Matter, Dark Matter and Dark Energy in perspective of New Theory of Quantum Gravitation.

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ABSTRACT

Universe is created from one particle of creation **String or Treo.** These particles constituted primordial soup. Instantly after big bang, these five dimensional particles of primordial soup were alternately woven as *bound treos* with five negative dimensional curled up *voids* (empty spaces with no length, breadth, or depth, represents elapsed time and absorbs positive energy to expand itself) to construct our Ten dimensional omnipresent space matrix [83, 85, 87, 88, 89].

This matrix is continuously vibrating at *Planck's frequency* by simultaneous vibrations of all bound treos. Rate of its rhythm which is S times per second is the new dimensionless constant **'S'** and is *COSMIC CODE* for our universe [83 a].

This S number decides the value of *all universal constants*, *Unit energy*, *Unit mass*, *Unit time*, *Unit*

speed, *Unit Space* (a cube of S bound treos length which is 'unit space matrix'), *Unit expansion* and *Unit contraction* (of one layer of unit space matrix) in this universe.[83 b,90,91]

 5% of universe is *free treos* (**visible matter**) which in multiple unit of S number (unit photon) forms all photons and in unit of $\sqrt{S} \times S$ number (unit electron) constitutes all Visible Matter. All *matter* with its quarks and kinetic coloumns rotate anticlockwise, while all *antimatter* with its kinetic coloumns rotates clockwise.

25% of universe is Dark Matter and is made up of *kinetons* (*Activated bound treos*). Any matter exerts load on multilayered space matrix from all directions, which is square of the number of unit masses in body and is neutralized by equal number of gravitons (*one gravitons has S^2 kinetons*). These kinetons are generated by contraction of equal number of bound treos, which results in contraction of local space matrix.

Undeformed continuously *vibrating bound treos* of Space matrix constitute 68% universe and its uniform omnipresent potential energy is represented as **Dark Energy.** This energy is responsible for slow and simultaneous uncurling of all 'curled up voids' which results in uniform, accelerating expansion of our universe.

With continuous expansion, universe is *aging,* along with all its living and nonliving's; and thus heading towards next big bang [92 pp 260].

Kinetons are single force provider of universe, and form kinetic coloumns in one, two, three and four dimensions, to construct fields of all four basic forces.

Remaining 2% universe forms configurations as *galactic Halos*, inter galactic *Filaments* and Billions of km long *'cosmic strings'* to construct 'buckeye ball shaped' architecture of our self supporting universe.

TEXT

This fundamental work of geometrical 'Treo model of structure and working of universe' explores about matter, dark matter and Dark energy, along with it advocated new theory of quantum gravitation.

25% of universe which *does not react with EM radiation*, and thus remains invisible, is **Dark Matter**.

Observations of rotational speed of spiral galaxies, the confinement of hot gases in galaxies and cluster of galaxies, the random motions of galaxies in clusters, the gravitational lenses of back ground objects and the observed fluctuations in the cosmic microwave back ground radiation require the

presence of *additional gravity*. The evidences suggest that the mass of Dark matter in galaxies, cluster of galaxies, and in universe as a whole is about 5 times greater than the mass of *ordinary light emitting matter* that makes up stars, planets, satellites, gas and dust.

Einstein thought that gravitational collapse of all matter will ultimately lead universe to 'big crunch', and to maintain its 'static universe configuration', he introduced a fudge factor of 'cosmological constant' in his equations of general relativity , but later on he regretted it.

When it was observed that universe is not static but continuously expanding since 'big bang', it compelled to search the reason of this uniform expansion.

1998 observation of HST (Hubbell space Telescope) of 'accelerating rate of expansion of universe' has again revived cosmological constant, and the idea allows that space itself should have its *own energy to expand* itself i.e. **Dark Energy**.

All galaxies are moving apart from each other and it is suggested that some time in past they must all have started their journey from one point which gave the hypothesis of 'Big Bang'. The idea was tested and found correct; but we remained ignorant about *what caused big bang*?

It allows us to think about presence of some strange kind of energy fluid, or some thing is missing in

general theory which requires a *new theory of gravity* and it should include some omnipresent field to explain this behavior of universe.

We know 68% of universe is Dark energy, while dark matter is 27% and 5% is visible matter.

One widely held belief about dark matter is that it cannot cool off by radiating energy. If it could, then it might bunch together and create compact objects in the same way as baryonic matter forms planets, stars, and galaxies. Observations so far suggest dark matter doesn't do that – it resides only in diffuse halos as a result, it is extremely *unlikely* that there are very dense objects like stars, made out of entirely (or even mostly) dark matter.[44]

It was Einstein who first recognized that *empty space* is not empty. Empty space can posses its own energy and as this is property of space itself, it will not be diluted as space expands faster and faster. Treo model gives exactly the right value and revives cosmological constant to explain every thing.

10^{120} times high value of energy, which 'Quantum theory of Matter' gives to universe; could not be explained. Treo model calculates it as energy of 'unit black hole'.

While their existence has not been established with certainty, 'primordial black holes' have in the past been suggested as a possible solution to the dark

matter mystery. Because there is so little evidence of them, though, the 'primordial black hole–dark matter hypothesis' has not gained a large following among scientists.

The LIGO () findings of gravitational waves, however, raise the prospect a new, especially as the objects detected in that experiment *confirm to the mass predicted for dark matter*. Predictions made by scientists in the past, held conditions at the birth of the universe would produce many of these 'primordial super massive black holes' distributed approximately evenly in the universe, clustering in halos around galaxies. All this would make them good candidates for dark matter. [65]

Proposed Treo model calculates that *one graviton* which supports one unit mass has '**Planck energy**'; while *one graviton on each bound treo in a meter length collectively generate* '**Planck Force**'; where as 10^{113} j is the value of '**Planck energy density**' of *all Gravitons on each bound treos in one meter cube*.

The Quintessence energy after fifth element of Greek Philosophers; is adopted in Treo model with recognition of *Energy as new <u>fifth dimension</u> of universe,* *along with both of its positive and negative values*.

First time Fritzwicky in 1930, after studying a cluster of 1000 galaxies moving away fast apart from each

other, was puzzled that why they are not ripping apart; or *what bound them together* in a cluster?[]

Vera Rubin and Kent ford, could not explain the reason of observed 'Rotational curve' with 'fast rotational speed of distal stars in all galaxies'. []

27% or 25% of universe as *dark matter* can not be explained by MACHOS (Massive Compact Halo Objects) or WIMPS (Weekly Interacting Massive Particles) which itself are produced from 5% visible universe.

Machos can only account for a very small percentage of the non-luminous mass in our galaxy, revealing that most dark matter cannot be strongly concentrated or exist in the 'baryonic astrophysical objects'. Although micro-lensing surveys rule out baryonic objects like brown dwarfs, black holes, and neutron stars in our galactic halo can be other forms of baryonic matter which make up the bulk of dark matter? The answer, surprisingly, is 'no'. [53]

A comparison of data from gravitational lensing and gamma ray observations has revealed that *regions of the sky with greater concentrations of matter emit more gamma rays*. So much of correlation is likely due to the action of supper massive black hole, but some of radiation is coming due to dark matter. [68]

Models predict that flux of gamma rays can be produced from dark matter when its particle density

is large, thus the *gamma ray signals could act as dark matter tracers*.

It all left us to answer two questions; *what binds all matter together* i.e. what is Dark Matter and *what expands universe* i.e. how Dark Energy is produced? Along with it third unanswered question '*what produces matter*' will also be answered here.

Proposed Treo model not only explains and proves the existence of MATTER, DARK MATTER and DARK ENERGY, but also explains the purpose behind their existence.

(1) **ALL MATTER AND ANTI MATTER** (5% mass energy of universe)**,** i.e. all **EM energy** and **Mass energy** in all packets are formed by accumulation of **FREE TREOS** *in different type of photon packets, all fermions* (electrons and elementary particles), nucleons, atoms unit masses and unit charge etc.

All *matter* with its quarks and kinetic coloumns rotate *anticlockwise (which gives them Negative Charge)*, while all *antimatter* with its kinetic coloumns rotates *clockwise (which gives them Positive Charge).*

Space matrix or our **SPACE** is responsible for **dark matter and dark energy**.

(2) **DARK MATTER** (27% mass of universe) is bound treos of omnipresent space matrix activated as **KINETONS** and they form *all binding* and *supporting material of universe.*

Dark matter is kinetons; which form 'force fields' of all four basic forces and also act as binding energy for matter and architectural energy of universe.

(a) Thus **as kinetons** it is present in *kinetic coloumns with all bosons.*

(!) As *sub kinetic coloumns* they produce electro magnetic fields and also manifests *as magnetrons* and supports all **photon packets**. There number increases with increasing number of kineton layers in all kinetic coloumns with increasing speed, and are directly responsible for *increased mass of all fast moving bodies.*

(!!) Kinetons form all *shells**, *sub shells* **and** *orbitums* (all orbitums along whole wave length together form one **orbit**).
The kinetons act as *binding energy* or *Atomic energy* in all **gluons** and are present as *chromo dynamic energy* in all nucleons (as Nucleons are composite particles, formed by accumulated of integral number of *'mass units' or 'C mues'* and they act as *mass provider* with Higgs boson). [83 c]

(!!!) These Kinetons present in kinetic coloumns of all bosons, provide *weight* to *W, Z particles*, and are also responsible for increased weight of a fast moving body which becomes evident at sub luminal speed (theory of relativity).

(!V)
(a) All S^2 *kinetons in one 'graviton coloumn' get* curled with one graviton. These **Gravitons** are present in *electron black holes, gravitational spheres, unit black holes, as halos in 'galactic gravitational fields' and in 'super massive black holes'* to support the mass of these bodies.

