The 8 Theory – COMPLETE OVERVIEW

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Fermions, Manifolds and Arbitrary Variations

Define a Lorentz manifold

$$\boldsymbol{s} = (\boldsymbol{M}, \boldsymbol{g})$$

Use it to assemble an Euler Lagrange Equation:

$$L = (s, s', t)$$

$$\boldsymbol{\frac{\partial L}{\partial s} - \frac{\partial L}{\partial s'} * \frac{d}{dt} = 0}$$

Develop the last equation:

$$\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} = 0$$

If the Lorenztion manifold to be stationary and no data is attainable from the first three terms, we can require the manifold to those two conditions:

$$\frac{\partial g}{\partial t} = 0 \quad and \qquad \frac{\partial \partial g'}{\partial \partial t} = 0$$

If these two are hold to be true, we have areas of extremum curvature on the manifold and negative time invariant acceleration. The demand of extrunum curvature to stay as they are overtime means the acceleration cannot affect them – if so, directed away from them. This in agreement with what we speculate as "dark energy".

$$\left[\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\right]\frac{\partial g}{\partial t}\delta g - \left[\frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\right]\frac{\partial \partial g'}{\partial \partial t}\delta g' = 0$$

δg *As amount of arbitrary variations, which by demands of stationarity we require to vanish*:

$\delta g1 + \delta g2 \ldots = \delta g$

$\delta g = 0$

$$\delta g1 + \delta g2 > 0$$

$$\delta g3 + \delta g4 < 0$$

If

$$\delta g1 + \delta g2 + \delta g3 + \delta g4 \neq 0$$

Than the overall series cannot vanish, by that logic we need equal amounts of plus and minuses. The overall amount must be even and summed as zero.

Suppose that we had three distinct elements, two pluses and minus:

$\delta g1 + \delta g2 + \delta g3 \ > 0$

or

$\delta g1 + \delta g2 + \delta g3 < 0$

Demanding the series to vanish this will defy the result, and so there could not be three distinct elements in the series, else the overall series will not vanish.

Decomposing in those sceneries, we require the series to have an even amount of variation elements, manifesting as two distinct elements in the series, which differ in sign.

If we allow those sub elements in the series to vary as well, and by the above reasoning, there are only two elements in the series, they are varying in a discrete way, or forming a group.

Let it be only four elements in the series and one of the pluses just changed its nature

$\boldsymbol{O}: \delta g1 \to \delta g2$

$\delta g1 + \ \delta g1 + \delta g2 + \ \delta g2 = \ 0$

To:

$\delta g1 + \ \delta g2 + \delta g2 + \ \delta g2 \neq 0$

There must be a way to bring it back to where it was, so the overall series can vanish, it takes another map, on the varying element to bring it back to where it was.

Y: $\delta g2 \to \delta g1$

Therefore, to bring an element to itself given only two varying elements in the series we need two distinct maps, which attach a varying element to itself, by a threefold combination. $\delta g1(O)\delta g2(Y)\delta g1$ *For example.*

Even though the sub elements in the series are varying, the overall series can vanish.

Now, count all the ways of possible combinations of those elements. We are going to analyze by the integral signs. Since it is a group, there is a natural map, which change an element to itself. One built his analysis firstly on those natural maps.

So:

$$(1(e)1(e)1)$$

$$2(e)2(e)2$$

$$(221)$$

$$(112)$$

$$(211)$$

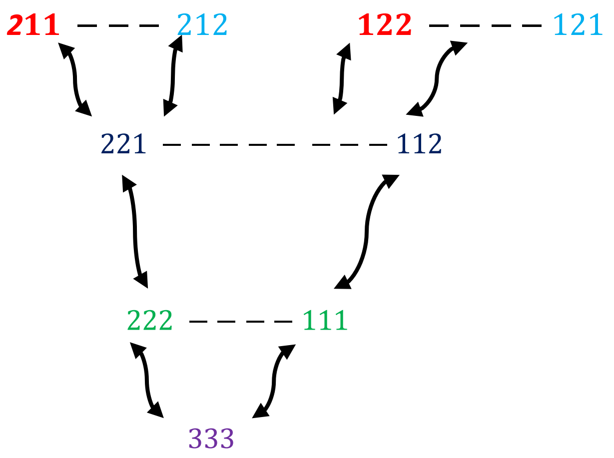
$$(122)$$

$$(212)$$

$$(121)$$

The first two combinations are by the natural maps and one used them to build the other combinations. Overall, there are eight such combinations and additional one arrow combination, which yield (333).

Here is how one built it, starting from those two natural maps. (Arrows to variations, colors to pairings):



Therefore, we have Lorenztion manifold with arbitrary variations, which turn into matter based on that idea.

One does not know whether these are the actually variations, as the mathematics does not entail any details about that. Therefore, the graph could be inaccurate in elements order. The colors meant to elements pairing.

***Reader does not have to agree with what one did,** but as one will calculate the ratios of all the forces known, one kindly asks the reader to keep reading as some truth seem to obey the reasoning line one is building.*

Deriving the Grand Coupling Constant Equation

***Theorem** (1) – nature will not allow a prime amount of variation to appear by itself. Define prime to be (2n+1) variations not divisible by minimal primes {2, 3}.*

1.1) Prime amounts appear in pairs.

***Theorem** (2): Nature will generate force if a **prime net amount of arbitrary variation will appear**. Net variations will appear when combine two amounts of prime variations.*

Two does not appear, as it is an even amount of variations, which vanish.

$Define\ N(V)\ as\ the\ series\ of\ prime\ net\ variations.$

$$N\ (V)\ =\ 3, 5\ ....$$

$Count\ all\ the\ prime\ pairs\ of\ \ variations,$

$$(3,3)\ \ (3,5)\ \ \ (3,7)\ \ (3,11), (3,13)\ ...$$

$$(5,3)\ \ (5,5)\ \ (5,7)\ \ (5,11)\ \ (5,13)\ \ ...$$

$$(7,3)\ \ \ (7,5)\ \ \ \ (7,7)\ \ (7,11)\ \ \ (7,13)\ \ ...$$

$$\dots.$$

$$(29, 19)(29,23), (29, 29), (29,31)\ ...$$

*That is a hard work, but here is the great part. **We only need to do it twice** to find what nature does repeatedly.*

*Since we have only two varying elements in the series, we can eliminate almost all the options, as we require obtaining **a sum that is divisible by two <u>and then</u> yields an odd number divisible by three.** By The following reasoning:*

Two as we have only two varying elements. Three as these elements create a certain amount of threefold combinations.

The sums satisfying the condition is $(5{,}13)\ or\ (7{,}11)\ and\ (29{,}31)$.

Of course, there are more as $N\ (V)$ *has no limit, but as one mentioned, it took two pairs to understand the principle:*

$\boldsymbol{Theorem\ (3)}\ -$
$each\ prime\ pair\ should\ have\ a\ net\ variation\ element\ of\ N(V)\ proportional$

$to\ Total\ Varitations\ value\ divided\ by\ two.$

$This\ will\ be\ vivid\ with\ actual\ examples$:

$\boldsymbol{Analyze\ the\ (7, 11)\ Total\ variations\ pair\ with\ net\ variation\ (+1)}$:

$Total\ variations\ sum\ is\ divisible\ by\ two$:

$18/2\ =\ 9$

$And\ than\ by\ three$

$9/3 = 3$

$We\ know\ that\ we\ have\ net\ variations\ of\ (+1)\ so\ it\ can\ be\ extracted\ to\ yield$:

$$F(1) = 8\ +\ 1$$

$However, even\ amounts\ of\ variations\ vanish\ so\ we\ can\ ignore\ the\ element\ 8\ and\ write$:

$$F(1) =\ 1$$

$\boldsymbol{Analyze\ the\ next\ pair\ of\ Total\ Variation\ (29\ , 31)\ with\ net\ variation}$: $(+\boldsymbol{3})$

$$29\ +\ 31\ =\ 60$$

$$60/2\ =\ 30$$

$In\ addition, three\ divisible. We\ know\ we\ have\ three\ net\ variations\ so\ extract$:

$$27 +\ 3$$

$\boldsymbol{Now\ that\ is\ all}\ you\ need\ to\ complete\ the\ series\ and\ calculate\ the\ \boldsymbol{next\ element}$:

$Notice\ her\ ingenuity$:

$$27 = 24 + (3)$$

$$(8 * 3) = 24$$

$obtain\ the\ ratio$:

$$[8 + 1]: [27 + 3] = [8 + 1]: [24 + (3)] + 3$$

$$[8 + 1]: [27 + 3] = [8 + 1]: [(\mathbf{8} * \mathbf{3}) + (\mathbf{3})] + 3$$

$Next\ element\ N(V) = (+5)$ $\boldsymbol{so\ if\ the\ overall\ idea\ to\ be\ correct}$

$we\ take\ this\ element, multiply\ by\ the\ even\ sum\ of\ the\ previous\ element,$

$\boldsymbol{add\ extra\ invariant}\ (\mathbf{3}), and\ we\ know\ we\ need\ add\ the\ extracted\ N(V).$

$$[(\mathbf{24} * \mathbf{5}) + (\mathbf{3})] + \mathbf{5} = \mathbf{128}.$$

$Stunning.$ $without\ any\ need\ for\ searching\ for\ prime\ pair. We\ found\ her\ spell.$

N$ext\ in\ line$:

$$[(120 * 7) + (3)] + 7 = 850$$

$$[(840 * 11) + (3)] + 11 = 9254$$

$Nature\ is\ than\ the\ \boldsymbol{interplay\ between\ total\ arbitrary\ variations\ to\ net\ variation}.$

$To\ calculte\ the\ magnitude$ of an $element\ R$:

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9: 30: 128: 850: 9254..$$

$\underline{Overview\ of\ reasoning}$:

Axiom *– prime amount of arbitrary variations pair to each other*

Their overall sum must be dividable by two and three

Two distinct elements, which create threefold combinations

define generated force as prime net variation in which we associate N(V) elementt

$\frac{total\ variations}{2} \propto\ to\ N(V) element\ by\ the\ relative\ size\ of\ total\ pairing$

can not contain an even, as it will vanish$N(V)$

$we\ searched\ for\ the\ first\ two\ prime\ pairs\ and\ derived\ 8 + (1)\ and\ \ 27 + (3)$

we saw that nature multiply the even sum by the next element of N(V)

we found the invariant (3) element.

we obtained a number to which we add the extracted net variation

we calculated the next element to be exactly 128 and the two next

$$8 + (1): (24 + (3)) + 3: (120 + (3)) + 5: (840 + (3)) + 7 \ldots$$

$$(1): (30): (128): (850): (9254) \ldots$$

$Important\ note: we\ can\ move\ from\ one\ element\ to\ another\ in\ the\ series\ of\ N\ (V) by\ assuming$

$that\ nature\ took\ care\ of\ all\ prime\ variations\ by\ their\ order. So\ by\ analyzing\ the\ second\ pair$

$we\ assume\ no\ more\ net\ prime\ variations\ of\ \ (+1).$

$We\ also\ did\ not\ include\ the + 1\ in\ N(V)\ as\ it's\ not\ a\ prime. But\ minimal\ net$

$variation\ start\ from\ the\ smallest\ positive\ which\ is\ not\ an\ even, i.e$

$(+1)\ net\ variations. the\ Main\ equation \mathrm{F(R)}\ than\ meant\ to\ second\ element$

$in\ the\ series\ and\ higher.$

Predictions and Conclusions

There are infinite variaty of forces, *one to each prime number of* $N(V)$.

