Treo model, Structure and working of universe, Space matrix, Fifth Dimension & cosmic code.

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Abstract

Kurt Gödel in 1931, proved in his famous 'Incompleteness theorem' about nature of mathematics, that there are problems that can not be solved by any set of rules or procedures [1]. Pure mathematical models of string and super string theories are good, but to understand the outcome of these theories you must before hand have a clear problem or question on which to apply this mathematics. To deal with such a paradox we can adopt an approach that is called 'model dependent realism' as a tool to carve a string model whose predictions can be verified mathematically.

The proposed logistic- mathematical model introduces one more dimension "Energy" as fifth positive dimension of universe,[2a] as part of our ten dimensional 'space matrix' i.e. Space-Time-Energy of universe; with five positive dimensions formed by strings (named as 'treo' in model) and five curled up negative dimensions are represented by 'void'.

This new dimension introduced, further helped to describe finer details of working of space matrix and deciphered a new pattern or 'cosmic code', based on S number (1.85539 x 10^{43} number; a dimensionless new constant) which is universal Rhythm, at which all strings constantly vibrate at Planck frequency.[2b][3a][18g]

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Treos or strings are described as one object of creation of all space (Space-Time- Energy) and all matter.

The role of voids is explored, in producing accelerated expansion of universe with all its possible consequences, in our Quantum pendulum universe. This new quantum model, named as 'treo model', only uses Planck units to explain the structure of universe and its working, which leads to unification of forces and quantum gravitation. (in 2 nd paper out of 3).

INTRODUCTION

Treo or String as generator of all matter and Space-Time-Energy.

Treo or *string* present themselves only in one dimension of length and each is of Planck's least length, have a fixed mass and energy and they vibrate continuously, in all possible planes, to create all five-positive dimensions of Space-Time-Energy. [2c]

Size of one treo = *Planck least length* = 1.616255×10^{-35} meter (conventional value)

Weight of one treo = $0.632592326 \times 10^{-94}$ kg

[$1/1.58079692 \times 10^{94}$ free treo in one Kg* = $0.632592326 \times 10^{-94}$ kg]
(*see calculations of derived value of gravitational constant, below)

Energy of one treo = $5.68545628 \times 10^{-78}$ J (Applying $E = mc^2$)

[$0.632592326 \times 10^{-94}$ kg $(2.99792458 \times 10^8)^2 = 5.68545628 \times 10^{-78}$ J (J= dimensional formula m l^2)]

Treos are divided in two categories 'free treos' and 'bound treos'.
Quantum of free treos accumulates and pile up in integral numbers to produce EM energy of photons and mass energy of all matter.
As bound treos they are arranged alternately with voids, to construct the geometry of all three dimensions of Space, celibates fourth dimension of Time, while they themselves are vibrating particles which represent fifth positive dimension of universe; ENERGY.

Fifth positive dimensions is created when bound treos arrange themselves alternately with voids and oscillates at Planck frequency (S times per second), each time after a gap of Planck's least time, in all possible S planes in a circle.

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It marks 1.85485844 × 10 ^43 or S number; the proposed new dimension less constant in model.

This rhythm of vibration of all bound treos of space matrix, at Planck frequency provides potential energy to matrix and regulates our universe. All bound treos simultaneously vibrate by S number of vibrations per second, in all possible S number of planes and it is responsible for 68.3% *dark energy* of universe [10][3b][18c].

Bound treos are *illusive dark matter* and are responsible for 26.8% missing mass of universe [10]. Bound treos after being converted in equal numbers of kinetons, in a reaction to increasing load of free treos, they form proposed kinetic coloumns of increasing size in each of four dimensions of space -time, by which they form fields of all forces along with gravitational field, forms dark halos around galaxies, prepares filaments and cosmic strings to bind bigger structures e.g galactic clusters and constructs structural patter of universe. [3b].

SECTION ONE

How S number decides Unit space, Unit time, Unit energy and value of other universal constants.

1. **S** number of treos is in one quantum energy, which is also the 'quantum of unit action' and the value of **'Reduced Planck Constant'; $\hbar$** (*h* Bar)

2. While **Planck constant *h*:** is the angular momentum of this one quantum mass–energy i.e. $h = S \times 2\pi$.

3. **S** bound treos distance per second (in S vibrations) is the **Speed of light, c.**

4. **S** free treos or 1quantum mass energy; is present in **one-unit photon.**

5. **√S** Quanta is mass energy of **one-unit electron;** and it is **one-unit charge.**

6. **S** quanta or S^2 free treos makes one-unit mass **(Planck mass).**

7. One-unit mass is supported by S^2 kinetons per second per second, it is also the derived value of **Gravitational constant.**

8. $\sqrt{S}$ Unit masses produces deformation of all three dimensions of space of one unit space matrix a cube of S bound treos in its each side.