(b) These kinetons also act as **binding material** in kinetic coloumns, **'filaments'** and **'cosmic strings'** as they act as basic units of architecture in our self supporting universe**.**

(3) **<u>DARK ENERGY</u>** (68% of universe)

In Treo model *'Energy' has been proposed as fifth dimension of universe*; both with its positive and Negative values. 68% of universe is produced by undeformed bound treos in space matrix which are constantly vibrating @ S times in S planes per second and with each vibration its *vibration energy is absorbed by its adjacent void to uncurl itself.*

Dark energy *manifests with constant slow uncurling of 'curled up five negative dimensions' of universe which results in simultaneous **increasing size of all***

voids, this in turn causes **accelerating expansion of universe** and decides the value of *'Hubble constant' and 'Cosmological constant',* as proposed in treo model.

This result in 'increasing *total* positive potential energy of universe' continuously, at the cost of 'decreasing *total* kinetic energy of universe', which thus *aging our universe and* with *increasing **entropy** preparing it for another big bang*.

[Contacted space matrix manifests with its increased (local) kinetic energy, as bound treos are activated as kinetons in local area to support all matter on space matrix.

But with churning of all matter (in gravitational spheres and in black holes) and production of 'Hawking energy pairs', this *contracted space matrix is no longer required*, which results in *re- flattening of space matrix, by conversion of some of these kinetons back to bound treos*, and thus also contributes to increase total potential energy of universe].

TO UNDERSTAND THE ABOVE STATEMENTS WE NEED TO EXPLORE SOME SALIENT FEATURES OF 'TREO MODEL' IN DETAIL.

Treo model advocates that **only *'one object'* i.e. string particles** and ***'one tool'* i.e. load dependent increasing contraction of space – time, is used in Creation**.

(!) STRUCTURE OF UNIVERSE [83; PP 35 to 54]

1. Treo as Precursor (generator) of All Space and All Matter.

The proposed geometrical 'Treo model' presents a hypothesis about a fundamental primordial particle commonly known as a *string,* **which is named 'Treo' in this model**. Treo presents itself in one-dimension of length and is of **Planck's least length.**

Treos have fixed mass and energy and as bound treos they vibrate continuously every time in different plane, to create all five-positive dimensions of space in active space–matrix.

Size of one treo = *Planck least length* = 1.616229 × 10^{–35} meter

$$\text{Size of one treo} = \textit{Planck least length} = 1.616229 \times 10^{-35} \text{ meter}$$

We will first observe, how space–time–energy and matter and dark matter is created, by this Treo?

2. Bound Treos and S number

Treos are divided in two categories 'free treos' and 'bound treos'.

As **bound treos** they get *arranged alternately with curled up* **voids**, to construct the geometry of all three dimensions of Space, marks fourth dimension of Time; while they themselves are vibrating particles by which they represent ENERGY the proposed fifth dimension of universe.

Five positive dimensions are created when bound treos arrange themselves (alternately with voids) in space matrix and oscillate continuously at **Planck frequency (S times per second),** each time after a gap of Planck's least time, in all possible S planes in 360°. This rhythm of vibrations of all bound treos in space matrix at Planck frequency regulates our universe.

S NUMBER THE 'COSMIC CODE'
(New Proposed Dimensionless Constant of Universe)

The S number is COSMIC CODE which governs and carves our QUANTUM PENDULUM UNIVERSE.

Planck frequency = (1 / Planck Least Time)
= $1 / 0.5389689 \times 10^{-43}$ sec = $1.85539441 \times 10^{43}$ per second

This number $1.855394409 \times 10^{43}$ or 'S' is the proposed new dimension less constant or COSMIC CODE in this treo model.

All bound treos vibrate by S number of vibrations per second in all possible S number of planes.

One quanta of **free treos** *(i.e. S free treos present in one 'unit photon')* accumulate and pile up in integral numbers, at each of √S quantum levels of first dimension to produce all √S types of photons of EM spectra. One unit Electron *(√S ×S free treos)* increases at each of √S quantum levels of second dimension as Mass energy of all elementary particles.

The constant S determines several other universal constants.

1. **S number of treos is one quantum energy**, which is also the 'quantum of unit action' and the value of *'reduced Planck constant'; ħ (h bar).* While *Planck constant h:* is the angular momentum of this one quantum energy i.e. $h = S \times 2\pi$. [83 d]

2. **S bound treos distance in S vibrations time (in one second**) **is the** *Speed of light, c*. [83f]

3. **S free treos** is **one quantum EM energy;** and are present in *one-unit photon.* [83g]

4. **√S Quanta are mass energy of** *one-unit electron* and are also present in *one-unit charge.*[83h]

5. **S quanta or S² free treos make one 'unit mass' (*Planck mass*).** [83i]

6. **S² kinetons** (formed by S² bound treos) **constitute one *Graviton* which supports one unit mass.** [83j]

7. **S² kinetons per second per second** is also the derived value of ***Gravitational constant***. [83k]

8. While uncurling of each void per vibration, by **1/S² of present size of each void, at each point of universe,** is the value of *cosmological constant* and the rate of expansion of universe, which calculates the present value of ***Hubble constant.*** [83l]

9. S seconds (S² vibrations) is one life span of universe; presently contracted in 13.8 billion light years size. [83m]

3. TIME, the Fourth Dimension of Universe

Time along with three dimensions of space, together form four dimensions of space–time. **Each bound treo vibrate by** S number of vibrations per second (Planck frequency); and time between two such vibrations is **Planck least time**. All the treos of the universe vibrate simultaneously and thus whole universe vibrates at S frequency.

The minimum time required for any action to take place is Planck least time i.e. the time period in between two vibrations of universe. It may be a physical action or any chemical or biological processes which occurs around us continuously, requires this 'least processing time' for any change; and this constant change (universal expansion and local contractions) is perceived by us as 'flow of time'. No time machine (to visit past or future) is possible as we move in continuously changing universe, transforming with its each new vibration, without leaving behind any trace e.g. as our body has evolved from a baby, with no remnants of baby body left, so we can not move from our present body in a baby body.

If **there is a reduction in total *number* of vibrations per second** in any local area, the time between two vibrations (i.e. Planck's least time) will increase, which in turn will increase the duration of 'minimum reaction time' or the 'least processing time' (now every action or chemical and biological process will take more time), and thus it will slow down the rate of change, to which we perceive as slow down of time in involved local area. If no change occurs Time will stop, then the universe will look like a photograph.

Fourth dimension of Time

'Planck's Least time'

Change

All 'bound Trεos' vibrate simultaneously each time after a time gap of 'Planck's least Time' & the whole universe readjusts itself in this Least Time. This continues change is perceived as continuous 'flow of time'.

Time

Slow Down of number of vibrations per sec, locally increases the time gap in between two vibrations which in turn increases 'least time' the minimum time required for a change'

Local Slow Down of Time

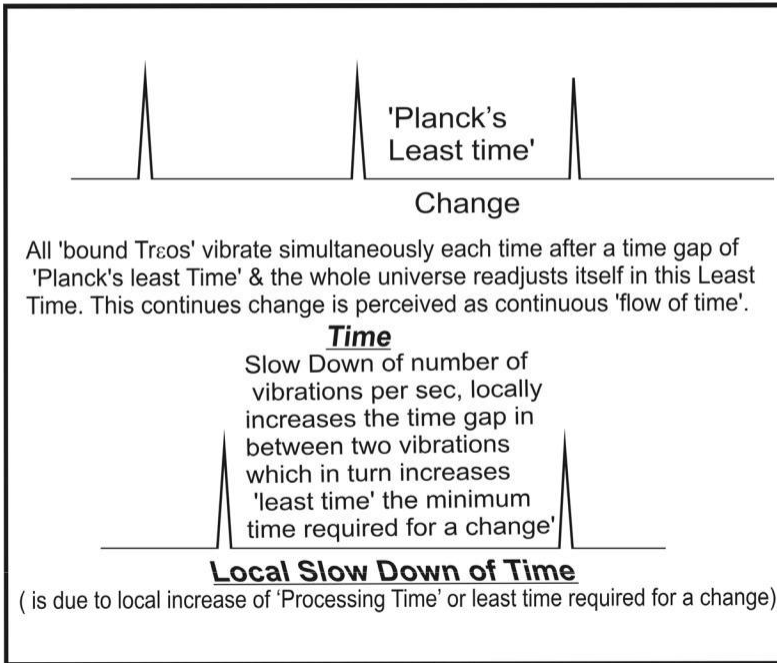(is due to local increase of 'Processing Time' or least time required for a change)

Figure 1: Each Bound treo vibrate by S Times per second, with a time gap of Planck's least time. This time gap is 'least processing time in universe' for execution of any action.

Number of vibrations in one second

One second/Planck's least time = $1/\,0.539 \times 10^{-43}$

$=1.855394405 \times 10^{43}$ vibrations per second (**S** vibrations)

4. FIFTH DIMENSION- ENERGY

All Electromagnetic energy and all mass energy packets up to one unit mass, exert a load along its *length of spread* in a line, at each *'apex bound treo'* along its **Reduced Compton wave length**. [83n]

At each 'apex bound treo' the load exerted by any number of free treos, is neutralized by equal number of bound treos of space matrix, as they convert in to *kinetons* and after getting arranged in a kinetic coloumn, they direct kinetic energy of all kinetons at this 'apex bound treo' to support the load.

All bound treos of space–matrix, which are not subjected to load, vibrate simultaneously by S vibrations per unit time (per second), in S number of *all possible planes*, in 360º of a circle. In next second it will vibrate in a circle placed in a different direction, and thus it will vibrate one by one in all S circles placed in S directions of one sphere, in its total life span of S seconds (which is also one full life span of our universe).Fig 2

When any *one bound treo* vibrating in all S planes is subjected to (minimum) 'load' of one free treo, its *planes of vibrations* (or the degree of freedom) is restricted and this bound treo will now vibrate S times per second only in *one plane*, in the direction of load to support or neutralize this load (mass pressure or momentum) on space–matrix, thus it produces an *equal and opposite reaction*.

