, V_{14}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}.
 \end{aligned}$$

- On the Figure (8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_1, E_2, E_3\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_{12}, V_{13}, V_{14}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}.
 \end{aligned}$$

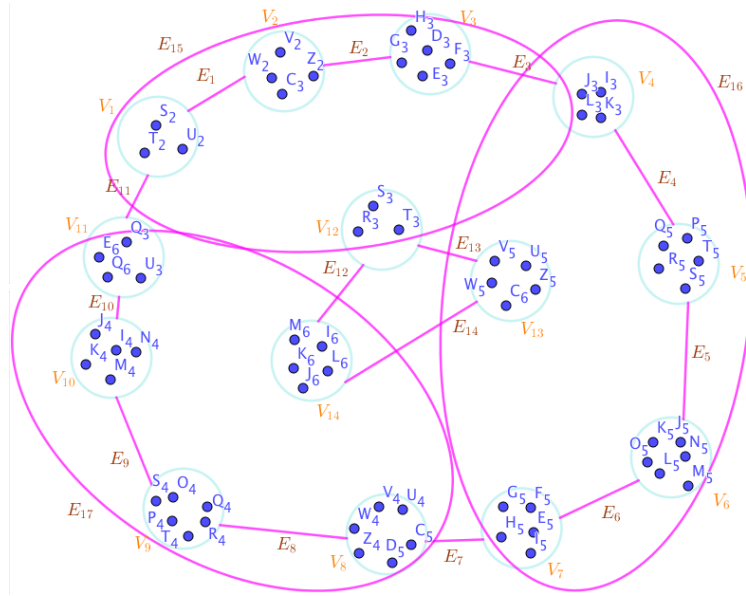


Figure 7. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

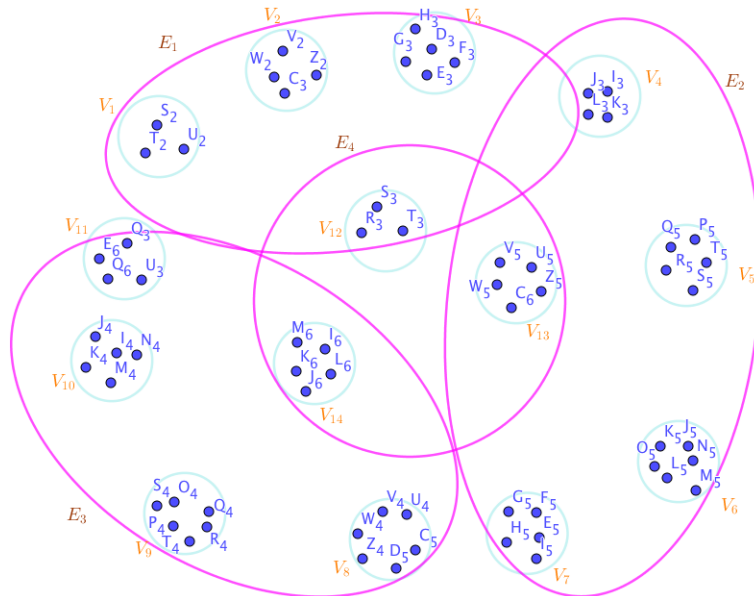


Figure 8. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

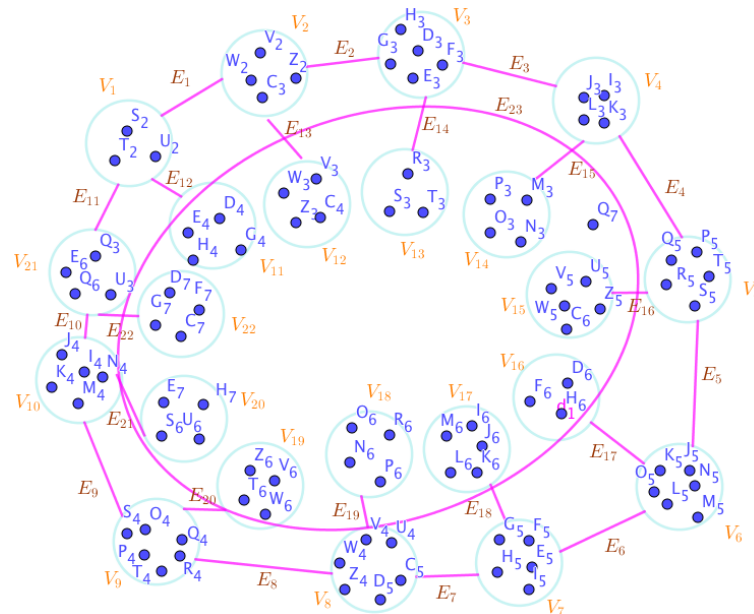


Figure 9. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\ \{E_{3i+1}, E_{23}\}_{i=0}^3. \\ \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\ z^{3-a}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\ \{V_{3i+1}, V_{11}\}_{i=0}^3. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\ z^{3-a}. \end{aligned}$$

- On the Figure (10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_1, E_2, E_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_{12}, V_{13}, V_{14}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}. \end{aligned}$$

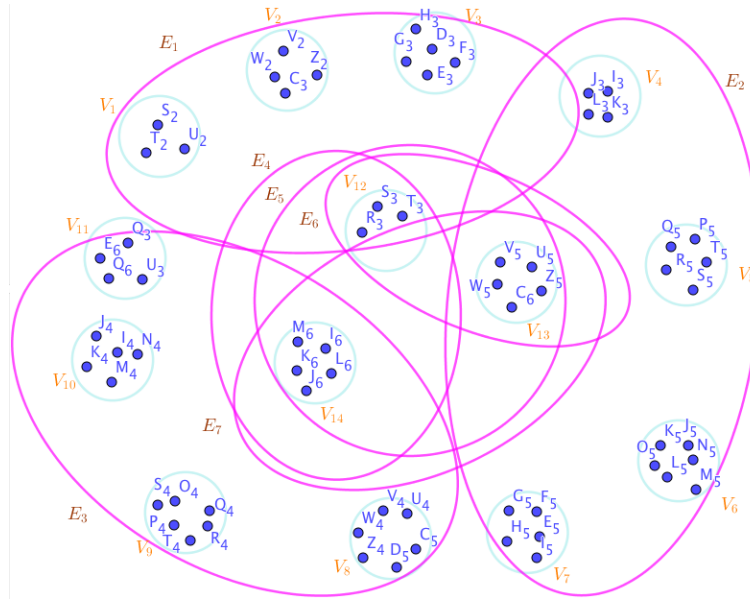


Figure 10. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_1, E_3\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{3-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_1, V_6\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{5-a}.
 \end{aligned}$$

- On the Figure (12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_1\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{5-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_1, V_2, V_3, V_7, V_8\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{5-a}.
 \end{aligned}$$

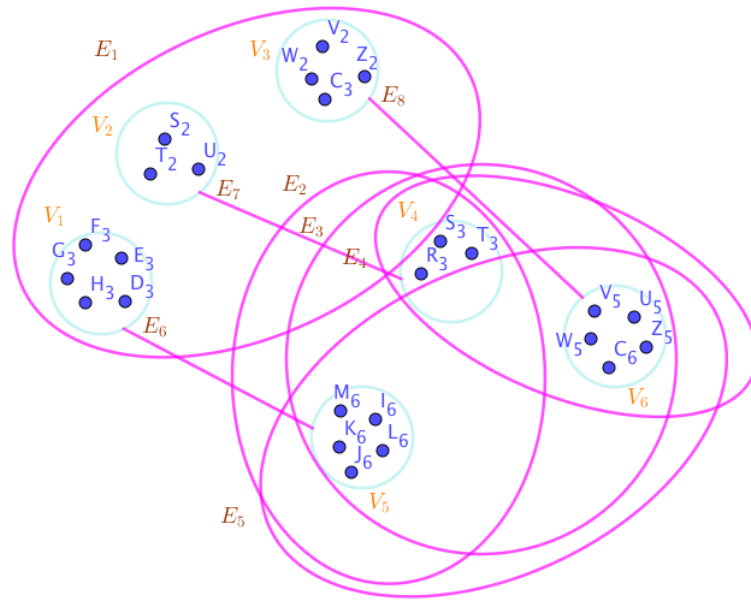


Figure 11. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_9, E_3\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{3-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_1, V_6\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{5-a}.
 \end{aligned}$$

- On the Figure (14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_2\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{3-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_1\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{5-a}.
 \end{aligned}$$

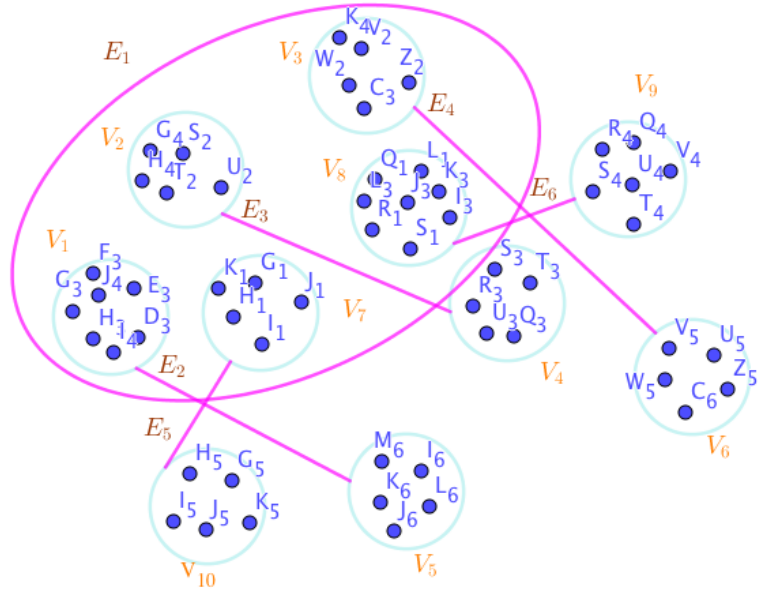


Figure 12. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

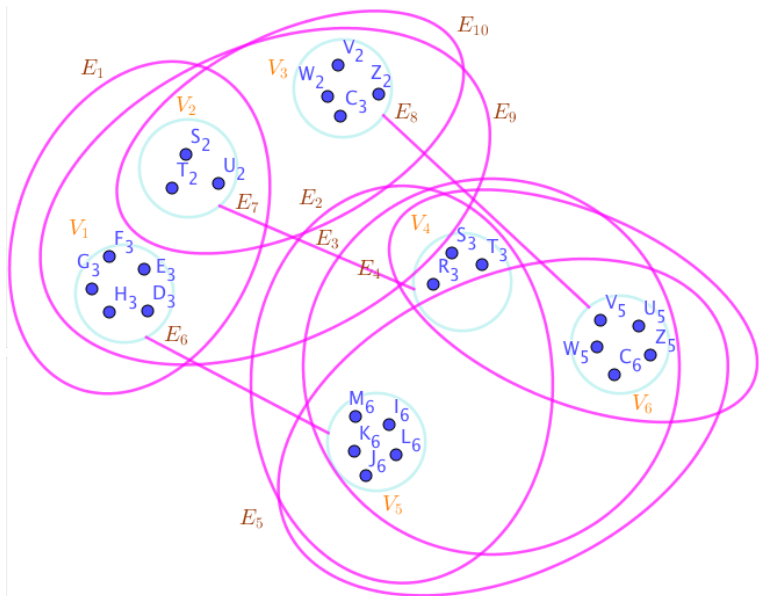


Figure 13. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

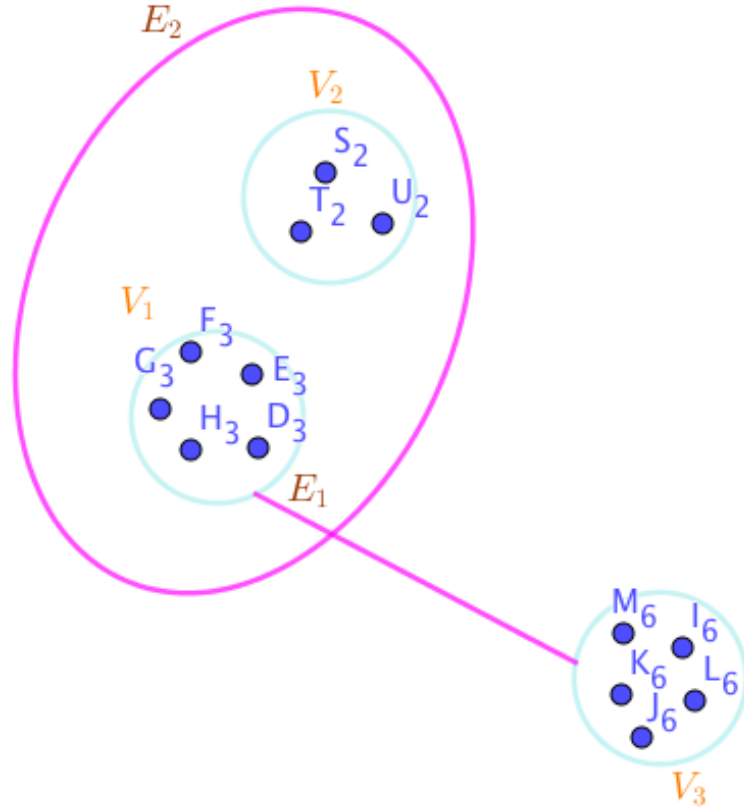


Figure 14. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_{3i+1}\}_{i=0}^1 & \cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 = z^{3-a} & \cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_{3i+1}\}_{i=0}^1 & \cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 = z^{3-a} & \cdot
 \end{aligned}$$

- On the Figure (16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely

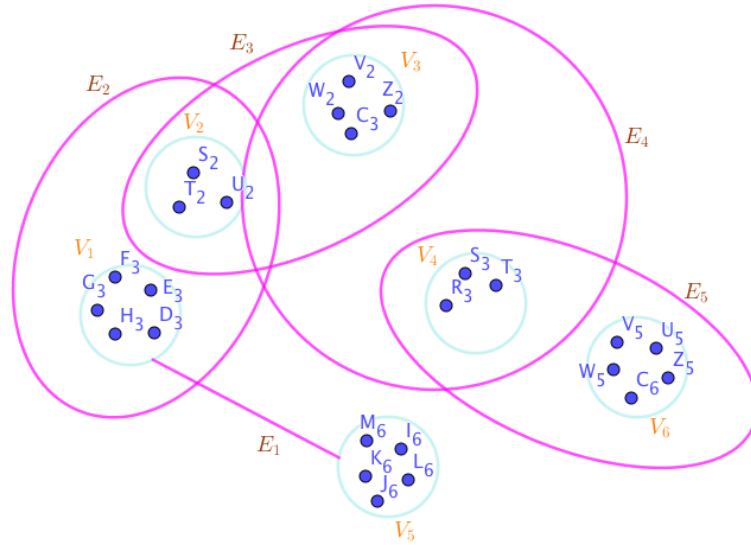


Figure 15. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_{3i+1}\}_{i=0}^1 &\cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} &\cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_2, V_{17}, V_7\} &\cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} &\cdot
 \end{aligned}$$

- On the Figure (17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_{3i+1}\}_{i=0}^1 &\cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} &\cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_2, V_{17}, V_7, V_{27}\} &\cdot \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} &\cdot
 \end{aligned}$$

- On the Figure (18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely

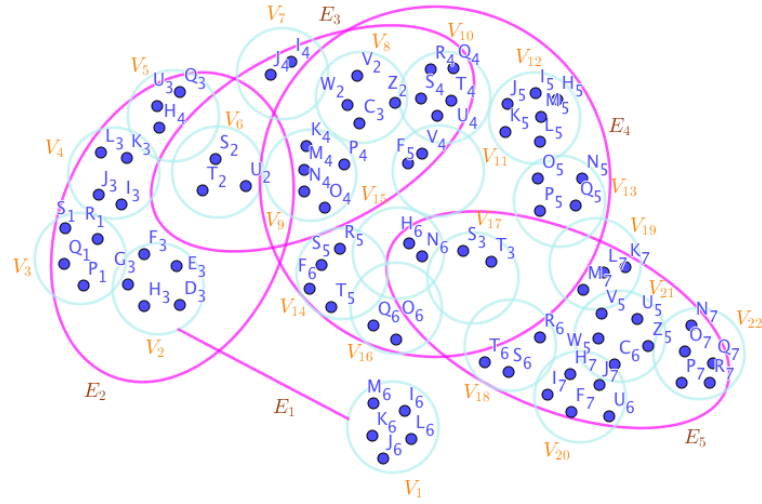


Figure 16. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

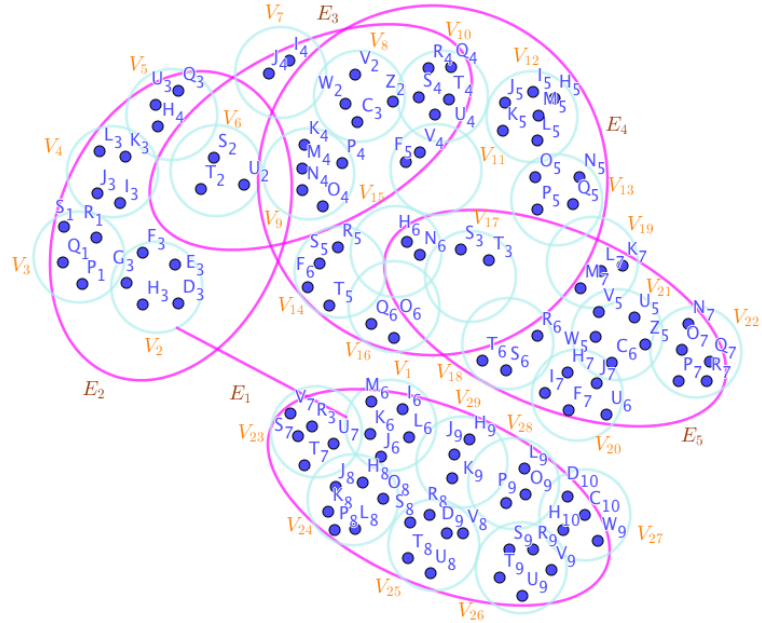


Figure 17. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

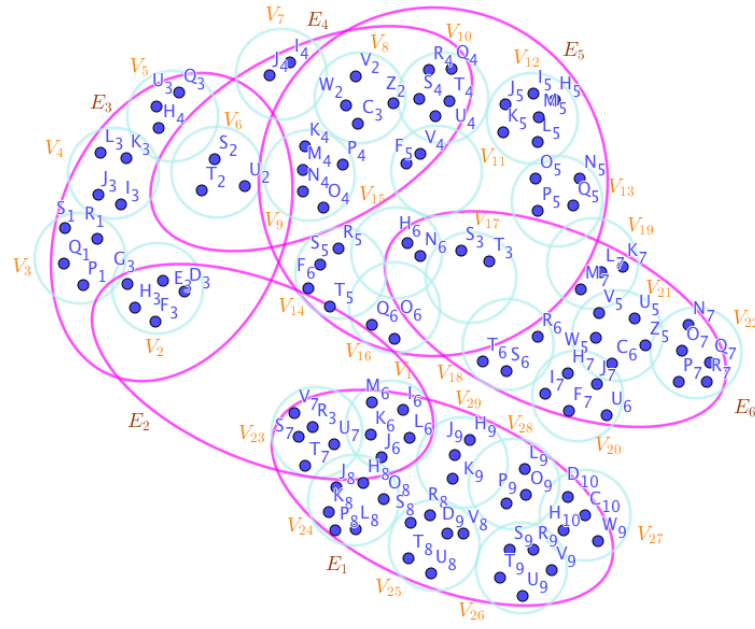


Figure 18. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_{3i+2}\}_{i=0}^1 & \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} & \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_2, V_{17}, V_7, V_{27}\} & \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} &
 \end{aligned}$$

- On the Figure (19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_{3i+1}\}_{i=0}^3 & \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} & \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_{2i+1}\}_{i=0}^5 & \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{2-a} &
 \end{aligned}$$