The clusters of total variations grow much more rapidly than the net variations.

The larger the cluster, the weaker the force.

The magnitude of forces manifested an in infinite series of ratios

$1:30:128:850:9254 \ldots$ *by the expression*:

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9:30:128:850:9254.$$

The element of (3) *makes the difference and preventing arbitary variations to turn into Matter.*

Gravity is just another force, must be extremely weak, as many elements are varying.

All the forces *are of the same hand, nature is governed by incredibile beauty and reason.*

Possible meanings of the Majestic (3)

Option 1

The ***Invariant three (3) as a cause****. Notice that all the element within the closed term* $(8 * ..)$ *are two and three divisible to vanish into matter. The invariant* (3) *prevents it completely and than as a result a net variation will appear. The net variation is proportional to the right element in the bracket* $(8 * 3) \propto 3$ *and* $(24 * 5) \propto 5$.

Option 2

The ***Invariant three (3) as a result*** *– There are perfect clusters of variations such as* $(8 * 3), (24 * 5)$ *which experience additional net variation causing them to destabilize. The result is manifested in the invariant* (3). *The additional variation could effect them could be external. Less likeable option.*

It is less likeable as we can them create mixutres $(8 * 3)$ *to destabilize by* $+5$ *net variations, and yield invariant* (3) *and all the beauty in which we attained than will be lost.*

<u>Option 3</u>

The ***Invariant three (3) and net variation as duals*** *− both appear at the same time and they are related to each other by more fundamental relation, which is not attainable nor explainable. Even though we found a jewl, many quesions still stand unanswered.*

Why the invariant (3) appear as it is and do not change ?

Of course that the real answer to that question is that one does not know. However, one can guess and say that (3) *is the smallest odd prime.*

If we assume that nature is lagranigan oriented, it might be the minimal way to destabilize the cluster of potential matter. Why add (37) *additional variations when only* (3) *is needed* ?

Its a logical arguement not a proof, and therefore rightfully argued by reader.
One was trying to argue that (3) *is a Prime minima, that's why it is invariant in the series.*
Remember that even variations vanish, so two is not an option.

$\boldsymbol{Correlating\ The\ Majestic\ (3)\ To\ Spin\ \left(\frac{1}{2}\right)\ and\ Matter}$

$In\ the\ paper\ about\ primes, we\ have\ shown\ that\ they\ create\ a\ non\ abelian\ group\ with$ $\frac{1}{2}\ as\ generator, by\ using\ the\ anti-commution\ relation\ and\ vanishing\ of\ even$ $amounts\ of\ variation.\ It\ recently\ become\ evident\ to\ one\ that\ we\ can\ represent$ $each\ element\ in\ the\ series\ in\ the\ following\ way$:

$$[(8*3)+(3)] \to \left[2\mathrm{N}1+\frac{1}{2}\right]$$

$$[(24*5)+(3)] \to \left[2\mathrm{N}2+\frac{1}{2}\right]$$

$$[(120*7)+(3)] \to \left[2\mathrm{N}3+\frac{1}{2}\right]$$

$Since\ (3)\ is\ a\ prime, and\ aligned\ on\ the\ prime\ ring\ located\ on\ critical\ line\ of\ \frac{1}{2}.\ The$ $sums\ along\ side\ of\ it\ are\ even\ sums\ such\ as\ 8, 24, 120\ and\ so\ on.\ These\ expressions$ $are\ interesting\ as\ one\ believes\ they\ represent\ the\ notion\ of\ matter\ or\ fermions.$

$Notice\ that\ we\ omitted\ the\ additional\ net\ Variation\ which\ is\ also\ prime.$
$meaning\ its\ also\ on\ the\ Prime\ Ring\ Located\ on\ \frac{1}{2}\ .Overall$:

$$[(8*3)+(3)]+3 \to \left[2\mathrm{N}1+\frac{1}{2}\right]+\frac{1}{2}$$

$$[(24*5)+(3)]+5 \to \left[2\mathrm{N}2+\frac{1}{2}\right]+\frac{1}{2}$$

$$[(120*7)+(3)]+7 \to \left[2\mathrm{N}3+\frac{1}{2}\right]+\frac{1}{2}$$

$So\ the\ construction\ within\ the\ parenthsis\ is\ prime\ but\ the\ oveall\ additional$

$net\ is\ changing\ it, and\ making\ it: \left(\frac{1}{2}+\frac{1}{2}\right) = 1.\ So\ the\ overall\ 1:30:128\ will\ have$

$to\ do\ with\ certain\ elements\ that\ have\ element \rightarrow 1.$

$We\ alraedy\ knows\ these\ are\ bosons, as\ we\ found\ the\ coupling\ constants\ series.$

$If\ so, than\ the\ rest\ of\ the\ terms\ are\ fermions, As\ only\ \left(\frac{1}{2}\right)\ is\ there.$

$so\ Its\ the\ Majestic\ (3) \rightarrow in\ this\ paper: \left(\frac{1}{2}\right) element\ To\ destabilize\ Perfect$

$clusters\ of\ variations\ and\ causing\ a\ net\ variation\ to\ appear.\ Notice\ that\ one$

$chose\ the\ first\ option\ in\ regards\ to\ the\ meaning\ of\ the\ invariant\ (3), As\ we$

$had\ in\ part\ (2)\ three\ elements\ to\ it's\ meaning.$

$We\ have\ proved\ that\ the\ Majestic\ (3)\ is\ Spin.\ We\ also\ proved, that$

$bosons\ will\ propage\ within\ variation\ clusters\ destabilized\ by\ \left(\frac{1}{2}\right), or\ matter.$

$These\ are\ Non\ trivial\ statements. We\ only\ use\ one\ equation, not\ experiment$

$nor\ inherited\ knowleadge.$ $\boldsymbol{Using\ that\ frmework\ we\ can\ see\ why\ bosons\ will}$

$\boldsymbol{propagate\ within\ fermions. It\ has\ to\ be\ that\ way}.$

$\boldsymbol{Since\ Its\ invariant, all\ matter\ must\ have\ the\ same\ spin \rightarrow \frac{1}{2}}.$

$So\ (2N)\ are\ variartion\ clusters, the\ Majestic\ (3)\ is\ really\ a\ destabilizing\ facotr$

$which\ is\ spin\ \left(\frac{1}{2}\right)\ yielding\ matter.\ As\ a\ result\ of\ that\ process\ a\ boson$

$will\ propagate\ from\ within\ the\ fermion. The\ nature\ of\ the\ boson\ is\ correlated\ to\ right$

$element\ of\ the\ term: (8*3) \rightarrow 3\ (weak\ particle), (24*5) \rightarrow 5\ or\ a\ photon, so\ on.$

$If\ we\ assosicate\ a\ fermion\ with\ \left[2n+\frac{1}{2}\right] than\ to\ turn\ a\ boson\ into\ a\ fermion$

$\left[2n+\frac{1}{2}\right]+\frac{1}{2}\rightarrow\ \left[2n+\frac{1}{2}\right], we\ will\ need\ to\ eliminate\ the\ net\ variation\ alone, but\ the$

$net\ variation\ is\ the\ result\ of\ the\ destabilizing\ factor\ \left(\frac{1}{2}\right) within\ the\ parenthsis.$

$Can\ we\ trap\ a\ boson, revrese\ its\ momenta\ direction\ and\ make\ it\ propagte\ inversly$
$into\ The\ fermion\ ? Is\ it\ possible\ to\ know\ where\ the\ boson\ even\ is\ ?$
$Suppose\ it\ was\ done.\ We\ only\ eliminated\ the\ N(V)\ and\ not\ the\ destabilizing\ facor\ \left(\frac{1}{2}\right).$
$so\ it\ will\ propagte\ an\ additional\ photon, since\ they\ are\ all\ the\ same, we\ can\ say$
nature 'bounced the photon back'.