9. **S** unit masses are in **one unit black hole.**

SECTION TWO

(a) The uncurling of each void per vibration, by **1/S^2 of one Planck's length, at each point of universe,** is the value of **cosmological constant** and the rate of expansion of universe, and it calculates the present value of **Hubble constant.**

(b) **S seconds (S^2 vibrations)** is one life span of universe and S^2 bound treos forms the expanded radius of universe (presently contracted in 13.78 billion light years.).

SECTION ONE
(Role of five Positive dimensions; bound treos)

Our 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 as 'Higgs fields [6]. It is postulated in Treo model that this field is not only space-time, but it has three interdependent components of Space, Time and energy.

1. SPACE; Creation of three dimensions of Space.

The space is not divided in units, but unit space matrix is functional unit of space matrix which acts as one unit space which starts from any point of load exerted on space matrix.

 All Bound treos are placed alternately with voids (voids have five curled up negative dimensions) and thus it weaves our ten–dimensional uniform, omnipresent space–matrix.
These one-dimensional bound treos can form 3 dimensional functional spaces, by their mode of compilation. When arranged side by side along a line, it produces first dimension of Length (with a simile to a book; one line of S alphabets). To construct two dimensions of

length and breadth, they construct figure of squares (simile; one page of S such lines). Finally they construct all 3 dimensions of space (length, breadth and depth) as small cubes of Planck least length which are formed in multi layered space matrix. One unit space matrix is a big cube where length of its each side is of S bound treos (simile; one book of S such pages) Fig 1.
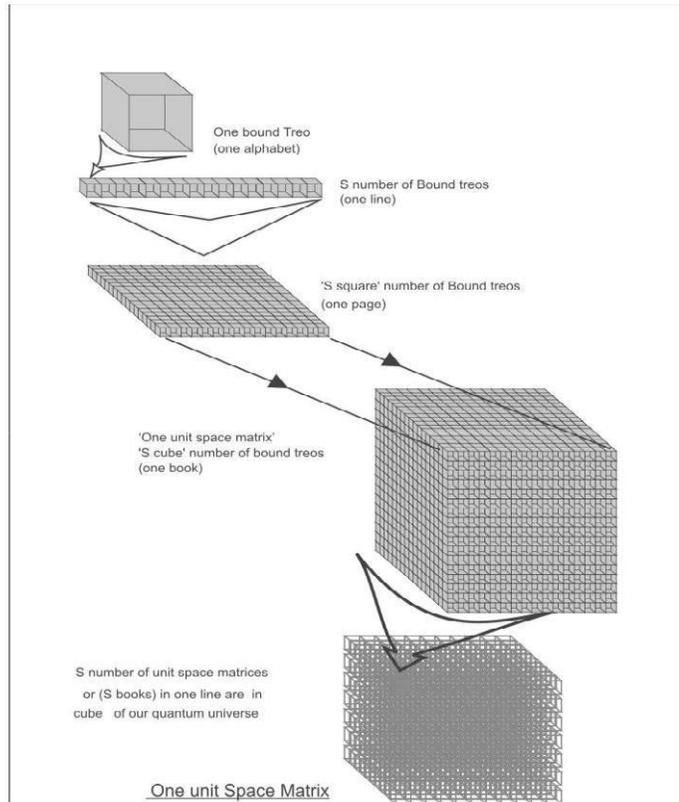

One bound Treo
(one alphabet)

S number of Bound treos
(one line)

'S square' number of Bound treos
(one page)

'One unit space matrix'
'S cube' number of bound treos
(one book)

S number of unit space matrices
or (S books) in one line are in
cube of our quantum universe

One unit Space Matrix

Figure 1: One Unit space matrix a cube with S bound treos present on its one side

2. <u>TIME, Fourth Dimension of Universe</u>

Time along with space both together form four dimensions of space– time. Each bound treo vibrate by S number of vibrations per second; and the time between two such vibrations is Planck least time. All treos (vibrating strings) 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 such vibrations of universe. It may be a mechanical action or any chemical, thermal or biological processes which occurs around us continuously, and the

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constant change is perceived by us as 'flow of time'. No time machine (to visit in past or future) is possible as we move in constantly changing universe, which is transforming with its each new vibration, and leaving behind its no trace (e.g. as our body has evolved from a baby, with no remnants of baby body left).