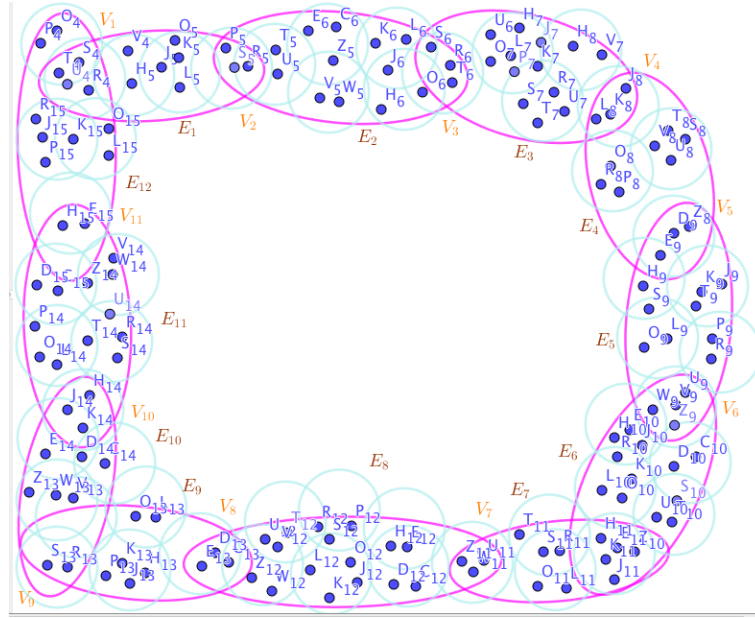


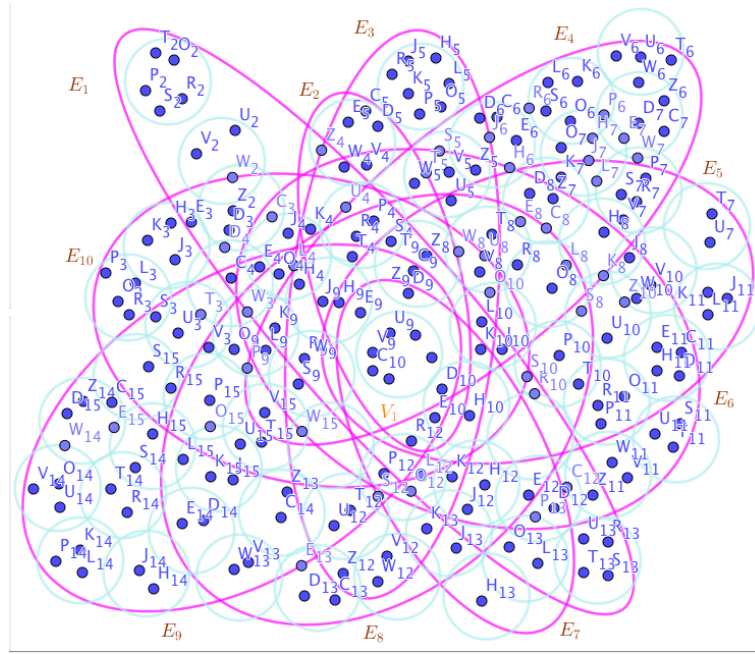
Figure 19. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_6\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{4-a}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_1\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{6-a}.
 \end{aligned}$$

- On the Figure (21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_2\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{|1-a|}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{V_1\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{|5-a|}.
 \end{aligned}$$



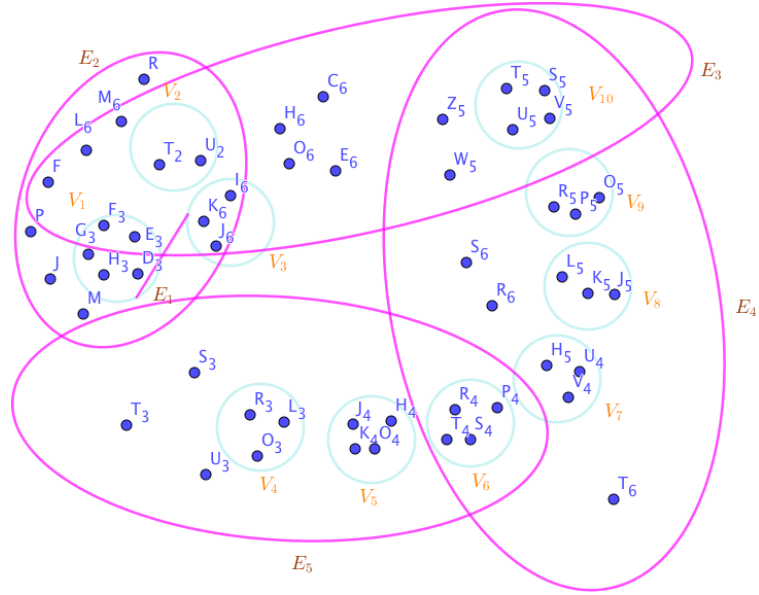


Figure 22. The Extreme SuperHyperGraphs Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.3)

- On the Figure (22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperReverse Strict Connective, is up. The Extreme Algorithm is Extremely straightforward.

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \\
 \{E_{2i+3}\}_{i=0}^1 & \\
 \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{1-a} & \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \\
 \{V_1, V_{10}, V_6\} & \\
 \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= \\
 z^{4-a} &
 \end{aligned}$$

Proposition 4.21. Assume a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The all interior Extreme SuperHyperVertices belong to any Extreme quasi-R-Reverse Strict Connective 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 4.22. 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 possibilities of the distinct interior Extreme SuperHyperVertices inside of any given Extreme quasi-R-Reverse Strict Connective 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-Reverse Strict Connective, minus all Extreme SuperHyperNeighbor to some of them but not all of them. 918
919

Proposition 4.23. 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-Reverse Strict Connective 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-Reverse Strict Connective 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 Extreme number of Extreme SuperHyperVertices are renamed to Extreme Reverse Strict Connective in some cases but the maximum number of the Extreme SuperHyperEdge with the maximum Extreme number of Extreme SuperHyperVertices, has the Extreme SuperHyperVertices are contained in an Extreme R-Reverse Strict Connective. 920
921
922
923
924
925
926
927

Proposition 4.24. Assume a simple Extreme SuperHyperGraph $ESHG : (V, E)$. Then the Extreme number of type-result-R-Reverse Strict Connective has, the least Extreme cardinality, the lower sharp Extreme bound for Extreme cardinality, is the Extreme cardinality of

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

If there's an Extreme type-result-R-Reverse Strict Connective with the least Extreme cardinality, the lower sharp Extreme bound for cardinality. 928
929

Proposition 4.25. Assume a connected loopless Extreme SuperHyperGraph $ESHG : (V, E)$. Then in the worst case, literally, 930
931

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

Is an Extreme type-result-Reverse Strict Connective. In other words, the least cardinality, the lower sharp bound for the cardinality, of an Extreme type-result-Reverse Strict Connective is the cardinality of 932
933
934

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

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-Reverse Strict Connective 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

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

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,

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

Is a quasi-R-Reverse Strict Connective. In other words, the least cardinality, the lower sharp bound for the cardinality, of a quasi-R-Reverse Strict Connective is the cardinality of

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

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-Reverse Strict Connective. 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

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

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-Reverse Strict Connective 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-Reverse Strict Connective. 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-Reverse Strict Connective has the Extreme cardinality of an Extreme SuperHyperEdge. Thus, an Extreme R-Reverse Strict Connective 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-Reverse Strict Connective 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-Reverse Strict Connective" 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-Reverse Strict Connective 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 SuperHyperSet

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

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-Reverse Strict Connective 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-Reverse Strict Connective. Those Extreme SuperHyperVertices are potentially included in an Extreme style-R-Reverse Strict Connective. 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-Reverse Strict Connective is

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

This definition coincides with the definition of the Extreme R-Reverse Strict Connective 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-Reverse Strict Connective. 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

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

But with the slightly differences,

Extreme R-Reverse Strict Connective =

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

Extreme R-Reverse Strict Connective =

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

Thus $E \in E_{ESHG:(V,E)}$ is an Extreme quasi-R-Reverse Strict Connective 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 Reverse Strict Connective, $E_x = E \in E_{ESHG:(V,E)}$ 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-Reverse Strict Connective 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-Reverse Strict Connective 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 Extreme number of Extreme SuperHyperVertices are renamed to Extreme Reverse Strict Connective in some cases but the maximum number of the Extreme SuperHyperEdge with the maximum Extreme number of Extreme SuperHyperVertices, has the Extreme SuperHyperVertices are contained in an Extreme R-Reverse Strict Connective.

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-Reverse Strict Connective where the Extreme completion of the Extreme incidence is up in that. Thus it's, literarily, an Extreme embedded R-Reverse Strict Connective. 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-Reverse Strict Connective. 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-Reverse Strict Connective. 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 Reverse Strict Connective, 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-Reverse Strict Connective. The Extreme R-Reverse Strict Connective with the exclusion of the exclusion of all Extreme SuperHyperVertices in one Extreme SuperHyperEdge and with other terms, the Extreme R-Reverse Strict Connective with the inclusion of all Extreme SuperHyperVertices in one Extreme SuperHyperEdge, is an Extreme quasi-R-Reverse Strict Connective. 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-Reverse Strict Connective 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-Reverse Strict Connective, minus all Extreme SuperHyperNeighbor to some of them but not all of them.

The main definition of the Extreme R-Reverse Strict Connective has two titles. an Extreme quasi-R-Reverse Strict Connective 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-Reverse Strict Connective 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-Reverse Strict ConnectiveS for all Extreme numbers less than its Extreme corresponded maximum number. The essence of the Extreme Reverse Strict Connective ends up but this essence starts up in the terms of the Extreme quasi-R-Reverse Strict Connective, again and more in the operations of collecting all the Extreme quasi-R-Reverse Strict ConnectiveS 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-Reverse Strict ConnectiveS. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Reverse Strict Connective}}$ be an Extreme number, an Extreme SuperHyperSet and an Extreme Reverse Strict Connective. Then

$$\begin{aligned} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} &= \{S_{\text{Extreme SuperHyperSet}} \mid \\ &S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Reverse Strict Connective}}, \\ &|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\ &= z_{\text{Extreme Number}}\}. \end{aligned}$$

As its consequences, the formal definition of the Extreme Reverse Strict Connective is

re-formalized and redefined as follows.

1018

$$\begin{aligned}
 G_{\text{Extreme Reverse Strict Connective}} &\in \cup_{z_{\text{Extreme Number}}} \\
 [z_{\text{Extreme Number}}]_{\text{Extreme Class}} &= \\
 \cup_{z_{\text{Extreme Number}}} & \\
 \{S_{\text{Extreme SuperHyperSet}} \mid & \\
 S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Reverse Strict Connective}}, & \\
 |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} & \\
 = z_{\text{Extreme Number}} \}. &
 \end{aligned}$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the Extreme Reverse Strict Connective.

1019

1020

$$\begin{aligned}
 G_{\text{Extreme Reverse Strict Connective}} &= \\
 \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid & \\
 \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid & \\
 S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Reverse Strict Connective}}, & \\
 |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} & \\
 = z_{\text{Extreme Number}} \mid & \\
 |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} & \\
 = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. &
 \end{aligned}$$

In more concise and more convenient ways, the modified definition for the Extreme Reverse Strict Connective poses the upcoming expressions.

1021

1022

$$\begin{aligned}
 G_{\text{Extreme Reverse Strict Connective}} &= \\
 \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid & \\
 |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} & \\
 = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}. &
 \end{aligned}$$

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

1023

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

And then,

1024

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

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

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

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

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

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

Now, the extension of these types of approaches is up. Since the new term, “Extreme SuperHyperNeighborhood”, 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-Reverse Strict Connective” but, precisely, it's the generalization of “Extreme Quasi-Reverse Strict Connective” since “Extreme Quasi-Reverse Strict Connective” happens “Extreme Reverse Strict Connective” in an Extreme SuperHyperGraph as initial framework and background but “Extreme SuperHyperNeighborhood” may not happens “Extreme Reverse Strict Connective” 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-Reverse Strict Connective”, and “Extreme Reverse Strict Connective” are up.

Thus, let

$z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Reverse Strict Connective}}$ be an Extreme number, an Extreme

SuperHyperNeighborhood and an Extreme Reverse Strict Connective and the new terms are up. 1044

$$\begin{aligned}
 G_{\text{Extreme Reverse Strict Connective}} &\in \cup_{z_{\text{Extreme Number}}} \\
 [z_{\text{Extreme Number}}]_{\text{Extreme Class}} &= \\
 \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\
 |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
 &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}.
 \end{aligned}$$

1045

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

1046

$$\begin{aligned}
 G_{\text{Extreme Reverse Strict Connective}} &= \\
 \{N_{\text{Extreme SuperHyperNeighborhood}} \\
 \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
 |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
 &= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} \}.
 \end{aligned}$$

1047

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

And with go back to initial structure,

1048

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

1049

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

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

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

Thus, in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The all interior Extreme SuperHyperVertices belong to any Extreme quasi-R-Reverse Strict Connective 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-Reverse Strict Connective.

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

The Extreme SuperHyperSet of Extreme SuperHyperVertices,

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

Is the simple Extreme type-SuperHyperSet of the Extreme R-Reverse Strict Connective. The Extreme SuperHyperSet of the Extreme SuperHyperVertices,

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

Is an **Extreme R-Reverse Strict Connective** $\mathcal{C}(ESHG)$ 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 Reverse Strict Connective is related to the Extreme SuperHyperSet of the Extreme SuperHyperVertices,

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

There's not only **one** Extreme SuperHyperVertex **inside** the intended Extreme SuperHyperSet. Thus the non-obvious Extreme Reverse Strict Connective is up. The obvious simple Extreme type-SuperHyperSet called the Extreme Reverse Strict Connective 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-Reverse Strict Connective **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-Reverse Strict Connective. 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-Reverse Strict Connective $\mathcal{C}(ESHG)$ 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 Reverse Strict Connective **and** it's an Extreme Reverse Strict Connective. 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 Reverse Strict Connective. There isn't only less than two Extreme SuperHyperVertices **inside** the intended Extreme SuperHyperSet,

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

Thus the non-obvious Extreme R-Reverse Strict Connective,

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

is up. The non-obvious simple Extreme type-SuperHyperSet of the Extreme Reverse Strict Connective, not:

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

Is the Extreme SuperHyperSet, not:

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

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-Reverse Strict Connective"

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

Extreme R-Reverse Strict Connective,

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 SuperHyperModeling. 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-Reverse Strict Connective amid those obvious simple Extreme type-SuperHyperSets of the Extreme Reverse Strict Connective, 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-Reverse Strict Connective. In other words, the least cardinality, the lower sharp bound for the cardinality, of an Extreme R-Reverse Strict Connective is the cardinality of

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

To sum them up, in a connected Extreme SuperHyperGraph $ESHG : (V, E)$. The all interior Extreme SuperHyperVertices belong to any Extreme quasi-R-Reverse Strict Connective 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-Reverse Strict Connective 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-Reverse Strict Connective. 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-Reverse Strict Connective. 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-Reverse Strict Connective, V_{ESHE} is up. The obvious simple Extreme type-SuperHyperSet of the Extreme R-Reverse Strict Connective, 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-Reverse Strict Connective 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 SuperHyperNeighborhoods and Extreme SuperHyperNeighbors out.

The SuperHyperNotion, namely, Reverse Strict Connective, 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 Reverse Strict Connective. The Extreme SuperHyperSet of Extreme SuperHyperEdges[SuperHyperVertices],

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

is the simple Extreme type-SuperHyperSet of the Extreme Reverse Strict Connective. The Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices],

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

Is an **Extreme Reverse Strict Connective** $\mathcal{C}(ESHG)$ 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 Reverse Strict Connective is up. The obvious simple Extreme

type-SuperHyperSet called the Extreme Reverse Strict Connective is an Extreme SuperHyperSet **includes** only **two** Extreme SuperHyperVertices. But the Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices],

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

Doesn't have less than three SuperHyperVertices **inside** the intended Extreme SuperHyperSet. Thus the non-obvious simple Extreme type-SuperHyperSet of the Extreme Reverse Strict Connective **is** up. To sum them up, the Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices],

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

Is the non-obvious simple Extreme type-SuperHyperSet of the Extreme Reverse Strict Connective. Since the Extreme SuperHyperSet of the Extreme SuperHyperEdges[SuperHyperVertices],

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

Is an Extreme Reverse Strict Connective $\mathcal{C}(ESHG)$ 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 given by that Extreme type-SuperHyperSet called the Extreme Reverse Strict Connective **and** it's an Extreme Reverse Strict Connective. Since it's

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 aren't only less than three

Extreme SuperHyperVertices **inside** the intended Extreme SuperHyperSet,

1158

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

Thus the non-obvious Extreme Reverse Strict Connective,

1159

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

Is up. The obvious simple Extreme type-SuperHyperSet of the Extreme Reverse Strict Connective, not:

1160

1161

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

Is the Extreme SuperHyperSet, not:

1162

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

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

1163

1164

1165

“Extreme Reverse Strict Connective”

1166

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

1167

Extreme Reverse Strict Connective,

1168

is only and only

1169

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

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

□ 1170

5 The Extreme Departures on The Theoretical Results Toward Theoretical Motivations

1171

1172

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

1173

1174

Proposition 5.1. Assume a connected Extreme SuperHyperPath $ESHP : (V, E)$. Then

1175

$$\begin{aligned}
& \mathcal{C}(NSHG)_{Extreme Reverse Strict Connective} = \\
& \{E_{3i+2}\}_{i=0}^{|ESHP|}. \\
& \mathcal{C}(NSHG)_{Extreme Reverse Strict Connective SuperHyperPolynomial} \\
&= z^{\min_{\{E_{3i+2}\}_{i=0}^{|ESHP|}} |E_i|}. \\
& \mathcal{C}(NSHG)_{Extreme V-Reverse Strict Connective} = \\
& \{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|ESHP|}. \\
& \mathcal{C}(NSHG)_{Extreme V-Reverse Strict Connective SuperHyperPolynomial} \\
&= z^{\min_{\{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|ESHP|}} |V_i|}.
\end{aligned}$$

Proof. Let

1176

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

1177

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

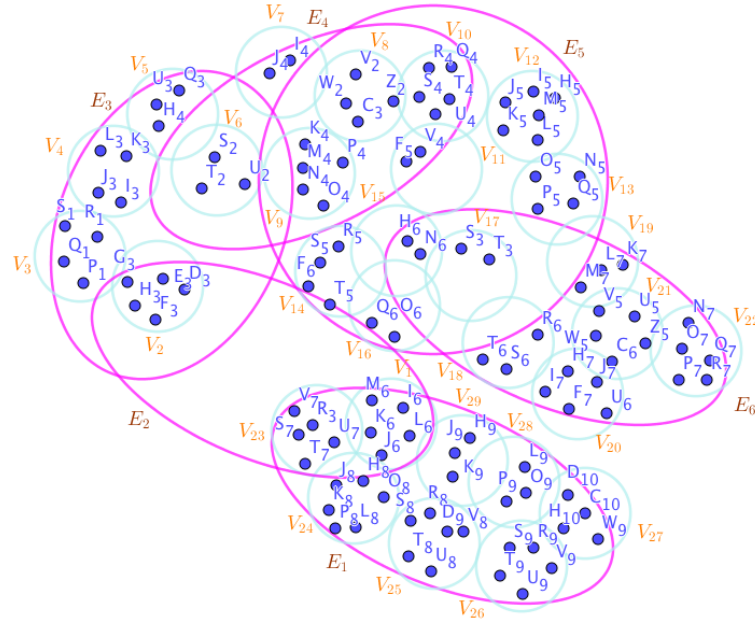


Figure 23. an Extreme SuperHyperPath Associated to the Notions of Extreme SuperHyperReverse Strict Connective in the Example (16.5)

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 SuperHyperReverse Strict Connective. The latter is straightforward. $\square$

Example 5.2. In the Figure (23), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (23), is the SuperHyperReverse Strict Connective.

Proposition 5.3. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective}} &= \\ \{E_{3i+2}\}_{i=0}^{|E_{ESH P}|} & \\ \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective} \text{ SuperHyperPolynomial}} &= \\ = z^{\min_{\{E_{3i+2}\}_{i=0}^{|E_{ESH P}|}} |E_i|} & \\ \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective}} &= \\ \{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|E_{ESH P}|} & \\ \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective} \text{ SuperHyperPolynomial}} &= \\ = z^{\min_{\{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|E_{ESH P}|}} |V_i|} & \end{aligned}$$

Proof. Let

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

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

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

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

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 SuperHyperReverse Strict Connective. The latter is straightforward. $\square$

Example 5.4. In the Figure (24), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (24), is the Extreme SuperHyperReverse Strict Connective.