This contracted bound treo, vibrating only in the direction of load, is a **'kineton'.** Fig 3
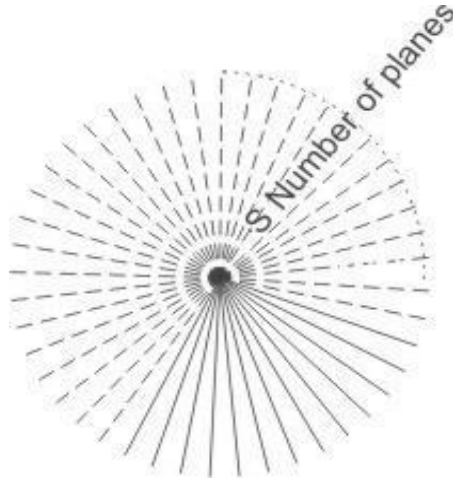

Figure 2: Each bound treo vibrates in all S planes in 360° degree of a circle or has S degrees of freedom, completing S vibrations per second. In next second it will vibrate in a circle placed in a different direction, and thus it will vibrate one by one in all S circles placed in S directions of one sphere in its total life span of S seconds (which is also one full life span of our universe).

Load of one free treo

One bound treo starts vibrating only in direction of load

Figure 3: When any bound treo of space–matrix starts vibrating only in the direction of load (restricting its degree of freedom) to support it, this deformed bound treo is called '**kineton**' (**one particle of Dark matter**).

5. Speed of Light

(Speed of displacement of photon packet per second)

Each time after one Planck's least time, by **next one vibration, the photon packet is pushed to adjoining 'next bound treo'** in direction of its progression on space matrix. And thus by S vibrations in one second, it performs translational motion **by S number of (i.e.$1.855394405 \times 10^{43}$) bound treos distance per second.**

$1.855394405 \times 10^{43}$ vibrations per second $\times$ $1.615788303 \times 10^{-35}$ Meter **2.997924×10^8 meter per second $= 2.997924 \times 10^8$ meter per second; and it is conventional value of 'c', the Speed of light.** (Where $1.615788303 \times 10^{-35}$ Meter is length of one bound treo by which the photon packet moves ahead by one vibration of space matrix)

This calculation indicates, (as it is calculated from two constants of Planck's least length and Planck's least time), that the speed of light is also a constant and is ultimate speed of movement in our universe, in un–deformed space matrix. Hence this speed of light also confirms the proposed 'structure of space matrix' as described in this treo model.

Space matrix is a medium, which propels all photons, and every motion of all bodies in this universe is the result of 'propulsion by this active

medium': It is to be noted *that continuous motion of every thing in this universe,* **is due to this active vibrating space matrix.**

As this moving deformation can not die by itself and shifts ahead with moving photon (or any) packet; it is ***basis of conservation of momentum;*** which is the first law of motion *'if a body is moving it will go on moving indefinitely until a retardation force is applied on it'.*

6. CREATION OF SPACE

Space is not empty, but it is permeated by a non-zero energy field, earlier named by Mr. Einstein as 'Space-Time' and by Mr. Peter Higgs the 'Higgs field'. In this model omnipresent, ten dimensional, 'Space matrix' represents all three components of Space – time – energy.

All Bound treos (which constructs five positive dimensions) are placed alternately with voids (five curled up negative dimensions) and thus it weaves our ten–dimensional uniform, omnipresent space–matrix.

The one-dimensional treos can only form 3 dimensional spaces, by their mode of compilation.

When arranged side by side along a *line,* it produces first dimension of **Length.**

To construct two dimensions of **length and breadth**, they construct figure of *squares*.

To construct all 3 dimensions of space (**length, breadth and depth**) small *cubes* of Planck least length are formed, in multi layered space matrix.

Unit Space Matrix[83o]

Universe is vibrating S times per second at '`cosmic rhythm`'. Unit space matrix is not a physical division of space in universe, but it quantities space and demarcates 'one unit space'. Space - matrix is omnipresent and the presence of load on it at any point (at any one *apex* bound treo) it starts the boundaries of one unit space matrix from this point.

Cosmic rhythm, **i.e. S vibrations,** regulates all three components of space-time-energy (space matrix); i.e. one **unit space**, one **unit time** and one **unit energy**, thus it quantities all five dimensions of Space-matrix governed by this rhythm of universe, of S vibrations per second**.**
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Unit space matrix, is **a cube having S number of bound treos in its each side**, (the distance traveled by light in one second), and demarks *one unit space*. S numbers of vibrations which occur in S number of Planck least times, mark *one 'unit time' or one second*.

The 'quanta of unit action', per second consume S vibrations. While S number of kinetons (S activated bound treos is *one quanta or one unit kinetic energy*) is one quantum kinetic energy which is required for 'one unit action' and it is the value of Reduced Planck constant (see calculations below).

One quanta EM energy or S number of free treos (in one–unit photon as *one unit EM energy*) evenly spreads in a line on one side of this cube on S number of bound treos, where one free treo load on one (apex) bound treo is supported by one kineton, by its **S vibrations which occur in one second**, (i.e. by each vibration it is supported only for a period of one Planck's least time and pushed to next bound treo in direction of motion; to travel at the speed of light).

This one–unit space systematically contract with increasing load at one apex bound treo (at one point), along with successively involving increasing number of four dimensions of space –time, to produce fields of all four basic forces (EM force, weak and atomic forces and gravitational force).

Unit space matrix is a cube and it can be better understood by simile of a book, that there is **one line of S bound treos**, **S such lines in one page** (S^2 bound treos), **and S such pages in one cubical book** (S^3 bound treos)**.**

S vibrations which can involve only S number of bound treos in one dimensional deformation of length; with changing coloumn geometry in increasing number of dimensions, will simultaneously effect S^2 bound treos in two dimensional and S^3 bound treos in three dimensional deformation of unit space matrix.

Our universe is quantum universe and our space is also quantified by S, S^2 and S^3 bound treos respectively in 1, 2, and 3 dimensions of unit space matrix and it vibrates as one unit continuously by S vibrations per unit time (in one second).

(!!) Matter (BASIC UNIT OF MATTER IS 'MASS UNIT' OF 35.012 MEV) [83p]

There are √S quantum levels in each of four dimensions of space –time.
All types of Photons are formed by Integral multiple of **one quantum EM energy (i.e. S free treos)**. S free treos (present in **one unit photon**) are added as one unit at each of √S quantum levels of first dimension to produce all √S types of photon packets which form entire EM spectrum.

Then the increments occur in unit of **one 'unit electron'** made up **of √S quanta mass energy (i.e. S × √S free treos)** at each of √S quantum levels of second dimension (of length and depth).

Thus all elementary particles, nucleons, atoms, molecules and up to one 'unit mass' *(i.e. Planck mass= 2.176 × 10⁻⁸),* are placed at their respective matching quantum level.

While all big bodies are made up of multiple numbers of 'unit masses' which adds one by one at √S quantum levels of third dimension, which progressively deforms length, breadth and depth all three dimensions of unit space matrix.

In fourth dimension, √S number of **'unit masses'** increases at each of √S quantum levels to form all cosmic bodies, with complete deformation of all four dimensions of space -time.

But in second dimensional deformation, when it comes to pack, **charged 'unit electrons' together**, to form a packet of composite elementary particle or nucleon, **great amount of localization energy** is required, *to overcome the strong repulsive force between two negatively charged unit electrons.*

It is observed that Mass energy of all elementary particles, is integral multiples of 35.012 MeV.

Author is first person to observe and reported it in 2015[92], that this 'mass unit' of 35.012 MeV is actually *Composite mass of unit electron,* (which is the 'mass energy of unit electron along with its localization energy') which can be calculated by

dividing mass energy of unit electron by twice of 'fine structure constant'*.

*[Traditionally it is considered that the '**fine structure constant**' is *coupling constant and is ratio of energy required to counteract the force of repulsion between two electrons* vs. reduced Compton wave length of photon.]

The '**Cmue unit**' (composite mass of unit electron) or simply '**mass unit**' in its integral multiples generate all elementary particles, nucleons and thus act as basic unit of all visible matter. ***Bound treos of space matrix*** *are the source of this localization energy of unit electron.*

According to proposed formula, this Composite mass of unit electron of 35.012 MeV; can be calculated by dividing the mass energy of unit electron of 0.511 MeV by twice of 'fine structure constant', with its known value of 1/137.035999084 [2018 Codata value].

'Composite mass energy of unit electron' (35.012 MeV) = Mass energy of one unit electron in MEV, which is divided by Twice of Fine structure Constant.