This framwork, SUSY is impossible *but* for a different reason, compared to one's previous $arguements\ that\ both\ \big(Invariant\ 3\ and\ the\ added\ N(V)\big)\ are\ needed\ to\ be\ eliminated.$

$Thus, the\ destabilizing\ facor\ \left(\frac{1}{2}\right)\ or\ the$ "Majestic (3)" $Allow\ us\ to\ construct\ the\ following$ $framewrok\ about\ nature$:

$(2N\ variations)\rightarrow Spin\ 0$

$(2N\ variations+3)\rightarrow matter\ with\ spin\ (\frac{1}{2})$

$(2N\ variations+3)+N(V)\rightarrow Bosons\ with\ spin\ (1)$

$(2N\ variations+3)+N(V1)+\ N(V2)\ +\cdots\ \rightarrow boson\ with\ higher\ spin\ integers$

$\underline{\boldsymbol{Majestic\ (3)\ as\ The\ Electron}}$

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9{:}\ 30{:}\ 128{:}\ 850{:}\ 9254\ \ldots$$

$$8 + (1)$$

$$[(8 * 3) + (3)] + 3$$

$$[(24 * 5) + (3)] + 5$$

$$[(120 * 7) + (3)] + 7$$

.....

$$[(8 * 3) + (3)] \to \left[2\mathrm{N}1 + \frac{1}{2}\right]$$

$$[(24 * 5) + (3)] \to \left[2\mathrm{N}2 + \frac{1}{2}\right]$$

$$[(120 * 7) + (3)] \to \left[2\mathrm{N}3 + \frac{1}{2}\right]$$

$$[(8 * 3) + (3)] + 3 \to \left[2\mathrm{N}1 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(24 * 5) + (3)] + 5 \to \left[2\mathrm{N}2 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(120 * 7) + (3)] + 7 \to \left[2\mathrm{N}3 + \frac{1}{2}\right] + \frac{1}{2}$$

In previous paper, (part three) we called the $\left(\frac{1}{2}\right)$ *an element To destabilize Perfect clusters of variations and causing a net variation to appear.* *In this paper we can* ***call it the electron***.

$$[(24*5)+(3)]+5 \rightarrow \left[2\mathrm{N}2+\frac{\mathbf{1}}{\mathbf{2}}\right]+\frac{1}{2}$$

$2N2 \rightarrow Fermions. \quad perfect\ variations\ to\ vanish\ into\ matter$

$\frac{\mathbf{1}}{\mathbf{2}} \rightarrow \ electron\ to\ $ destabilize $the\ perfect\ 2N2\ and\ prevent\ it\ from\ vanishing\ into\ matter$

$\frac{1}{2} \rightarrow the\ result\ is\ the\ net\ variation\ which\ is\ also\ on\ the\ critical\ line\ of\ the\ primes.$

$\left[2\mathrm{N}2+\frac{\mathbf{1}}{\mathbf{2}}\right]+\frac{1}{2}=\mathbf{2N2+1} \rightarrow Probability\ of\ boson\ emittion, in\ that\ case\ the\ photon.$

When we first discover the coupling constant equation, we only saw the analytical aspect, by $N(V)$ and the ratio between the total variations to net variations.

However, by setting the equation on the geometrical relam and examining the critical line of the primes, we can get a deeper insight to what's going on.

We are able to analyze the trait of spin, we can understand why bosons have spin 1 and the Invariant (3) spin (1/2). Therefore, it is the electron, which causes the boson propagation from clusters Of Potential matter.

Sure, we knew that, but we did not have the Mathemtical equation to describe it.
The coupling constant equation has than another powerful use; it describes what it going on in elementary level, not just the magnitude of the interactions.
It was only available to us when we examined the geometrical realm.

Please notice that the electron is inside potential cluster $\left[2\mathrm{N}2+\frac{\mathbf{1}}{\mathbf{2}}\right]$ *so it we would not be . able to know where it is within the cluser, it blends in to it* $[120+3]=123$

$Therefore, that\ is\ in\ agreement\ with\ what\ we\ know\ in\ QM\ as\ the$ "$Uncertainty\ principle$".

$Which\ comes\ to\ an\ agreement\ with\ the\ entire\ QM\ framework.$

$\boldsymbol{The\ Complete\ Picure}$:

$Perfect\ clusters\ of\ variations \rightarrow 2N$

$destabilize\ the\ perfect\ 2N$ is the majestic $(3) \rightarrow \left(\frac{1}{2}\right) \rightarrow electron.\ blends\ in$

$the\ potential\ cluster\ to\ yield\ in\ that\ case \rightarrow 123.$

$The\ result\ is\ the\ net\ variation\ which\ is\ also\ Prime\ \ N(V) \rightarrow \left(\frac{1}{2}\right) \rightarrow\ +(5)$

$\left[2N + \left(\frac{1}{2}\right)\right] + \left(\frac{1}{2}\right) \rightarrow\ probability\ to\ an\ emission\ of\ a\ boson. The\ overall\ result\ yields$

$123 + 5 = 128.$

$We\ have\ taken\ the\ third\ element\ in\ the\ series, as\ we\ are\ familiar\ with\ the\ nature$
$Of\ the\ electrons\ due\ to\ the\ great\ minds\ of\ the\ past\ century, but\ the\ following\ result\ would$
$Apply\ to\ each\ element\ in\ the\ series\ from\ the\ second\ and\ above.$

$\underline{\boldsymbol{Weak\ Interaction\ Negative\ Left\ orientation}}$

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9{:}\,30{:}\,128{:}\,850{:}\,9254\ \ldots$$

$$8 + (1)$$

$$[(8 * 3) + (3)] + 3$$

$$[(24 * 5) + (3)] + 5$$

$$[(120 * 7) + (3)] + 7$$

....

$$[(8 * 3) + (3)] \rightarrow \left[2\mathrm{N}1 + \frac{1}{2}\right]$$

$$[(24 * 5) + (3)] \rightarrow \left[2\mathrm{N}2 + \frac{1}{2}\right]$$

$$[(120 * 7) + (3)] \rightarrow \left[2\mathrm{N}3 + \frac{1}{2}\right]$$

$$[(8 * 3) + (3)] + 3 \rightarrow \left[2\mathrm{N}1 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(24 * 5) + (3)] + 5 \rightarrow \left[2\mathrm{N}2 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(120 * 7) + (3)] + 7 \rightarrow \left[2\mathrm{N}3 + \frac{1}{2}\right] + \frac{1}{2}$$

$notice\ that\ each\ term\ in\ the\ series\ within\ the\ Parenthesis$ is prime $\rightarrow 123,\ 843{,}9243\ldots$

$as\ one\ did\ not\ calculate\ the\ entire\ series\ he\ is\ going\ to\ assume\ that\ is\ will\ be\ true$

$in\ regard\ to\ each\ higher\ element\ in\ the\ series. we\ are\ leaving\ out\ the\ net\ variation$

$N(V), in\ this\ paper, it's\ not\ a\ significant\ to\ our\ matter.$

notice that the only term which is not a prime after added the Majestic (3) *or spin* $\left(\frac{1}{2}\right)$

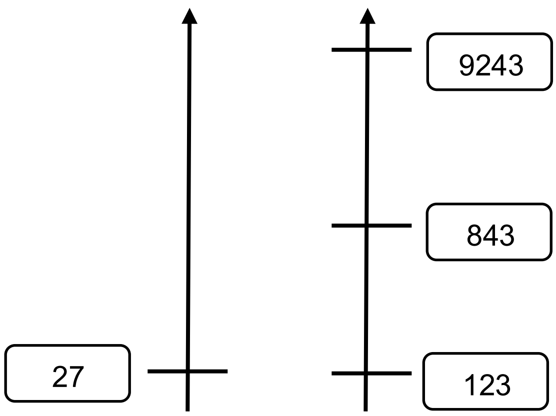
is the second element in the series, in which we associate with the weak interaction.

$$[(8 * 3) + (3)] = 27$$

As the series is ever increasing and each term inside the parenthesis is creating an higher prime Than the previous element, in order to the weak interaction to be of the same nature of the rest Of the forces, we would need that the sum of the parenthesis to be a prime, we look for the closest higher prime:

$$[(8 * 3) + (3)] \rightarrow 29$$

So in order to be like the rest of the forces. Meaning to have a prime inside a parenthesis, it lacks a Certain amount of variation. If we associate each interaction to be invariant to direction – and the Cause of such a trait to be the prime term inside the parenthesis, than the weak interaction would Differ by its nature.



The fact that the term inside the parenthesis is not on the critical line of the primes, but left To it, can explain why the weak interaction is left oriented and differ by its nature by the rest In terms of its spin.

We have proved that the majestic (3) *is really a different representation of Spin, which destabilizes Clusters of perfect variations causing the* N (V) *to appear, which overall yield a propagation of a Boson from the fermion, and therefore gives us the beautiful series of coupling constants.*

If all the Terms on the critical line of primes are fermions with spin $\left(\frac{1}{2}\right)$ *than the term of the weak interaction would be* $\left(-\frac{1}{2}\right)$ *or* $\left(-\frac{3}{2}\right)$*, It's really a mathmatical prediction, as we did not use any data from experiment nor the names of the particles we know to participate in the weak interaction.*

$27 - 29 = -2$

$\left(\frac{1}{2} - 2\right) = -\frac{3}{2}$

$\underline{\boldsymbol{Mathmatical}\ \mathbf{Duality}\ \boldsymbol{Of\ Forces - Virtual\,Variations}}$

$we\ will\ take\ the\ equation\ built\ and\ first\ three\ developments$:

$8+(1):[(8*3)+(3)]+3:[(24*5)+(3)]+5$

The idea: we will allow the net variations to vary, and when they have the

same value, than the expressions inside the parentheses will become scalar multiple:

this will be done by using the idea of virtual variations:

$[(24*5)+(3)]+5 \rightarrow\ [(24*5)+(3)]+3$

$notice\ that\ now\ the\ third\ is\ a\ scalar\ multiple\ of\ the\ second\ by\ a\ factor\ of$ 5:

$[(24*5)+(3)]+3$

$[(8*3)+(3)]+3$

$so\ the\ weak\ and\ the\ electric\ are\ differing\ now\ by\ a\ scalar, that's\ simply\ beautiful.$

$but\ the\ strong\ force\ just\ accepted\ that\ extra\ two\ variations\ so\ its\ just\ become$:

$8+(1)+2 \rightarrow 8+(1).$ $As\ even\ amounts\ of\ variations\ vanish.\ It\ does\ not\ effect\ it.$

$it\ will\ be\ permited.$

$we\ can\ try\ something\ more\ intresting, and\ that's\ the\ real\ purpuse\ of\ the\ part$:

$[(24*5)+(3)]+5 \rightarrow\ [(24*5)+(3)]+\mathbf{2}$

$8+(1)+3$

$now\ this\ will\ ruin\ the\ duality\ and\ the\ series, the\ weak\ and\ the\ electric\ are\ not$

$isomorphic, and\ the\ strong\ just\ got\ a\ prime\ amount\ of\ variations\ which\ can\ not$