Proposition 5.5. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

$$\begin{aligned}
 \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective}} &= \{E_i\}. \\
 \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective SuperHyperPolynomial}} &= z^{|E_i|}. \\
 \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective}} &= \{CENTER\}. \\
 \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{|CENTER|}.
 \end{aligned}$$

Proof. Let

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

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

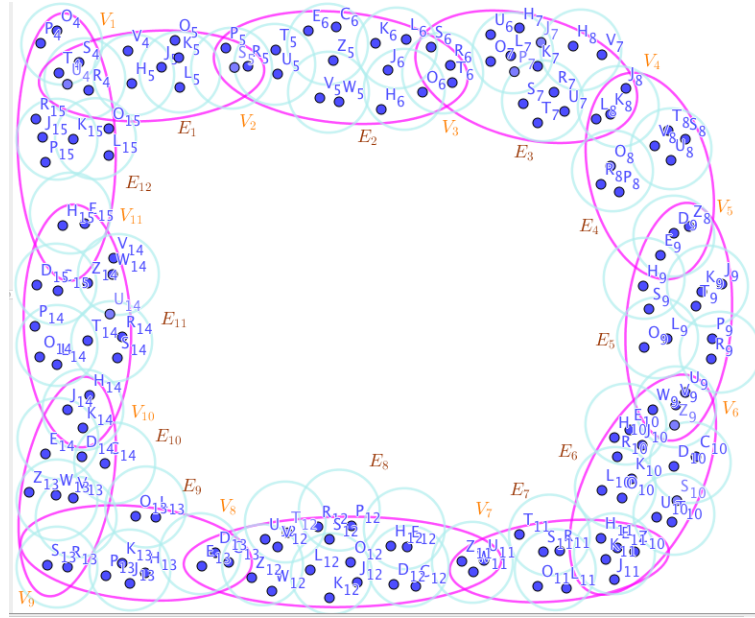


Figure 24. an Extreme SuperHyperCycle Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.7)

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 SuperHyperReverse Strict Connective. The latter is straightforward. $\square$

Example 5.6. In the Figure (25), 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 (25), is the Extreme SuperHyperReverse Strict Connective.

Proposition 5.7. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective}} &= \\ \{E_{3i+2}\}_{i=0}^{|P_{ESHP}^{\min}|} & \\ \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective SuperHyperPolynomial}} &= \\ \min_{\{P_{3i+2}^{\min}\}_{i=0}^{|E_{ESHP}|}} |E_i| & \\ \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective}} &= \\ \{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|P_{ESHP}^{\min}|} & \\ \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective SuperHyperPolynomial}} &= \\ \min_{\{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|P_{ESHP}^{\min}|}} |V_i| & \end{aligned}$$

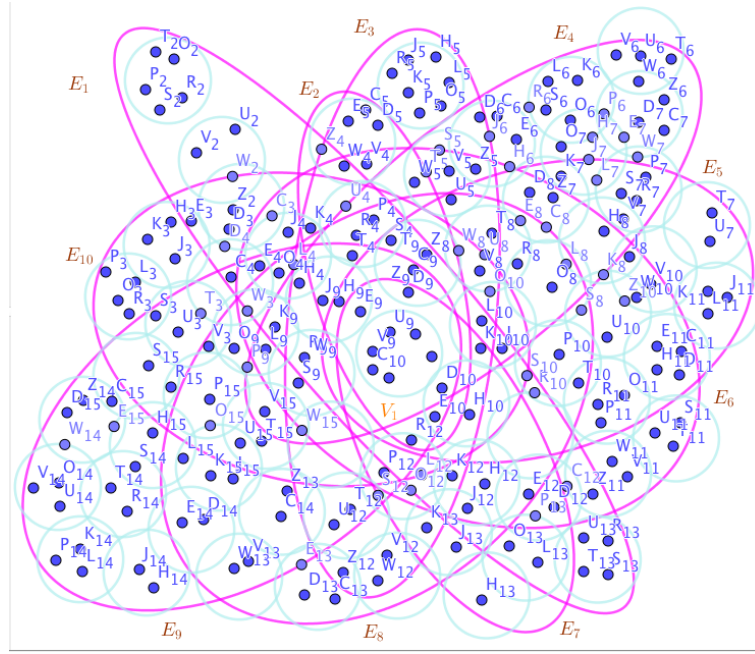


Figure 25. an Extreme SuperHyperStar Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.9)

Proof. Let

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

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

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

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

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 SuperHyperReverse Strict Connective. The latter is straightforward. Then there's no at least one SuperHyperReverse Strict Connective. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperReverse Strict Connective could be applied. There are only two SuperHyperParts.

$ESHM : (V, E)$. Then

1235

$$\begin{aligned}
& \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective}} = \\
& \{E_{3i+2}\}_{i=0}^{|P_{ESH P}^{\min}|} . \\
& \mathcal{C}(NSHG)_{Extreme \text{ Reverse Strict Connective} \text{ SuperHyperPolynomial}} \\
& = z^{\min_{\{P_{3i+2}^{\min}\}_{i=0}^{|E_{ESH P}|}} |E_i|} . \\
& \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective}} = \\
& \{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|P_{ESH P}^{\min}|} . \\
& \mathcal{C}(NSHG)_{Extreme \text{ V-Reverse Strict Connective} \text{ SuperHyperPolynomial}} \\
& = z^{\min_{\{V_{2i+2}^{EXTERNAL}\}_{i=0}^{|P_{ESH P}^{\min}|}} |V_i|} .
\end{aligned}$$

Proof. Let

1236

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

1237

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

is a longest SuperHyperReverse Strict Connective taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

1238

1239

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

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 SuperHyperReverse Strict Connective. The latter is straightforward. Then there's no at least one SuperHyperReverse Strict Connective. Thus the notion of quasi may be up but the SuperHyperNotions based on SuperHyperReverse Strict Connective could be applied. There are only z' SuperHyperParts. Thus every SuperHyperPart could have one SuperHyperVertex as the representative in the

1240

1241

1242

1243

1244

1245

1246

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

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only

1247

1248

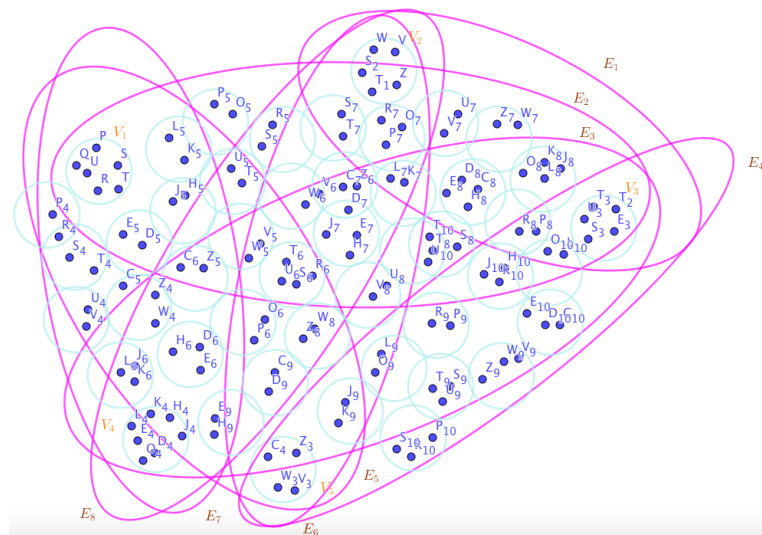


Figure 27. an Extreme SuperHyperMultipartite Associated to the Notions of Extreme SuperHyperReverse Strict Connective in the Example (16.13)

minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution 1249

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

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

Example 5.10. In the Figure (27), 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 (27), is the Extreme SuperHyperReverse Strict Connective.

Proposition 5.11. *Assume a connected Extreme SuperHyperWheel* 1257
ESHW : $(V, E \cup E^)$. Then,* 1258

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective}} &= \{E_i\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Reverse Strict Connective SuperHyperPolynomial}} &= z^{|E_i|}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective}} &= \{CENTER\}. \\ \mathcal{C}(NSHG)_{\text{Extreme V-Reverse Strict Connective SuperHyperPolynomial}} &= z^{|CENTER|} \end{aligned}$$

Proof. Let 1259

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

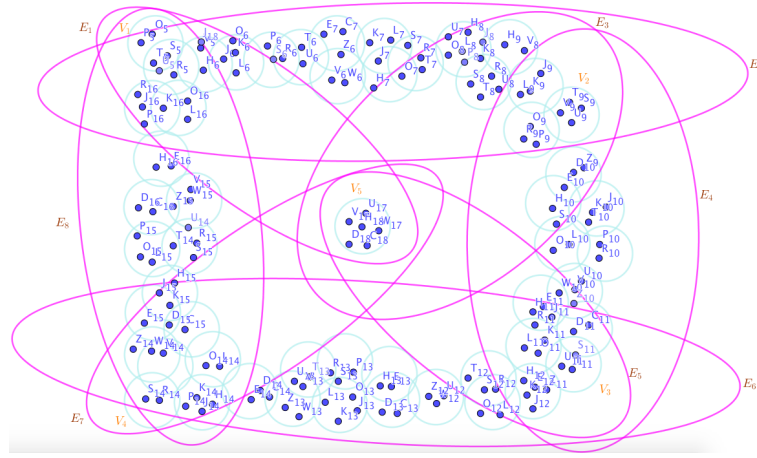


Figure 28. an Extreme SuperHyperWheel Extreme Associated to the Extreme Notions of Extreme SuperHyperReverse Strict Connective in the Extreme Example (16.15)

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

is a longest SuperHyperReverse Strict Connective taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

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

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 SuperHyperReverse Strict Connective. The latter is straightforward. Then there's at least one SuperHyperReverse Strict Connective. Thus the notion of quasi isn't up and the SuperHyperNotions based on SuperHyperReverse Strict Connective could be applied. The unique embedded SuperHyperReverse Strict Connective proposes some longest SuperHyperReverse Strict Connective excerpt from some representatives. The latter is straightforward. $\square$

Example 5.12. In the Extreme Figure (28), 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 (28), is the Extreme SuperHyperReverse Strict Connective.

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

For the SuperHyperReverse Strict Connective, Extreme SuperHyperReverse Strict Connective, and the Extreme SuperHyperReverse Strict Connective, some general results are introduced.

Remark 6.1. Let remind that the Extreme SuperHyperReverse Strict Connective is “redefined” on the positions of the alphabets.

Corollary 6.2. Assume Extreme SuperHyperReverse Strict Connective. Then

1281

$$\begin{aligned} & \text{Extreme SuperHyperReverseStrictConnective} = \\ & \{ \text{theSuperHyperReverseStrictConnective of the SuperHyperVertices} \mid \\ & \max | \text{SuperHyperOffensive} \\ & \text{SuperHyperReverseStrictConnective} \\ & | \text{Extremecardinality amid those SuperHyperReverseStrictConnective.} \} \end{aligned}$$

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.

1282

1283

1284

Corollary 6.3. Assume an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then the notion of Extreme SuperHyperReverse Strict Connective and SuperHyperReverse Strict Connective coincide.

1285

1286

1287

Corollary 6.4. Assume an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then a consecutive sequence of the SuperHyperVertices is an Extreme SuperHyperReverse Strict Connective if and only if it's a SuperHyperReverse Strict Connective.

1288

1289

1290

Corollary 6.5. Assume an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then a consecutive sequence of the SuperHyperVertices is a strongest SuperHyperReverse Strict Connective if and only if it's a longest SuperHyperReverse Strict Connective.

1291

1292

1293

Corollary 6.6. Assume SuperHyperClasses of an Extreme SuperHyperGraph on the same identical letter of the alphabet. Then its Extreme SuperHyperReverse Strict Connective is its SuperHyperReverse Strict Connective and reversely.

1294

1295

1296

Corollary 6.7. Assume an Extreme SuperHyperPath(-/SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel) on the same identical letter of the alphabet. Then its Extreme SuperHyperReverse Strict Connective is its SuperHyperReverse Strict Connective and reversely.

1297

1298

1299

1300

Corollary 6.8. Assume an Extreme SuperHyperGraph. Then its Extreme SuperHyperReverse Strict Connective isn't well-defined if and only if its SuperHyperReverse Strict Connective isn't well-defined.

1301

1302

1303

Corollary 6.9. Assume SuperHyperClasses of an Extreme SuperHyperGraph. Then its Extreme SuperHyperReverse Strict Connective isn't well-defined if and only if its SuperHyperReverse Strict Connective isn't well-defined.

1304

1305

1306

Corollary 6.10. Assume an Extreme SuperHyperPath(-/SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its Extreme SuperHyperReverse Strict Connective isn't well-defined if and only if its SuperHyperReverse Strict Connective isn't well-defined.

1307

1308

1309

1310

Corollary 6.11. Assume an Extreme SuperHyperGraph. Then its Extreme SuperHyperReverse Strict Connective is well-defined if and only if its SuperHyperReverse Strict Connective is well-defined.

1311

1312

1313

Corollary 6.12. Assume SuperHyperClasses of an Extreme SuperHyperGraph. Then its Extreme SuperHyperReverse Strict Connective is well-defined if and only if its SuperHyperReverse Strict Connective is well-defined.

1314

1315

1316

Corollary 6.13. Assume an Extreme SuperHyperPath(-/SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its Extreme SuperHyperReverse Strict Connective is well-defined if and only if its SuperHyperReverse Strict Connective is well-defined.

1317

1318

1319

1320

Proposition 6.14. *Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. Then V is* 1321

(i) : *the dual SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1322

(ii) : *the strong dual SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1323

(iii) : *the connected dual SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1324

(iv) : *the δ -dual SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1325

(v) : *the strong δ -dual SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1326

(vi) : *the connected δ -dual SuperHyperDefensive SuperHyper^{Reverse Strict} Connective.* 1327

Proposition 6.15. *Let $NTG : (V, E, \sigma, \mu)$ be an Extreme SuperHyperGraph. Then $\emptyset$ is* 1328

(i) : *the SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1329

(ii) : *the strong SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1330

(iii) : *the connected defensive SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1331

(iv) : *the δ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1332

(v) : *the strong δ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1333

(vi) : *the connected δ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective.* 1334

Proposition 6.16. *Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. Then an independent SuperHyperSet is* 1335
1336

(i) : *the SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1337

(ii) : *the strong SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1338

(iii) : *the connected SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1339

(iv) : *the δ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1340

(v) : *the strong δ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1341

(vi) : *the connected δ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective.* 1342

Proposition 6.17. *Let $ESHG : (V, E)$ be an Extreme SuperHyperUniform SuperHyperGraph which is a SuperHyper^{Reverse Strict} Connective/SuperHyperPath. Then V is a maximal* 1343
1344
1345

(i) : *SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1346

(ii) : *strong SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1347

(iii) : *connected SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1348

(iv) : *$\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1349

(v) : *strong $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1350

(vi) : *connected $\mathcal{O}(ESHG)$ -SuperHyperDefensive SuperHyper^{Reverse Strict} Connective;* 1351

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 1352

Proposition 6.18. *Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is a SuperHyperUniform SuperHyperWheel. Then V is a maximal* 1353
1354

(i) : dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1355

(ii) : strong dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1356

(iii) : connected dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1357

(iv) : $\mathcal{O}(\text{ESHG})$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1358

(v) : strong $\mathcal{O}(\text{ESHG})$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1359

(vi) : connected $\mathcal{O}(\text{ESHG})$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1360

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide. 1361

Proposition 6.19. Let $\text{ESHG} : (V, E)$ be an Extreme SuperHyperUniform 1362

SuperHyperGraph which is a SuperHyperReverse Strict Connective/SuperHyperPath. Then the 1363

number of 1364

(i) : the SuperHyperReverse Strict Connective; 1365

(ii) : the SuperHyperReverse Strict Connective; 1366

(iii) : the connected SuperHyperReverse Strict Connective; 1367

(iv) : the $\mathcal{O}(\text{ESHG})$ -SuperHyperReverse Strict Connective; 1368

(v) : the strong $\mathcal{O}(\text{ESHG})$ -SuperHyperReverse Strict Connective; 1369

(vi) : the connected $\mathcal{O}(\text{ESHG})$ -SuperHyperReverse Strict Connective. 1370

is one and it's only V . Where the exterior SuperHyperVertices and the interior 1371

SuperHyperVertices coincide. 1372

Proposition 6.20. Let $\text{ESHG} : (V, E)$ be an Extreme SuperHyperUniform 1373

SuperHyperGraph which is a SuperHyperWheel. Then the number of 1374

(i) : the dual SuperHyperReverse Strict Connective; 1375

(ii) : the dual SuperHyperReverse Strict Connective; 1376

(iii) : the dual connected SuperHyperReverse Strict Connective; 1377

(iv) : the dual $\mathcal{O}(\text{ESHG})$ -SuperHyperReverse Strict Connective; 1378

(v) : the strong dual $\mathcal{O}(\text{ESHG})$ -SuperHyperReverse Strict Connective; 1379

(vi) : the connected dual $\mathcal{O}(\text{ESHG})$ -SuperHyperReverse Strict Connective. 1380

is one and it's only V . Where the exterior SuperHyperVertices and the interior 1381

SuperHyperVertices coincide. 1382

Proposition 6.21. Let $\text{ESHG} : (V, E)$ be an Extreme SuperHyperUniform 1383

SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete 1384

SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then a 1385

SuperHyperSet contains [the SuperHyperCenter and] the half of multiplying r with the 1386

number of all the SuperHyperEdges plus one of all the SuperHyperVertices is a 1387

(i) : dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1388

(ii) : strong dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1389

(iii) : connected dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1390

(iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1391

(v) : strong $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1392

(vi) : connected $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective. 1393

Proposition 6.22. 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 1394
1395
1396
1397
1398
1399

(i) : SuperHyperDefensive SuperHyperReverse Strict Connective; 1400

(ii) : strong SuperHyperDefensive SuperHyperReverse Strict Connective; 1401

(iii) : connected SuperHyperDefensive SuperHyperReverse Strict Connective; 1402

(iv) : δ -SuperHyperDefensive SuperHyperReverse Strict Connective; 1403

(v) : strong δ -SuperHyperDefensive SuperHyperReverse Strict Connective; 1404

(vi) : connected δ -SuperHyperDefensive SuperHyperReverse Strict Connective. 1405

Proposition 6.23. Let $ESHG : (V, E)$ be an Extreme SuperHyperUniform SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then Then the number of 1406
1407
1408
1409

(i) : dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1410

(ii) : strong dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1411

(iii) : connected dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1412

(iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1413

(v) : strong $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1414

(vi) : connected $\frac{\mathcal{O}(ESHG)}{2} + 1$ -dual SuperHyperDefensive SuperHyperReverse Strict Connective. 1415

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. 1416
1417
1418
1419

Proposition 6.24. 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 1420
1421

(i) : SuperHyperDefensive SuperHyperReverse Strict Connective; 1422

(ii) : strong SuperHyperDefensive SuperHyperReverse Strict Connective; 1423

(iii) : connected SuperHyperDefensive SuperHyperReverse Strict Connective; 1424

(iv) : SuperHyperReverse Strict Connective; 1425

(v) : strong 1-SuperHyperDefensive SuperHyperReverse Strict Connective; 1426

(vi) : connected 1-SuperHyperDefensive SuperHyperReverse Strict Connective. 1427

Proposition 6.25. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph. Then the number is at most $\mathcal{O}(ESHG)$ and the Extreme number is at most $\mathcal{O}_n(ESHG)$.

Proposition 6.26. 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 $\min \sum_{v \in \{v_1, v_2, \dots, v_t\}_{t > \frac{\mathcal{O}(ESHG:(V,E))}{2}} \subseteq V} \sigma(v)$, in the setting of dual

(i) : SuperHyperDefensive SuperHyperReverse Strict Connective;

(ii) : strong SuperHyperDefensive SuperHyperReverse Strict Connective;

(iii) : connected SuperHyperDefensive SuperHyperReverse Strict Connective;

(iv) : $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperReverse Strict Connective;

(v) : strong $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperReverse Strict Connective;

(vi) : connected $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -SuperHyperDefensive SuperHyperReverse Strict Connective.