35.0126237 MeV = 0.510998918 MeV / (2 × 1/137. 035999084)

All elementary particles and nucleons have their mass energy which is integral multiple of this 'MASS UNIT' (or Cmue units i.e. 'composite

mass energy of unit electron') within 1% deviation. (Ref below, table)

PARTICLE	Known mass of elementary particles in Mev	Calculated Mass of all elementary particles in Mev	Known mass-calculated mass × 100/ known mass = Error in %	Number of composite unit electron masses in particle as observed here
LEPTONS				
Electron	0.51 Mev	0.51/ 2 (1/137.035999710) = 35.012698 Mev (Composite mass of unit electron or m_e)	0%	= 1
Muon	105.66 Mev	m_e × 3 = 105.3809 Mev	0.26%	= 3
Tau	1776.99 Mev	m_e × 51 = 1785.6475 Mev	0.48%	= 51
MESONS				
Pion	139.57 Mev	m_e × 4 = 140.0507 Mev	0.34%	=4
Kaon	493.68 Mev	m_e × 14 = 490.1777Mev	0.70%	=14
Eta	547.75 Mev	m_e × 16 = 560.2031 Mev	− 0.22%	=16
Rho	775.8 Mev	m_e × 22 = 770.2792 Mev	0.71%	=22
Omega	782.59 Mev	m_e × 22 = 770.2792 Mev	1.57%	=22
Meson	1869.4 Mev	m_e × 53 = 1855.6728 Mev	0.73%	= 53
Ds Meson	1968.3 Mev	m_o × 56 = 1960.7109 Mev	0.37%	=56
B Meson	5279.4 Mev	m_e × 150 = 5251.9023 Mev	0.52%	=150
Bs Meson	5369.6 Mev	m_e × 156 = 5391.955 Mev	0.41%	=156
BARYONs				
Nucleons	938.27 Mev	m_e × 27 = 0945.3427 Mev	− 0.75%	N=27
Lamda	1115.68 Mev	m_e × 32 = 1120.4062 Mev	0.42%	N=32
Sigma	1197.45 Mev	m_o × 34 = 1190.4316 Mev	0.59%	N=34
Xi	1314.18 Mev	me × 38 = 1330.4825 Mev	− 0.12%	N=38
Omega	1672.45 Mev	m_e × 65 = 1680.6095 Mev	− 0.48%	N=48
Lamda$_s$	2284.9 Mev	m_e × 48 = 2275.8254 Mev	0.397%	N=65
Sigma$_s$	2452.2 Mev	m_e × 70 = 2450.8889 Mev	0.04%	N= 70
Xi$_s$	2466.3 Mev	m_e × 70 = 2450.8889 Mev	0.62%	N=70
Omega$_s$	2697.5 Mev	m_e × 77 = 2695.9778 Mev	0.05%	N=77
Lamda$^@_s$	5654.0 Mev	m_e × 161 = 5637.0445 Mev	0.29%	N=161

Table: Mass–energy of elementary particles is integral multiple of 'MASS UNITS' or composite mass of unit electron within 1% deviation

While describing the **Higgs fields** it was advocated by Mr Peter Higgs that Elementary particle drag the fixed amount of Higgs field with them in which they move; by **Higgs mechanism.**

Treo model explains Higgs mechanism as below ---

This dragged fixed amount of Higgs field according to model, are fixed number of bound treos supplied from space matrix.

These ***bound treos*** contributed as *fixed amount of localization energy* (or wrapped Higgs fields with each unit electron) after being converted in kinetons act as 'quantum chromo dynamic binding energy of a proton' and binding energy of all nucleons.

It is conventionally accepted that Protons are composite particles, where most of Proton mass is not only its mass energy but predominantly it is quantum 'chromo dynamics binding energy' which is attributed to massless gluons.

27 MASS UNITS (Unit Electron along with its localization energy, each of 35.012 MeV) **form one Proton.** (35.012 x 27 = 945.3 MeV is well within 1% deviation from 938.2 MeV which is known mass of proton) [83Q]

While forming a nucleus by protons, neutrons, mesons, gluons and W and Z particles, **this localization energy**, accumulated with each 'mass unit' which forms these nucleons, subsequently get

converted to kinetons to act as binding energy which manifests as 8 types of Gluons (type of bosons made up of kinetic coloumns) and gives mass to W, Z particles.

Question lingers on are these building blocks i.e. 'mass unit' (of 35.012 MeV) forming all matter particles and *providing them weight* can itself be named as **one type of Higgs boson or god's particle**?

COMPOSITION OF VISIBLE MATTER

The number of 'Treos' in

1. **Unit Photon** $= 1.855394405 \times 10^{43}$ Free Treos

2. **Gamma photon of 1.02 Mev** $= 2.8724704 \times 10^{64}$ Free Treos

3. **Electron of 0.511 MeV** $= 1.439491604 \times 10^{64}$ free treos

4. **Proton of 938.272 MeV** $= 2.64416818 \times 10^{67}$ Treos

5. **Neutron of 939.565 MeV** $= 2.64781297 \times 10^{67}$ Treos

6. **Unit mass (Planck mass)** $= 3.442488398 \times 10^{86}$ free Treos $=$ or *2.17643 $\times$ 10^{-8} Kg* (*Planck mass*)

7. **One Kg mass** $= 1.58079692 \times 10^{94}$ free Treos[83r]

8. **Charge on 'one rotating treo'** $= 1.112167 \times 10^{-83}$ coulomb [83s]

(Number of free treos on one unit electron i.e. one eV is on $= 1.439491604 \times 10^{64}$ free treos and 6.2×10^{18} unit electrons produces one coulomb charge on $0.89(9240188) \times 10^{83}$ free treos)

9. **Mass to charge ratio**[83t] = above values are according to known ratio $1.76 \times 10^{11} =$ Kg / coloumb

$(1.76 \times 10^{11} = 1.58(26627) \, 10^{94}$ treos are in one Kg mass $/ 0.899240188 \times 10^{83}$ free treos in a coulomb.)

10. **Mass of one treo =** $0.632592326 \times 10^{-94}$ kg

11. **Energy of one Treo** $(e=mc^2) = 5.6831651 \times 10^{-76}$ J

(!!!) DARK MATTER

Dark Matter is every where, but has not been identified so far. As per treo model, the Dark matter is activated bound treos- **the Kinetons**, which are

only force provider in universe which support, push and act as all binding energy particles in universe.

The known fact that **'mass of any fast–moving particle increases in proportion to its increasing velocity',** but *what increases its mass with increasing velocity?* The speed of particle will increase due to increase in its kinetic energy, which is possible by increase in number of kinetons or DARK MATTER present as kinetons in all supporting and pushing kinetic coloumns.

As per treo model, this increase is due to transfer of layers of kinetons in all kinetic coloumns of *moving body*, from all kinetic coloumns of *pushing body* and is responsible for proportionately increasing mass/ weigh of the moving body with its increasing velocity.

STRUCTURES FORMED BY DARK MATTER (by kinetons in universe)

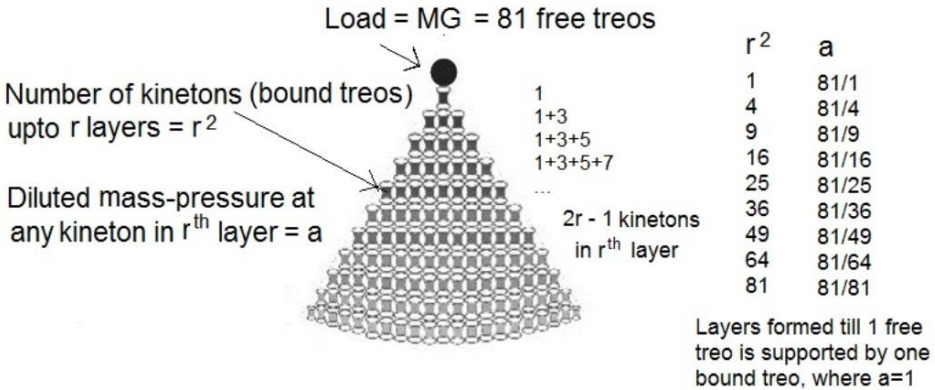### (a) Dark matter as kinetons in all type of Kinetic coloumns.

In kinetic coloumn of all four dimensions according to proposed coloumn geometry, with ***increase of one more unit*** of mass energy at any **n^{th} quantum level, one new n^{th} layer is added having 2n -1 supporting units (kineton, orbitum or S kinetons, graviton or S^2 kinetons and electron black hole $\sqrt{S} \times S^2$ kinetons respectively) in all kinetic coloumns,**

formed at each apex bound treo along its wave length, and thus each n layered kinetic coloumn will now have n² supporting units as per dimension.

all supporting sub kinetic coloumns in one (wave) length of any Photon Packet form one EM wave

Figure 4: Photon packet uniformly spreads on each apex bound treo in its wave length and all supporting Sub- kinetic coloumns together form its one EM wave.


Load = MG = 81 free treos

Number of kinetons (bound treos) upto r layers = r^2

Diluted mass-pressure at any kineton in r^{th} layer = a

1
1+3
1+3+5
1+3+5+7
...
2r - 1 kinetons in r^{th} layer

r^2	a
1	81/1
4	81/4
9	81/9
16	81/16
25	81/25
36	81/36
49	81/49
64	81/64
81	81/81

Layers formed till 1 free treo is supported by one bound treo, where a=1

Example of a 9 layered kinetic coloumn supporting 81 free treo load

Coloumn geometry describing Newton's equation MG = r^2a

Figure 5: Coloumn geometry which is valid with kinetic coloumns which form in all four dimensions. Here one dimensional geometry of nine layered 'sub kinetic coloumn' is depicted which forms both EM waves and one dimensional part of gravitational field (coloumn) which can be described by Newton's equation.

The total **n number of layers in 'kinetic coloumn'** of this **'n quanta mass energy photon packet' denote n frequency of its wave** (or number of waves per second) **and also the n amplitude of wave**.
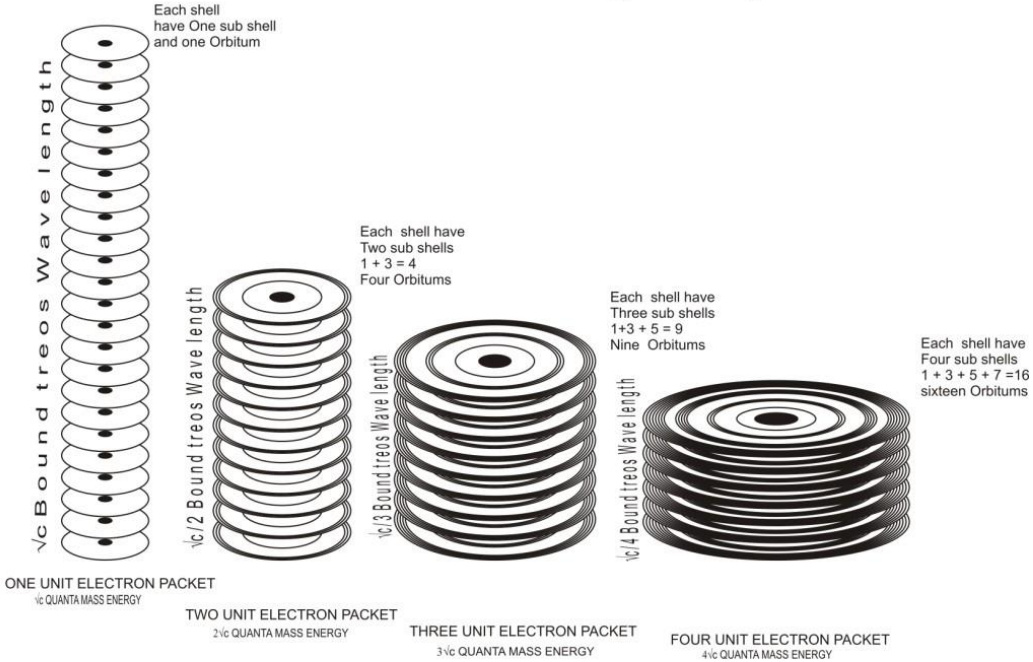
1st, 2nd, 3rd and 4th quantum levels of second dimension

Figure 6: In two dimensional geometry of kinetic coloumns at 1st, 2nd, 3rd and 4th quantum level, in each shell (kinetic coloumn) *s, p, d, f* sub shells are added one by one (which have 1, 3, 5 and 7 orbitums respectively as shown) with increased load at each next quantum level; Energy distribution at K. L. M. N atomic energy levels is based on this coloumn geometry.