If Space contracts, there will be a *reduction in total number of vibrations per second* of all bound treos in any local area. Thus the time between two vibrations (i.e. Planck's least time) will increase, which in turn will increase the time duration of 'minimum reaction time' or the 'least processing time' (now every action or chemical and biological process in this deformed/ contracted local area will take more time to perform), 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.
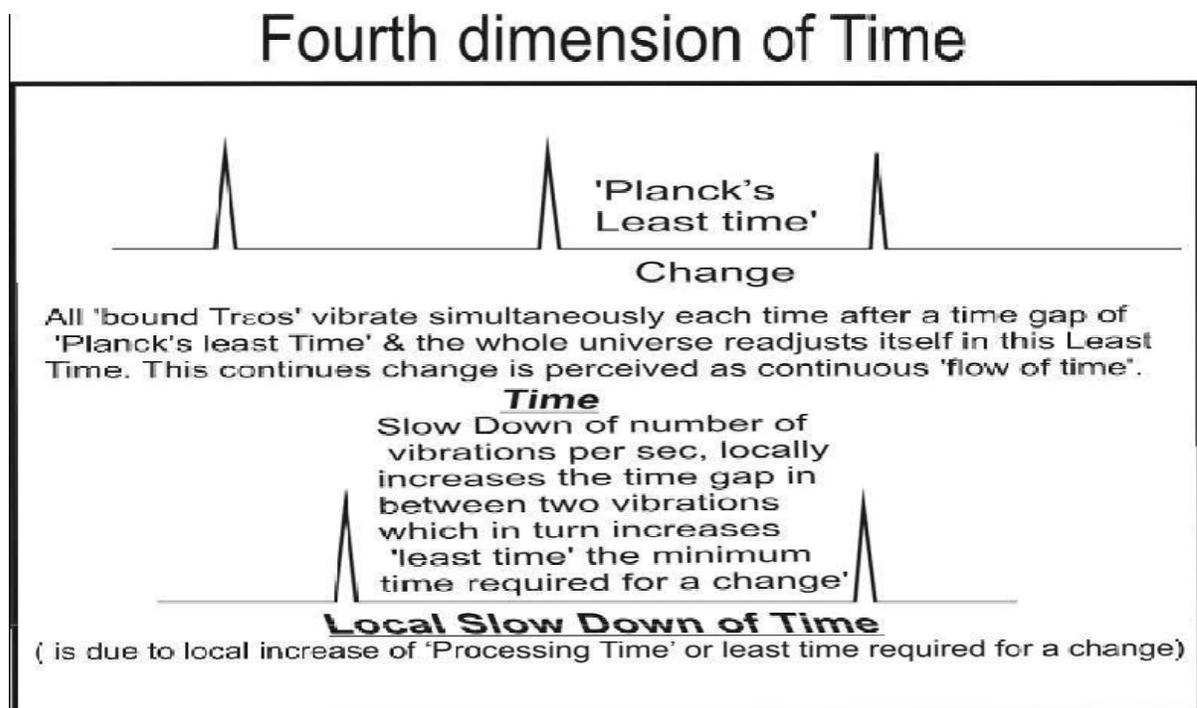

Figure 2: Each treo vibrate by S Times per second, each time after a time gap Planck's least time.

3. ENERGY as Fifth Dimension of Universe

All Electromagnetic energy and all mass energy packets from unit photon to one unit mass, exert a load on space matrix, along its length of spread in a line at each apex bound treo along its wave length. At each apex bound treo, the load exerted of any number of free treos according to its packet density, is neutralized by equal number of bound treos of space matrix, as they convert in kinetons and get arranged according to proposed geometry of kinetic coloumns.

All bound treos of space–matrix which are not subjected to load, simultaneously vibrate by S number of vibrations per second in all possible *S planes* in a circle. When any one such bound treo vibrating in all S planes, is subjected to (minimum possible) 'load' of one free treo, its planes of vibration (or the degree of freedom) are restricted and this bound treo will now vibrate S times per second only in one plane, only in the direction of load to support or neutralize this load (i.e. any mass pressure or momentum) on space–matrix, by an equal and opposite reaction. [2d] This contracted bound treo, which start vibrating only in the direction of load S times per second, is a 'kineton'.

4. <u>Reduced Planck Constant, Planck Constant</u>.

S numbers of treos form one quantum energy. *The S free treos or one quantum energy is the value of Reduced Planck constant ħ, while Angular momentum of this one quantum mass–energy is the value of Planck constant h = ħ × (2π).*

The one quanta energy (or S number of free treos, which is also EM–energy of one unit photon), generates unit action and deforms just one bound treo layer of unit space matrix. With its one unit angular momentum (value of *h*; Planck constant) the packet rotates once to produces one EM wave during its translational motion.

(A) Reduced Planck constant is Energy of one quantum mass, which generates 'Quanta of unit action' or 'unit minimum action'

$= 1.054571817 × 10^{-34}$ Joule sec.
(Conventional Co data 2018 value of Reduced Planck constant)

(B) Planck constant is the angular momentum of this 'one quantum mass–energy' which produces one EM wave in one second.

$= 6.62607015 × 10^{-34}$ Joule sec. (Conventional Co data 2018 value of Planck constant)

(C) If we divide conventional value of Planck constant by 2π

$6.62607015 \times 10^{-34}$ Joule / 6.28318531 (value of 2π)
$= 1.05457182 \times 10^{-34}$ Joule
(We get conventional value of Reduced Planck constant per second)

(1) If we calculate Mass of this energy ($m = E/c^2$)

$1.05457182 \times 10^{-34}$ Joule / $(2.99792458 \times 10^8$ meter per second$)^2$
$= 1.17336939 \times 10^{-51}$ kg (mass of one quanta energy)

(2) Number of free treos in this mass of one quanta mass

$1.17336939 \times 10^{-51}$ kg $\times$ *$1.58079692 \times 10^{94} = 1.85485872$ (± 28) $\times 10^{43}$ treos (S number of free treos)

(S free treos = is one quantum energy, which is present in one unit photon = value of reduced Planck constant)

*see below, free treos in one Kg mass, calculations from new derived value of gravitational constant.