Proposition 6.27. 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

(i) : SuperHyperDefensive SuperHyperReverse Strict Connective;

(ii) : strong SuperHyperDefensive SuperHyperReverse Strict Connective;

(iii) : connected SuperHyperDefensive SuperHyperReverse Strict Connective;

(iv) : 0-SuperHyperDefensive SuperHyperReverse Strict Connective;

(v) : strong 0-SuperHyperDefensive SuperHyperReverse Strict Connective;

(vi) : connected 0-SuperHyperDefensive SuperHyperReverse Strict Connective.

Proposition 6.28. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is SuperHyperComplete. Then there's no independent SuperHyperSet.

Proposition 6.29. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is SuperHyperReverse Strict Connective/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

(i) : SuperHyperDefensive SuperHyperReverse Strict Connective;

(ii) : strong SuperHyperDefensive SuperHyperReverse Strict Connective;

(iii) : connected SuperHyperDefensive SuperHyperReverse Strict Connective;

(iv) : $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperReverse Strict Connective;

(v) : strong $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperReverse Strict Connective;

(vi) : connected $\mathcal{O}(ESHG : (V, E))$ -SuperHyperDefensive SuperHyperReverse Strict Connective.

Proposition 6.30. Let $ESHG : (V, E)$ be an Extreme SuperHyperGraph which is SuperHyperStar/complete SuperHyperBipartite/complete SuperHyperMultiPartite. The number is $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the Extreme number is $\min \sum_{v \in \{v_1, v_2, \dots, v_t\}_{t > \frac{\mathcal{O}(ESHG:(V,E))}{2}} \subseteq V} \sigma(v)$, in the setting of a dual

(i) : *SuperHyperDefensive SuperHyperReverse Strict Connective*; 1464

(ii) : *strong SuperHyperDefensive SuperHyperReverse Strict Connective*; 1465

(iii) : *connected SuperHyperDefensive SuperHyperReverse Strict Connective*; 1466

(iv) : $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -*SuperHyperDefensive SuperHyperReverse Strict Connective*; 1467

(v) : *strong* $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -*SuperHyperDefensive SuperHyperReverse Strict Connective*; 1468

(vi) : *connected* $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$ -*SuperHyperDefensive SuperHyperReverse Strict Connective*. 1469

Proposition 6.31. *Let $\mathcal{NSHF} : (V, E)$ be a SuperHyperFamily of the ESHGs : (V, E) Extreme 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 Extreme SuperHyperGraphs.* 1470
1471
1472
1473

Proposition 6.32. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. If S is a dual SuperHyperDefensive SuperHyperReverse Strict Connective, then $\forall v \in V \setminus S, \exists x \in S$ such that* 1474
1475
1476

(i) $v \in N_s(x)$; 1477

(ii) $vx \in E$. 1478

Proposition 6.33. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. If S is a dual SuperHyperDefensive SuperHyperReverse Strict Connective, then* 1479
1480

(i) S is *SuperHyperReverse Strict Connective set*; 1481

(ii) there's $S \subseteq S'$ such that $|S'|$ is *SuperHyperChromatic number*. 1482

Proposition 6.34. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. Then* 1483

(i) $\Gamma \leq \mathcal{O}$; 1484

(ii) $\Gamma_s \leq \mathcal{O}_n$. 1485

Proposition 6.35. *Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph which is connected. Then* 1486
1487

(i) $\Gamma \leq \mathcal{O} - 1$; 1488

(ii) $\Gamma_s \leq \mathcal{O}_n - \Sigma_{i=1}^3 \sigma_i(x)$. 1489

Proposition 6.36. *Let $ESHG : (V, E)$ be an odd SuperHyperPath. Then* 1490

(i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_{n-1}\}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1491
1492

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ and corresponded SuperHyperSet is $S = \{v_2, v_4, \dots, v_{n-1}\}$; 1493

(iii) $\Gamma_s = \min\{\Sigma_{s \in S=\{v_2, v_4, \dots, v_{n-1}\}} \Sigma_{i=1}^3 \sigma_i(s), \Sigma_{s \in S=\{v_1, v_3, \dots, v_{n-1}\}} \Sigma_{i=1}^3 \sigma_i(s)\}$; 1494

(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 SuperHyperReverse Strict Connective. 1495
1496

Proposition 6.37. *Let $ESHG : (V, E)$ be an even SuperHyperPath. Then* 1497

(i) the set $S = \{v_2, v_4, \dots, v_n\}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1498
1499

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ and corresponded SuperHyperSets are $\{v_2, v_4, \dots, v_n\}$ and $\{v_1, v_3, \dots, v_{n-1}\}$; 1500
1501

(iii) $\Gamma_s = \min\{\sum_{s \in S=\{v_2, v_4, \dots, v_n\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S=\{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 1502

(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 SuperHyperReverse Strict Connective. 1503
1504

Proposition 6.38. Let $ESHG : (V, E)$ be an even SuperHyperReverse Strict Connective. Then 1505

(i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_n\}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1506
1507

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ and corresponded SuperHyperSets are $\{v_2, v_4, \dots, v_n\}$ and $\{v_1, v_3, \dots, v_{n-1}\}$; 1508
1509

(iii) $\Gamma_s = \min\{\sum_{s \in S=\{v_2, v_4, \dots, v_n\}} \sigma(s), \sum_{s \in S=\{v_1, v_3, \dots, v_{n-1}\}} \sigma(s)\}$; 1510

(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 SuperHyperReverse Strict Connective. 1511
1512

Proposition 6.39. Let $ESHG : (V, E)$ be an odd SuperHyperReverse Strict Connective. Then 1513

(i) the SuperHyperSet $S = \{v_2, v_4, \dots, v_{n-1}\}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1514
1515

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ and corresponded SuperHyperSet is $S = \{v_2, v_4, \dots, v_{n-1}\}$; 1516

(iii) $\Gamma_s = \min\{\sum_{s \in S=\{v_2, v_4, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s), \sum_{s \in S=\{v_1, v_3, \dots, v_{n-1}\}} \sum_{i=1}^3 \sigma_i(s)\}$; 1517

(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 SuperHyperReverse Strict Connective. 1518
1519

Proposition 6.40. Let $ESHG : (V, E)$ be SuperHyperStar. Then 1520

(i) the SuperHyperSet $S = \{c\}$ is a dual maximal SuperHyperReverse Strict Connective; 1521

(ii) $\Gamma = 1$; 1522

(iii) $\Gamma_s = \sum_{i=1}^3 \sigma_i(c)$; 1523

(iv) the SuperHyperSets $S = \{c\}$ and $S \subset S'$ are only dual SuperHyperReverse Strict Connective. 1524

Proposition 6.41. Let $ESHG : (V, E)$ be SuperHyperWheel. Then 1525

(i) the SuperHyperSet $S = \{v_1, v_3\} \cup \{v_6, v_9, \dots, v_{i+6}, \dots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is a dual maximal SuperHyperDefensive SuperHyperReverse Strict Connective; 1526
1527

(ii) $\Gamma = |\{v_1, v_3\} \cup \{v_6, v_9, \dots, v_{i+6}, \dots, v_n\}_{i=1}^{6+3(i-1) \leq n}|$; 1528

(iii) $\Gamma_s = \sum_{\{v_1, v_3\} \cup \{v_6, v_9, \dots, v_{i+6}, \dots, v_n\}_{i=1}^{6+3(i-1) \leq n}} \sum_{i=1}^3 \sigma_i(s)$; 1529

(iv) the SuperHyperSet $\{v_1, v_3\} \cup \{v_6, v_9, \dots, v_{i+6}, \dots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is only a dual maximal SuperHyperDefensive SuperHyperReverse Strict Connective. 1530
1531

Proposition 6.42. Let $ESHG : (V, E)$ be an odd SuperHyperComplete. Then 1532

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1533
1534

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$; 1535

(iii) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}};$ 1536

(iv) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is only a dual SuperHyperDefensive SuperHyperReverse Strict Connective. 1537
1538

Proposition 6.43. Let $ESHG : (V, E)$ be an even SuperHyperComplete. Then 1539

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective; 1540
1541

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor;$ 1542

(iii) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}};$ 1543

(iv) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is only a dual maximal SuperHyperDefensive SuperHyperReverse Strict Connective. 1544
1545

Proposition 6.44. Let $\mathcal{NSHF} : (V, E)$ be a m -SuperHyperFamily of Extreme SuperHyperStars with common Extreme SuperHyperVertex SuperHyperSet. Then 1546
1547

(i) the SuperHyperSet $S = \{c_1, c_2, \dots, c_m\}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective for $\mathcal{NSHF}$; 1548
1549

(ii) $\Gamma = m$ for $\mathcal{NSHF} : (V, E)$; 1550

(iii) $\Gamma_s = \Sigma_{i=1}^m \Sigma_{j=1}^3 \sigma_j(c_i)$ for $\mathcal{NSHF} : (V, E)$; 1551

(iv) the SuperHyperSets $S = \{c_1, c_2, \dots, c_m\}$ and $S \subset S'$ are only dual SuperHyperReverse Strict Connective for $\mathcal{NSHF} : (V, E)$. 1552
1553

Proposition 6.45. Let $\mathcal{NSHF} : (V, E)$ be an m -SuperHyperFamily of odd SuperHyperComplete SuperHyperGraphs with common Extreme SuperHyperVertex SuperHyperSet. Then 1554
1555
1556

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual maximal SuperHyperDefensive SuperHyperReverse Strict Connective for $\mathcal{NSHF}$; 1557
1558

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ for $\mathcal{NSHF} : (V, E)$; 1559

(iii) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$ for $\mathcal{NSHF} : (V, E)$; 1560

(iv) the SuperHyperSets $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ are only a dual maximal SuperHyperReverse Strict Connective for $\mathcal{NSHF} : (V, E)$. 1561
1562

Proposition 6.46. Let $\mathcal{NSHF} : (V, E)$ be a m -SuperHyperFamily of even SuperHyperComplete SuperHyperGraphs with common Extreme SuperHyperVertex SuperHyperSet. Then 1563
1564
1565

(i) the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive SuperHyperReverse Strict Connective for $\mathcal{NSHF} : (V, E)$; 1566
1567

(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$ for $\mathcal{NSHF} : (V, E)$; 1568

(iii) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^3 \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$ for $\mathcal{NSHF} : (V, E)$; 1569

(iv) the SuperHyperSets $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ are only dual maximal SuperHyperReverse Strict Connective for $\mathcal{NSHF} : (V, E)$. 1570
1571

Proposition 6.47. Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. Then following statements hold;

- (i) if $s \geq t$ and a SuperHyperSet S of SuperHyperVertices is an t -SuperHyperDefensive SuperHyperReverse Strict Connective, then S is an s -SuperHyperDefensive SuperHyperReverse Strict Connective;
- (ii) if $s \leq t$ and a SuperHyperSet S of SuperHyperVertices is a dual t -SuperHyperDefensive SuperHyperReverse Strict Connective, then S is a dual s -SuperHyperDefensive SuperHyperReverse Strict Connective.

Proposition 6.48. Let $ESHG : (V, E)$ be a strong Extreme SuperHyperGraph. Then following statements hold;

- (i) if $s \geq t + 2$ and a SuperHyperSet S of SuperHyperVertices is an t -SuperHyperDefensive SuperHyperReverse Strict Connective, then S is an s -SuperHyperPowerful SuperHyperReverse Strict Connective;
- (ii) if $s \leq t$ and a SuperHyperSet S of SuperHyperVertices is a dual t -SuperHyperDefensive SuperHyperReverse Strict Connective, then S is a dual s -SuperHyperPowerful SuperHyperReverse Strict Connective.

Proposition 6.49. Let $ESHG : (V, E)$ be a $[an]$ $[V]$ -SuperHyperUniform-strong-Extreme SuperHyperGraph. Then following statements hold;

- (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 SuperHyperReverse Strict Connective;
- (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 SuperHyperReverse Strict Connective;
- (iii) if $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is an V -SuperHyperDefensive SuperHyperReverse Strict Connective;
- (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 SuperHyperReverse Strict Connective.

Proposition 6.50. Let $ESHG : (V, E)$ is a $[an]$ $[V]$ -SuperHyperUniform-strong-Extreme SuperHyperGraph. Then following statements hold;

- (i) $\forall a \in S, |N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperReverse Strict Connective;
- (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 SuperHyperReverse Strict Connective;
- (iii) $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an V -SuperHyperDefensive SuperHyperReverse Strict Connective;
- (iv) $\forall a \in V \setminus S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual V -SuperHyperDefensive SuperHyperReverse Strict Connective.

Proposition 6.51. Let $ESHG : (V, E)$ is a $[an]$ $[V]$ -SuperHyperUniform-strong-Extreme SuperHyperGraph which is a SuperHyperComplete. Then following statements hold;

- (i) $\forall a \in S, |N_s(a) \cap S| < \lfloor \frac{Q-1}{2} \rfloor + 1$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive SuperHyperReverse Strict Connective;

(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 SuperHyperReverse Strict Connective; 1615
1616

(iii) $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an $(\mathcal{O} - 1)$ -SuperHyperDefensive
SuperHyperReverse Strict Connective; 1617
1618

(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 SuperHyperReverse Strict Connective. 1619
1620

Proposition 6.52. Let $ESHG : (V, E)$ is a[an]
[V-]SuperHyperUniform-strong-Extreme SuperHyperGraph which is a
SuperHyperComplete. Then following statements hold; 1621
1622
1623

(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 SuperHyperReverse Strict Connective; 1624
1625

(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 SuperHyperReverse Strict Connective; 1626
1627

(iii) if $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is
 $(\mathcal{O} - 1)$ -SuperHyperDefensive SuperHyperReverse Strict Connective; 1628
1629

(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 SuperHyperReverse Strict Connective. 1630
1631

Proposition 6.53. Let $ESHG : (V, E)$ is a[an]
[V-]SuperHyperUniform-strong-Extreme SuperHyperGraph which is SuperHyperReverse Strict
Connective. Then following statements hold; 1632
1633
1634

(i) $\forall a \in S, |N_s(a) \cap S| < 2$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive
SuperHyperReverse Strict Connective; 1635
1636

(ii) $\forall a \in V \setminus S, |N_s(a) \cap S| > 2$ if $ESHG : (V, E)$ is a dual 2-SuperHyperDefensive
SuperHyperReverse Strict Connective; 1637
1638

(iii) $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is an 2-SuperHyperDefensive
SuperHyperReverse Strict Connective; 1639
1640

(iv) $\forall a \in V \setminus S, |N_s(a) \cap V \setminus S| = 0$ if $ESHG : (V, E)$ is a dual
2-SuperHyperDefensive SuperHyperReverse Strict Connective. 1641
1642

Proposition 6.54. Let $ESHG : (V, E)$ is a[an]
[V-]SuperHyperUniform-strong-Extreme SuperHyperGraph which is SuperHyperReverse Strict
Connective. Then following statements hold; 1643
1644
1645

(i) if $\forall a \in S, |N_s(a) \cap S| < 2$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive
SuperHyperReverse Strict Connective; 1646
1647

(ii) if $\forall a \in V \setminus S, |N_s(a) \cap S| > 2$, then $ESHG : (V, E)$ is a dual
2-SuperHyperDefensive SuperHyperReverse Strict Connective; 1648
1649

(iii) if $\forall a \in S, |N_s(a) \cap V \setminus S| = 0$, then $ESHG : (V, E)$ is an 2-SuperHyperDefensive
SuperHyperReverse Strict Connective; 1650
1651

(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 SuperHyperReverse Strict Connective. 1652
1653

7 Extreme Applications in Cancer's Extreme Recognition

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(-/SuperHyperReverse Strict Connective, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). The aim is to find either the Extreme SuperHyperReverse Strict Connective or the Extreme SuperHyperReverse Strict Connective in those Extreme Extreme SuperHyperModels.

8 Case 1: The Initial Extreme Steps Toward Extreme SuperHyperBipartite as Extreme SuperHyperModel

Step 4. (Extreme Solution) In the Extreme Figure (29), the Extreme SuperHyperBipartite is Extreme highlighted and Extreme featured. By using the Extreme Figure (29) and the Table (4), the Extreme SuperHyperBipartite is obtained. 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 (29), is the Extreme SuperHyperReverse Strict Connective.

9 Case 2: The Increasing Extreme Steps Toward Extreme SuperHyperMultipartite as Extreme SuperHyperModel

Step 4. (Extreme Solution) In the Extreme Figure (30), the Extreme SuperHyperMultipartite is Extreme highlighted and Extreme featured.

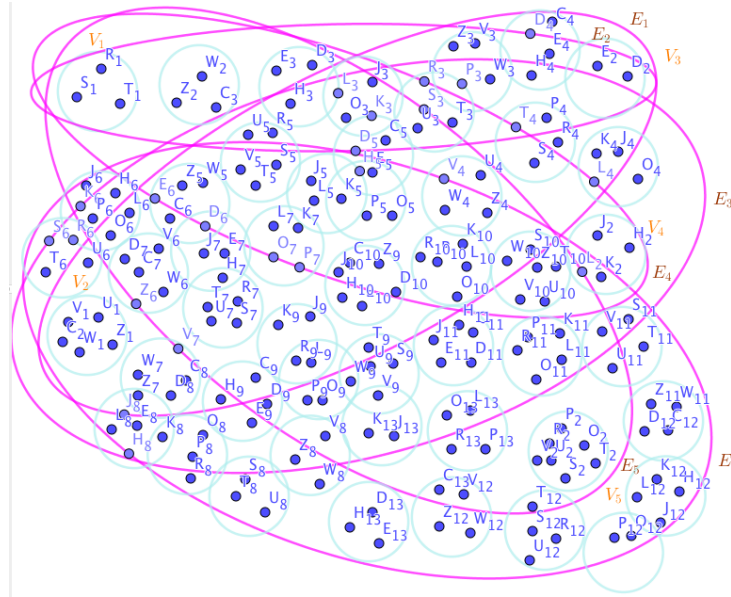


Figure 29. an Extreme SuperHyperBipartite Associated to the Notions of Extreme SuperHyperReverse Strict Connective

Table 4. 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

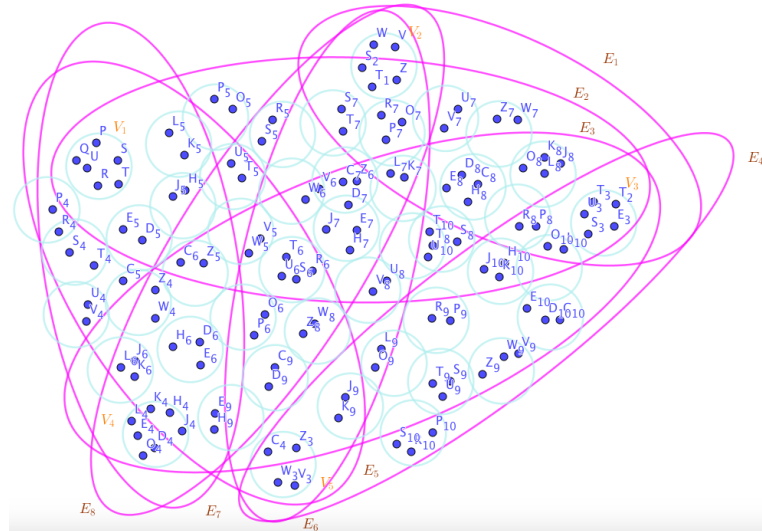


Figure 30. an Extreme SuperHyperMultipartite Associated to the Notions of Extreme SuperHyperReverse Strict Connective

Table 5. 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

By using the Extreme Figure (30) and the Table (5), the Extreme SuperHyperMultipartite is obtained. 1696
 The obtained Extreme SuperHyperSet, by the Extreme Algorithm in previous result, of the Extreme SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$, in the Extreme SuperHyperModel (30), 1697
 is the Extreme SuperHyperReverse Strict Connective. 1698
 1699
 1700
 1701

10 Wondering Open Problems But As The Directions To Forming The Motivations 1702

Directions To Forming The Motivations 1703

In what follows, some “problems” and some “questions” are proposed. 1704
 The SuperHyperReverse Strict Connective and the Extreme SuperHyperReverse Strict Connective are defined on a real-world application, titled “Cancer’s Recognitions”. 1705
 1706

Question 10.1. Which the else SuperHyperModels could be defined based on Cancer’s recognitions? 1707
 1708

Question 10.2. Are there some SuperHyperNotions related to SuperHyperReverse Strict Connective and the Extreme SuperHyperReverse Strict Connective? 1709
 1710

Question 10.3. Are there some Algorithms to be defined on the SuperHyperModels to compute them? 1711
 1712

Question 10.4. Which the SuperHyperNotions are related to beyond the SuperHyperReverse Strict Connective and the Extreme SuperHyperReverse Strict Connective? 1713
 1714

Problem 10.5. The SuperHyperReverse Strict Connective and the Extreme SuperHyperReverse Strict Connective do a SuperHyperModel for the Cancer’s recognitions and they’re based on SuperHyperReverse Strict Connective, are there else? 1715
 1716
 1717

Problem 10.6. Which the fundamental SuperHyperNumbers are related to these SuperHyperNumbers types-results? 1718
 1719

Problem 10.7. What’s the independent research based on Cancer’s recognitions concerning the multiple types of SuperHyperNotions? 1720
 1721

11 Conclusion and Closing Remarks 1722

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. 1723
 1724
 1725

This research uses some approaches to make Extreme SuperHyperGraphs more understandable. In this endeavor, two SuperHyperNotions are defined on the SuperHyperReverse Strict Connective. For that sake in the second definition, the main definition of the Extreme SuperHyperGraph is redefined on the position of the 1726
 1727
 1728
 1729

alphabets. Based on the new definition for the Extreme SuperHyperGraph, the new SuperHyperNotion, Extreme SuperHyperReverse Strict Connective, 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, SuperHyperReverse Strict Connective, the new SuperHyperClasses and SuperHyperClasses, are introduced. Some general results are gathered in the section on the SuperHyperReverse Strict Connective and the Extreme SuperHyperReverse Strict Connective. 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 "SuperHyperReverse Strict Connective" 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 (6), benefits and

Table 6. An Overlook On This Research And Beyond

Advantages	Limitations
1. Redefining Extreme SuperHyperGraph	1. General Results
2. SuperHyperReverse Strict Connective	
3. Extreme SuperHyperReverse Strict Connective	2. Other SuperHyperNumbers
4. Modeling of Cancer's Recognitions	
5. SuperHyperClasses	3. SuperHyperFamilies

avenues for this research are, figured out, pointed out and spoken out.