$vanish.$

$To\ solve\ that\ we\ can\ define\ a\ Virtual\ exchange\ of\ varitation \rightarrow (1v).$

$[8+(1)]+3-(\mathbf{1v}) \colon [(24*5)+(3)]+\mathbf{3}$

$the\ real\ variations\ are\ +3\ but\ to\ ensure\ the\ nature\ of\ the\ strong\ force, there\ is$
$a\ virtual\ exchange\ of\ one\ variation.\ marked\ in\ color. For\ a\ very\ short\ period$
$of\ time, the\ strong\ is\ now\ a\ scalar\ multiple\ of\ the\ other\ two. Overall\ they\ have$
$the\ same\ prime\ amount\ of\ variations\ N(V)=+(3). That\ was\ the\ goal\ of$
$the\ following\ paper.$

$$[8+(1)]+3-(\mathbf{1v}) \colon \quad [(8*3)+(3)]+3 : \ [(24*5)+(3)]+\mathbf{3}$$

$we\ can\ say\ that\ there\ are\ three\ real\ exchanges\ and\ one\ virtual, so\ overall\ four\ exchanges,$
$which\ causes\ all\ the\ forces\ to\ align\ on\ the\ N(V)=+(3).\ Take\ the\ average\ of\ the$
$sum \rightarrow \frac{4}{2} = 2\ net.$
$the\ converging\ value\ of\ the\ those\ exchanges\ will\ modify\ the\ middle\ element:$
$[(8*3)+(3)]+3.\ Since\ we\ want\ to\ keep\ the\ prime\ net\ variation\ N(V)=+3$
$as\ it\ is, to\ ensure\ duality, and\ we\ can't\ touch\ the$ invariant $(3), we\ add\ this\ +2, to$
$the\ ((8*3)+2)=26.$

$The\ point\ where\ they\ three\ aligned\ will\ be\ around\ 24+2\ \ variations.$
$certain\ agreement\ with\ this\ number\ exist, as\ far\ as\ one\ knows.$

$\underline{\boldsymbol{Proof: The\ Pauli\ Exclusion\ Principle}}$

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9: 30: 128: 850: 9254 \ldots$$

$$8 + (1)$$

$$[(8 * 3) + (3)] + 3$$

$$[(24 * 5) + (3)] + 5$$

$$[(120 * 7) + (3)] + 7$$

$$[(8 * 3) + (3)] + 3 \rightarrow \left[2\mathrm{N}1 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(24 * 5) + (3)] + 5 \rightarrow \left[2\mathrm{N}2 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(120 * 7) + (3)] + 7 \rightarrow \left[2\mathrm{N}3 + \frac{1}{2}\right] + \frac{1}{2}$$

We have seen that we can change the term outside the parenthesis, and so we can reach Duality between the forces. When we did it in the first three terms, we saw that their duality Is exactly on 24+2 variations, which is in agreement with what we know in other theories of GUT.

We briefly mention in that paper, that we cannot touch the invariant (3). This will be the subject Of this paper. If we for example combine:

$$[(24 * 5) + (3)] + 5 \pm \text{INTEGER} \ldots$$

We can switch and change the terms outside the parenthesis, as those are net variations and they Do not seem to obey to any strict rules. However, we could not touch the invariant (3) and now we Will examine deeply the reason.

$$[(24 * 5) + (3) + (3)] + 5 = [(24 * 5) + Even)] + 5$$

$$Even = 0$$

$$[(24 * 5) + 0)] + 5 \rightarrow \text{Impossible}$$

As even amount of variations vanish. Remember that the invariant (3) is the cause, It is the destabilizing factor yielding a net variation. In the case of the third element it's the Electron. So using that framework, we can see why we cannot combine two electrons or invariant (3) Elements together.

The term than becomes meaningless, a photon cannot propagate from nowhere and the coupling Constant series does not makes sense anymore. So the invariant (3) cannot be combined, it will Repel each other. The net variation however can be changed and switched, which makes the Flexibility and duality of the forces.

The equation is with complete agreement with our understanding, we are just examining additional Meaning of it. It allows us to examine it from a deeper, more profound view. Now we can understand Why fermions do not commute – because even variations vanish and so bosons will not be Propagated.

Remember that in part four we gave the following:

$2N2 \rightarrow Fermions. \quad perfect\ variations\ to\ vanish\ into\ matter$

$\mathbf{\frac{1}{2}} \rightarrow \ electron\ to\ destabilize\ the\ perfect\ 2N2\ and\ prevent\ it\ from\ vanishing\ into\ matter$

$\frac{1}{2} \rightarrow the\ result\ is\ the\ net\ variation\ which\ is\ also\ on\ the\ critical\ line\ of\ the\ primes.$

$\left[\mathrm{2N2} + \mathbf{\frac{1}{2}}\right] + \frac{1}{2} = \mathbf{2N2+1} \rightarrow Probability\ of\ boson\ emittion, in\ that\ case\ the\ photon.$

If we eliminate the electron, than no boson will be propagate at all. However, consider the following:

$$[(24*5)+(3)]+5+[(24*5)+(3)]+5+..=$$

$$[(24*5)+(3)]+7+[(24*5)+(3)]+3+..=$$

While we cannot touch the terms inside the parenthesis, we can change and combine the net Variation, there seems to be no limitation in regards to that operation, we have done it before, and Showed that the forces can be scalar multiples.

We can cluster the net variations, which means that many electrons can emit net variations together, That is bosons, which agrees to what we know as laser, or what we know as bosons Commutation Relation in QFT. However, using the 8-theory framework we can get a new and fresh insight On why those things are the way they are using the coupling constant equation.

As we mentioned in part four of the paper series on coupling constants, the invariant (3) blends In the total cluster of the fermions, so we cannot know where he is. That is in agreement with the Heisenberg principle of uncertainty.

$\textbf{\textit{Strikingly Beautiful connection between masses of Three generations}}$

$The\ idea, which\ is\ followed\ by\ the\ last\ paper, is\ that\ if\ 8 + (1)\ to\ generate\ force,$ $and\ force\ is\ extanded\ outward, (short\ or\ long\ ranged)\ than\ 8 - (1)\ would\ be$ $to\ generate\ mass, or\ arbitray\ \textbf{variations converging inward}.\ Equipped\ with\ this$ $idea\ we\ can\ search\ for\ a\ mathmatical\ pattern.$

$first, take\ all\ the\ masses, accurate\ as\ they\ can\ and\ combine\ tham\ according\ to$ $generation:$

$[1.9]$ $[1320]$ $[172{,}770]$

$[4.4]$ $[87]$ $[4240]$

$$1.\quad 1.9 + 4.4 = 6\tfrac{1}{3}$$

$$2.\quad 1320 + 87 = 1407$$

$$3.\quad 172{,}770 + 4240 = 177010$$

$seemingly\ noting\ in\ common, but\ we\ can\ change\ it. soon\ one\ will\ reason\ why\ the\ following$ $exacly, multiple\ equation\ one\ by\ factor\ of\ 9\ and\ divide\ (3)\ by\ a\ factor\ of\ 9.\ notice\ that$ $9 = 8 + (1), or\ force\ generted, we\ will\ come\ back\ to\ it, as\ its\ not\ the\ issue\ now.$

$obtain:$

$$1\ .\ 6\frac{1}{3} * 9 = 57 = 50 + 7$$

$$2.\quad 1320 + 87 = 1407 = 1400 + 7$$

$$3.\quad \frac{177010}{9} = 19{,}667 = 19{,}660 + 7$$

$also\ notice\ that$

$$50 * 28 = 1400$$

$$1400 * 14 = 19{,}660$$

but

$$28 = 7 * 4$$

$$14 = 7 * 2$$

$so\ to\ go\ from\ first\ to\ second:$

$$(7 * 4) * 50 + (7)$$

$And\ from\ second\ to\ third$

$$(7 * 2) * 1400 + (7)$$

$one\ has\ said\ it\ once, if\ allowed, to\ say\ again, she\ is\ truly\ beautiful.\ Its\ increadible.$
$notice\ that\ its\ a\ decreasing\ by\ an\ even\ facor\ of\ 2. And\ if\ we\ go\ from\ low\ to\ high$
$it\ does\ not\ make\ sense\ physiclly, it\ should\ be\ lagrangian\ oriented, nature\ is\ divising\ by$
$increasing\ amount\ to\ minimize\ the\ arbitrary\ variations, so\ if\ correct\ we\ should\ go\ from$
$three\ to\ one\ by\ divising:$

$$4.\ \frac{19{,}660 + (7)}{7 * 2} = 1400 + (7)$$

$$5.\ \frac{1400 + (7)}{7 * 4} = 50 + (7) * \frac{1}{9}$$

$next\ we\ can\ predict\ that\ \boldsymbol{total\ mass}\ for\ fourth\ to\ sixth\ familys::$

$$6.\ \ \frac{50+(7)}{7*8}*\frac{1}{9}=\ 0.113\ \text{mev}$$

$$7.\ \ \frac{0.113}{7*16*9}=\ 0.000113\ mev\quad \boldsymbol{or}\quad \frac{0.113}{7*16}=\ \ 0.00100\ mev$$

$$8.\ \ \frac{0.000113}{7*32*9}=5.95*10^{-8}\ mev\quad \boldsymbol{or}\quad \frac{0.00100}{7*32}=0.0000045\ mev$$

$summing\ 4-6\ families$, 0.113113 or 0.1140 Mev, we can see it is converging to $the\ value\ of\ the\ forth\ which\ is\ \ 55.25-55.69\ lighter\ than\ first\ family:$

$$9.\ \ \frac{6.3}{0.1131130595}=55.696\qquad or\qquad \frac{6.3}{0.1140}=55.26$$

$keep\ in\ mind\ we\ needed\ to\ readjust\ the\ scale\ by\ the\ factor\ of\ 8+(1)\ \ as\ we\ manipulated\ the\ data, in\ a\ search\ for\ a\ pattern.\ adjust\ it\ in\ the\ third\ family, by\ multipication\ and\ in\ the\ first\ and\ bellow\ it, by\ divison.$