5. <u>Speed of Light</u>

(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 (i.e. $1.85485844 \times 10^{43}$) in one second, it moves by S number of bound treos distance per second.

$1.85485844 \times 10^{43}$ vibrations per second $\times$ 1.616255×10^{-35} Meter* is displacement of photon packet per vibration $= 2.99792458 \times 10^8$ meter per second, and it is conventional value of 'c', the Speed of light.

*1.616255×10^{-35} Meter is Planck least length and the Space occupied by one bound treo in length.

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

Thus, space matrix propels all photons in translational motion, and the constant motion of all bodies in this universe is the result of this 'propulsion by active medium': It is to be noted that nothing is still (e.g. Brownian motion) in universe and *the continuous motion of every thing in this moving universe,* is due to this active space matrix.

As this moving deformation can not die by itself (with out being opposed by other deformation), it is conserved and with every motion it only 'change hands'; thus every body will move indefinitely and it is the basis of conservation of momentum and the reason behind first law of motion "if a body is moving it will go on moving (indefinitely) until a retardation force is applied on it".

6. <u>New Derived Value of Gravitational Constant;</u>
(After Replacing Meter with Planck Least Length)

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

(B) By substituting the value of meter by natural unit of Planck's least length, 'G' can be recalculated in number of kinetons (while one meter have $0.61871425 \times 10^{35}$ bound treos and each can be converted in one kineton).

(C) $6.67430 \times 10^{-11} \times *(0.61871425 \times 10^{35})^3$ per kg, per sec per sec
G = $1.58079692 \times 10^{94}$ 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' in one KG. Thus $1.58079692 \times 10^{94}$ 'free treos' constitute one kg mass.

(D) Alternatively, the value of G can also be denoted by number of kinetons supporting one–unit mass (S^2 number of free treos or one Planck's mass)

G = $3.44049984 \times 10^{86}$ kinetons per unit mass, per second per Second**

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

G= 1 kineton per free treo, per sec per second.

Then quantum gravitation as a phenomenon can be explained: G = universal constant = 1unit action by one free treo is reacted by one kineton, per second per second (i.e. continuously)

*One meter = $1/1.616255 \times 10^{-35}$ m Planck Least Length = $0.61871425 \times 10^{35}$ bound treos distance.
** (!) One unit mass or Planck mass = $(1.85485844 \times 10^{43})^2 = 3.44049983 \times 10^{86}$ free treos.
(!!) One unit mass or Planck mass = $1.58079692 \times 10^{94} \times 2.176\ 434 \times 10^{-8} = 3.44050016(\pm33) \times 10^{86}$ free treos.

As *one–unit mass is maximum load which can be supported at 'one–unit gravitational center', by one graviton in universe*, this derived new value of G is fundamental and true unit of gravitational constant and also equal to the kinetic energy in one graviton.[a 18]

7. <u>Unit Mass</u>

It is S quanta mass energy (or S^2 Free treos) or one unit mass which is supported at its unit Gravitational centre by one graviton, this unit mass is *conventional Planck mass, $2.176434 \times 10^{-}8\ Kg$*; (the mass roughly equal to size of one flea egg).

The maximum load which can be supported at one (bound treo) point in universe is one unit mass. To support *load* of bodies made up of multiple unit masses, equal number of gravitons are required which get arranged in a kinetic coloumn, which forms around its one gravitational centre.

S^2 free treos are in a unit mass (or *Planck's mass*), which are supported by S^2 kinetons at one graviton by its one graviton coloumn, with its total energy or *Planck's energy of 1.96 $\times 10^{9}J$.*

Graviton is a boson with spin 2. Spin two means, that while rotating, by its half rotation the particle will regain its orientation (proposed is dumbbell shape of graviton; to understand it, we can think of the familiar shape of queen in playing cards; as by its half rotation the queen regains its shape.) In fermions ½ spin means that by full two rotations it will regain its shape and spin 1 of bosons means that they will require one full spin.

The value of G (gravitational constant) is expressed in number of kinetons supporting one–unit mass (S^2 number of free treos or one Planck's mass), G = $3.44049983 \times 10^{86}$ kinetons per unit mass, per second per Second.

Some approximations or relations and values

(A) ENERGY OF ONE UNIT MASS = 1.96×10^9 J

(1) The energy in one Kg mass when calculated in Joule, according to Einstein's equation as $E = mc^2$

If m is one Kg and c^2 $(3 \times 10^8$ meter per sec$)^2$ = E = 9×10^{16} J Kg meter^2 / second^2; (Dimensional formula of energy in joule; m l^2 / t^2)

(2) Known value of One Planck mass or unit mass = 2.176434×10^{-8} Kg

(3) Energy of One unit mass in J; from equation (1) and (2)
= 9×10^{16} J $\times 2.17643 \times 10^{-8}$ Kg = 1.96×10^9 J

(B) FREE TREOS IN ONE UNIT MASS (ONE PLANCK MASS)
= $3.440500016(\pm 32) \times 10^{86}$ free treos.