Space matrix is deformed layer by layer in increasing number of 4 dimensions of space-time to form fields of all 4 basic forces.

[This layer by layer contraction of unit space matrix with the conversion of its increasing number of bound treos into kinetons is described in pages 100 to 150 in proposed geometrical 'Treo model of structure and working of universe' in referred book[83]]**.**

(b) Dark matter as binding energy and in gluons.

In 'composite mass of unit electron' or in each *C mue* unit of 35.01 MeV i.e. in each "mass Unit", it is mainly its 'localization energy' gathered from bound treos of space matrix. By union of multiple 'mass units' in integral number, this localization energy participates in the formation of *most part* of all composite particles i.e. quarks, elementary particles and nucleons. Subsequently in nucleons this 'localization energy' (as kinetons) gets converted to form all 8 Gluons and act as nuclear binding energy, and it also gives weight to W, Z Particles. Due to variation of number of kinetons in binding energy of different elements we observe this 'binding energy deficits' or 'MASS DEFICITS'.

Orbits are formed by union of all orbitums (each having S kinetons) placed one over other, in sub shells of all shells (i.e. kinetic coloumns of second dimension) which are present at each apex bound treo in wave length of this matter wave (Fig. 6).

(c) Dark matter as kinetons in solitary Gravitational field (Coloumn) of all cosmic bodies; (New Theory of quantum gravity)[83u].

Quantum Gravitation is four dimensional deformation of space-time by which all cosmic bodies get supported.
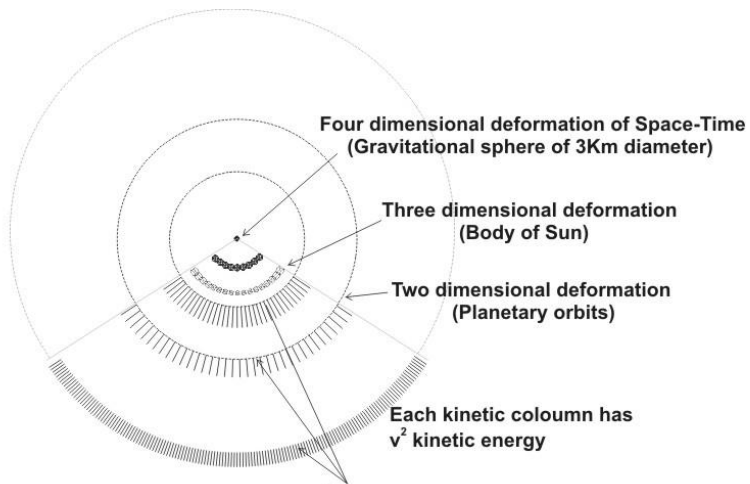
Where as all terrestrial bodies get supported even by three dimensional deformation of one unit space matrix. In two dimensional deformation of 'unit space matrix' orbits are formed with its matter waves and atomic forces erupt; while in its one dimensional deformation 'transverse sub kinetic coloumns' are formed which together produces EM waves (EM forces) of all photon packets.

The **sub kinetic coloumns** also (as they form EM waves as well) neutralize the exerted load of any cosmic body on space matrix in its gravitational field. Newton only described this one dimensional deformation of gravitational coloumn, by its gravitational field equations $MG = r^2 a$, $MG = rv^2$ i.e. $r \times a = v^2$ [where 'a' or conventional acceleration is 'diluted mass pressure' in treo model (see Fig. 5) and 'r ×a' is exerted load of cosmic body at any distance 'r', which is neutralized by equal number of v^2 kinetons (kinetic energy) in v layered sub kinetic coloumns, which thus executes 'action reaction mechanism' ($r \times a = v^2$) at each point in gravitational field].

In gravitational coloumn of any cosmic body, the central load in all cosmic bodies is supported by four

dimensional deformation which forms Gravitational sphere in four dimensional geometry, while three dimensional spherical mould is formed in three dimensional deformation which accommodate the mass of any cosmic body (**Thus all cosmic bodies are spherical**, but when the rarified mass of Saturn could not be accommodated in its three dimensional spherical mould it spells out in two dimensional deformation of gravitational field to form **'rings of Saturn'** among orbits of its satellites). In two dimensional geometry it forms orbit, in which the matter wave revolute the 'point mass of a planet' (after neutralization of load of planet by its own individual gravitational sphere and gravitational field), while one dimensional deformation (described by Newton with its Field equations $MG=rv^2$ and $MG=r^2a$) extends through out from its gravitational centre to its periphery (up to last layer formed at last $\sqrt{S}$ gravitational field quantum level in which only one free treo 'diluted mass pressure' of sun is supported by one kineton).

Sun is made up of 10^{38} unit masses and exerts a load of $(10^{38})^2$ unit masses at its gravitational centre, where '10^{38} graviton layered gravitational sphere' by its $(10^{38})^2$ gravitons supports this load. **10^{38} graviton coloumns unite side by side, to form solitary gravitational coloumn (field) of Sun.**

Four dimensional deformation of Space-Time
(Gravitational sphere of 3Km diameter)

Three dimensional deformation
(Body of Sun)

Two dimensional deformation
(Planetary orbits)

Each kinetic coloumn has
v^2 kinetic energy

All 2n-1 Sub kinetic coloumns in any n^{th} layer matter wave have total
2MG kinetons which support total 2MG free treos mass pressure of Sun

Coloumn geometry describes gravitational field and Newton's formula $MG=rv^2$

With diluting mass pressure of Sun in gravitational field, the deformation occur in decreasing
number of dimensions and gravitational kinetic energy reduces on smaller kinetic coloumns

Diagrammatic representation not to scale

Figure 7: m^2 or 'Square number of unit masses' central load, of 'm unit mass cosmic body', spreads and dilutes distally on each bigger orbit as 2 m load, and is supported by m × (2n-1) sub kinetic coloumns in any n^{th} orbit.

Sun (made up of 10^{38} unit masses or M unit masses) exerts its load of M^2 [$(10^{38})^2$] unit masses at its gravitational centre, which spreads/disperses all around on space matrix as 2M load (2×10^{38} unit masses) as 'diluted mass pressure' on *each orbit* in gravitational field of Sun and is supported by M or 10^{38} × (2n-1) **kinetic coloumns** in matter wave of this orbit, present at any 'n' bound treo distance from centre of Sun'.

Where this n bound treo distance = square of this gravitational field (any) 'quantum level number' × 10^{38} unit masses in Sun (same formula is applicable for all cosmic bodies).

In this solitary column (gravitational field) of Sun which has √S total 'gravitational field quantum levels'; firstly 'cyclonic waves' form in 3 dimensional deformation which **generates magnetic storms of sun (and '*Red spot in case of Jupiter*'),** then 'matter waves' are formed in 2 dimensional and '*gravitational field EM waves*' in 1 dimensional deformation.

Gravitational attraction[83v] is guided fall of bodies towards each other, as *shared space matrix* in between two bodies remains inadequate and can not produce enough deformation (number of gravitons required) to support both bodies.

(d) Dark matter as *gravitons* in 'electron black holes' at gravitational centre of terrestrial bodies and in solitary 'gravitational spheres' of all cosmic bodies (New Theory of quantum gravitation)

'Unit mass' is maximum mass which can be supported by one 'graviton' with its 'one full graviton coloumn' at one apex bound treo i.e. its 'unit gravitational centre'.

Any body made up of **multiple unit masses,** exerts its load of square number of 'unit masses present in this body' and is supported by equal number of gravitons (each graviton have S^2 kinetons); these are present both in electron black hole (three dimensional full kinetic coloumn) or in gravitational

sphere (four dimensional kinetic coloumn in formation and when completed it will convert in one 'unit black hole') of a cosmic body, as per size of body.

Thus to support all matter formed from 5 % of visible universe which will exert its load on space matrix in square number of its unit masses; will be supported by square number gravitons or by 25% of universe made up of kinetons (Dark matter).

(e) Dark matter in unit black holes, super massive black holes and in galactic halos; *as gravitons.* (New Theory of quantum gravitation)

Conventionally 'galactic centre' of our Milk way galaxy has approximately 42 million solar masses. According to treo model this mass is provided by **20 unit black holes** [as approximately 2.1 million solar masses or *'S number of unit masses'* are present in each unit black hole] arranged as per coloumn geometry.

A *halo* of dark matter made up of gravitons, (each graviton have S^2 kinetons in its accompanied graviton coloumn) will be formed in and around its galactic center, to support its mass, while still distally *'three dimensional deformations' of 'joint gravitational field' of galaxy, shapes the spiral arms of our galaxy*.