$the\ following\ reason, T-B\ family\ has\ much\ more\ mass, thus\ much\ more\ arbitrary\ vartiaion\ convering\ inward, that\ might\ by\ the\ reason\ it\ has\ 8+(1)\ factor\ in\ the\ nominatior, and\ in\ the\ first, the\ arbitrary\ variations\ are\ so\ small, we\ need\ to\ adjust\ it\ in\ the\ opposite\ direction, to\ increase\ by\ 8+(1).$

$Whether\ in\ the\ fifth\ family\ and\ below, additional\ rescales\ are\ needed\ is\ unknown, we\ do\ include\ two\ options, with\ the\ 8+(1) or\ without\ it.$

$so\ accoding\ to\ the\ above\ reasoning\ and\ mathmatical\ notion, one\ will\ predict\ infinite$

$families\ forming\ below\ the\ masses\ of\ the\ U-D\ masses, coverging\ to\ total\ value$

$of\ \approx 0.1131130595\ \mathrm{Mev}\ as\ familys\ below\ the\ six\ are\ neglected\ due\ to\ little$

$contribution\ the\ the\ total\ sum.$

$so\ overall\ we\ can\ write,$ $\boldsymbol{for\ first\ generation\ and\ below}$:

$$10. \qquad \mathrm{M}\ (\mathrm{N}+1) = \frac{\mathrm{M}(\mathrm{N}) + (7)}{7 * \prod_{I=1}^{r} N(E)} * \frac{1}{9}$$

Or

$$\mathbf{M}\ (\mathbf{N}+\mathbf{1}) = \frac{\mathbf{M}(\mathbf{N}) + (\mathbf{7})}{\mathbf{7} * \prod_{\boldsymbol{I}=\mathbf{1}}^{r} \boldsymbol{N}(\boldsymbol{E})}$$

$N(E) \rightarrow functions\ for\ two\ multiple\ of\ variations\ starting\ from\ two - 2,4,8..$
$from\ seemingly\ no\ relation, we\ could\ reason\ and\ hope\ to\ reach\ a\ certain\ idea, wheher\ correct$

$or\ not, it\ was\ just\ too\ beautiful\ to\ be\ ignored.\ one\ hope\ that\ great\ physicists\ will\ find\ a\ way\ to$

$examine\ whether\ it\ agrees\ with\ experiment.$

$of\ course\ for\ (T-B)\ family\ we\ adjust\ the\ other\ way\ around.$

$the\ meaning\ of\ 8+(1) \rightarrow in\ the\ Third\ family\ (T-B), there\ could\ have\ been\ large,$
$wild\ variations, thus\ it\ appears\ in\ the\ up, that\ comes\ in\ agreement,$
$that\ in\ th\ first\ (U-D), we\ should\ rescale\ the\ term\ by\ a\ multiplcaion$
$, meaning\ it\ was\ canceled\ in\ the\ second\ family.$
$Simple\ and\ beautiful.$

Overview of ideas

$mass\ is\ just\ variation\ converging\ inward, and\ nature\ would\ like\ to\ eliminte\ it\ again,$

$if\ true, seems\ like\ she\ really\ has\ many\ ways\ to\ do\ the\ same\ thing$

$8 + (1) \rightarrow force \rightarrow net\ variation\ outward$

$\rightarrow proved\ last\ paper: 8 + (1): [24 + (3)] + 3: [(24 * 5) + (3)] + 5 \ldots$

$8 + 0 \rightarrow \mathrm{m}atter \rightarrow not\ nessercialy\ with\ mass$

$8 - (1) \rightarrow \mathrm{m}ass \rightarrow decreasing\ succession\ of\ familys\ \ converging\ to\ 0$

$nature\ is\ again\ eliminating\ the\ variations, this\ time\ a\ bit\ differently.$

$infinite\ familys \rightarrow with\ decresing\ net\ mass, this\ could\ come\ in\ agreement$

$With\ experiment.\ From\ first\ family\ (U - D)\ and\ below:$

$$10.\ \mathrm{M}\ (\mathrm{N} + 1) = \frac{\mathrm{M(N)}}{7 * \prod_{I=1}^{r} N(E)} * \frac{1}{9}\ \ or\ \ \frac{\mathrm{M(N)}}{7 * \prod_{I=1}^{r} N(E)}$$

$as\ we\ combined\ the\ net\ masses\ of\ the\ two\ elemetns, the\ value\ should\ be\ again,$

$decomposed\ to\ the\ two\ seperate\ elements.$

$\boldsymbol{There\ are\ an\ infinite\ variaty\ of\ familiys}\ whose\ mass\ is\ decreasing, thus\ \boldsymbol{below}$

$\boldsymbol{First\ generation\ of\ quarks, this\ could\ agree\ with\ so\ called, dark\ matter}.$

$cosmologists\ to\ decide\ whether\ the\ values\ predicted\ agree\ with\ the\ data.$

Mathmatical Attempt at Reasoning Universel Flatness

quarks are arbitrary *amounts of* ***curvature on the Lorentz manifold****.*

so the eight combinations we counted are really the way of nature to eliminate the curvature. The atoms than, must appear flat, and any additional, higher level interaction must be flat as well.

that could come in agreement with the fact that electricity is linear, and so does gravity, well almost.

Remember we concluded in previous papers, now instead of saying "variations" we switch to "curvature".

Remember, when we calculated the coupling constants values and realized that the magnitude of the force is an interplay between total variations to net variations ? We saw that the total variations grow much faster than the net, and we dealt with small numbers $n \leq 31$.

Imagine dealing with an amount of varying elements of 10^7 *Quarks or any amount of Quarks contained in the star. If no rules nor order, then there could be a net curvature, which must be eliminted. The net is very small compare to total , if so the amount of net curvature is quite insagnificant as well.*

So the net amount is causing another net amounts to get closer, to eliminate the problem, and ensure no net variations. Thus, despite the manifold is somewhat curved, "gravity" has to be linear and so called, 'efficent'.

One would like to suggest, after few Intresting results found in previous papers, that the underling principle, taken from this point of view, is to ***eliminate the arbitary amounts of curvature****. The whole Sequence we found*:

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9:30:128:850:9254 \ldots$$

Was goveren by the idea that each time a net curvature will appear, force will by manifsted. We just called it 'variation'. *we saw that net curvature is of prime amount.* ***Force is net curvature extended owtward → to pull****.*

So we can expect that the curvature to be extremely strong at start and weaker and weaker as we develop the series.

So the forces Strong, weak, Electric … should be curvutre extensions. The Stronger the net The closer the balancing element should be and just equally strong but revese in direction. nature would not allow curvings to appear, she will attampt to eliminate it.

So arbitrary amounts of curvature appear as quarks, and paired immedatly, as that is the point in a EL framework, Protons are created, subject to certain amount of net curvature themselves, than atoms and cheimstry, than stars, than galaxies, than clusters of galaxies, than life. Its her reason, everywhere.

But we also showed that the Lagrangian could be represented as:

$$\frac{\partial L}{\partial s1} - \frac{\partial L}{\partial s2} = 0$$

Taken from that point of view, the flatness of the manifold is due to other manifolds interacting with it.

But we don't see any, so its quite peculiar. One would like to suggest that it could be interaction from outside , manifold packing or wrapping, opinion like. Each liar is a manifold itself.

So if certain manifold is experiencing wild, strong variations this will be eliminated by the interaction with additional manifolds.

Two different ways to reason for flatness; Both lead to one conclusion she is not a fan of differential geomtry nor curvature.

We also showed that mass in a variation converging inward $\rightarrow 8-(1)$; ***Mass is curvature extending Inward to pull. Force and mass than are the same*** *just reverse in direction.*

$$\sum_{n\to 1}^{n\to\infty} M - \sum_{n\to 1}^{n\to\infty} F = 0$$

$$8-(1)+\ 8+(1)=\ 16\rightarrow 0$$

Interactions between forces and mass will yield no curvature, Linear.
Even amount of Variations taken to vanish.

$$8-(1)+\ 8+(1)=\ 16\rightarrow 0$$

Also imply that forces will try to meet the masses if given at the same space. As Arbitrary curving must vanish, they are perfectly suited to eliminate, same but opposite In direction.

$Thus, Theortical\ proof\ of\ masses\ and\ forces\ relationship.\ Mass\ will\ attract\ force,$
$and\ Force\ will\ attract\ Mass.\ No\ Physics\ needed.$

$Curvature\ converging \rightarrow generate\ mass \rightarrow 8-(1)\ curvings \rightarrow familys$
$Curvature\ diverging \rightarrow generate\ force \rightarrow 8+(1)\ curvings \rightarrow coupling\ constants$

$There\ are\ infinite\ values\ of\ net\ curvings, In\ agreement\ with\ finding$
$infinite\ sequence\ of\ coupling\ constants\ given\ by$:

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = \ 9:30:128:850:9254 \ldots$$

$Also\ infinite\ number\ of\ curving\ converging\ , aspiring\ to\ zero\ over\ time, as$
$it\ has\ to\ be\ eliminted.\ In\ agreement\ with\ infinite\ familys\ forming\ below$
$the\ first\ family.$ $\boldsymbol{Possibly\ given\ by}$:

$$\mathrm{M}\,(\mathrm{N}+1) = \frac{\mathrm{M(N)}+7}{7 * \prod_{I=1}^{r} N(E)} * \frac{1}{9} \ \ \boldsymbol{or}\ \mathrm{M}\,(\mathrm{N}+1) = \frac{\mathrm{M(N)}+(7)}{7 * \prod_{I=1}^{r} N(E)}$$

$By\ following\ reasoning - We\ can\ analyze\ entire$ 8 theory $framework$:

$$\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t}\omega g - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t}\omega g' = 0$$

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = \ 9:30:128:850:9254$$

$$\mathrm{M}\,(\mathrm{N}+1) = \frac{\mathrm{M(N1)}}{7 * \prod_{I=1}^{r} N(E)} * \frac{1}{9} \ \ or \ \ \mathrm{M}\,(\mathrm{N}+1) = \frac{\mathrm{M(N1)}}{7 * \prod_{I=1}^{r} N(E)}$$

$And\ put\ it\ in\ one\ word$:

$\boldsymbol{Flat}.$

The Rise of The Arrow of Time

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9{:}\,30{:}\,128{:}\,850{:}\,9254 \ldots$$

$$\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} = 0$$

In our framework we have a Lorentz manifold inside an Euler- Lagrange equation. The manifold Experience arbitrary variations, which vanish into, matter, we proved it in previous papers.