(a) As 1.58079692^{94} free treos are in one Kg mass*, Then one unit (Planck) mass = 2.176434×10^{-8} Kg $\times 1.58079692^{94}$ free treo per Kg = $3.44050016(\pm 32) \times 10^{86}$ free treos (one unit mass = S^2 free treos energy = S quanta mass energy.)

(b) The mass energy particles in one unit mass can also be calculated by equation $E = m\,c^2$, 1 unit mass energy = 1 unit mass $\times$**$(1.85485844 \times 10^{43}$ bound treos distance per second; treo model$)^2$ = $1 \times 3.44049984 \times 10^{86}$ = $3.44049984 \times 10^{86} \times 10^{86}$ free treos x (bound treos distance, per second)^2; (Dimensional formula of energy in joule; m l^2 / t^2)

*See calculation above of gravitational constant

**Speed of light = $1.85485844 \times 10^{43}$ bound treo distance per second, See above

8. <u>Energy Of Gravitons</u>

(!) One graviton (Planck energy) (!!) all gravitons in one meter (Planck force) (!!!) all Gravitons in one meter cube (Planck energy density); known values.

(!) As One unit mass = one Planck mass = 2.176434×10^{-8} Kg = $3.44049984 \times 10^{86}$ free treos = 1.956×10^9 J is mass energy of one unit mass.

And graviton in its one graviton coloumn have equal number of $3.44050016(\pm 32) \times 10^{86}$ kinetons, thus this is also kinetic energy of one graviton = kinetic energy of 1.956×10^9 J = <u>*Planck energy*</u>

(!!) Kinetic Energy of gravitons in one–meter length* (when one graviton is placed on each bound treo present in one meter length) = 0.618714×10^{35} gravitons in 1 meter on each apex bound treos; when multiplied by kinetic energy of one graviton we get $=1.956\times10^9$ J $\times$ 0.618714×10^{35} gravitons per meter = the known value of _Planck's force_ of 1.2102×10^{44} Newton (J per meter)

(!!!) Kinetic energy of gravitons in one–meter cube, calculates the known value of _Planck's energy density._

    i. 5.155×10^{96} Kg/m^3 $\times$ 9×10^{16} J = 4.633×10^{113}J/m^3

    ii. 1.956×10^9J$\times(0.618714\times10^{-35})^3$ = 4.633×10^{113}J/m^3

*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 = $(1/1.616229\times10^{-35})$ = 0.618714×10^{35} bound treos.

These known values of _Planck's energy, Planck's force and Planck's energy density,_ first time finds its justification in Treo model, as energy of accumulated gravitons at _one bound treo_ (_Planck's energy_), at all bound treos _in one meter_ (_Planck's force_), and on all bound treos _in one meter cube_ (_Planck's energy density_).

9. <u>Unit Charge</u>

    A. 1eV or One–elementary charge of $1.602176634\times10^{-19}$ coulomb; is the charge of one unit electron. (known value)

    B. But one unit Electron is made up of 1.44000952×10^{64} free treos. (treo model)

    C. Therefore; charge on one free treo is $1.1121\,67\times10^{-83}$ coulomb.
    $(1.602176634\times10^{-19}$coulomb / 1.44×10^{64} free treos in one unit electron
    = 1.11261604×10^{-83} coulomb)

    D. Thus one coulomb charge is on 0.898782656×10^{83} free treos.
    $(1/1.11261604\times10^{-83}$ = 0.898782656×10^{83} free treos)

    1. But one coulomb charge is on 6.2415×10^{18} electrons. (Known value)
Number of free treos has one coulomb charge / number of free treos in one electron = conventional value of number of electrons having one coulomb charge. $(0.898782656\times10^{83}$ / 1.44×10^{64} = 6.2415×10^{18} electrons)

    2. Charge mass ratio = 1.7588×10^{11} coulomb / Kg (Known value)
$(1.58079692\times10^{94}$ Free Treos are in one Kg mass (treo model)* / 0.898782656×10^{83} free treos have one coulomb charge) By calculating it according to treo model we get the same value.

10. **The Number of 'free Treos' calculated in matter particles** [3b][18d].

(1) Unit Photon = One quanta energy = $1.85485844 \times 10^{43}$ Free Treos

(2) Gamma photon of = $2.88001904 \times 10^{64}$ Free Treos

(3) Unit Electron of $\sqrt{S}$ quanta = 0.5109906 MeV = $1.44000952 \times 10^{64}$ free treos

(4) Proton = 938.2723 MeV = $2.64413924 \times 10^{67}$ free Treos

(5) Neutron = 939.56563 MeV = $2.64772023 \times 10^{67}$ free Treos

(6) One unit mass = Planck mass = 2.176434×10^{-8} Kg = $3.44049984 \times 10^{86}$ free treos.