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

Definition 12.1. (Different Extreme Types of Extreme SuperHyperDuality).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 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) **Extreme e-SuperHyperDuality** if $\forall E_i \in E', \exists E_j \in E_{ESHG:(V,E)} \setminus E'$ such that $V_a \in E_i, E_j$;
- (ii) **Extreme re-SuperHyperDuality** if $\forall E_i \in E', \exists E_j \in E_{ESHG:(V,E)} \setminus E'$ such that $V_a \in E_i, E_j$ and $|E_i|_{\text{Extreme CARDINALITY}} = |E_j|_{\text{Extreme CARDINALITY}}$;
- (iii) **Extreme v-SuperHyperDuality** if $\forall V_i \in V', \exists V_j \in V_{ESHG:(V,E)} \setminus V'$ such that $V_i, V_j \in E_a$;

- (iv) **Extreme rv-SuperHyperDuality** if $\forall V_i \in V', \exists V_j \in V_{ESHG:(V,E)} \setminus V'$ such that $V_i, V_j \in E_a$ and $|V_i|_{\text{Extreme CARDINALITY}} = |V_j|_{\text{Extreme CARDINALITY}}$; 1764
1765
- (v) **Extreme SuperHyperDuality** if it's either of Extreme e-SuperHyperDuality, Extreme re-SuperHyperDuality, Extreme v-SuperHyperDuality, and Extreme rv-SuperHyperDuality. 1766
1767
1768

Definition 12.2. ((Extreme) SuperHyperDuality). 1769

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme SuperHyperEdge (NSHE) $E = \{V_1, V_2, \dots, V_s\}$. Then E is called 1770
1771

- (i) an **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 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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; 1772
1773
1774
1775
1776
1777
1778
1779
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; 1780
1781
1782
1783
1784
1785
1786
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded to its Extreme coefficient; 1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperDuality; and the Extreme power is corresponded to its Extreme coefficient; 1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
- (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 1807
1808
1809
1810
1811

SuperHyperVertices in the consecutive Extreme sequence of Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperDuality;

- (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 consecutive Extreme SuperHyperEdges and Extreme
SuperHyperVertices such that they form the Extreme SuperHyperDuality;
- (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 cardinality consecutive Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperDuality; and the Extreme power is corresponded to its
Extreme coefficient;
- (viii) 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 SuperHyperVertices
of an Extreme SuperHyperSet S of high Extreme cardinality consecutive Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperDuality; and the Extreme power is corresponded to its
Extreme coefficient.

Example 12.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$
in the mentioned Extreme Figures in every Extreme items.

- On the Figure (1), the Extreme SuperHyperNotion, namely, Extreme
SuperHyperDuality, 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 SuperHyperDuality.

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

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

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = 3z.$$

- On the Figure (2), the Extreme SuperHyperNotion, namely, Extreme
SuperHyperDuality, 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 SuperHyperDuality. 1855
1856
1857
1858
1859

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

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

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = 3z.$$

- On the Figure (3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1860
1861

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

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

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = 3z.$$

- On the Figure (4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1862
1863

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} = \{E_4, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} = 2z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_1, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = 15z^2.$$

- On the Figure (5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1864
1865

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} = \{E_3\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} = 4z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = z.$$

- On the Figure (6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1866
1867

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} = \{E_{3i+1_{i=0}^3}, E_{3i+24_{i=0}^3}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} 6z^8.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_{3i+1_{i=0}^7}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = 6z^8.$$

- On the Figure (7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1868
1869

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} = \{E_{15}, E_{16}, E_{17}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} = \{V_3, V_{13}, V_8\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} = 4 \times 5 \times 5z^3.$$

- On the Figure (8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1870
1871

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1872
1873

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

- On the Figure (10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1874
1875

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

- On the Figure (11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1876
1877

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

- On the Figure (12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1878
1879

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperDuality SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality}} &= \{V_1, V_{i=4}^{i \neq 5,7,8}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperDuality SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1880
1881

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

- On the Figure (14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1882
1883

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

- On the Figure (15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1884
1885

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

- On the Figure (16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1886
1887

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

- On the Figure (17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1888
1889

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

- On the Figure (18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1890
1891

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

- On the Figure (19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1892
1893

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

- On the Figure (20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1894
1895

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

- On the Figure (21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1896
1897

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

- On the Figure (22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperDuality, is up. The Extreme Algorithm is Extremely straightforward. 1898
1899

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

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 1900
1901

Proposition 12.4. Assume a connected Extreme SuperHyperPath $ESHP : (V, E)$. Then 1902
1903

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

Proof. Let 1904

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

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 SuperHyperDuality. The latter is straightforward. $\square$

Example 12.5. In the Figure (23), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (23), is the SuperHyperDuality.

Proposition 12.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

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

Proof. Let

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

be a longest path taken from a connected Extreme SuperHyperCycle $ESH C : (V, E)$.
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. $\square$

Example 12.7. In the Figure (24), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (24), is the Extreme SuperHyperDuality.

Proposition 12.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} &= \{E \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= |i \mid E_i \in E_{ESHG:(V,E)}|_{Extreme \text{ Cardinality}} |z|. \\ \mathcal{C}(NSHG)_{Extreme \text{ R-Quasi-SuperHyperDuality}} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ R-Quasi-SuperHyperDuality SuperHyperPolynomial}} &= z. \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

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

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

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. $\square$

Example 12.9. In the Figure (25), 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 (25), is the Extreme SuperHyperDuality.

Proposition 12.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} &= \{E_i \in E_{P_i ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose} |P_i^{ESHG:(V,E)}| \right) \\ &\quad z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} &= \{V_i^{EXTERNAL} \in V_{P_i^{EXTERNAL} ESHG:(V,E)}, V_i^{EXTERNAL} \in V_{P_i^{EXTERNAL} ESHG:(V,E)}, i \neq j\}. \\ \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extreme \text{ Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

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

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

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

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

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

$$\begin{aligned} P : \\ V_1^{EXTERNAL}, E_1, \\ V_2^{EXTERNAL}, E_2, \\ \dots, \\ E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL} \end{aligned}$$

The latter is straightforward. □

Example 12.11. In the Extreme Figure (26), 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 (26), is the
Extreme SuperHyperDuality.

Proposition 12.12. Assume a connected Extreme SuperHyperMultipartite

$ESHM : (V, E)$. Then

1959

$$\begin{aligned}
& \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} \\
&= \{E_i \in E_{P_i^{ESHG:(V,E)}}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
& \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
&= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) choose |P_i^{ESHG:(V,E)}| \right) \\
& z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
& \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} \\
&= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
& \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
&= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extreme \text{ Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| choose 2) \right) = z^2.
\end{aligned}$$

Proof. Let

1960

$$\begin{aligned}
& P : \\
& V_1^{EXTERNAL}, E_1, \\
& V_2^{EXTERNAL}, E_2, \\
& \dots, \\
& E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
\end{aligned}$$

is a longest SuperHyperDuality taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

1961

1962

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

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

1963

1964

1965

1966

1967

1968

$$\begin{aligned}
& P : \\
& V_1^{EXTERNAL}, E_1, \\
& V_2^{EXTERNAL}, E_2, \\
& \dots, \\
& E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
\end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Thus only some SuperHyperVertices and only

1969

1970

minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution 1971

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. $\square$ 1972 1973

Example 12.13. In the Figure (27), 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 (27), is the Extreme SuperHyperDuality. 1974 1975 1976 1977 1978

Proposition 12.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then, 1979 1980

$$\begin{aligned}
 \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality}} &= \{E^* \in E_{ESHG:(V,E)}^*\}. \\
 \mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperDuality SuperHyperPolynomial}} \\
 &= |i \mid E_i^* \in E_{ESHG:(V,E)}^*|_{Extreme \text{ Cardinality}} |z|. \\
 \mathcal{C}(NSHG)_{Extreme \text{ R-Quasi-SuperHyperDuality}} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{Extreme \text{ R-Quasi-SuperHyperDuality SuperHyperPolynomial}} &= z.
 \end{aligned}$$

Proof. Let 1981

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1^*, \\
 V_2^{EXTERNAL}, E_2^*, \\
 \dots, \\
 E_{|E_{ESHG:(V,E)}^*|_{Extreme \text{ Cardinality}}}^*, V_{|E_{ESHG:(V,E)}^*|_{Extreme \text{ Cardinality}}+1}^{EXTERNAL}
 \end{aligned}$$

is a longest SuperHyperDuality taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as 1982 1983

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

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. $\square$ 1984 1985 1986 1987 1988 1989

Example 12.15. In the Extreme Figure (28), 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 (28), is the Extreme SuperHyperDuality. 1990 1991 1992 1993 1994

13 Extreme SuperHyperJoin But As The Extensions Excerpt From Dense And Super Forms

Definition 13.1. (Different Extreme Types of Extreme SuperHyperJoin).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 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) **Extreme e-SuperHyperJoin** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, such that $V_a \in E_i, E_j$; and $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$;
- (ii) **Extreme re-SuperHyperJoin** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, 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 $|E_i|_{\text{Extreme CARDINALITY}} = |E_j|_{\text{Extreme CARDINALITY}}$;
- (iii) **Extreme v-SuperHyperJoin** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, such that $V_i, V_j \notin E_a$; and $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$;
- (iv) **Extreme rv-SuperHyperJoin** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, 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 $|V_i|_{\text{Extreme CARDINALITY}} = |V_j|_{\text{Extreme CARDINALITY}}$;
- (v) **Extreme SuperHyperJoin** if it's either of Extreme e-SuperHyperJoin, Extreme re-SuperHyperJoin, Extreme v-SuperHyperJoin, and Extreme rv-SuperHyperJoin.

Definition 13.2. ((Extreme) SuperHyperJoin).

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

- (i) an **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 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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin;
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin;
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme coefficient;

- (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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme
 coefficient; 2041-2050
- (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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme
 SuperHyperVertices such that they form the Extreme SuperHyperJoin; 2051-2057
- (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
 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such
 that they form the Extreme SuperHyperJoin; 2058-2064
- (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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme
 coefficient; 2065-2074
- (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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperJoin; and the Extreme power is corresponded to its Extreme
 coefficient. 2075-2084
- Example 13.3.** Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$
 in the mentioned Extreme Figures in every Extreme items. 2085-2086
- On the Figure (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 2087-2089

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 (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 (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 (4), the Extreme SuperHyperNotion, namely, Extreme
 SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward.

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

- On the Figure (5), the Extreme SuperHyperNotion, namely, Extreme
 SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward.

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

- On the Figure (6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2109
2110

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

- On the Figure (7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2111
2112

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

- On the Figure (8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2113
2114

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_3, V_{13}, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 4 \times 5 \times 5z^3.\end{aligned}$$

- On the Figure (9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2115
2116

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

- On the Figure (10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2117
2118

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

- On the Figure (11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2119
2120

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

- On the Figure (12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2121
2122

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

- On the Figure (13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2123
2124

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_3, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= 3 \times 3z^2.\end{aligned}$$

- On the Figure (14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2125
2126

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

- On the Figure (15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2127
2128

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

- On the Figure (16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2129
2130

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= (1 \times 5 \times 5) + (1 \times 2 + 1)z^3.\end{aligned}$$

- On the Figure (17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2131
2132

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2133
2134

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2135
2136

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

- On the Figure (20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2137
2138

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

- On the Figure (21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2139
2140

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

- On the Figure (22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperJoin, is up. The Extreme Algorithm is Extremely straightforward. 2141
2142

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin}} &= \{E_2, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperJoin SuperHyperPolynomial}} &= \\ = 10 \times 6 + 10 \times 6 + 12 \times 6 + 12 \times 6z^2.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 2143
2144

Proposition 13.4. Assume a connected Extreme SuperHyperPath $ESH P : (V, E)$. 2145

Then

2146

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

Proof. Let

2147

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

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

2148

2149

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

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. □

2150

2151

2152

Example 13.5. In the Figure (23), the connected Extreme SuperHyperPath
 $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the
Extreme SuperHyperModel (23), is the SuperHyperJoin.

2153

2154

2155

Proposition 13.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$.
Then

2156

2157

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

Proof. Let

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

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$.
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. $\square$

Example 13.7. In the Figure (24), the connected Extreme SuperHyperCycle $NSHG : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (24), is the Extreme SuperHyperJoin.

Proposition 13.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$.
Then

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} &= \{E \in E_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin SuperHyperPolynomial}} \\
 &= |i \mid E_i \in E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}|z. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperJoin}} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperJoin SuperHyperPolynomial}} &= z.
 \end{aligned}$$

Proof. Let

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

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

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

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. $\square$

Example 13.9. In the Figure (25), 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 (25), is the Extreme SuperHyperJoin.

2180

2181

Proof. Let 2182

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

2189
2190

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

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

2191
2192
2193

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

The latter is straightforward. □

2194

Example 13.11. In the Extreme Figure (26), 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 (26), is the Extreme SuperHyperJoin.

2195
2196
2197
2198
2199
2200

Proposition 13.12. Assume a connected Extreme SuperHyperMultipartite

2201

$ESHM : (V, E)$. Then

2202

$$\begin{aligned}
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} \\
&= (PERFECT MATCHING). \\
& \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
& \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} \\
&= (OTHERWISE). \\
& \{\}, \\
& \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} \\
&= (PERFECT MATCHING). \\
&= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose} |P_i^{ESHG:(V,E)}| \right) \\
& z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
& \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
&= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperJoin SuperHyperPolynomial}} \\
&= (OTHERWISE)0. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin}} \\
&= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperJoin SuperHyperPolynomial}} \\
&= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) = z^2. \right.
\end{aligned}$$

Proof. Let

2203

$$\begin{aligned}
& P : \\
& V_1^{EXTERNAL}, E_1, \\
& V_2^{EXTERNAL}, E_2, \\
& \dots, \\
& E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
\end{aligned}$$

is a longest SuperHyperJoin taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

2204

2205

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

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

2206

2207

2208

2209

2210

SuperHyperVertex as the representative in the

2211

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite

2212

$ESHM : (V, E)$. Thus only some SuperHyperVertices and only

2213

minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

2214

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite

2215

$ESHM : (V, E)$. The latter is straightforward. □

2216

Example 13.13. In the Figure (27), the connected Extreme SuperHyperMultipartite

2217

$ESHM : (V, E)$, is highlighted and Extreme featured. The obtained Extreme

2218

SuperHyperSet, by the Algorithm in previous Extreme result, of the Extreme

2219

SuperHyperVertices of the connected Extreme SuperHyperMultipartite $ESHM : (V, E)$,

2220

in the Extreme SuperHyperModel (27), is the Extreme SuperHyperJoin.

2221

Proposition 13.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$.

2222

Then,

2223

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

Proof. Let

2224

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

is a longest SuperHyperJoin taken from a connected Extreme SuperHyperWheel
 $ESHW : (V, E)$. 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 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. $\square$

Example 13.15. In the Extreme Figure (28), 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 (28), is the Extreme SuperHyperJoin.

14 Extreme SuperHyperPerfect But As The Extensions Excerpt From Dense And Super Forms

Definition 14.1. (Different Extreme Types of Extreme SuperHyperPerfect).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an
 Extreme 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) **Extreme e-SuperHyperPerfect** if $\forall E_i \in E_{ESHG:(V,E)} \setminus E', \exists! E_j \in E'$, such
 that $V_a \in E_i, E_j$;
- (ii) **Extreme re-SuperHyperPerfect** if $\forall E_i \in E_{ESHG:(V,E)} \setminus E', \exists! E_j \in E'$, such
 that $V_a \in E_i, E_j$; and $|E_i|_{\text{Extreme CARDINALITY}} = |E_j|_{\text{Extreme CARDINALITY}}$;
- (iii) **Extreme v-SuperHyperPerfect** if $\forall V_i \in V_{ESHG:(V,E)} \setminus V', \exists! V_j \in V'$, such
 that $V_i, V_j \in E_a$;
- (iv) **Extreme rv-SuperHyperPerfect** if $\forall V_i \in V_{ESHG:(V,E)} \setminus V', \exists! V_j \in V'$, such
 that $V_i, V_j \in E_a$; and $|V_i|_{\text{Extreme CARDINALITY}} = |V_j|_{\text{Extreme CARDINALITY}}$;
- (v) **Extreme SuperHyperPerfect** if it's either of Extreme e-SuperHyperPerfect,
 Extreme re-SuperHyperPerfect, Extreme v-SuperHyperPerfect, and Extreme
 rv-SuperHyperPerfect.

Definition 14.2. ((Extreme) SuperHyperPerfect).

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

- (i) an **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 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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; 2264
2265
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; 2266
2267
2268
2269
2270
2271
2272
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded to its Extreme coefficient; 2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; and the Extreme power is corresponded to its Extreme coefficient; 2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
- (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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; 2293
2294
2295
2296
2297
2298
2299
2300
- (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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperPerfect; 2301
2302
2303
2304
2305
2306
2307
- (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 2308
2309
2310
2311
2312

number of the maximum Extreme cardinality of the Extreme SuperHyperVertices
of an Extreme SuperHyperSet S of high Extreme cardinality consecutive Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperPerfect; and the Extreme power is corresponded to its
Extreme coefficient;

- (viii) 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 SuperHyperVertices
of an Extreme SuperHyperSet S of high Extreme cardinality consecutive Extreme
SuperHyperEdges and Extreme SuperHyperVertices such that they form the
Extreme SuperHyperPerfect; and the Extreme power is corresponded to its
Extreme coefficient.

Example 14.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$
in the mentioned Extreme Figures in every Extreme items.

- On the Figure (1), the Extreme SuperHyperNotion, namely, Extreme
SuperHyperPerfect, 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 SuperHyperPerfect.

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

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} = 3z.$$

- On the Figure (2), the Extreme SuperHyperNotion, namely, Extreme
SuperHyperPerfect, 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 SuperHyperPerfect.

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

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} = 3z.$$

- On the Figure (3), the Extreme SuperHyperNotion, namely, Extreme
SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward.