Each time net variation appear on the manifold, a boson is manifested into our matric. That was The idea, which derived the coupling constant equation. Net variations are prime, and for each prime There is a boson, unique boson:

$$8 + (1)$$

$$[(8 * 3) + (3)] + 3$$

$$[(24 * 5) + (3)] + 5$$

$$[(120 * 7) + (3)] + 7$$

However, how does that relate to the arrow of time? Remember that the coupling constant equation Is really a built upon a ratio between total variations divided by two and net variations which are Prime. We saw that the total variations grew much more rapidly than the net, and we required a Sequence, that it will go from low to high.

So the arrow of time should go from low to high as well. There could not be a photon propagation Without electron which propagate from the nuclei, or cluster of so-called quarks. The sequence of The coupling constant equation is the sequence of time it allows us to build from the elementary to The massive, first arbitrary variations eliminate and vary themselves, create protons and neutrons Which vary as well, propagate electrons, which vary as well, yielding photons and electromagnetism. Moreover, the series go on and on.

Interplay of total variations to net variations, which grow in number and gets weaker from one element to another, explain why the forces at a large scale are much weaker than those at Smaller scale, here are much more total variations and the net is divided across the whole cluster. So starts and galaxies must appear only after the strong, weak and electromagnetic.

Nature is going from high to low, from small amount or strong variations to weak amounts of Net variations over bigger clusters of total variations. Keep in mind that when we say variation We mean curvature as we built the 8- theory upon a Lorentz manifold.

But if we look at each element in itself, like electromagnetism for example we won't see any clues For the arrow of time, as it's not telling anything about the arrow. Its only when we find the series of Coupling constants and the intimate relation of the boson to primes and we put them in a row, than and only than we can see the rise of the arrow of time.

In other words, we can reason why galaxies and cluster of galaxies can form only After the strong, weak and the electric. We are also able to reason the weakness Of gravity and the interactions in higher terms in the series.

$$1 > \frac{1}{30} > \frac{1}{128} > \frac{1}{850} \quad \cdots$$

$$\longrightarrow$$

$$1 > \frac{1}{30} > \frac{1}{128} > \frac{1}{850} \quad \cdots$$

The Almost homogenous Universe

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9: 30: 128: 850: 9254 \ldots$$

$$\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} = 0$$

The reason the universe is not completely homogenous based on the framework is that the manifold Experience arbitrary variations – which than vanish into fermions. Marked in green.

$$\left[\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\right]\frac{\partial g}{\partial t}\delta g - \left[\frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\right]\frac{\partial \partial g'}{\partial \partial t}\delta g' = 0$$

Those variations are arbitrary amount of curvature of a manifold, and they are subject to net variations Which yielded the coupling constant equation. We saw that nature is really the interplay between total Arbitrary variations to net variations. Net variations are prime in their nature, and so in the 8- theory Framework for each prime number there exist a boson.

$$8 + (1)$$

$$[(8 * 3) + (3)] + 3$$

$$[(24 * 5) + (3)] + 5$$

$$[(120 * 7) + (3)] + 7$$

The series gives rise to the arrow of time; we should see more interactions as time goes on and so, Bigger and bigger structures which makes the manifold less and less homogenous. The bigger the Cluster of total variations the weaker the force, as it is divided across the whole cluster.

By looking at those two equations we can see exactly why the universe or the Lorentz manifold in The 8-theory framework is not homogenous, because of those arbitrary variations and the additional Net variations. The first accounts for fermions, known as quarks, the other known as bosons.

Using that framework, we can see why the manifold cannot be homogenous, it is almost obvious. Of course, the question of the homogenous structure is a question in which we cannot really Answer, as it has no numerical data, it's a question revolving around a theory in which the lack of Homogeny is a feature of the main axioms and equations.

We can see it in the framework of the 8-theory, or any Lagrangian oriented theory, which includes Arbitrary variations, which must vanish at border. The beauty and innovative part in the 8-theory Is that, all life forms, galaxies, clusters of galaxies **are** those arbitrary variations.

$8 - Theory\ on\ Universe\ Expansion - Collapse$

$$1.\ \frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} = 0$$

$$\frac{\partial g}{\partial t} = 0 \text{ and } -\frac{\partial \partial g'}{\partial \partial t} = 0$$

This equation describes dark energy, or time invariant acceleration from areas of extremum Curvature on the Lorenz manifold. We assume no data is available from the first three terms, Which describe a varying matric in spatial dimensions.

To ensure universe collapse, we need to revert the signs so we will get:

$$+\frac{\partial g}{\partial t} \rightarrow -\frac{\partial g}{\partial t}$$

$$-\frac{\partial \partial g'}{\partial \partial t} \rightarrow +\frac{\partial \partial g'}{\partial \partial t}$$

In other words, the acceleration is now directed inwards, and the new equation is:

$$2.\ \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} - \frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} = 0$$

Therefore, we have an inward acceleration and areas of negative curving on the Manifold, which agrees with the description of a compressed Lorentz manifold. However, Is it reasonable physically to make such a transformation from (1) to (2)?

Suppose it is reasonable to change the direction of the acceleration. By looking at

The second term:

$$+\frac{\partial g}{\partial t} \rightarrow -\frac{\partial g}{\partial t}$$

Meaning, all the galaxies, clusters of galaxies, which represent extremum curvature On the manifold, must be eliminated and revert their direction inward, toward the manifold. Such shift will be along an inward acceleration and a process of manifold compression. The Process than is synonymous to going from a lower energy state, colder state, to a much Higher state of energy.

It is a higher state of energy as it is a process of immense masses compressing inward, Toward a converging Lorenz manifold, such process will be encompassed by friction, heat And high entropy. It is not Lagrangian oriented and not likeable scenario in our framework. There is no need for calculation of hydrogen atoms per unit space when we have the Mathematical equation.

We can also analyze the subject of expansion or collapse by using the coupling constant Equation in its third representation, the arrow of time.

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9:30:128:850:9254..$$

$$1 > \frac{1}{30} > \frac{1}{128} > \frac{1}{850} \ \ldots$$

$$\overrightarrow{1 > \frac{1}{30} > \frac{1}{128} > \frac{1}{850} \ \ldots}$$

A universal collapse would be to revert the side of the arrow. From weaker And weaker interactions at mega scales, to go for smaller interactions much stronger:

$$\xleftarrow{\qquad\qquad\qquad\qquad}$$
$$1 > \frac{1}{30} > \frac{1}{128} > \frac{1}{850} \quad \dots$$

The physical meaning would be than, stars, galaxies and clusters of galaxies to deform And in an endless succession until we reach quarks and gluons. Such process would require Immense amount of energy and it has to happen across all the spectra of the foreseeable Universe. In our framework, it means less manifold net variations (positive curving) over Time. Physically it does not make sense, it's not Lagrangian oriented. To go from low State of energy and aspire the highest level.

There is no indication that such process could accrue in nature, without artificial Intervene. As far as one knows, it comes to an agreement with the laws of Thermodynamics. Nevertheless, more importantly, in our framework, there Is no reason For such unnatural thing to happen.

The Coupling Constant Equation and Gauge Fields

The coupling constant equation:

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9{:}\,30{:}\,128{:}\,850{:}\,9254$$

Each term individually:

$$8 + (1)$$
$$[(8 * 3) + (3)] + 3$$
$$[(24 * 5) + (3)] + 5$$
$$[(120 * 7) + (3)] + 7$$

Let us look at the first term:

$$8 + (1)$$

Remember back in the day, when we concluded that we could ignore the eight, since Even amount of variations vanish, and just write that the first element is one.

$$8 + (1){:}\,\big(24 + (3)\big) + 3{:}\,\big(120 + (3)\big) + 5{:}\,\big(840 + (3)\big) + 7 \ldots$$

$$(1){:}\,(30){:}\,(128){:}\,(850){:}\,(9254) \ldots$$

We also know that there are eight gluon fields. These are meditating the strong Interaction and color charge. However, this could be just a coincidence. Let us Examine the next Term in the series:

$$[(8 * 3) + (3)] + 3$$

This term describe the nature of the weak interaction. Notice the right inside the Parenthesis:

$$(8 * \mathbf{3})$$

We also know that there are three gauge fields meditating the weak interaction. Which we correlate to $SU(2)$ $and\ Isospin.\ the\ massive\ W\ \ the\ Z\ bosons$.

If the right term inside the parenthesis is a reflection on the number of fields Meditating an interaction than we can examine the next term on the series, Electromagnetism:

$$[(24 * \mathbf{5}) + (3)] + 5$$

That is a daring statement to make, but if the assumption to hold true, There Should be five gauge fields meditating the electric interaction. Five distinct Kinds of photons.

It is really an absurd statement to make, given the fact that there are no indication That there is an agreement with experiment regarding that idea. But sometimes in Theoretical physics, bold risks must be taken, and so the author of this paper Will allow his belief regarding the great power of the equation to guide him and State:

The 8-theory predicts five gauge fields meditating electromagnetism.

Whether such thing could be correct, only time and experiment will tell. It is Very exciting as the 8-Theory was on point up until now regarding questions No other theory could answer.

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8 *Theory On Quark Mass Mixing And Mixing Angles*

Take the masses of all the generations and combine them:

$$[1.9] \qquad [1320] \qquad [172{,}760]$$

$$[4.4] \qquad [87] \qquad [4240]$$

1. $1.9 + 4.4 = 6.3$
2. $1320 + 87 = 1407$
3. $172{,}760 + 4240 = 177000$

<u>The idea</u> by Quark mixture we mean multiplication of masses of the first and second to Yield the total mass of third, times a scalar. So a total mass of the first family multiplied by The total mass of the second family, both multiplied by a scalar, will yield the total mass of The Third.