Held together and united with additional 2% universe (i.e. additional dark matter), are 'cluster of galaxies' with their *interconnecting galactic halos* or '**filaments**'. The 'buckeye ball architecture of universe' is constructed by millions of light year long **'cosmic strings'** all are made up of gravitons, which is Dark matter**.**
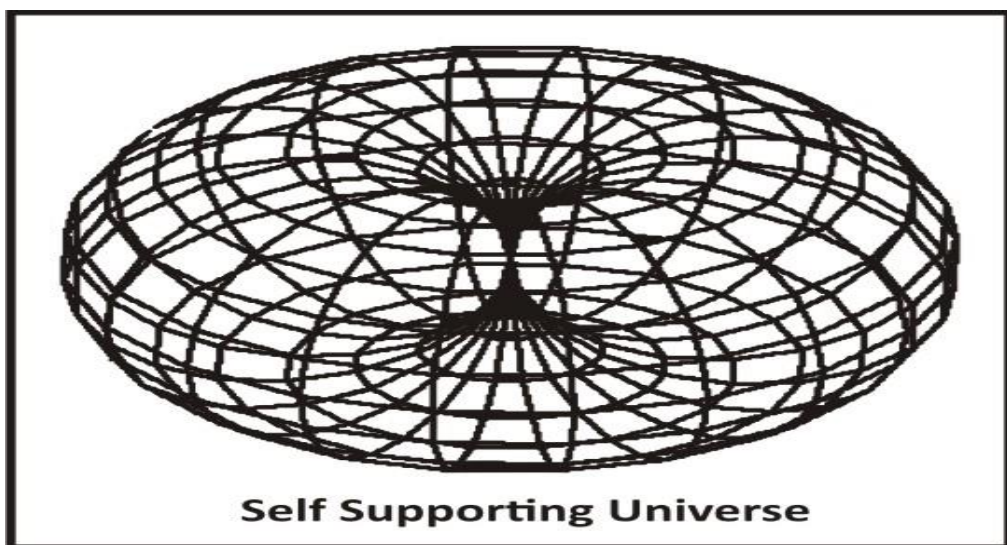

Figure 8: Self supporting (one bran of multiverse or) our quantum pendulum universe.

(f) The disintegrating gravitons produce 'Gamma ray bursts'. (according to New Theory of quantum gravitation)

Treo model proposes that disintegrating gravitons from gravitational spheres and three dimensional

40

gravitational fields after a supernova explosion (bursting star) produce *'gamma ray burst'* of prolong duration; when gamma rays rain on Earth up to few minutes.

All moving cosmic bodies continuously construct new gravitational fields while their existing gravitational fields will subsequently disintegrate as loose 'Sub kinetic coloumns' (one dimensional kinetic coloumns) which may capture free treos, to generate photon packets, similarly disintegration of gravitons will result in formation of 'gamma ray photon packet'.

The observed formation of photon packets as visible *'forward tail'* primarily and also 'back ward tail' of comets can be regarded as circumstantial proves of possible generation of photons by space matrix.

Here the increased gamma ray flux from massive and super massive black holes (from a particular area with increased matter density) also finds its explanation.

(g). Galaxy and its 'Rotational velocity curve': 90 year's old unsolved puzzle gets its solution. (New Theory of quantum gravitation) [83 w],

Our Sun is placed in our spiral galaxy milky way; (100,000 light years across: second largest after Andromeda in local group of galaxies), at 8 kpc

away or 27000 ly from galactic center in a small Orion spur located between Sagittarius and Perseus arms of galaxy (The four main spiral arms of our Milky way galaxy are, Norma and Cygnus arm, Sagittarius, Scutum-crux and Perseus).

The 'galactic centre' and its bar have 20 unit black holes (each of 'S unit masses') and will exert its load of square of unit masses at its galactic centre and this load of $(20\ S)^2$ unit masses, will be supported by $(20\ S)^2$ gravitons in four dimensional deformation of space -time and in three dimensional deformation around its galactic centre.

By our present knowledge of gravitation, we could not answer the riddle of 'Rotational velocity curve' (which depict increasing orbital velocity of stars with their increasing distance from galactic centre).

Newton described gravitational field by its equations $(MG = r^2\ a;\ MG = rv^2)$ but these equations describe only one dimensional gravitational field part in Gravitational coloumn of Sun.
While Einstein's gravitation is description of this field as curved space- time, with its causality at centre of this curved space.

As per treo model the Gravitation is four dimensional deformation (of space-time in ten dimensional space matrix) in gravitational spheres of

cosmic bodies which fades with distance in three, two, and one dimensional deformation.

In *one and two dimensional deformation* of gravitational field of Sun the gravitational **kinetic energy v^2 in sub kinetic coloumns fades by 'inverse square law' ($v^2 = MG/r$)** , due to *gradual reduction of number of kineton layers* in kinetic coloumns present in matter wave, in subsequent distal orbits.

But in each *three dimensional deformation of gravitational field of galaxy* with the *addition of 2n-1 gravitons* in any n^{th} layer at increasing n^{th} quantum level of kinetic coloumn the **number of gravitons will increase in each peripheral layer** (orbit).

Thus the Keplerian dynamic which is valid only for Planets (and satellites) of any star having 'sun like gravitational field', where all the *planets are placed in 'two dimensional deformation' of gravitational field of this star*; and acquire orbital velocity 'v' ($v = \sqrt{v^2} = \sqrt{MG/r}$) due to gravitational kinetic energy v^2 of the star. This kinetic energy v^2 obeys 'inverse square law' and fades with distance (i.e. $v^2 = MG/r$).

But in a galaxy, the *stars are placed in* spiral arms *of galaxy which are formed with multiple 'three dimensional deformations' in solitary galactic gravitational field (coloumn).* **In any one 'three dimensional deformation' 2n -1 gravitons are**

added in any nth layer at each next nth quantum level.

Thus in the rotating gravitational coloumn of any galaxy *each peripheral layer (orbit) will rotate at increasingly higher speeds,* **due to increase in its number of gravitons** *along with increase in total kinetic energy of orbit* and so the velocity of peripheral stars moving as 'point masses' in these orbits will increase. It explains observed anomaly of 'galactic rotational velocity curve' where we find increased orbital velocity of peripheral stars.

(a) <u>Energy of one Kineton</u>
(& Gravitational constant) [83k]

One kineton supports one free treo, while one Graviton (S^2 kinetons) supports one unit mass load (S^2 free treos) by S vibrations per second, on space matrix.

To get the energy of one Kineton we will first recalculate the value of universal gravitational constant.

Recalculated Value of Gravitational Constant;
(After converting Meter in Planck Least Lengths)

Gravitational constant 'G' = 6.67430 × 10^{−11} Meter³ per kg, per sec per sec.
(Dimensional Formula $L^3 M^{-1} T^{-2}$)

A. By substituting the value of meter by natural unit of Planck's least length, value of **'G' can be recalculated** (while **one meter is $0.61871425 \times 10^{35}$ bound treos length**)

$$= \quad 6.67430 \times 10^{-11} \times *(0.61871425 \times 10^{35})^3$$
per kg, per sec per sec

$$= \quad 1.58079692 \times 10^{94} \text{ kinetons per kg, per}$$
second per second.

It also means that this number of kinetons act on 1 kg mass per second per second and will support equal number of 'free treos' present in one KG. Thus $1.58079692 \times 10^{94}$ 'free treos' will constitute one kg mass.

B. Alternatively, the value of G can also be denoted by number of kinetons supporting one–unit mass (S^2number of free treos) per second per second

$1.58079692 \times 10^{94}$ free treos in one Kg $\times$ 2.17645×10^{-8} Kg (conventional weight of one unit mass or Planck mass).

$=3.44 \times 10^{86}$ free treos are in one unit mass. Which are supported by equal number of kinetons.

$=\mathbf{3.44 \times 10^{86}}$ **kinetons (or S^2 kinetons) per unit mass, per second per second**. **

C. Alternatively, the value of G can also be denoted by kineton acting on one free treo (as in case of unit photon)

> =   **1 kineton per free treo, per sec per second.**

Then gravitation as a phenomenon can be explained as

G = universal constant = minimum **action** by one free treo which is **reacted** by one kineton, per second per second.

*Number of Bound treos in One meter length = 1meter /Planck Least Length = $0.61871425 \times 10^{35}$ bound treos distance.
** Square of S number = $(1.85539 \times 10^{43})^2 =$ **3.44×10^{86}**

As one–unit mass (S^2 free treos) is *maximum* load which can be supported at 'one– unit gravitational center', by one graviton by its accompanying graviton coloumn (having S^2 kinetons) in universe, *this derived new value for one 'unit mass' is fundamental and true unit of gravitational constant.*

 D. Weight of one treo

= **6.3259×10^{-95} kg**

(Weight of one treo $=1/1.58079692 \times 10^{94}$ free treos in one Kg)

E. Thus energy of one treo and equal energy in one kineton can be calculated. (Applying $E = mc^2$)

$$= 5.6831651 \times 10^{-76} \text{ J}$$

(b) Energy of S number of Kinetons
(Reduced Planck Constant and Planck Constant). [83d]

According to treo model, S number of free treos or kinetons; are in one quantum mass or one quantum kinetic energy.

S free treos, is also one quantum EM energy of one unit photon; it is the calculated value of Reduced Planck constant ℏ (h bar); and the Angular momentum of this one quantum energy is the value of Planck constant h = ℏ × (2π).