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

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} = 3z.$$

- On the Figure (4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2348
2349

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

- On the Figure (5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2350
2351

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

- On the Figure (6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2352
2353

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

- On the Figure (7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2354
2355

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_{15}, E_{16}, E_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2356
2357

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2358
2359

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

- On the Figure (10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2360
2361

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_3, V_6, V_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 4 \times 4z^3.\end{aligned}$$

- On the Figure (11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2362
2363

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

- On the Figure (12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2364
2365

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_1\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1, V_{i=4}^{i \neq 5,7,8}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 5z^5.\end{aligned}$$

- On the Figure (13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2366
2367

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_3, E_9\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{V_1, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= 3 \times 3z^2.\end{aligned}$$

- On the Figure (14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2368
2369

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

- On the Figure (15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2370
2371

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

- On the Figure (16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2372
2373

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= (1 \times 5 \times 5) + (1 \times 2 + 1)z^3.\end{aligned}$$

- On the Figure (17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2374
2375

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2376
2377

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= 3z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_{27}, V_2, V_7, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} &= (1 \times 1 \times 2 + 1)z^4.\end{aligned}$$

- On the Figure (19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2378
2379

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

- On the Figure (20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2380
2381

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

- On the Figure (21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2382
2383

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

- On the Figure (22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperPerfect, is up. The Extreme Algorithm is Extremely straightforward. 2384
2385

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E_2, E_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect}} &= \{V_3, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperPerfect SuperHyperPolynomial}} \\ &= 10 \times 6 + 10 \times 6 + 12 \times 6 + 12 \times 6z^2.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 2386
2387

Proposition 14.4. Assume a connected Extreme SuperHyperPath $ESH P : (V, E)$. Then 2388
2389

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

Proof. Let 2390

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

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a new way to redefine as 2391
2392

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

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 SuperHyperPerfect. The latter is straightforward. 2393
2394
□ 2395

Example 14.5. In the Figure (23), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (23), is the SuperHyperPerfect. 2396
2397
2398

Proposition 14.6. Assume a connected Extreme SuperHyperCycle $ESHG : (V, E)$.
Then

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

Proof. Let

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

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$.
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 SuperHyperPerfect. The latter is straightforward. $\square$

Example 14.7. In the Figure (24), the connected Extreme SuperHyperCycle $NSHG : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (24), is the Extreme SuperHyperPerfect.

Proposition 14.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$.
Then

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect}} &= \{E \in E_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
 &= |i \mid E_i \in E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} z. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect}} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperPerfect SuperHyperPolynomial}} &= z.
 \end{aligned}$$

Proof. Let

$$P : V_i^{\text{EXTERNAL}}, E_i, CENTER, V_j^{\text{EXTERNAL}}.$$

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 SuperHyperPerfect. The latter is
straightforward. $\square$

Example 14.9. In the Figure (25), 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
(25), is the Extreme SuperHyperPerfect.

Proposition 14.10. Assume a connected Extreme SuperHyperBipartite
 $ESHB : (V, E)$. Then

$$\begin{aligned} &\mathcal{C}(NSHG)_{Extremes\ Quasi-SuperHyperPerfect} \\ &= (PERFECT\ MATCHING). \\ &\{E_i \in E_{P_i^{ESHG:(V,E)}}, \\ &\quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ &\mathcal{C}(NSHG)_{Extremes\ Quasi-SuperHyperPerfect} \\ &= (OTHERWISE). \\ &\{\}, \\ &If\ \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\ &\mathcal{C}(NSHG)_{Extremes\ SuperHyperPerfect\ SuperHyperPolynomial} \\ &= (PERFECT\ MATCHING). \\ &= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) choose |P_i^{ESHG:(V,E)}| \right) \\ &\quad z^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ &where\ \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ &\mathcal{C}(NSHG)_{Extremes\ SuperHyperPerfect\ SuperHyperPolynomial} \\ &= (OTHERWISE)0. \\ &\mathcal{C}(NSHG)_{Extremes\ Quasi-SuperHyperPerfect} \\ &= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}^{EXTERNAL}}, V_i^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}^{EXTERNAL}}, i \neq j\}. \\ &\mathcal{C}(NSHG)_{Extremes\ Quasi-SuperHyperPerfect\ SuperHyperPolynomial} \\ &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extremes\ Cardinality}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| choose\ 2) = z^2. \right. \end{aligned}$$

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 Extreme 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 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

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

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

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

The latter is straightforward. □

Example 14.11. In the Extreme Figure (26), 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 (26), is the
Extreme SuperHyperPerfect.

Proposition 14.12. Assume a connected Extreme SuperHyperMultipartite

$ESHM : (V, E)$. Then

2445

$$\begin{aligned}
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
&= (PERFECT MATCHING). \\
& \{E_i \in E_{P_i^{ESHG:(V,E)}}, \\
& \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
&= (OTHERWISE). \\
& \{\}, \\
& \text{If } \exists P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \neq \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
&= (PERFECT MATCHING). \\
&= \left(\sum_{i=|P^{ESHG:(V,E)}|} (\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|) \text{choose} |P_i^{ESHG:(V,E)}| \right) \\
& z^{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
& \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
&= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperPerfect SuperHyperPolynomial}} \\
&= (OTHERWISE)0. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect}} \\
&= \{V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, V_i^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, i \neq j\}. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperPerfect SuperHyperPolynomial}} \\
&= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) = z^2. \right.
\end{aligned}$$

Proof. Let

2446

$$\begin{aligned}
& P : \\
& V_1^{EXTERNAL}, E_1, \\
& V_2^{EXTERNAL}, E_2, \\
& \dots, \\
& E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
\end{aligned}$$

is a longest SuperHyperPerfect taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. There's a new way to redefine as

2447

2448

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

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

2449

2450

2451

2452

2453

one SuperHyperVertex as the representative in the

2454

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite

2455

$ESHM : (V, E)$. Thus only some SuperHyperVertices and only

2456

minimum-Extreme-of-SuperHyperPart SuperHyperEdges are attained in any solution

2457

$$\begin{aligned}
 P : \\
 V_1^{EXTERNAL}, E_1, \\
 V_2^{EXTERNAL}, E_2, \\
 \dots, \\
 E_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|}, V_{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|+1}^{EXTERNAL}
 \end{aligned}$$

is a longest path taken from a connected Extreme SuperHyperMultipartite

2458

$ESHM : (V, E)$. The latter is straightforward. $\square$

2459

Example 14.13. In the Figure (27), 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 (27), is the Extreme SuperHyperPerfect.

2460

2461

2462

2463

2464

Proposition 14.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then,

2465

2466

$$\begin{aligned}
 \mathcal{C}(NSHG)_{Extreme \ SuperHyperPerfect} &= \{E \in E_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{Extreme \ SuperHyperPerfect \ SuperHyperPolynomial} \\
 &= |i \mid E_i \in E_{ESHG:(V,E)}|_{Extreme \ Cardinality} |z|. \\
 \mathcal{C}(NSHG)_{Extreme \ R-SuperHyperPerfect} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\
 \mathcal{C}(NSHG)_{Extreme \ R-SuperHyperPerfect \ SuperHyperPolynomial} &= z.
 \end{aligned}$$

Proof. Let

2467

$$P : V_i^{EXTERNAL}, E_i, CENTER, V_j^{EXTERNAL}.$$

is a longest SuperHyperPerfect taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as

2468

2469

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

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. $\square$

2470

2471

2472

2473

2474

2475

Example 14.15. In the Extreme Figure (28), 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 (28), is the Extreme SuperHyperPerfect.

15 Extreme SuperHyperTotal But As The Extensions Excerpt From Dense And Super Forms

Definition 15.1. (Different Extreme Types of Extreme SuperHyperTotal).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 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) **Extreme e-SuperHyperTotal** if $\forall E_i \in E_{ESHG:(V,E)}, \exists! E_j \in E'$, such that $V_a \in E_i, E_j$;
- (ii) **Extreme re-SuperHyperTotal** if $\forall E_i \in E_{ESHG:(V,E)}, \exists! E_j \in E'$, such that $V_a \in E_i, E_j$; and $|E_i|_{\text{Extreme CARDINALITY}} = |E_j|_{\text{Extreme CARDINALITY}}$;
- (iii) **Extreme v-SuperHyperTotal** if $\forall V_i \in V_{ESHG:(V,E)}, \exists! V_j \in V'$, such that $V_i, V_j \in E_a$;
- (iv) **Extreme rv-SuperHyperTotal** if $\forall V_i \in V_{ESHG:(V,E)}, \exists! V_j \in V'$, such that $V_i, V_j \in E_a$; and $|V_i|_{\text{Extreme CARDINALITY}} = |V_j|_{\text{Extreme CARDINALITY}}$;
- (v) **Extreme SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal.

Definition 15.2. ((Extreme) SuperHyperTotal).

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

- (i) an **Extreme 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 SuperHyperEdges in the consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal;
- (ii) a **Extreme SuperHyperTotal** if it's either of Extreme e-SuperHyperTotal, Extreme re-SuperHyperTotal, Extreme v-SuperHyperTotal, and Extreme rv-SuperHyperTotal 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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperTotal;
- (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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme
 coefficient;

(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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme
 coefficient;

(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 consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme
 SuperHyperVertices such that they form the Extreme SuperHyperTotal;

(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
 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such
 that they form the Extreme SuperHyperTotal;

(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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme
 coefficient;

(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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the

Extreme SuperHyperTotal; and the Extreme power is corresponded to its Extreme coefficient. 2568
2569

Example 15.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$ in the mentioned Extreme Figures in every Extreme items. 2570
2571

- On the Figure (1), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2572
2573
 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 2574
2575
Extreme SuperHyperNeighbor, there's only one Extreme SuperHyperEdge, namely, 2576
2577
 E_4 . The Extreme SuperHyperVertex, V_3 is Extreme isolated means that there's no 2578
2579
Extreme SuperHyperEdge has it as an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperTotal.

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} = 3z.$$

- On the Figure (2), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2580
2581
 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 2582
2583
only one Extreme SuperHyperEdge, namely, E_4 . The Extreme SuperHyperVertex, 2584
2585
 V_3 is Extreme isolated means that there's no Extreme SuperHyperEdge has it as 2586
2587
an Extreme endpoint. Thus the Extreme SuperHyperVertex, V_3 , is excluded in every given Extreme SuperHyperTotal.

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} = 3z.$$

- On the Figure (3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2588
2589

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} = 3z.$$

- On the Figure (4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2590
2591

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-}} = \{E_4, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = 2z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} = \{V_1, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} = 15z^2.$$

- On the Figure (5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2592 2593

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_3\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = 4z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} = \{V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

- On the Figure (6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2594 2595

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} 20z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2596 2597

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_{12}, E_{13}, E_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = z^3.$$

- On the Figure (8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2598 2599

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2600 2601

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} 10z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2602 2603

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal}} = \{E_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2604 2605

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_1, E_6, E_7, E_8\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 2z^4. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 3z^2.\end{aligned}$$

- On the Figure (12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2606 2607

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_1, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 5z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_{i=1}^{i \neq 4,5,6}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= z^5.\end{aligned}$$

- On the Figure (13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2608 2609

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_3, E_9, E_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 3z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_5\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 3z^2.\end{aligned}$$

- On the Figure (14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2610 2611

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_1, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_3\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 2z^2.\end{aligned}$$

- On the Figure (15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2612 2613

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_2, V_3, V_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= z^3.\end{aligned}$$

- On the Figure (16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2614 2615

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 4 \times 3z^3.\end{aligned}$$

- On the Figure (17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2616 2617

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 4 \times 3z^4.\end{aligned}$$

- On the Figure (18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2618 2619

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 2 \times 4 \times 3z^4.\end{aligned}$$

- On the Figure (19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2620 2621

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 11z^{10}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 11z^{10}.\end{aligned}$$

- On the Figure (20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2622 2623

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_6, E_{10}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 9z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= (|V| - 1)z^2.\end{aligned}$$

- On the Figure (21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2624 2625

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_1, E_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= 2z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{V_1, V_2\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= 9z^2.\end{aligned}$$

- On the Figure (22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperTotal, is up. The Extreme Algorithm is Extremely straightforward. 2626 2627

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal}} &= \{V_3, V_{10}, V_6\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperTotal SuperHyperPolynomial}} &= 3 \times 6z^3.\end{aligned}$$

The previous Extreme approach apply on the upcoming Extreme results on Extreme SuperHyperClasses. 2628
2629

Proposition 15.4. Assume a connected Extreme SuperHyperPath $ESH P : (V, E)$. Then 2630
2631

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \\
 &= \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}. \\
 \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= \\
 &= z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \\
 &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\
 &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}
 \end{aligned}$$

Proof. Let 2632

$$\begin{aligned}
 P : \\
 V_2^{\text{EXTERNAL}}, E_2, \\
 V_3^{\text{EXTERNAL}}, E_3, \\
 \dots
 \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperPath $ESH P : (V, E)$. There's a new way to redefine as 2633
2634

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

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 SuperHyperTotal. The latter is straightforward. 2635
2636
2637

Example 15.5. In the Figure (23), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (23), is the SuperHyperTotal. 2638
2639
2640

Proposition 15.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then 2641
2642

$$\begin{aligned}
 \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \\
 &= \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}. \\
 \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= \\
 &= (|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 1) \\
 &\quad z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \\
 &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}. \\
 \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\
 &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}-2}
 \end{aligned}$$

Proof. Let

$$P : \begin{aligned} &V_2^{EXTERNAL}, E_2, \\ &V_3^{EXTERNAL}, E_3, \\ &\dots, \\ &\frac{E_{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 1}}{V^{EXTERNAL}_{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 1}} \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESHG : (V, E)$. 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. $\square$

Example 15.7. In the Figure (24), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (24), is the Extreme SuperHyperTotal.

Proposition 15.8. Assume a connected Extreme SuperHyperStar $ESHS : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} &= \{E_i, E_j \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} &= |i(i-1)| \cdot |E_i \in E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} z^2. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal}} &= \{CENTER, V_j \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperTotal SuperHyperPolynomial}} &= \\ &(|V_{ESHG:(V,E)}|_{\text{Extreme Cardinality}}) \text{ choose } (|V_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 1) \\ &z^2. \end{aligned}$$

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. $\square$

Example 15.9. In the Figure (25), 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 (25), is the Extreme SuperHyperTotal.

Proposition 15.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned}
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} \\
&= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\
&\quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} \\
&= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
&\text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
&= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
& \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} \\
&= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, V_b^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, i \neq j\}. \\
& \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} \\
&= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
\end{aligned}$$

Proof. Let

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

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

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

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

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

The latter is straightforward. □

Example 15.11. In the Extreme Figure (26), 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 (26), is the Extreme SuperHyperTotal.

Proposition 15.12. Assume a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. Then

$$\begin{aligned}
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} \\
 &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\
 & \quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal SuperHyperPolynomial}} \\
 &= z_{\min |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\
 & \text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\
 &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|. \\
 & \mathcal{C}(NSHG)_{\text{Extreme SuperHyperTotal}} \\
 &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}^{EXTERNAL}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}}^{EXTERNAL}, i \neq j\}. \\
 & \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperTotal SuperHyperPolynomial}} \\
 &= \sum_{|V_{ESHG:(V,E)}^{EXTERNAL}|_{\text{Extreme Cardinality}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{choose } 2) \right) = z^2.
 \end{aligned}$$

Proof. Let

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

is a longest SuperHyperTotal 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 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

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

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 2699

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

is a longest path taken from a connected Extreme SuperHyperMultipartite $ESHM : (V, E)$. The latter is straightforward. $\square$ 2700 2701

Example 15.13. In the Figure (27), 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 (27), is the Extreme SuperHyperTotal. 2702 2703 2704 2705 2706

Proposition 15.14. Assume a connected Extreme SuperHyperWheel $ESHW : (V, E)$. Then, 2707 2708

$$\begin{aligned} \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal} &= \{E_i, E_j \in E_{ESHG:(V,E)}^*\}. \\ \mathcal{C}(NSHG)_{Extreme\ SuperHyperTotal\ SuperHyperPolynomial} \\ &= |i(i-1) \mid E_i \in E_{ESHG:(V,E)}^*|_{Extreme\ Cardinality} z^2. \\ \mathcal{C}(NSHG)_{Extreme\ R-SuperHyperTotal} &= \{CENTER, V_j \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extreme\ R-SuperHyperTotal\ SuperHyperPolynomial} &= \\ &(|V_{ESHG:(V,E)}|_{Extreme\ Cardinality}) \text{ choose } (|V_{ESHG:(V,E)}|_{Extreme\ Cardinality} - 1) \\ &z^2. \end{aligned}$$

Proof. Let 2709

$$P : V_i^{EXTERNAL}, E_i^*, CENTER, E_j.$$

is a longest SuperHyperTotal taken from a connected Extreme SuperHyperWheel $ESHW : (V, E)$. There's a new way to redefine as 2710 2711

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

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. $\square$ 2712 2713 2714 2715 2716 2717

Example 15.15. In the Extreme Figure (28), 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 (28), is the Extreme SuperHyperTotal. 2718 2719 2720 2721 2722

16 Extreme SuperHyperConnected But As The Extensions Excerpt From Dense And Super Forms

Definition 16.1. (Different Extreme Types of Extreme SuperHyperConnected).

Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$. Consider an Extreme 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) **Extreme e-SuperHyperConnected** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, such that $V_a \in E_i, E_j$; and $\forall E_i, E_j \in E'$, such that $V_a \notin E_i, E_j$;
- (ii) **Extreme re-SuperHyperConnected** if $\forall E_i \in E_{NSHG:(V,E)} \setminus E', \exists E_j \in E'$, 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 $|E_i|_{\text{Extreme CARDINALITY}} = |E_j|_{\text{Extreme CARDINALITY}}$;
- (iii) **Extreme v-SuperHyperConnected** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, such that $V_i, V_j \notin E_a$; and $\forall V_i, V_j \in V'$, such that $V_i, V_j \notin E_a$;
- (iv) **Extreme rv-SuperHyperConnected** if $\forall V_i \in E_{NSHG:(V,E)} \setminus V', \exists V_j \in V'$, 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 $|V_i|_{\text{Extreme CARDINALITY}} = |V_j|_{\text{Extreme CARDINALITY}}$;
- (v) **Extreme SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv-SuperHyperConnected.

Definition 16.2. ((Extreme) SuperHyperConnected).

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

- (i) an **Extreme SuperHyperConnected** 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 maximum Extreme cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the Extreme SuperHyperEdges in the consecutive Extreme sequence of Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected;
- (ii) a **Extreme SuperHyperConnected** if it's either of Extreme e-SuperHyperConnected, Extreme re-SuperHyperConnected, Extreme v-SuperHyperConnected, and Extreme rv-SuperHyperConnected 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 consecutive Extreme SuperHyperEdges and Extreme SuperHyperVertices such that they form the Extreme SuperHyperConnected;
- (iii) an **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 SuperHyperEdges of an Extreme SuperHyperSet S of high Extreme cardinality consecutive Extreme

SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperConnected; and the Extreme power is corresponded to its
 Extreme coefficient;

(iv) 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 SuperHyperEdges of
 an Extreme SuperHyperSet S of high Extreme cardinality consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperConnected; and the Extreme power is corresponded to its
 Extreme coefficient;

(v) an **Extreme R-SuperHyperConnected** 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 maximum Extreme
 cardinality of an Extreme SuperHyperSet S of high Extreme cardinality of the
 Extreme SuperHyperVertices in the consecutive Extreme sequence of Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperConnected;

(vi) a **Extreme R-SuperHyperConnected** 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 maximum Extreme
 cardinality of the Extreme SuperHyperVertices of an Extreme SuperHyperSet S of
 high Extreme cardinality consecutive Extreme SuperHyperEdges and Extreme
 SuperHyperVertices such that they form the Extreme SuperHyperConnected;

(vii) an **Extreme R-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 consecutive 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 consecutive Extreme
 SuperHyperEdges and Extreme SuperHyperVertices such that they form the
 Extreme SuperHyperConnected; and the Extreme power is corresponded to its
 Extreme coefficient.

Example 16.3. Assume an Extreme SuperHyperGraph (NSHG) S is a pair $S = (V, E)$
 in the mentioned Extreme Figures in every Extreme items.

- On the Figure (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. 2818
2819
2820
2821
2822
2823
2824
2825
2826

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

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3z.$$

- On the Figure (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. 2827
2828
2829
2830
2831
2832
2833
2834

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

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3z.$$

- On the Figure (3), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward. 2835
2836
2837

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

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3z.$$

- On the Figure (4), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward. 2838
2839
2840

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_1, E_2, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 15z^2.$$

- On the Figure (5), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely 2841
2842

straightforward.