We can proof that is the almost case exactly for the values of the masses above:

$$6.3 * 1407 = 8864.1$$

$$\frac{177{,}000}{8864.1} = 19.96$$

If we can allow a slight variation of the first masses to be 6.29 Mev and not 6.3, it will be

$$6.29 * 1407 = 8850$$

$$\boldsymbol{\frac{177{,}000}{8850} = 20}$$

Therefore, just a slight variation of 0.01 Mev and we have a beautiful integer, a scalar. But, More importantly, a way to combine the total mass of the first and the second, mix them And multiply by the scalar, to reach the total mass of the third.

Reader should argue that it could be just a coincidence, a choice of certain values to yield The scalar and he might be right as the masses are not measured or known as exact, they Could divert.

Assuming the mixing will accrue at scalar numbers only, we can build correction angles To ensure the scalar number will hold. So if the masses of the first divert or measured At a higher value that 6.29, there will be a correction angle to retain the same scalar we Obtained. The correction angles could have more than one value and they can be Positive or negative.

Take the mass of the up quark to be average between 1.9 to 2.2 Mev, which is 2.05 Mev.

$$\frac{1.9 + 2.2}{2} = 2.05\ Mev$$

$$2.05 + 4.4 = 6.45\ Mev$$

$$6.45 * 1407 = 9075.15$$

$$\frac{177{,}000}{9075.15} = 19.503$$

The correction angle to reach desired scalar would be than

$$\mathbf{19.503 + \cos\ (11.5)\ \approx\ 20}$$

Now that is truly beautiful. Now it is less likeably a mere luck. We started with an idea, we Varied the mass according to an average and by using the correction angles we again reach The same scalar. The correction angle is with agreement with quark mixing angle.

There could be many more, the correction angles are not limited in number and depend Upon the masses values taken of the first, second, and the third as well. The idea behind Stay the same. The correction angle will be added to yield a scalar multiple.

$$20 * \left(TotalMass(1) * TotalMass(2)\right) = TotalMass(3)$$

Among all the achievements of the 8-theory, and there has been many, the question of Quark mixing seems to be among the hardest ones. This paper is not a proof of any sort But a mathematical idea, the reader should rightfully argue and doubt it.

One was trying to reason in the simplest and most elegant way, the weird phenomenon Of Quark mixing. Whether it makes sense or not, readers should decide after analyzing the Paper.

The Coupling Constant Equation and Higgs Mechanism

$$F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9:30:128:850:9254..$$

$$8 + (1):(24 + (3)) + 3:(120 + (3)) + 5:(840 + (3)) + 7 \ldots$$

$$(1):(30):(128):(850):(9254) \ldots$$

Let us look at the first term describing the strong. We saw that the eight vanish since its An Even in our framework.

$$8 + (1) \rightarrow (1)$$

We also know that from physics the gluons are massless. Let us examine the second term.

$$\big(24 + (3)\big) + 3$$

We know that the bosons that meditate the weak interaction do carry mass. And we Know that the symmetry of $\mathrm{SU}(2)$ *forbids mass terms in the Lagrangian, and the solution Which allows us to include mass terms without ruining the symmetry is the Higgs idea. This idea works by including extra terms.*

In our framework, the ***extra term is the Majestic (3).*** *Therefore, the Higgs field is Responsible for the lack of order in our series, which could have been a beautiful Series of eight multiples. In a sense of the standard model, we can say it is "breaking The symmetry" by inserting the invariant (3).*

So overall, we move from spin 0 – perfect clusters of variations. With the Majestic (3) *inserted by the Higgs Field we move to a matter with Spin one-half, we did so by setting the equation on the critical line of the primes. This* (3) *is really a destabilizing factor than yields a net variation, which is prime as well.*

For example – Electromagnetism:

$Perfect\ clusters\ of\ variations \rightarrow 2N$

$destabilize\ the\ perfect\ 2N$ is the Majestic $(3) \rightarrow \left(\frac{1}{2}\right) \rightarrow electron.$

$Blends\ in\ the\ potential\ cluster\ to\ yield\ in\ that\ case \rightarrow 123.$

$The\ result\ is\ the\ net\ variation\ which\ is\ also\ Prime\text{:}\ N(V) \rightarrow \left(\frac{1}{2}\right) \rightarrow\ +(5)$

$The\ overall\ frame\ yields\text{:}$

$\left[2N + \left(\frac{1}{2}\right)\right] + \left(\frac{1}{2}\right) \rightarrow\ \mathbf{123 + 5 = 128}.\ Probability\ \ of\ Boson\ emission.$

The main point of the paper is that the Majestic (3) is a result of the Higgs field. It's the Reason the majestic (3) appears. So overall, our framework does not contradict the Higgs Idea but support it and allow us an additional view on how the mechanism work.

As the Higgs is responsible for additional terms in the Lagrangian, and in the 8-theory We see that the first elements in the series of coupling constant differ by an additional Term, the Majestic (3) *or* $spin\ \left(\frac{1}{2}\right)$ *.*

$\underline{\boldsymbol{Anti\ Matter}\ \&\ \boldsymbol{Dirac\ Delta\ Function}}$

$$\boldsymbol{s} = (\boldsymbol{M}, \boldsymbol{g})$$

$$L = (s, s', t)$$

$$\boldsymbol{\frac{\partial L}{\partial s} - \frac{\partial L}{\partial s'} * \frac{d}{dt} = 0}$$

$$\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} = 0$$

$$\frac{\partial g}{\partial t} = \ 0 \ \text{ and } \ \frac{\partial \partial g'}{\partial \partial t} = \ 0$$

$$\left[\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\right]\frac{\partial g}{\partial t}\delta g - \left[\frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\right]\frac{\partial \partial g'}{\partial \partial t}\delta g' = 0$$

$$\delta g1 + \delta g2 \ldots = \ \delta g$$

$$\delta g = 0$$

Reader should be familiar with the procedure. Now we have seen that we can derive The nature of fermions and the quark model by allowing the series, which contain two Distinct elements to vary. So overall we obtain eight threefold combinations of those Elements.

Therefore, even though the elements are varying the series could vanish. That is in Agreement with A stationary Lorentz manifold.
There could be however, another way to ensure a stationary Lorenz manifold.

$$\delta g1 + \delta g2 \ldots = \delta g$$
$$\delta g = 0$$

Which will match each element in the series its mirrored element. That is

$$\delta g1 + \delta \exists g1 = 0$$
$$\delta g2 + \delta \exists g2 = 0$$

By mirror, it means the same but opposite in sign. So the overall sum of the Series will hold as zero. In the 8- theory framework quarks are regarded as Arbitrary amount of curvature on a manifold. Based on this view, anti-quarks And anti-matter is arbitrary curvature with opposite direction. Same magnitude Just different direction.

So overall, that framework would allow the existence of anti-matter. That Is in agreement With quantum field theory and with the Dirac equation for spinors. In fact, the moment of Singularity could be a result of the series not equal to zero.

$$\boldsymbol{\delta g \neq 0}$$

The moment the series is not equal to zero than means that we have net curvature, or Maximal curvature on the manifold, which will yield a negative extremum time invariant Acceleration from it.

$$\left[\frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\right]\frac{\partial g}{\partial t}\delta g - \left[\frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\right]\frac{\partial \partial g'}{\partial \partial t}\delta g' = 0$$

In other words, the moment of asymmetry in the series yielding net curvature on the Manifold could be the reason for singularity and so called among the masses "big bang". It is just an idea of course, but up until now the 8- theory was on point in regards to Issues on other theory could explain.

Dirac Delta Function

Our two main equations in the framework:

$$1.\ \frac{\partial L}{\partial s}\frac{\partial s}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \frac{\partial L}{\partial s'}\frac{\partial s'}{\partial M}\frac{\partial M}{\partial g'}\frac{\partial \partial g'}{\partial \partial t} = 0$$

$$2.\ F(R) = \left(8 * \prod_{i=1}^{i=R} N(V) + (3)\right) + N(V) = 9: 30: 128: 850: 9254..$$

The Dirac delta in our framework is an interference on the Lorenztion manifold. An arbitrary Amount of curvature δg on the manifold. Since it is not allowed and must vanish, we require , as we did previously in this framework. $\delta g = 0$

$$\delta g \neq 0 \qquad at \qquad t = 0$$
$$\delta g = 0 \qquad at \qquad t > 0$$

So the Dirac delta in our framework describe the process in which arbitrary amount of Curvature appear, and vanish into matter. However, there is no restriction with regard to Time. Arbitrary amount of Curvature can appear at any time, so we must modify the idea Of the Dirac in our framework.

$$\delta g \neq 0 \qquad at \qquad t = Q(t)$$
$$\delta g = 0 \qquad at \qquad t = Q(t) + \Delta t$$

We also require that $\Delta t \to 0$ as just after the arbitrary amount or interference will appear, It will immediately vanish into matter. So in this framework is rich in delta functions. The difference is that the delta can appear at time that is not null. In a sense, we have more Flexibility with the delta.

After the delta appeared and as a result fermions were manifested into the metric. Those Fermions could still vary, and experience a net curvature or net variation as was analyzed In the thesis. Those net curvatures were taken to be prime numbers and that was the reasoning Behind the construction of the coupling constant equation.

Those net variations of the manifold are another interference, but and interference which Propagate from fermions, and is prime number. So in that sense it cannot turn into fermions. **Fermions vanish in even amount of variations.** The result is a propagation across the manifold Ripples on the metric all across.

$$\delta g = 0 \qquad at \qquad t1 = Q(t) + \Delta t$$

At later continuation of time:

$$t2 > t1$$

This condition is satisfied:

$$\delta g \neq 0 \qquad at \qquad t2 = Q(t) + \Delta t + \Delta t$$

And the amount of variations is either prime or one.

$$\delta g = 2\left(n + \frac{1}{2}\right) \; for \; n > 1$$

$$\delta g = 1$$

In addition, a condition that must be satisfied is that the odd $2\left(n+\frac{1}{2}\right)$ will not be divisible by

Three and not a scalar multiple of **even** lower primes.

Than we have a ripple on the manifold which propagate all across, toward all directions.
The Laplacian operator than is vital to description for a mathematical description of the
Manifold ripples, or bosonic fields.