(7) One Kg mass = $1.58079692 \times 10^{94}$ Free Treos

(8) Number of treos in one calorie (calorie = 4.184 joule)
   = $0.736362761.6 \times 10^{78}$ free treos.

10. **Bound treos represents Dark matter of universe** [3b].

The bound treos in space matrix are particles of dark matter, which are responsible for 26.8% of *missing mass* of universe [10].

Increasing loads of free treos, which are exerted on space matrix at one apex bound treo (of 1 free treo in unit photon, to S free treo of Gamma photon, S x S free treos of unit mass, S x S x S free treos in electron black hole and S x S x S x S free treos in unit black hole) is neutralized by equal number of Kinetons (bound treo of space matrix after its conversion in kineton), while thus produced increasing deformation of space matrix, one by one involves increasing number of four dimensions of space -time.

Different kinetic units get arranged according to coloumn geometry (2n-1 units in any n th layer and n square in any n layered kinetic coloumn) in formation of kinetic coloumn of each dimension.

The fields of all forces, gravitational fields, filaments and cosmic strings which form architectural pattern of large scale structures (e.g. cluster of galaxies), all are formed by union of these multiple kinetic coloumns.

The 'dark halos' observed away from star clusters in colliding galaxies are concentration of these coloumns as deformed space matrix at *shifted '*common shared gravitational center of colliding masses.

SECTION TWO
(Role of five negative dimensions; voids)

(A) Expansion of Space-Matrix

(The curled up five negative dimensions incorporated with curled up voids are slowly uncurling; and thus they jointly generate *dark energy,* which plays an important role in our quantum pendulum universe, as it decides the value of 'Hubble Constant' and 'Cosmological Constant').

Our space is not empty.

'Cosmological constant' Λ , was brought forward by Einstein to explain the model of 'static universe', but when it was proven that our universe is an 'expanding universe', he said that cosmological constant was the *greatest mistake of his life*.

But contemporary scientist Sir Eddington disagreed; as he wrote that to drop this constant would be '*knocking out the bottom of our universe*". He initially related it with radius of universe and later on in 1931 he provided the value $\Lambda = (2GM / \pi)^{2} (mc/ e^2)^4 = 9.8 \times 10^{-55}$ cm $^{-2}$ [13].

Again, the cosmological constant has been revived, and being projected as some sort of energy which prevent universe from gravitational collapse. In this treo model it is postulated/ calculated, that this force is 'dark energy' which is produced by simultaneous uncurling of all voids.

After the Oscillating universe theory briefly considered by Albert Einstein in 1930, theorized a universe following an eternal series of oscillations, each beginning with a Big Bang and ending with a Big Crunch.

Aleksandr nikitin writes in his concluding remark of his paper '**fundamental connection between the Planck and Hubble constant**'
"To date it is believed that dark matter and dark energy are outside the orthodox physical science. The standard model explains our world only within baryonic matter. But our research, stated in this article, speaks the need to 'legalize' dark matter and dark energy and the corresponding expansion of physics beyond the standard model. The fundamental connection in this paper between the fundamental constant of the quantum theory – the Planck constant h and the basic constant of astrophysics - the Hubble constant H, determines the dynamic material –energy unity of our world. [16]

The cyclic theory was revived as 'pendulum quantum universe' in 2005 [2e]. It describes when universe will be fully expanded at its maximum potential energy state, with no deformations on space matrix left by churning of all matter in black holes and gravitational spheres, the flat matrix will violently collapse, immediately followed by big bang which will lead to a fully contracted new universe at maximum kinetic energy stage, fit to generate a new generation of nucleons, in new life span of universe. Thus potential energy and kinetic energy fluctuates occur as in one swing of pendulum with each new cycle of universe.

In 2011 same idea of cyclic universe, came as conformal cyclic cosmology [7]. But the observed and claimed Hawkins points, diagnosed by undocumented non-standard approach of studying CMBR [8] as marks of super massive black hole vaporization in previous universe, could not be confirmed [9].

(B) <u>The universe is expanding like a balloon.</u>

Let us see, the role of this negative DARK ENERGY, incorporated with all five negative dimensional curled up 'voids', which are continuously uncurling. Five negative dimensions have, NO Length, NO Breadth, NO Depth, it calibrates passed Time, and absorbs Energy to constantly uncurl each void. 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. As both the expansion of the universe and flow of time are based on a single mechanism thus we register it as 'constant flow of time'. The simultaneous uncurling of all the voids leads to balloon like expansion of universe along 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 present value of Planck least length per vibration" and this is also the value of "cosmological constant" and mechanism of accelerating expansion of universe (according to treo model).[b18]
The accelerating rate of expansion of universe can be explained, with increased absolute 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 above)

In the radius of our present size universe it has 'S^2 pairs of bound treo and voids, deformed in its present size (also see below as the Hubbell's length), then by this combined and simultaneous uncurling of all these voids at each point, the universe at its periphery will increase, by one Planck's least length per vibration.