One quantum energy (*value of Reduced Planck constant ℏ*) produces one '*unit action*' and deforms just one bound treo layer of unit space matrix and its one unit angular momentum (which is *value of h; Planck constant*) produces one EM wave in one second.

   a. **Reduced Planck constant; is Energy of one quantum EM energy or one quantum mass**

which *is value of 'Quanta of unit action'* **or** *'unit action'.*

> *= 1.0545718 × 10⁻³⁴ Joule sec.* (conventional *Codata 2018 value of Reduced Planck constant*)

b. *Planck constant is the* **angular momentum of this one quantum EM energy (or one quantum mass energy) which produces one EM wave in one second.**

> = **6.626070 × 10⁻³⁴** *Joule sec.* (conventional *Codata 2018 value of Planck constant*)

1. **If we divide conventional value of Planck constant by 2π,**

   6.626070 × 10⁻³⁴ Joule / 6.28318531 (value of 2π)

   = 1.05457179 × 10⁻³⁴ Joule

We get conventional value of Reduced Planck constant per second, or <u>energy of S kinetons</u>

2. **To calculate Mass of this one quantum energy by equation ($m = E/c^2$).**

   1.05457179 × 10⁻³⁴ Joule / (2.99792458 × 10⁸ meter per second) ²

   =1.17336936 × 10⁻⁵¹ kg (mass of one quanta energy)

3. **Number of treos in this one quanta energy**

1.173369×10^{-51} kg $\times 1.5808 \times 10^{94}$ (number of free treos in one Kg) *

= **1.855×10^{43} treos**, or S number of free treos or kinetons.

*see calculations for new derived value of gravitational constant calculated as above.

(c) <u>Energy Of S² Number Of Kinetons</u> (One Graviton)

(a) <u>What is UNIT MASS</u>[83 i]

Unit mass, is S quanta mass energy (or S^2 Free treos), supported at its 'unit gravitational center' by S^2 kinetons in 'one graviton coloumn' of 'one graviton'.

'Unit mass' is *conventional Planck mass 2.1764 × 10^{-8} Kg* (the mass roughly equal to size of one flea egg) and when condensed it form 'a miniscule black hole' ($2GM/c^2$). This is the maximum capacity of space matrix to support a load in universe at one (bound treo) point. This 'unit mass' is supported by S^2 kinetons with its total kinetic energy or <u>*Planck's energy of 1.96 × 10^9J*</u> present in one graviton. *Graviton is a boson with spin 2.*

In increasing deformation at √S quantum levels of second dimension the mass energy increases successively by √S quanta mass (present in one unit electron) at each next quantum level, and thus finally it forms the biggest √S layered kinetic coloumn made up of S^2 kinetons, and is now named as *graviton coloumn* of second dimension.

We will now elaborate it

(a) **First we will calculate energy in one Kg mass in Joule**, according to Einstein's equation as $E = mc^2$ [When m= one Kg and c is the speed of light (3×10^8 meter per sec)]

Then E energy $= 9 \times 10^{16}$ J
[$= 1 \times (3 \times 10^8$ meter per sec$)^2$]*

* Joule $= Kg \times$ meter ^{2} / second ^{2}; (Dimensional formula of energy in joule; $m \, l^2 / t^2$)

(b) **Then Energy of one unit mass or 'Planck mass' can be calculated**.

$= 9 \times 10^{16} J \times$ **$2.17643 \times 10^{-8} Kg = \underline{\textbf{1.96} \times \textbf{10}^9 \textbf{J}}$*

** *(as' unit mass'= Planck's mass = conventional known value is 2.176434×10^{-8} Kg)*

(c) **As per treo model; one Planck mass (unit mass) = is mass energy of 3.440499×10^{86} free treos.**

As One Planck mass = *2.176434 × 10⁻⁸ Kg* and 1.58079692^{94} free treos are present in one Kg***.

Then; *2.176434 × 10⁻⁸* × 1.58079692^{94} = 3.440499 × 10^{86} free treos energy is in one unit mass = S^2 free treos energy = S quanta energy.

*** see calculations of gravitational constant as described above.

(d) The energy of one unit mass can also be calculated according to equation *E = m c²*

Then calculated energy E of 1 unit mass = 1 unit mass ×****(1.85485844×10^{43} bound treos distance per second) ^{2} = 1 × 3.440499×10^{86} = 3.440499 ×10^{86} free treos (bound treos distance, per second) ^{2}

**** (Speed of light = 1.85485844×10^{43} bound treo distance per second) as described above.

Therefore One unit mass = one Planck mass = 2.176434 × 10⁻⁸ Kg = 3.440499 ×10^{86} free treos = *1.956 × 10⁹J is mass energy of one unit mass.*

(b) <u>This One Unit Mass (load) is supported by one Graviton</u>

To support load of a body made up of multiple unit masses multiple gravitons are required.

The gravitons are carrier bosons of gravitational forces, and they form three and four dimensional

kinetic coloumns around gravitational centre of a body (to support its exerted load by square of unit masses in this body).   Where three dimensional kinetic coloumn is named as **electron black hole** in this model and four dimensional kinetic coloumn is conventional **gravitational sphere.**

(i) **Kinetic energy in *one* graviton**

Each GRAVITON has S^2 or **3.440499 $\times 10^{86}$ number of kinetons** which are equal in number to free treos present in one unit mass. Thus this energy of one unit mass (*1.956 $\times$ 10^{9}J*) calculated above will also be energy of one graviton.

Thus energy of one graviton = **1.956×10^9J**;

This is conventional known value of **Planck energy.**

(ii) **Total Kinetic energy of gravitons in *one–meter length*** (one on each bound treo)

1.956×10^9 J $\times$ 0.618714$\times 10^{35}$ gravitons per meter# = **1.2102$\times 10^{44}$ Newton** (J per meter).

This is conventional known value of **Planck's force.**

#(As length of one bound treo = 1.616229×10^{-35} meter or one Planck least length, Thus number of bound treos in one meter length = 1/ 1.616229×10^{-35} meter = 0.618714$\times 10^{35}$

(iii) **Kinetic energy of gravitons in _one–meter cube_** (one on each bound treo).

 (a) $1.956 \times 10^9 J$ $\times$ $(0.618714 \times 10^{-35})^3$ $=$ **_4.633×10¹¹³ J/m³_** (Graviton energy in one meter cube)

 (b) 5.155×10^{96} $Kg/m^3 \times 9 \times 10^{16}$ $J =$ **_4.633×10¹¹³ J/m³_** (according to mc²)

This is conventional known value of **Planck's energy density.**

The known value of _Planck's energy, Planck's force and Planck's energy density,_ **find its justification** as _energy of one gravitons at one bound treo (Planck's energy); energy of gravitons at all bound treos in one meter (Planck's force); energy of gravitons on all bound treos in one meter cube (Planck's energy density)._ It is thus explained, calculated and reported in July 2020 in my book for the first time. [83x]

(c) **Number of Gravitons In One Unit Black Hole**

The   biggest   gravitational   sphere   (four dimensional kinetic coloumn) of 'one unit black hole' is of 3 lacs Km radius.

This solitary gravitational sphere around its gravitational centre not only supports the exerted load of S^2 unit masses of '**one unit black hole**' by S^2 gravitons, but it also accommodates its S unit masses as well.

S^2 Gravitons (S^2x S^2 kinetons) comes from S number of unit space matrixes (each having S^3 kinetons), support S unit masses present in 'one unit black hole'.

This huge space occupied by 'S number of unit space matrixes' will contract to support 'one unit black hole mass', and both are accommodated inside its own gravitational sphere of 3 lacs Km radius.

(!V) DARK ENERGY

After producing matter and dark matter the remaining 68% of universe as 'undeformed Space matrix' is responsible for production of Dark energy.

Expansion of Space-Matrix

Some spectacular advances in observational cosmology of twenty first century are, detailed mapping of the cosmic afterglow of the big bang which is done by satellite named WMAP and the discovery of **accelerating expansion** of universe by

some **mysterious dark energy** as analyzed by the data collected by Hubble space telescope.

But question arises what is this dark energy and how it works?

(a) *'Cosmological constant'*

'**Cosmological constant**' was brought forward by Einstein to explain his model of a 'static universe', but when it was proved that our universe is not static but an 'expanding universe', he admitted that cosmological constant was the greatest blunder of his life.

But now a days, the **cosmological constant has again emerged, and being related with some sort of 'dark energy', which is some how expanding universe at an accelerating rate**.

(b) *The universe is expanding like a balloon.*

Let us see, **the role of negative energy incorporated with all five negative dimensional curled up 'voids', all of which in universe are continuously uncurling**?

There could be only one possible explanation for the 'balloon like expansion of the universe' that the *universe is expanding at its each and every point,* with 'constant flow of time' and both the expansion of the universe and flow of time are based on a single mechanism.

Simultaneous uncurling of all the voids leads to balloon like expansion of universe with passage of time, thus the present size of universe also indicates present age of universe.

The space occupied by each 'void' (**its size**) is always increasing due to simultaneous uncurling of its curled up five negative dimensions**, @ *"1/S ^{2} of acquired size of 'void' after each vibration".*** This is also the value of "cosmological constant" and describes mechanism of accelerating expansion of universe (according to treo model).

The **accelerating** rate of expansion of universe can be explained, with changing and increasing value of 'Planck least length' with each vibration of universe.

It is to be noted here, that the **derived value of gravitational constant is *'S^2 kinetons per unit mass per second per second';*** (see calculations of gravitational constant as done before)

When **each void constantly and simultaneously uncurls itself at each point**, it not only expands the universe but thus, continuously tries to flatten 'whole crumpled deformed space matrix' of universe. The fully 'flat sheath of un–deformed space matrix of universe' is the requirement for next big crunch: i.e. death of universe.

This constant expansion also leads to decrease in its 'total kinetic energy', in turn with continuous increase in its 'total potential energy' (i.e. entropy), and it also results in slow aging of universe (and all its creatures; which all are infect 3D printed free treos on space matrix in different shapes).

(c) To make space matrix flat like a plain sheath with no wrinkles (with no deformations and contractions) **one more mechanism is working.**

Along with the continuous universal expansion, one more mechanism is working sporadically to make space matrix flat and free of local deformations; i.e. *all matter is being churned up*.