Important point to take, is that the **underlining reason for the boson propagation**
All across the metric is their prime number feature. They could not vanish into matter.
And based on this framework we cannot associate a morphism between a boson ripple
Fields and fermions interferences, super symmetry is not possible in this framework.

Define a bosonic ripple across the Lorentzian Metric:

$$\boldsymbol{\nabla}^2 = \frac{\partial^2 g}{\partial^2 M(x)} + \frac{\partial^2 g}{\partial^2 M(x)} + \frac{\partial^2 g}{\partial^2 M(z)}$$

That is curvature propagation across all metric spatial dimensions as:

$$M(x, y, z) \in S$$

$$S = (M, g)$$

$\underline{\boldsymbol{Proof: The\ Riemann\ Hypothesis}}$

Define a Lorentz manifold

$\boldsymbol{s} = (\boldsymbol{M}, \boldsymbol{g})$

Use it to assemble a Lagrangian and require it to be stationary:

$L = (s, s', t)$ As $\boldsymbol{\frac{\partial L}{\partial s} - \frac{\partial L}{\partial s'} * \frac{d}{dt} = 0}$

Allow arbitrary variations of the manifold. Ensure it will vanish:

$$\varpi \boldsymbol{s} = 0$$

Turn it to a series of arbitrary variations:

$$\varpi \boldsymbol{s} = \varpi \boldsymbol{s1} + \varpi \boldsymbol{s2} + \varpi \boldsymbol{s}3 \dots$$

If there are only four elements in the series, and we require them all to vanish, than we can allocate two pluses and two minuses:

$$\varpi \boldsymbol{s1} + \varpi \boldsymbol{s3} > 0$$

$$\varpi \boldsymbol{s2} + \varpi \boldsymbol{s4} < 0$$

If

$$\varpi \boldsymbol{s1} + \varpi \boldsymbol{s3} + \varpi \boldsymbol{s2} + \varpi \boldsymbol{s4} \neq 0$$

Than the overall series cannot vanish, by that logic we need equal amounts of plus and minuses. The overall amount must be even and summed as zero.

Suppose that we had three distinct elements, two pluses and minus:

$\varpi \boldsymbol{s1} + \varpi \boldsymbol{s3} + \varpi \boldsymbol{s2}$ *> 0*

or

$\varpi \boldsymbol{s1} + \varpi \boldsymbol{s3} + \varpi \boldsymbol{s2} < 0$

Demanding the series to vanish this will defy the result, and so prove that there could not be three distinct elements in the series, else the overall series will not vanish.

Decomposing in those sceneries, we require the series to have an even amount of variation elements, manifesting as two distinct elements in the series, which differ in sign.

If we allow those sub elements in the series to vary as well, and by the above reasoning, there are only two elements in the series, they are varying in a discrete way, or forming a group.

Let it be only four elements in the series and one of the pluses just changed its nature

$\boldsymbol{O}: \varpi \boldsymbol{s1} \rightarrow \varpi \boldsymbol{s2}$

$\varpi \boldsymbol{s1} + \varpi \boldsymbol{s1} + \varpi \boldsymbol{s2} + \varpi \boldsymbol{s2} = 0$

To:

$\varpi \boldsymbol{s1} + \varpi \boldsymbol{s2} + \varpi \boldsymbol{s2} + \varpi \boldsymbol{s2} \neq 0$

There must be a way to bring it back to where it was, so the overall series can vanish, it takes another map, on the varying element to bring it back to where it was.

Y: $\varpi \boldsymbol{s2} \rightarrow \varpi \boldsymbol{s1}$

Therefore, to bring an element to itself given only two varying elements in the series we need two distinct maps, which attach a varying element to itself, by a threefold combination. $\varpi \boldsymbol{s1}(O)\ \varpi \boldsymbol{s2}(Y)\ \varpi \boldsymbol{s1}$ *For example.*

Even though the sub elements in the series are varying, the overall series can vanish.

Now, count all the ways of possible combinations of those elements. We are going to analyze by the integral signs. Since it is a group, there is a natural map, which change an element to itself. One built his analysis firstly on those natural maps.

So:

$$(1(e)1(e)1)$$

$$2(e)2(e)2$$

$$(221)$$

$$(112)$$

$$(211)$$

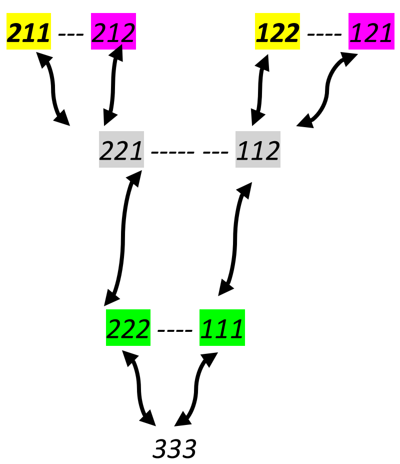
$$(122)$$

$$(212)$$

$$(121)$$

The first two combinations are by the natural maps and one used them to build the other combinations. Overall, there are eight such combinations and additional one arrow combination, which yield (333)

Here is how one built it, starting from those two natural maps. (Arrows to variations, colors to pairings):



Now that we have a series of 2N elements, varying to one another and forming threefold combinations, ***which we require to vanish at end****, we can set the stage for a proof of primes:*

Define: *P^m as the set of {2 , 3} as "minimal primes"*

In addition, all the other primes to be in a set of $P_{\underline{h}}$ as meant "prime higher".

Define *$P_{\underline{h}} = \{2n+1\}$ not divisible by P^m as "prime higher" set – $2n$ taken as amount of Lorentz manifold arbitrary variations.*

$\{2n+1\}$ *Meaning odd amount of variation not divisible by the elements of* P^m.

.$P_{\hat{\underline{t}}} = P_{\underline{h}} + P^m$; t*o be the set of all the primes*

Define a functor *V on $P_{\underline{h}}$:*

$$V: set \rightarrow ring$$

Analyze any multiplication or addition combination of $P_{\underline{h}}$ on the ring

Multiplication:

Define T *to be a number aspiring infinity: $T \rightarrow \infty$*

Multiply an ***even or odd*** *series aspiring infinity of distinct higher primes to obtain:*

$$[(2n_1+1)(2n_2+1)(2n_3+1)\ldots(2n+1]) =$$

$$2\left[T\left((n_1\, n_2 \ldots)\right) + (n1+n2+n3\ldots) + \frac{1}{2}\right]$$

$$= 2([T\,((n1\,n2\,\ldots)) + N(s) + 1/2]$$

$$N(s) = (n1+n2+n3\ldots) = 0.$$

As sums of even amounts of arbitrary variations vanish. Since all the elements are two multiples, they all vanish. Final form:

$$2([T\ (n1\ n2\ \dots)]\ +1/2)$$

$\boldsymbol{Addition}$

*Add any infinite **even series** of distinct higher primes to obtain*

$$(2n_1+1)+\ (2n_2+1)\ +\ (2n_3+1)\dots\ =\ [2(n1+n2\dots)\ +\ even]\ =$$

$$[2(n1+n2\dots)]$$

$$as\ even\ =\ 0.$$

Prime cannot form, as even amount of variations vanish exactly to zero. That is the reason the paper begins with deriving fermions, their anti-commutation relation. Even amount of distinct higher primes added will never form a prime.

---

*Add any infinite **odd series** of distinct higher primes to obtain*

$$(2\mathrm{n}_1+1)+\ (2\mathrm{n}_2+1)\ +\ (2\mathrm{n}_3+1)\dots\ =$$

$$[2(n1+n2\dots)\ +\ odd]\ =$$

$$[2(n1+n2\dots)\ +\ (even+\ 1)]$$

However, even amounts of arbitrary variations vanish:

$$even\ =0$$

$$[2(n1+n2\dots)+1]\ \ or:$$

$$2[n1+n2\dots+1/2]$$

$Category\ transformations$

Define a functor on "Primes higher" ring

$$G: ring \rightarrow group$$

All "primes higher" are forming a closed non-abelian group with 1/2 as generator. The condition to group forming is to have an odd amount of primes under addition and eliminating even amounts of arbitrary variations taken as an axiom.

Define additional functor

$$G': group \rightarrow set$$

Add the sets:

$$P_{\underline{\mathrm{h}}} + P^{\mathrm{m}} = P_{\underset{\wedge}{\mathrm{t}}} \ ;$$

Define a functor on $P_{\underset{\wedge}{\mathrm{t}}}$:

$$G'': set \rightarrow group$$

All primes are forming a non-abelian group of generator 1/2. Minimal primes are part of the group by nature of the proof, defined technically to be prime.

Primes are forming a non-abelian group under addition and multiplication. The condition to satisfy is to have an odd amount of primes under operation of addition. No matter how far into infinity we will go, the framework of vanishing of even amount of variations will ensure that all primes take the same form – aligned on 1/2.

*setting the stage and **examining primes not as numbers**, **but rather as arbitrary variations of a manifold**, which vanish in pairs of even variations, we are able to show primes to form a non-abelian closed group under 2(n+1/2).*

Final functor on the total group of primes:

$$Riemann: Group \rightarrow ring$$

All primes are forming an infinite ring on the critical line of 1/2 and only there.

End of proof.

The reasoning for choosing the numbers of "prime minimal" is due to the nature of fermions, which yield a series of two distinct elements in threefold combinations. Fermions behave according to an anti- commutation relation and vanish in pairs.

There could not be a "quark" or an arbitrary variation of the manifold by itself. The series must be two and three divisible. Even amounts of opposite signs and threefold combination of elements.

Overview of Reasoning

1. Deriving fermions as arbitrary variations of a Lorentz manifold

2. Arbitrary variations to vary to form threefold combinations

3. Using the fact that arbitrary variations must vanish – to derive their pairing.

Threefold combinations pairs in color.

4. Defining a prime in a context of variations – knowing that even amount of variations cancel.

5. Changing the setting from sets to rings – so we can operate addition and multiplication

6. Showing that under any multiplication – (1/2) will be invariant

7. Showing that under addition – only odd amount of primes will ensure a prime,

As even amounts of variations vanish. Thus, could not be a prime there.

8. Changing the settings from ring to group, from group to set, adding minimal primes,

From set to group again, and group to ring.