Thus treo model explains why the periphery of universe will always swell up, with the speed of light (i.e. by one Planck least length per vibration). Therefore the size of present universe measured in light years; is also the Age of universe of 13.799 billion light years. In other words this means the balloon (at periphery) of universe is inflating continuously at the speed of light.

This constant expansion leads to decrease in its 'total kinetic energy' and in turn with continuous increase in its 'total potential energy', which results in slow aging of universe (and expansion of local space matrix on which each electron and nucleon of body are painted is also responsible for aging of all its creatures) and all its entities.

When each void constantly uncurls itself at each point, it not only expands the universe but thus, simultaneously and continuously tries to flatten 'whole crumpled deformed space matrix' of universe. The fully 'flat sheath of un–deformed space matrix of universe' with no kinetons and kinetic energy is the requirement for big crunch: i.e. death of universe.

In our universe the total potential energy (entropy) is increasing constantly (*as it is required for next violent big bang soon after big crunch or death of universe*), at the cost of its reducing total kinetic energy. All this indicates to pendulum behavior of our universe. EM waves are one dimensional pendulum while orbits with two foci are two dimensional pendulum and contracting and expanding ball of universe is higher dimensional pendulum.

(C) Matter Is Being grinded,

 (To make crumpled space matrix flat like a plain sheath, with no wrinkles and
   free of all deformation/contractions.)

But along with expansion of universe, one more mechanism is working to make space matrix flat and free of local deformations.

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.

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Sun, (which are 'black holes in formation' or 'quasi black holes') along with unit black holes continuously churn the matter, *reciprocal to its size*, 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; and thus produced treos are proposed source of energy needed for outwards flow of 'Solar wind' from Sun and similarly from other cosmic bodies).

Now all deformations (supporting kinetic coloumns) which were earlier supporting this matter, before it churned out, will eventually vanish, which will result in more flattened local space matrix. This observed behavior also assigns the possible hidden purpose of gravitational forces in universe.

With these ongoing 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; and both are increasing the 'entropy of universe'.

(D) <u>Galactic central Disc</u>

Our central galactic disk of Milky Way is reported to have super massive black hole of located at Sgr A* is of 4.1 million Sun masses ± 0.034 [11]. Thus it will have 21 unit black holes (as each unit black hole is of 203 thousand Sun masses [3d][18c] and all 21 unit black holes are arranged according to coloumn geometry in one incomplete kinetic coloumn of fifth dimension). The baby bodies of this super massive black hole (from this black hole kinetic coloumn) will start condensing at its 10^4 th gravitational field quantum level [3 e][18 f] i.e. at 0.43 Parse ; or at 10^8 times of its Schwarzschild radii of galactic nucleus.

With in one parse it may have fragmented disc material which may form cluster of baby stars and O/WR-stars. The clockwise rotating condensed star cluster and anticlockwise rotating scatted stars; are most probable areas of deformation and counter deformation of space matrix, outside event horizon of central super massive black hole cluster. The discrepancy of orbital speed of stars observed in 'rotational velocity curve of galaxy', can be explained by labeling this region as 'rotating three dimensional gravitational field' (treo model) as in this rotating disc like region, the stars embedded at periphery will rotate faster then the stars embedded towards its center.[4 a][18h]

(E) <u>The end of universe</u>

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 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 a big crunch or 'death of universe', and all space matrix of universe will suddenly collapse.

This 'resultant sudden contraction of 10 dimensional unstable energy of space matrix of whole universe' around one universal singularity; will divide it in two equal parts of five positive dimensions of treos and fully curled up five negative dimensions of voids, which will also shift dying universe from 'maximum potential energy state' to 'maximum kinetic energy state', in new born contracted universe.

With its return to its *initial reduced entropy stage* which was at start of previous universe; in these reversible cycles of universe, no thermodynamic principal is violated. Thus the 'big crunch' is immediately followed by 'big bang', and then newly formed fully contracted universe will start its new life cycle/ or next oscillation of five dimensional pendulum of our 'pendulum quantum universe' with restart of slow uncurling of all voids and its expansion.

(F) <u>Universal Singularity</u>

Universal singularity is defined as a point of infinite density and gravity and before this event; space and time did not exist.

As proposed in treo model, we should re-consider about 'singularity of universe'; it can be thought as extension of gravitational singularity which is seen at 'gravitational centre of unit black hole'.

The gravitational sphere of one **unit black hole** support 'S' unit masses' (203 thousand times the mass of sun, which get totally condensed in S bound treo layers in its radius of 2 GM/ r^2 sphere). This unit black hole exert a load of S^2 unit masses at its gravitational centre which in

turn is supported by S^2 Gravitons in a kinetic coloumn in 'S' concentric layers of its gravitational sphere (in 300 thousand Km radius).[3f]. All gravitons direct their force towards its centre i.e. at 'gravitational centre of unit black hole'. S graviton coloumn together unite side by side to form gravitational (coloumn) field of this black hole.