2843

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_3\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = 4z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = z.$$

- On the Figure (6), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2844

2845

2846

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} 20z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (7), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2847

2848

2849

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_{12}, E_{13}, E_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

- On the Figure (8), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2850

2851

2852

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (9), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2853

2854

2855

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_{i+1}_{i=0}^9\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} 10z^{10}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{i+1}_{i=11}^9, V_{22}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 20z^{10}.$$

- On the Figure (10), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely

2856

2857

straightforward.

2858

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_{12}, V_{13}, V_{14}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3 \times 4 \times 4z^3.$$

- On the Figure (11), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2859

2860

2861

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_1, E_6, E_7, E_8\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = 2z^4.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (12), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2862

2863

2864

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_1, E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = 5z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_1, V_{i=1}^{i \neq 4,5,6}\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^5.$$

- On the Figure (13), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2865

2866

2867

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_3, E_9, E_6\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = 3z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_1, V_5\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 3z^2.$$

- On the Figure (14), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2868

2869

2870

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_1\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = z.$$

- On the Figure (15), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2871

2872

2873

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_2, E_3, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_2, V_3, V_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^3.$$

- On the Figure (16), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2874
2875
2876

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} &= \{V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} &= 4 \times 3z^3.\end{aligned}$$

- On the Figure (17), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2877
2878
2879

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 4 \times 3z^4.\end{aligned}$$

- On the Figure (18), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2880
2881
2882

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_2, E_3, E_4\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= z^3. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_1, V_2, V_6, V_{17}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 2 \times 4 \times 3z^4.\end{aligned}$$

- On the Figure (19), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2883
2884
2885

$$\begin{aligned}\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \{E_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 11z^{10}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \{V_{i+2_{i=011}}\}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= 11z^{10}.\end{aligned}$$

- On the Figure (20), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

2886
2887
2888

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

- On the Figure (21), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected}} = \{E_2\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme SuperHyperConnected SuperHyperPolynomial}} = z.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected}} = \{V_1\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-SuperHyperConnected SuperHyperPolynomial}} = 10z.$$

- On the Figure (22), the Extreme SuperHyperNotion, namely, Extreme SuperHyperConnected, is up. The Extreme Algorithm is Extremely straightforward.

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} = \{E_3, E_4\}.$$

$$\mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} = z^2.$$

$$\mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} = \{V_3, V_{10}, V_6\}.$$

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} \\ = 3 \times 6z^3. \end{aligned}$$

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

Proposition 16.4. Assume a connected Extreme SuperHyperPath $ESHP : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected}} &= \\ &= \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}. \\ \mathcal{C}(NSHG)_{\text{Extreme Quasi-SuperHyperConnected SuperHyperPolynomial}} &= \\ &= z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected}} &= \\ &= \{V_i^{\text{EXTERNAL}}\}_{i=1}^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2}. \\ \mathcal{C}(NSHG)_{\text{Extreme R-Quasi-SuperHyperConnected SuperHyperPolynomial}} &= \\ &= \prod |V^{\text{EXTERNAL}}_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} z^{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 2} \end{aligned}$$

Proof. Let

$$\begin{aligned} P : \\ V_2^{\text{EXTERNAL}}, E_2, \\ V_3^{\text{EXTERNAL}}, E_3, \\ \dots, \\ E_{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 1}, V_{|E_{ESHG:(V,E)}|_{\text{Extreme Cardinality}} - 1}^{\text{EXTERNAL}}. \end{aligned}$$

be a longest path taken from a connected Extreme 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 $|N(V_i^{EXTERNAL})| \geq |N(V_j)|$ where V_j is corresponded to $V_i^{EXTERNAL}$ in the literatures of SuperHyperConnected. The latter is straightforward. $\square$

Example 16.5. In the Figure (23), the connected Extreme SuperHyperPath $ESH P : (V, E)$, is highlighted and featured. The Extreme SuperHyperSet, in the Extreme SuperHyperModel (23), is the SuperHyperConnected.

Proposition 16.6. Assume a connected Extreme SuperHyperCycle $ESH C : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extremal\ Quasi-SuperHyperConnected} &= \\ &= \{E_i\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extremal\ Cardinality}-2}. \\ \mathcal{C}(NSHG)_{Extremal\ Quasi-SuperHyperConnected\ SuperHyperPolynomial} &= \\ &= (|E_{ESHG:(V,E)}|_{Extremal\ Cardinality} - 1) \\ &\quad z^{|E_{ESHG:(V,E)}|_{Extremal\ Cardinality}-2}. \\ \mathcal{C}(NSHG)_{Extremal\ R-Quasi-SuperHyperConnected} &= \\ &= \{V_i^{EXTERNAL}\}_{i=1}^{|E_{ESHG:(V,E)}|_{Extremal\ Cardinality}-2}. \\ \mathcal{C}(NSHG)_{Extremal\ R-Quasi-SuperHyperConnected\ SuperHyperPolynomial} &= \\ &= \prod |V^{EXTERNAL}_{ESHG:(V,E)}|_{Extremal\ Cardinality} z^{|E_{ESHG:(V,E)}|_{Extremal\ Cardinality}-2} \end{aligned}$$

Proof. Let

$$\begin{aligned} P : \\ V_2^{EXTERNAL}, E_2, \\ V_3^{EXTERNAL}, E_3, \\ \dots, \\ E_{|E_{ESHG:(V,E)}|_{Extremal\ Cardinality}-1}, V^{EXTERNAL}_{|E_{ESHG:(V,E)}|_{Extremal\ Cardinality}-1}. \end{aligned}$$

be a longest path taken from a connected Extreme SuperHyperCycle $ESH C : (V, E)$. 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. $\square$

Example 16.7. In the Figure (24), the connected Extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained Extreme SuperHyperSet, in the Extreme SuperHyperModel (24), is the Extreme SuperHyperConnected.

Proposition 16.8. Assume a connected Extreme SuperHyperStar $ESH S : (V, E)$. Then

$$\begin{aligned} \mathcal{C}(NSHG)_{Extremal\ SuperHyperConnected} &= \{E_i \in E_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extremal\ SuperHyperConnected\ SuperHyperPolynomial} &= \\ &= |i \mid E_i \in E_{ESHG:(V,E)}|_{Extremal\ Cardinality} z. \\ \mathcal{C}(NSHG)_{Extremal\ R-SuperHyperConnected} &= \{CENTER \in V_{ESHG:(V,E)}\}. \\ \mathcal{C}(NSHG)_{Extremal\ R-SuperHyperConnected\ SuperHyperPolynomial} &= z. \end{aligned}$$

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 SuperHyperConnected. The latter is straightforward. $\square$

Example 16.9. In the Figure (25), 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 (25), is the Extreme SuperHyperConnected.

Proposition 16.10. Assume a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. Then

$$\begin{aligned} &\mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperConnected}} \\ &= \{E_a \in E_{P_i^{ESHG:(V,E)}}, \\ &\quad \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| = \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ &\mathcal{C}(NSHG)_{Extreme \text{ Quasi-SuperHyperConnected SuperHyperPolynomial}} \\ &= z^{\min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|} \\ &\text{where } \forall P_i^{ESHG:(V,E)}, |P_i^{ESHG:(V,E)}| \\ &= \min_i |P_i^{ESHG:(V,E)} \in P^{ESHG:(V,E)}|\}. \\ &\mathcal{C}(NSHG)_{Extreme \text{ V-SuperHyperConnected}} \\ &= \{V_a^{EXTERNAL} \in V_{P_i^{ESHG:(V,E)}}, V_b^{EXTERNAL} \in V_{P_j^{ESHG:(V,E)}}, i \neq j\}. \\ &\mathcal{C}(NSHG)_{Extreme \text{ V-SuperHyperConnected SuperHyperPolynomial}} \\ &= \sum_{\substack{|V_{ESHG:(V,E)}^{EXTERNAL}|_{Extreme \text{ Cardinality}}}} = \left(\sum_{i=|P^{ESHG:(V,E)}|} (|P_i^{ESHG:(V,E)}| \text{ choose } 2) \right) = z^2. \end{aligned}$$

Proof. Let

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

is a longest path taken from a connected Extreme SuperHyperBipartite $ESHB : (V, E)$. There's 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 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 16.11. In the Extreme Figure (26), 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 (26), is the Extreme SuperHyperConnected.

Proposition 16.12. 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

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

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

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

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

Example 16.13. In the Figure (27), 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 (27), is the Extreme SuperHyperConnected.

Proposition 16.14. 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 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. $\square$

Example 16.15. In the Extreme Figure (28), 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 (28), is the Extreme SuperHyperConnected.

17 Background

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 “*New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot*” in **Ref. [1]** by Henry Garrett (2023). In this research article, a novel approach is implemented on SuperHyperGraph and neutrosophic SuperHyperGraph based on general forms with introducing used neutrosophic classes of neutrosophic SuperHyperGraph. It’s published in prestigious and fancy journal is entitled “*Current Trends in Mass Communication (CTMC)*” with ISO abbreviation “*Curr Trends Mass Comm*” in volume 2 and issue 1 with pages 32-55.

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. [2]** 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. [3]** 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 “*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. [4]** 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 "*neutrosophic co-degree and neutrosophic degree alongside chromatic numbers in the setting of some classes related to neutrosophic hypergraphs*" in **Ref. [5]** 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. 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. [6]** by Henry Garrett (2022), "*0049 — (Failed)1-Zero-Forcing Number in Neutrosophic Graphs*" in **Ref. [7]** 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. [8]** 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. [9]** by Henry Garrett (2022), "*Neutrosophic Version Of Separates Groups Of Cells In Cancer's Recognition On Neutrosophic SuperHyperGraphs*" in **Ref. [10]** 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. [11]** 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. [12]** 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. [13]** by Henry Garrett (2022), "*Extremism of the Attacked Body Under the Cancer's Circumstances Where Cancer's Recognition Titled (Neutrosophic) SuperHyperGraphs*" in **Ref. [14]** by Henry Garrett (2022), "*(Neutrosophic) 1-Failed SuperHyperForcing in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs*" in **Ref. [15]** by Henry Garrett (2022), "*Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer's Neutrosophic Recognitions In Special ViewPoints*" in **Ref. [16]** by Henry Garrett (2022), "*Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer's Neutrosophic Recognition And Beyond*" in **Ref. [17]** by Henry Garrett (2022), "*(Neutrosophic) SuperHyperStable on Cancer's Recognition by Well- SuperHyperModelled (Neutrosophic) SuperHyperGraphs*" in **Ref. [18]** by Henry Garrett (2022), "*Neutrosophic Messy-Style SuperHyperGraphs To*"

Form Neutrosophic SuperHyperStable To Act on Cancer's Neutrosophic Recognitions In Special ViewPoints" in **Ref. [14]** by Henry Garrett (2022), "Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs" in **Ref. [19]** by Henry Garrett (2022), "Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer's Neutrosophic Recognitions In Special ViewPoints" in **Ref. [20]** by Henry Garrett (2022), "(Neutrosophic) SuperHyperModeling of Cancer's Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances" in **Ref. [21]** by Henry Garrett (2022), "(Neutrosophic) SuperHyperAlliances With SuperHyperDefensive and SuperHyperOffensive Type-SuperHyperSet On (Neutrosophic) SuperHyperGraph With (Neutrosophic) SuperHyperModeling of Cancer's Recognitions And Related (Neutrosophic) SuperHyperClasses" in **Ref. [22]** by Henry Garrett (2022), "SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer's Recognitions" in **Ref. [23]** by Henry Garrett (2022), "Some SuperHyperDegrees and Co-SuperHyperDegrees on Neutrosophic SuperHyperGraphs and SuperHyperGraphs Alongside Applications in Cancer's Treatments" in **Ref. [24]** by Henry Garrett (2022), "SuperHyperDominating and SuperHyperResolving on Neutrosophic SuperHyperGraphs And Their Directions in Game Theory and Neutrosophic SuperHyperClasses" in **Ref. [25]** by Henry Garrett (2022), "SuperHyperMatching By (R-)Definitions And Polynomials To Monitor Cancer's Recognition In Neutrosophic SuperHyperGraphs" in **Ref. [192]** 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. [193]** by Henry Garrett (2023), "Extreme Failed SuperHyperClique Decides the Failures on the Cancer's Recognition in the Perfect Connections of Cancer's Attacks By SuperHyperModels Named (Neutrosophic) SuperHyperGraphs" in **Ref. [194]** 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. [195]** by Henry Garrett (2023), "Perfect Directions Toward Idealism in Cancer's Neutrosophic Recognition Forwarding Neutrosophic SuperHyperClique on Neutrosophic SuperHyperGraphs" in **Ref. [198]** 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. [199]** 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. [202]** by Henry Garrett (2023), "Using the Tool As (Neutrosophic) Failed SuperHyperStable To SuperHyperModel Cancer's Recognition Titled (Neutrosophic) SuperHyperGraphs" in **Ref. [205]** by Henry Garrett (2023), "Neutrosophic Messy-Style SuperHyperGraphs To Form Neutrosophic SuperHyperStable To Act on Cancer's Neutrosophic Recognitions In Special ViewPoints" in **Ref. [206]** by Henry Garrett (2023), "(Neutrosophic) SuperHyperStable on Cancer's Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs" in **Ref. [207]** by Henry Garrett (2023), "Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer's Neutrosophic Recognition And Beyond" in **Ref. [208]** by Henry Garrett (2022), "(Neutrosophic) 1-Failed SuperHyperForcing in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs" in **Ref. [209]** by Henry Garrett (2022), "Basic Notions on (Neutrosophic) SuperHyperForcing And (Neutrosophic) SuperHyperModeling in Cancer's Recognitions And (Neutrosophic) SuperHyperGraphs" in **Ref. [210]** by Henry Garrett (2022), "Basic Neutrosophic Notions Concerning SuperHyperDominating and Neutrosophic SuperHyperResolving in SuperHyperGraph" in **Ref. [221]** 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. [222]** by Henry Garrett (2022), and [4–222], there are some endeavors to formalize the basic SuperHyperNotions about neutrosophic SuperHyperGraph and SuperHyperGraph alongside scientific research books at [223–347]. Two popular scientific research books in Scribd in the terms of high readers, 4728 and 5721 respectively, on neutrosophic science is on [348, 349].

Some scientific studies and scientific researches about neutrosophic graphs, are proposed as book in **Ref. [348]** by Henry Garrett (2023) which is indexed by Google Scholar and has more than 4728 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. [349]** by Henry Garrett (2023) which is indexed by Google Scholar and has more than 5721 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 [1–3]. The formalization of the notions on the framework of notions in SuperHyperGraphs, Neutrosophic notions in SuperHyperGraphs theory, and (Neutrosophic) SuperHyperGraphs theory at [4–222] alongside scientific research books at [223–347]. Two popular scientific research books in Scribd in the terms of high readers, 4728 and 5721 respectively, on neutrosophic science is on [348, 349].

References

1. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot”, *Curr Trends Mass Comm* 2(1) (2023) 32-55. (<https://www.opastpublishers.com/open-access-articles/new-ideas-in-recognition-of-cancer-and-neutrosophic-super-hypergraph-as-hyper-tool-on-super-toot.pdf>)
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*”, *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>)
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*”, *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>)
4. 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 2(1) (2023) 16-24. (doi: 10.33140/JCTCSR.02.01.04) 3182
3183
5. 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) 3184
3185
3186
3187
6. 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>. 3188
<https://oa.mg/work/10.5281/zenodo.6319942> 3189
3190
3191
3192
3193
7. 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>. 3194
<https://oa.mg/work/10.13140/rg.2.2.35241.26724> 3195
3196
3197
3198
8. 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). 3199
3200
3201
3202
9. 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). 3203
3204
3205
3206
10. 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). 3207
3208
3209
11. 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). 3210
3211
3212
3213
3214
3215
12. 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). 3216
3217
3218
3219
13. 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). 3220
3221
3222
3223
14. 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). 3224
3225
3226
3227

15. Henry Garrett, “(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1). 3228
3229
3230
16. 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). 3231
3232
3233
3234
17. Henry Garrett, “Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond”, Preprints 2023, 2023010044 3235
3236
3237
18. Henry Garrett, “(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well- SuperHyperModelled (Neutrosophic) SuperHyperGraphs”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1). 3238
3239
3240
19. 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). 3241
3242
3243
3244
20. 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). 3245
3246
3247
3248
21. Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1). 3249
3250
3251
22. 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). 3252
3253
3254
3255
3256
23. Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1). 3257
3258
3259
24. 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). 3260
3261
3262
3263
25. 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). 3264
3265
3266
3267
26. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Unequal Connective Dominating As Hyper Conceit On Super Con”, Zenodo 2023, (doi: 10.5281/zenodo.8078445). 3268
3269
3270
27. Henry Garrett, “New Ideas On Super Con By Hyper Conceit Of Unequal Connective Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8078543). 3271
3272
3273

28. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Strict Connective Dominating As Hyper Conceit On Super Con”, Zenodo 2023, (doi: 10.5281/zenodo.8076416). 3274
3275
3276
29. Henry Garrett, “New Ideas On Super Con By Hyper Conceit Of Strict Connective Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8076399). 3277
3278
3279
30. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Reverse Dimension Dominating As Hyper Dimple On Super Dimity”, Zenodo 2023, (doi: 10.5281/zenodo.8072171). 3280
3281
3282
31. Henry Garrett, “New Ideas On Super Dimity By Hyper Dimple Of Reverse Dimension Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8072267). 3283
3284
3285
32. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Equal Dimension Dominating As Hyper Dimple On Super Dimity”, Zenodo 2023, (doi: 10.5281/zenodo.8067384). 3286
3287
3288
33. Henry Garrett, “New Ideas On Super Dimity By Hyper Dimple Of Equal Dimension Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8067409). 3289
3290
3291
34. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Dimension Dominating As Hyper Dimple On Super Dimity”, Zenodo 2023, (doi: 10.5281/zenodo.8061927). 3292
3293
3294
35. Henry Garrett, “New Ideas On Super Dimity By Hyper Dimple Of Dimension Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8062016). 3295
3296
3297
36. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Reverse Connective Dominating As Hyper Conceit On Super Con”, Zenodo 2023, (doi: 10.5281/zenodo.8057696). 3298
3299
3300
37. Henry Garrett, “New Ideas On Super Con By Hyper Conceit Of Reverse Connective Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8057753). 3301
3302
3303
38. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Equal Connective Dominating As Hyper Conceit On Super Con”, Zenodo 2023, (doi: 10.5281/zenodo.8052893). 3304
3305
3306
39. Henry Garrett, “New Ideas On Super Con By Hyper Conceit Of Equal Connective Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8052925). 3307
3308
3309
40. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Connective Dominating As Hyper Conceit On Super Con”, Zenodo 2023, (doi: 10.5281/zenodo.8051346). 3310
3311
3312
41. Henry Garrett, “New Ideas On Super Con By Hyper Conceit Of Connective Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8051360). 3313
3314
3315
42. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By United Dominating As Hyper Ultra On Super Units”, Zenodo 2023, (doi: 10.5281/zenodo.8025707). 3316
3317
3318

43. Henry Garrett, “New Ideas On Super Units By Hyper Ultra Of United Dominating In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8027275). 3319
3320
3321
44. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Zero Forcing As Hyper ford On Super forceps”, Zenodo 2023, (doi: 10.5281/zenodo.8017246). 3322
3323
3324
45. Henry Garrett, “New Ideas On Super forceps By Hyper ford Of Zero Forcing In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.8020128). 3325
3326
3327
46. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Matrix-Based As Hyper mat On Super matte”, Zenodo 2023, (doi: 10.5281/zenodo.7978571). 3328
3329
3330
47. Henry Garrett, “New Ideas On Super mat By Hyper matte Of Matrix-Based In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7978857). 3331
3332
3333
48. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Dominating-Edges As Hyper Dome On Super Eddy”, Zenodo 2023, (doi: 10.5281/zenodo.7940830). 3334
3335
3336
49. Henry Garrett, “New Ideas On Super Eddy By Hyper Dome Of Dominating-Edges In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7943578). 3337
3338
3339
50. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Edge-Gap As Hyper Gape On Super Gab”, Zenodo 2023, (doi: 10.5281/zenodo.7916595). 3340
3341
3342
51. Henry Garrett, “New Ideas On Super Gab By Hyper Gape Of Edge-Gap In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7923632). 3343
3344
3345
52. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7904698). 3346
3347
3348
53. Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Type-Cycle-Neighbor In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7904671). 3349
3350
3351
54. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Cycle-Decomposition As Hyper Decompress On Super Decompensation”, Zenodo 2023, (doi: 10.5281/zenodo.7904529). 3352
3353
3354
3355
55. Henry Garrett, “New Ideas On Super Decompensation By Hyper Decompress Of Eulerian-Type-Cycle-Decomposition In Cancer’s Recognition With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7904401). 3356
3357
3358
3359
56. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Type-Cycle-Cut As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7871026). 3360
3361
3362

57. Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Type-Cycle-Cut In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7874647). 3363
3364
3365
58. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Neighbor As Hyper Nebbish On Super Nebulous”, Zenodo 2023, (doi: 10.5281/zenodo.7857856). 3366
3367
3368
59. Henry Garrett, “New Ideas On Super Nebulous By Hyper Nebbish Of Eulerian-Cycle-Neighbor In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7857841). 3369
3370
3371
60. Henry Garrett, “New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph By Eulerian-Cycle-Decomposition As Hyper Decompress On Super Decomensation”, Zenodo 2023, (doi: 10.5281/zenodo.7855661). 3372
3373
3374
61. Henry Garrett, “New Ideas On Super Decomensation By Hyper Decompress Of Eulerian-Cycle-Decomposition In Recognition of Cancer With (Neutrosophic) SuperHyperGraph”, Zenodo 2023, (doi: 10.5281/zenodo.7855637). 3375
3376
3377
62. 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). 3378
3379
3380
63. 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). 3381
3382
3383
64. 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). 3384
3385
3386
65. 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). 3387
3388
3389
66. 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). 3390
3391
3392
67. 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). 3393
3394
3395
68. 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). 3396
3397
3398
69. 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). 3399
3400
3401
70. 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). 3402
3403
3404
71. 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). 3405
3406
3407

72. 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). 3408
3409
3410
73. 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). 3411
3412
3413
74. Henry Garrett, “*New Ideas In Recognition of Cancer And Neutrosophic SuperHyperGraph As Hyper Tool On Super Toot*”, Zenodo 2023, (doi: 10.5281/zenodo.7812236). 3414
3415
3416
75. 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). 3417
3418
3419
76. 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). 3420
3421
3422
77. 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). 3423
3424
3425
78. 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). 3426
3427
3428
79. 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). 3429
3430
3431
80. 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). 3432
3433
3434
81. 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). 3435
3436
3437
3438
82. 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). 3439
3440
3441
83. 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). 3442
3443
3444
84. 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). 3445
3446
3447
85. 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). 3448
3449
3450

86. 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). 3451
3452
3453
87. 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). 3454
3455
3456
88. 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). 3457
3458
3459
89. 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). 3460
3461
3462
90. 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). 3463
3464
3465
91. 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). 3466
3467
3468
92. 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). 3469
3470
3471
93. 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). 3472
3473
3474
94. 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). 3475
3476
3477
95. 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). 3478
3479
3480
96. 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). 3481
3482
3483
97. 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). 3484
3485
3486
98. 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). 3487
3488
3489
99. 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). 3490
3491
3492
100. 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). 3493
3494
3495

101. 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). 3496
3497
3498
102. 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). 3499
3500
3501
103. 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). 3502
3503
3504
104. 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). 3505
3506
3507
105. 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). 3508
3509
3510
106. 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). 3511
3512
3513
107. 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). 3514
3515
3516
108. 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). 3517
3518
3519
109. 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). 3520
3521
3522
110. 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). 3523
3524
3525
111. 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). 3526
3527
3528
112. 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). 3529
3530
3531
113. 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). 3532
3533
3534
114. 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). 3535
3536
3537
115. 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). 3538
3539
3540

116. 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). 3541
3542
3543
117. 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). 3544
3545
3546
118. 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). 3547
3548
3549
119. 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). 3550
3551
3552
120. 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). 3553
3554
3555
121. 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). 3556
3557
3558
122. 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). 3559
3560
3561
123. 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). 3562
3563
3564
124. 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). 3565
3566
3567
125. 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). 3568
3569
3570
126. 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). 3571
3572
3573
127. 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). 3574
3575
3576
128. 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). 3577
3578
3579
129. 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). 3580
3581
3582
130. 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). 3583
3584
3585

131. 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). 3586
3587
3588
132. 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). 3589
3590
3591
133. 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). 3592
3593
3594
134. 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). 3595
3596
3597
135. 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). 3598
3599
3600
136. 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). 3601
3602
3603
137. 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). 3604
3605
3606
138. 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). 3607
3608
3609
139. 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). 3610
3611
3612
140. 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). 3613
3614
3615
141. 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). 3616
3617
3618
142. 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). 3619
3620
3621
143. 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). 3622
3623
3624
144. 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). 3625
3626
3627
145. 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). 3628
3629
3630

146. 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). 3631
3632
3633
147. 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). 3634
3635
3636
148. 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). 3637
3638
3639
149. 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). 3640
3641
3642
150. 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). 3643
3644
3645
151. 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). 3646
3647
3648
152. 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). 3649
3650
3651
153. 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). 3652
3653
3654
154. 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). 3655
3656
3657
155. 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). 3658
3659
3660
156. 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). 3661
3662
3663
157. 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). 3664
3665
3666
158. 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). 3667
3668
3669
159. 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). 3670
3671
3672
160. 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). 3673
3674
3675

161. 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). 3676
3677
3678
162. 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). 3679
3680
3681
163. 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). 3682
3683
3684
164. 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). 3685
3686
3687
165. 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). 3688
3689
3690
166. 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). 3691
3692
3693
167. 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). 3694
3695
3696
168. 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). 3697
3698
3699
169. 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). 3700
3701
3702
3703
170. 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). 3704
3705
3706
3707
171. 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). 3708
3709
3710
3711
172. 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). 3712
3713
3714
3715
173. 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). 3716
3717
3718
3719

174. 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). 3720-3723
175. 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). 3724-3727
176. 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). 3728-3730
177. 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). 3731-3733
178. 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). 3734-3736
179. 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). 3737-3740
180. 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). 3741-3744
181. 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). 3745-3749
182. 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). 3750-3754
183. 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). 3755-3758
184. 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). 3759-3761
185. 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). 3762-3765

186. 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). 3766
3767
3768
3769
187. 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). 3770
3771
3772
188. 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). 3773
3774
3775
3776
3777
3778
189. 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). 3779
3780
3781
3782
190. 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). 3783
3784
3785
3786
191. 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). 3787
3788
3789
3790
192. 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). 3791
3792
3793
193. 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). 3794
3795
3796
3797
194. 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). 3798
3799
3800
3801
195. 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). 3802
3803
3804
3805
196. 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). 3806
3807
3808
3809
197. Henry Garrett, “*(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs*”, Preprints 2023, 2023010105 (doi: 10.20944/preprints202301.0105.v1). 3810
3811
3812

198. 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). 3813
3814
3815
199. 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). 3816
3817
3818
3819
200. 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). 3820
3821
3822
3823
201. 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). 3824
3825
3826
3827
202. 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). 3828
3829
3830
3831
203. Henry Garrett, “*Neutrosophic 1-Failed SuperHyperForcing in the SuperHyperFunction To Use Neutrosophic SuperHyperGraphs on Cancer’s Neutrosophic Recognition And Beyond*”, Preprints 2023, 2023010044 3832
3833
3834
204. Henry Garrett, “*(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well- SuperHyperModelled (Neutrosophic) SuperHyperGraphs*”, Preprints 2023, 2023010043 (doi: 10.20944/preprints202301.0043.v1). 3835
3836
3837
205. 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). 3838
3839
3840
206. 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). 3841
3842
3843
207. Henry Garrett, “*(Neutrosophic) SuperHyperStable on Cancer’s Recognition by Well-SuperHyperModelled (Neutrosophic) SuperHyperGraphs*”, ResearchGate 2023, (doi: 10.13140/RG.2.2.35774.77123). 3844
3845
3846
208. 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). 3847
3848
3849
3850
209. Henry Garrett, “*(Neutrosophic) 1-Failed SuperHyperForcing in Cancer’s Recognitions And (Neutrosophic) SuperHyperGraphs*”, ResearchGate 2022, (doi: 10.13140/RG.2.2.29430.88642). 3851
3852
3853
210. 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). 3854
3855
3856
3857

211. Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, Preprints 2022, 2022120549 (doi: 10.20944/preprints202212.0549.v1). 3858
3859
3860
212. Henry Garrett, “(Neutrosophic) SuperHyperModeling of Cancer’s Recognitions Featuring (Neutrosophic) SuperHyperDefensive SuperHyperAlliances”, ResearchGate 2022, (doi: 10.13140/RG.2.2.19380.94084). 3861
3862
3863
213. 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). 3864
3865
3866
3867
3868
214. 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). 3869
3870
3871
3872
3873
215. Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, Preprints 2022, 2022120500 (doi: 10.20944/preprints202212.0500.v1). 3874
3875
3876
216. Henry Garrett, “SuperHyperGirth on SuperHyperGraph and Neutrosophic SuperHyperGraph With SuperHyperModeling of Cancer’s Recognitions”, ResearchGate 2022 (doi: 10.13140/RG.2.2.20993.12640). 3877
3878
3879
217. 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). 3880
3881
3882
3883
218. 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). 3884
3885
3886
3887
219. 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). 3888
3889
3890
3891
220. 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). 3892
3893
3894
3895
221. Henry Garrett, “Basic Neutrosophic Notions Concerning SuperHyperDominating and Neutrosophic SuperHyperResolving in SuperHyperGraph”, ResearchGate 2022 (doi: 10.13140/RG.2.2.29173.86244). 3896
3897
3898
222. 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). 3899
3900
3901
3902

223. Henry Garrett, “Unequal Connective Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8078574). 3903
3904
224. Henry Garrett, “Strict Connective Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8076449). 3905
3906
225. Henry Garrett, “Reverse Dimension Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8072310). 3907
3908
226. Henry Garrett, “Equal Dimension Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8067469). 3909
3910
227. Henry Garrett, “Dimension Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8062076). 3911
3912
228. Henry Garrett, “Reverse Connective Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8057817). 3913
3914
229. Henry Garrett, “Equal Connective Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8052976). 3915
3916
230. Henry Garrett, “Connective Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8051368). 3917
3918
231. Henry Garrett, “United Dominating In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8027488). 3919
3920
232. Henry Garrett, “Zero Forcing In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.8020181). 3921
3922
233. Henry Garrett, “Matrix-Based In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7978921). 3923
3924
234. Henry Garrett, “Collections of Math II”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7943878). 3925
3926
235. Henry Garrett, “Dominating-Edges In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7943871). 3927
3928
236. Henry Garrett, “Edge-Gap In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7923786). 3929
3930
237. Henry Garrett, “Eulerian-Type-Cycle-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7905287). 3931
3932
238. Henry Garrett, “Eulerian-Type-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7904586). 3933
3934
239. Henry Garrett, “Eulerian-Type-Cycle-Cut In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7874677). 3935
3936
240. Henry Garrett, “Eulerian-Cycle-Neighbor In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7857906). 3937
3938
241. Henry Garrett, “Eulerian-Cycle-Decomposition In SuperHyperGraphs”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7856329). 3939
3940
242. Henry Garrett, “*Eulerian-Cycle-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7854561). 3941
3942

243. Henry Garrett, “*Eulerian-Type-Path-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7851893). 3943
3944
244. Henry Garrett, “*Eulerian-Type-Path-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7848019). 3945
3946
245. Henry Garrett, “*Eulerian-Type-Path-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7835063). 3947
3948
246. Henry Garrett, “*Eulerian-Path-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7826705). 3949
3950
247. Henry Garrett, “*Eulerian-Path-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7820680). 3951
3952
248. Henry Garrett, “*Eulerian-Path-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812750). 3953
3954
249. Henry Garrett, “*Hamiltonian-Type-Cycle-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7812142). 3955
3956
250. Henry Garrett, “*Hamiltonian-Type-Cycle-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7810394). 3957
3958
251. Henry Garrett, “*Hamiltonian-Type-Cycle-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7807782). 3959
3960
252. Henry Garrett, “*Hamiltonian-Cycle-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7804449). 3961
3962
253. Henry Garrett, “*Hamiltonian-Cycle-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7793875). 3963
3964
254. Henry Garrett, “*Hamiltonian-Cycle-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7792307). 3965
3966
255. Henry Garrett, “*Hamiltonian-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7790728). 3967
3968
256. Henry Garrett, “*Hamiltonian-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7787712). 3969
3970
257. Henry Garrett, “*Hamiltonian-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7783791). 3971
3972
258. Henry Garrett, “*Trace-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7780123). 3973
3974
259. Henry Garrett, “*Trace-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7773119). 3975
3976
260. Henry Garrett, “*SuperHyperDuality*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7637762). 3977
3978
261. Henry Garrett, “*Trace-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7766174). 3979
3980
262. Henry Garrett, “*Edge-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7762232). 3981
3982

263. Henry Garrett, “*Edge-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7758601). 3983
3984
264. Henry Garrett, “*Edge-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7754661). 3985
3986
265. Henry Garrett, “*Vertex-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7750995) . 3987
3988
266. Henry Garrett, “*Vertex-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7749875). 3989
3990
267. Henry Garrett, “*Vertex-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7747236). 3991
3992
268. Henry Garrett, “*Stable-Neighbor In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7742587). 3993
3994
269. Henry Garrett, “*Stable-Decompositions In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7738635). 3995
3996
270. Henry Garrett, “*Stable-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7734719). 3997
3998
271. Henry Garrett, “*Clique-Neighbors In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730484). 3999
4000
272. Henry Garrett, “*Clique-Decompositions In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7730469). 4001
4002
273. Henry Garrett, “*Clique-Cut In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7722865). 4003
4004
274. Henry Garrett, “*Space In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7713563). 4005
4006
275. Henry Garrett, “*Space In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7709116). 4007
4008
276. Henry Garrett, “*Edge-Connectivity In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706415). 4009
4010
277. Henry Garrett, “*Vertex-Connectivity In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7706063). 4011
4012
278. Henry Garrett, “*Tree-Decomposition In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7701906). 4013
4014
279. Henry Garrett, “*Chord In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7700205). 4015
4016
280. Henry Garrett, “*(i,j)-Domination In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7694876). 4017
4018
281. Henry Garrett, “*Edge-Domination In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7679410). 4019
4020
282. Henry Garrett, “*K-Domination In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7675982). 4021
4022

283. Henry Garrett, “*K-Number In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7672388). 4023
4024
284. Henry Garrett, “*Order In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7668648). 4025
4026
285. Henry Garrett, “*Coloring In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7662810). 4027
4028
286. Henry Garrett, “*Dimension In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7659162). 4029
4030
287. Henry Garrett, “*Cancer In SuperHyperGraphs*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653233). 4031
4032
288. Henry Garrett, “*SuperHyperWheel*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653204). 4033
4034
289. Henry Garrett, “*SuperHyperMultipartite*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653142). 4035
4036
290. Henry Garrett, “*SuperHyperBipartite*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653117). 4037
4038
291. Henry Garrett, “*SuperHyperStar*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7653089). 4039
4040
292. Henry Garrett, “*SuperHyperCycle*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651687). 4041
4042
293. Henry Garrett, “*SuperHyperPath*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651619). 4043
4044
294. Henry Garrett, “*SuperHyperDomination*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7651439). 4045
4046
295. Henry Garrett, “*SuperHyperDominating*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7650729). 4047
4048
296. Henry Garrett, “*SuperHyperConnected*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647868). 4049
4050
297. Henry Garrett, “*SuperHyperTotal*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7647017). 4051
4052
298. Henry Garrett, “*SuperHyperPerfect*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7644894). 4053
4054
299. Henry Garrett, “*SuperHyperJoin*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7641880). 4055
4056
300. Henry Garrett, “*Path SuperHyperColoring*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7632923). 4057
4058
301. Henry Garrett, “*SuperHyperDensity*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7623459). 4059
4060
302. Henry Garrett, “*Neutrosophic SuperHyperConnectivities*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416). 4061
4062

303. Henry Garrett, “*Extreme SuperHyperConnectivities*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606416). 4063
4064
304. Henry Garrett, “*SuperHyperConnectivities*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7606404). 4065
4066
305. Henry Garrett, “*Neutrosophic SuperHyperCycle*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018). 4067
4068
306. Henry Garrett, “*Extreme SuperHyperCycle*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018). 4069
4070
307. Henry Garrett, “*Extreme SuperHyperCycle*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7580018). 4071
4072
308. Henry Garrett, “*SuperHyperCycle*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7579929). 4073
4074
309. Henry Garrett, “*Neutrosophic SuperHyperGirth*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563170). 4075
4076
310. Henry Garrett, “*Extreme SuperHyperGirth*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563164). 4077
4078
311. Henry Garrett, “*SuperHyperGirth*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160). 4079
4080
312. Henry Garrett, “*Extreme SuperHyperGirth*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160). 4081
4082
313. Henry Garrett, “*Overlook On SuperHyperGirth*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7563160). 4083
4084
314. Henry Garrett, “*Neutrosophic SuperHyperMatching*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557063). 4085
4086
315. Henry Garrett, “*Extreme SuperHyperMatching*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7557009). 4087
4088
316. Henry Garrett, “*Overlook On SuperHyperMatching*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484). 4089
4090
317. Henry Garrett, “*Neutrosophic Failed SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390). 4091
4092
318. Henry Garrett, “*Extreme Failed SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390). 4093
4094
319. Henry Garrett, “*Overlook On Failed SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390). 4095
4096
320. Henry Garrett, “*Extreme SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574952). 4097
4098
321. Henry Garrett, “*Neutrosophic SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7574992). 4099
4100
322. Henry Garrett, “*Extreme SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357). 4101
4102

323. Henry Garrett, “*Overlook On SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357). 4103
4104
324. Henry Garrett, “*Neutrosophic Failed SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782). 4105
4106
325. Henry Garrett, “*Extreme Failed SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782). 4107
4108
326. Henry Garrett, “*Overlook On Failed SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782). 4109
4110
327. Henry Garrett, “*Neutrosophic SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395). 4111
4112
328. Henry Garrett, “*Extreme SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395). 4113
4114
329. Henry Garrett, “*Overlook On SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395). 4115
4116
330. Henry Garrett, “*Neutrosophic Failed SuperHyperForcing*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450). 4117
4118
331. Henry Garrett, “*Extreme Failed SuperHyperForcing*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450). 4119
4120
332. Henry Garrett, “*Neutrosophic SuperHyperForcing*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862). 4121
4122
333. Henry Garrett, “*Extreme SuperHyperForcing*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862). 4123
4124
334. Henry Garrett, “*Overlook On SuperHyperForcing*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862). 4125
4126
335. Henry Garrett, “*Neutrosophic SuperHyperAlliances*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845). 4127
4128
336. Henry Garrett, “*Extreme SuperHyperAlliances*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845). 4129
4130
337. Henry Garrett, “*Overlook On SuperHyperAlliances*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845). 4131
4132
338. Henry Garrett, “*SuperHyperMatching*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7539484). 4133
4134
339. Henry Garrett, “*Failed SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523390). 4135
4136
340. Henry Garrett, “*SuperHyperClique*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7523357). 4137
4138
341. Henry Garrett, “*Failed SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7504782). 4139
4140
342. Henry Garrett, “*SuperHyperStable*”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7499395). 4141
4142

343. Henry Garrett, “ <i>Failed SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7497450).	4143 4144
344. Henry Garrett, “ <i>SuperHyperForcing</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7494862).	4145 4146
345. Henry Garrett, “ <i>SuperHyperAlliances</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7493845).	4147 4148
346. Henry Garrett, “ <i>SuperHyperGraphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7480110).	4149 4150
347. Henry Garrett, “ <i>Neut. SuperHyperEdges</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.7378758).	4151 4152
348. Henry Garrett, “ <i>Beyond Neutrosophic Graphs</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6320305).	4153 4154
349. Henry Garrett, “ <i>Neutrosophic Duality</i> ”. Dr. Henry Garrett, 2023 (doi: 10.5281/zenodo.6677173).	4155 4156