To accomplish this task, all cosmic bodies because of their gravitational attraction first gather all matter present around it. Then the *gravitational spheres* of all cosmic bodies e.g. of Sun (which is Unit hole in formation or quasi black hole), *and all unit **black holes** continuously churn the matter* with the production of 'Hawkins energy pair' of positive and negative energy particles i.e. which are recognized as *free treos and voids* in this model.

This production of 'energy pairs' is the *source of energy* provided for outwards flow of 'Solar wind' from Sun and similarly from other cosmic bodies.

Now **all deformations** (kinetic coloumns) which were earlier supporting this matter, before it churned out, will eventually **vanish**, **to result in** *more flattened local space matrix*.

By these two mechanisms, total potential energy of universe is increasing, at the cost of decreasing total kinetic energy, with this continuous expansion and flattening of universe; both are *increasing the 'entropy of universe'*.

(d) The end of universe [83y]

All matter (mass energy packets) and space matrix geometry, in universe is preserved as long as five negative dimensions of voids are curled up.

The continuous uncurling of curled up 'five negative dimensions of voids', at some moment in future, will completely match with 'five positive dimensions of treos' and then all treos and their full–size adjacent voids will engulf each other instantly after *one life cycle of universe of S seconds,* on death day of universe. It will result in other type of big crunch or 'death of universe', in which **entire space matrix of universe will instantly collapse.**

Then the 'resultant **sudden contraction of space matrix of whole universe'** around one universal singularity; will convert dying universe from 'maximum potential energy state' to 'maximum kinetic energy state' of new born universe.

And thus the 'big crunch' is immediately followed by 'big bang', and then newly formed fully contracted universe starts its new life cycle/and next oscillation of *five dimensional pendulum of our 'pendulum quantum universe'* with its continuous expansion in next life cycle.

(e) Hubble's law

Our universe is constantly expanding at each point like an inflating balloon. Thus, the distance between any two points in the universe is constantly increasing and all the galaxies are getting apart. It means that the expansion distance in two–kilometer length is twice that of expansion distance in one kilometer length and it will be tripled in three–kilometer length.

This proposed simultaneous uncurling of all voids can explain the accelerating expansion of universe.

The uncurling of each void at the proposed rate of *"1/S ^{2} of acquired size of 'void' after each vibration"* will swell the universe (in S^2 bound treos or 'Hubbell length') by 'One Planck's least length per vibration', i.e. at the speed of light.

Thus "**one Planck least length** (its present value) / S^2, **per vibration**" **is the value of Hubble's constant H_0.**

'This is same as **Conventional Present value of Hubble's constant** *(Conventionally Hubble's constant or H_0 is used in known formula ($v = H_0 \times D$))*

Hubble's constant *i.e. H_0; is 'constant of proportionality', where 'v' is velocity of receding galaxy and 'D' is distance of galaxy from point of observation.*

Rate of expansion of our universe when calculated according to proposed rate, per second per Mega Parse, in present contracted size of universe (of approximately 13.8 billion light years), matches with the **present accepted value of Hubble's Constant, *which is about 70 (+ - 2.4) Km per sec per Mega Parsec***.

Hubble's Time $1/H0$ = S² vibrations or S seconds: ('total life span of universe is S seconds'; from its birth at 'big bang' up to the time of its death, at 'big crunch').

While the present age of universe is 13.8 billion light years.

Hubble's length $1/H0 \times c$ = (S² vibrations as proposed 'life span of universe' × one Planck's distance per vibration) = **S² Planck's distances?** Weather it will be radius of multiverse just before common big bang?

(f) Fate of Universe[83z]

Our universe is a 'Quantum pendulum universe'. In it one life cycle, of S seconds, universe performs only one oscillation of this five– dimensional pendulum.

In this oscillation the total kinetic energy of universe is continuously decreasing while its total potential energy is increasing; due to ongoing expansion of universe, by slow but continuous and simultaneous uncurling of all curled up 'voids' of space matrix. Thus, after this time of S seconds, after full expansion of universe at its **maximum potential energy state**, the magnitude of five negative dimensions in each void will become equal to the magnitude of five positive dimensions generated by bound treos. Then (after no matter and its supporting kinetons I.e. Dark matter left on one un-crumpled flat sheet of space matrix of our universe), all bound treos alternately placed with voids, will inhale each other to produce 'big crunch', resulting in one *unstable* ten–dimensional universe.

Now the whole space matrix will disintegrate and universe will instantly deflate and *ten dimensional, unstable universe* will violently **break at its each point** to produce five positive dimensional treos and fully curled up five negative dimensional voids; and it is labeled as 'big bang'. The 'universal singularity' unlike 'gravitational singularity of black hole' and after wards **inflation** i.e. 'rapid expansion' finds *no* place in treo model. [92 page 258]

One Life Cycle of Universe

Each curled up VOID of space matrix from the time of 'big bang' is continuously uncurling and decides the value of Hubble's constant. Each void will uncurl to the size of one cube of one 'Planck's least length' in 'one life cycle of universe'. When five negative dimensions of each void will become equal to five positive dimensions of a bound treo, they will acquire equal magnitude. At this stage each void will inhale each bound treo of entire space matrix. The space matrix of whole universe will crumple to result in a "big-crunch" : immediately followed by a "big bang" and then it will start the 'next cycle of universe.'

TIME

S^2 Vibrations
(Life span of universe)

Big Bang   Big Crunch

to collapse it takes
NO TIME

Maximum   Maximum
Kinetic Energy State   Potential Energy State

(Full Contraction)   (Full Expansion)
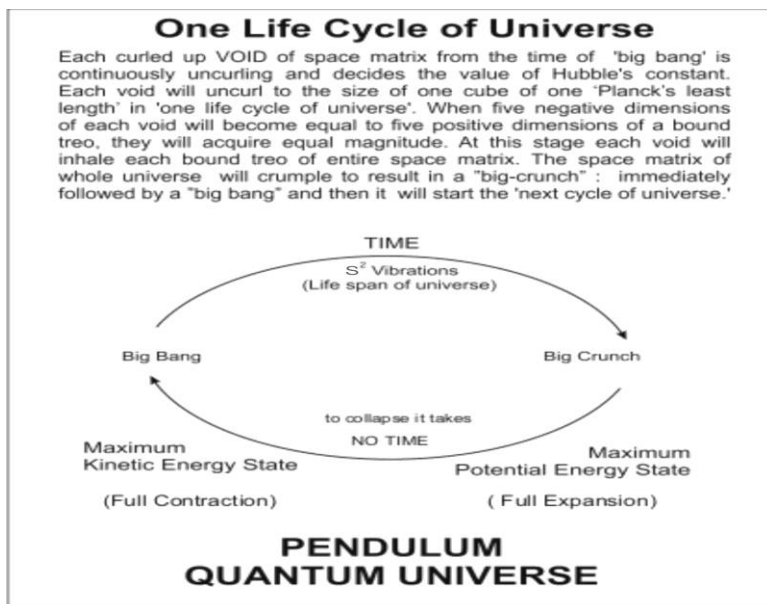
PENDULUM
QUANTUM UNIVERSE

Figure 9: One life cycle of our pendulum quantum universe.

The new baby universe thus born will be fully contracted at its **maximum kinetic energy state** and it will start expanding by slow uncurling of all its voids, to start the next life cycle (next oscillation of five dimensional pendulum) of next baby universe.

(g) Gravitational effect of other parallel universes or of Multiverse (Onion Peel Model)

With increasing understanding of our universe, we are compelled to think that our universe is not a single entity, but there must be more universes which are beyond our reach.

One 'brane' in multiverse, which marks our universe, can be compared with one peel of onion. This model of our universe, that it is just like one peel of an onion, is further supported by our known observation, that *our universe is **flat universe**, as if galaxies are painted at the surface of a inflating balloon.*[82b 195] *Stephens hawking even said that the gravitational effects (short gravitational waves) of large black holes from other adjacent universes can penetrate this brane (peel) of our universe* [82a 192]. These gravitational effects of black holes from other universes should remain in back ground of our mind, in any further study of dark energy and its mysterious effects on our surroundings.
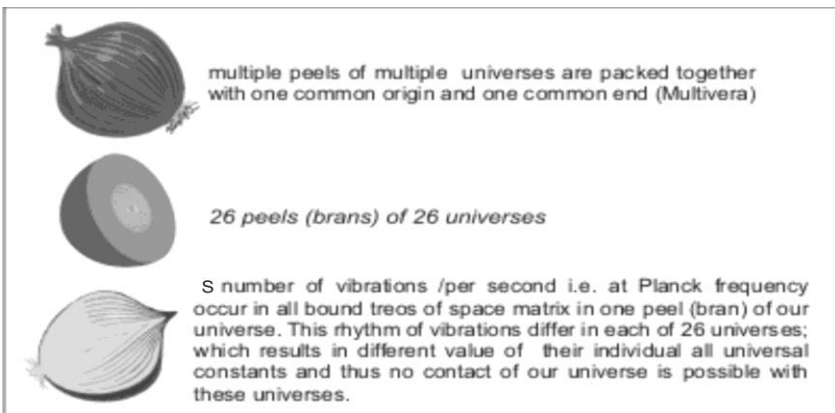

multiple peels of multiple universes are packed together with one common origin and one common end (Multivera)

26 peels (brans) of 26 universes

s number of vibrations /per second i.e. at Planck frequency occur in all bound treos of space matrix in one peel (bran) of our universe. This rhythm of vibrations differ in each of 26 universes; which results in different value of their individual all universal constants and thus no contact of our universe is possible with these universes.

Figure 61: Multiverse (proposed onion peel model)

This proposed treo model advocates 26-peel structure of multiverse which is also supported by mathematical models. With our universe they all

must have one common origin and common end, but with their different unique individual 'cosmic code'.

In other peels or in other universes the rhythm of its vibration (as our universe vibrates at Planck frequency, by S number per second) will change with change in the rate of its vibration. Thus the value of S (Cosmic Code) in every other universe will differ, with different values of their all universal constants, which will make all these universes un-approachable and un-detectable.

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