Outer most layer of this unit black hole rotates at speed of light by S vibrations of its kinetons per second; while inner layers are rotating with successively reduced speed at each next inner quantum level due to reduction of @ one vibration of each kineton in layer at each next inner quantum level and the gravitational centre of black hole, is called **'gravitational singularity' with only √ S vibrations per second.**[3f]

This reduction of number of vibrations one by one at each next quantum level will successively slow down the speed of rotation of each inner concentric layer. This is necessary to maintain the configuration of rotating kinetic coloumn (which occupies 1/3 area of gravitational sphere), so it can direct its total force of its all gravitons simultaneously towards its gravitational centre.

This pattern of deformation of space- time will continue in five dimensional deformation at galactic disc and finally at universal singularity. It can be inferred that at the time of 'big crunch' the '*universe will remain of substantial size*'; (with all energy of universe concentrated in a ball around universal singularity and it will not become a pin point universe) while the '*singularity of one unit universe*' achieved, in one *full* kinetic coloumn of fifth dimension with *no vibration* at its centre (when time will stop) can be viewed in the light of '*Gravitational singularity of a unit black hole*' as described above. This hypothesis will also eliminates the need of 'exponent sudden expansion of universe' just after big bang as postulated in previous models of big bang of universe.

(G) 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 this type of expansion of universe. The uncurling of each voids[6] at the proposed rate "1/S^2 of present value of Planck least length per vibration" will increase the present radius (S^2 bound treos) of universe by 'One Planck's least length per vibration' which is the speed of light. Thus "one Planck least length / S^2 per vibration" is Hubble's constant H$_0$.

'Present value of Hubble's constant

(Conventionally Hubble's constant or H$_0$ is used in known formula (v = H$_0$ × D)

(!) <u>Hubble's constant</u> i.e. H$_0$: is 'constant of proportionality', where 'v' is velocity of receding galaxy and 'D' is distance of galaxy.

Rate of expansion of our universe when calculated according to proposed rate, per second per Mega Parse, in present contracted size of universe (of approximate 13.8 billion light years), matches with the present accepted value of Hubble's Constant, which is about 67.15 (+ - 1.2) Km per sec per Mega Parsec**[10]

** One pc or one parsec is 3.26 light years distance, or 30.857 pentameters (10^{15} meters); One mega parsec = one million parsecs.

(!!) <u>Hubble's Time</u> 1/H$_0$ = S^2 vibrations ('total life span of universe is S seconds'; from its birth up to the time of its death, at 'big crunch'). While the present age of universe is 13.8 billion light years.

(!!!) <u>Hubble's length</u> 1/H$_0$ × c = (S^2 vibrations as proposed 'life span of universe' × one Planck's distance per vibration at which universe is increasing along its radius) = S^2 Planck's distances; will be the radius of our universe at the time of 'big crunch'.

_____

* The Proposed values of G, cosmological constant, radius of universe and life span of universe, all are in full agreement with large numbers hypothesis (LNH) proposed by Paul Dirac in 1937.[12]

(!) **Dirac said that physical constants are actually not constants but their value depends on Age of universe** and thus we find the proposed value of (1) **Cosmological constant "1/S^2** of present value of Planck least length per vibration" Or *in one full life span of universe of S^2 vibrations one void will fully uncurl* (2) **S^2 Planck least lengths** will be radius of fully expanded universe, just before big crunch. (3) **S^2 kinetons** per unit mass per second per second is value of gravitational constant. And **S^2 vibrations** or S second as total age (life span) of universe.

(!!) In LNH Dirac also proposed that strength of gravity, as represented by **gravitational constant, is inversely proportional to the Age of the universe**: G is proportional to 1/ t.
We have observed that G As the value of G (gravitational constant) can also be denoted by number of kinetons supporting one–unit mass (S^2 kinetons per unit mass per second per second.) G = 3.44049983 × 10^{86} or S^2 kinetons per unit mass, per second per Second. This hypothesis G α 1/ t. finds it's ground; as G = S^2 kinetons per unit mass, per second per second is inversely proportional to 1/ S^2 vibrations or S second as total age of universe.

(!!!) **Gravitational constant and cosmological constant are related**; i.e value of G or S^2 kinetons (each of Planck least length) per unit mass per second per second (ENERGY) is inverse to cosmological constant or uncurling of each void is "1/S^2 of present value of Planck least length per vibration" (DARK ENERGY)

Conclusion

When the SI units are used to express the value of all universal constants, very less information about our universe is divulged, and they fail to describe its full picture. The proposed Treo model is the study of basic of all basics and describes our universe beautifully and truly.

The script of creation is written in 'Cosmic language' and is governed by Cosmic Rhythm or S number the cosmic code; a new dimension less constant. The alphabets of this language are Planck units (or Gods' units) which are universal units, and will never change. The values thus arrived will help in better understanding of nature and will further help us to unveil other hidden secrets of unification and Quantum gravitation (see paper 2 & 3 Treo model).

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