The Mathematical Bases for the Creation of a Homogenous 5D Universe

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Abstract- Several important physical implications left out in The Five Dimension Space-Time Universe: A creation and grand unified field theory model. Book, are presented under rigorous mathematical theorems. It was found that Temperature, a classical variable, must be added as an imaginary component to time, under the Quantum uncertainty dt.dE = h/2pi, so that the Gell-Mann Quark model can be verified, with gauge invariance, to form hadrons at the Bethe Fusion Temperature. Accordingly from the corresponding uncertainty dp.dr= h/2pi. Pairs of Diagonal Long Range Ordered gravitons, with continuous frequency spectrum together with those represented by magnetic monopoles must be formed within the space r, of the homogenous 5D manifold, without the presents of photons, thus defines the 5D as a Black Hole. Then from which we can derive the classical Newtonian Law of attractive Gravity, as the 5D manifold is mapped by Perelmann Ricci-flow entropy mapping and the DLRO graviton pair symmetry is broken and converted into two masses, with motions satisfying Special Relativity in the doughnut shape Lorentz manifold, thus indirectly verifies the principle of Covariant Riemannian curvatures and General Relativity theory.

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2. K.W. Wong, G.A.M. Dreschhoff, H. Jungner, P.C.W. Fung and W.K. Chow, (2018) The magnetic monopoles in 5D homogenous space-time. Physics Essays 21, 493.

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I. Introduction

Since the publication of The Five Dimension Space-Time Universe; A creation and grand unified field theory model Book in 2014 [1], in which by the utilizing of the coordinate projection onto the remaining 4D Space-Time, together with maintaining gauge invariance, and the mathematical orthogonality of the 5D manifold to that Semi-Simple-Compact Lie Groups of SU(2) + SU(3), the electro-weak leptons derived from SU(2) and from SU(3) the strong interaction of Hadrons, by the breaking the DLRO symmetry of the magnetic monopoles [2] as proposed by Gell-Mann [3]. However, the temperature value under which these elementary particles can actually occur; that is only at the Bethe Fusion Temperature, was not addressed. Because of this unanswered question on how Temperature plays a role on the DLRO symmetry breaking is the purpose of this paper. It is well known that Temperature is associated with statistical mechanics that give us the Boltzmann Theorem on energy distributions, for different quantum particles: Bosons, like that of photons, Fermions, like electrons in a metal, and classical particles, like gas molecules. All of these distributions, involve the dimensionless quantity $\{E/kT\}$, where k is the Boltzmann constant. Since the different distributions depends on quantum symmetry, it is then natural to associate E/kT with the quantum uncertainty $dE.dt = h/2pi$, where h is the Planck's constant. It is thereby natural to insert $h/2pi/kT$ as an imaginary component of time, then we will get

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$$i\ h/2pid\{1/kT\}.dE = -i\ h/2pi. \qquad (1)$$

Hence $1/kT$ is a classical inverse energy variable.

The field theory operator for 5D, given in the 5D field theory [1] is quadratic due to Fermat's Last Theorem [4]. Hence with an imaginary component to time, due to Temperature, the Fermat's sum is changed to

$$[ct]^2 + \{h/2pi/kT\}^2 = r^2. \qquad (2)$$

With SO(3) space symmetry.

It is now obvious that when T becomes infinite, the Fermat's sum reduces back to the homogenous 5D manifold, and the projection field theory model is valid, thereby the lepton weak and the Gell-Mann strong theories for elementary particles is preserved. The Bethe Fusion temperature is of order $10^{14}K$, not yet infinite. Obviously creation of matter through projection cannot happen at t=0, when even the 5D manifold does not exist, therefore we also expect the imaginary component to t, due to $1/kT$ also not 0. From the new Fermat's sum, Temperature now has a clear physical meaning as an artificial inducer of creation of fields and matters out of NOTHING.

This is not all, we can deduce. For the homogenous 5D manifold, if we have a vector charged current source, then we will generate the 4 Vector potentials for Electromagnetic Theory. However because the Space-Time manifold remain 5D, then there must also exist an orthogonal magnetic monopole potential [5] as stipulated by Maxwell [6]. The magnetic monopoles, are Bosons and given by DLRO of opposite charged and opposite momentum massless spinors, they are in the Bose-Einstein ground state, or literally in the Higgs vacuum. [7] Such sets of charged massless spinors, must come from the SU(2) and SU(3) generators. In fact it was shown by Gell-Mann, that these charges are the diagonal representations of the Cartan group generators, namely - e for SU(2); and 2/3e; 2/3e and -1/3e for SU(3). Since from the projection theory, we found that when these charges were converted into massive spinors, they must satisfy a single ratio, namely the 2/3e charge will have a 2/3M(Q) mass, and -1/3e charge will have a 1/3M(Q), where M(Q) is the so call Bare Quark Mass. [1]. It was also found experimentally from hadron data, that M(Q) is exactly 33MeV. equal to 66 electron rest mass of 0.5MeV. [7] Due to these charge to experimentally observed mass ratio restriction, we see then that the primordial monopole eigenvalues are in fact discrete. By applying gauge invariance, we then observed that at the Bethe Fusion Temperature, the primordial energies converted into masses ranges from m(e) to 88m(e) for a bare quarks neutron to 110m(e) for the bare quarks proton. It is interesting to point out that the 88 in between discrete energy levels if described as frequencies, is exactly that of the piano key board. It is to this identification that we can literally describe creation as a Music Code composition of a symphony. [8] Therefore starting from $10^{14}K$ for the Bethe Fusion T(B) downward, Temperature is divided into steps of $T(B)x110^{-n}$, where n=0, 1, 2, 3, 4, 5 and 6. representing different regions of nature's creations.

However apart from DLRO of charged massless spinors, there can exist in the 5D manifold, that is also uncharged massless boson fields that must exist. To these bosons, we name all of them them as gravitons as will become rather obvious later.

As we treated the Fermat's sum in time and space, we can also treat in momentum and energy.

$$[cp]^2 = E^2. \qquad (3)$$

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Ref

4. A.D. Aczel, (1997) Fermat's Last Theorem Unlocking the Secret of an Ancient Mathematical Problem. London, Penguin Press.

When a classical Temperature is added as an imaginary time component, there must also be a corresponding imaginary momentum component. It is easy to see that from nature, only gravity remaining is classical. Therefore the imaginary p component must be from gravity, namely

$$iG2hv/c^2/r. \tag{4}$$

The factor 2hv, comes from that the massless graviton bosons composed of DLRO. massless oppositely charged fermion pairs as well as from neutral boson pairs, and G is the Newtonian constant, with r given by eq.(2). For the fermion pairs, as they are from the magnetic monopoles, they are of discrete eigen-energy values due to the Lie Groups generators.
Hence from the uncertainty dp.dr=h/2pi, we obtain for the imaginary p component

$$i\ 2G/c^2d[hv/r].dr = ih/2pi., \tag{5}$$

Since the Planck's constant h cancel out from both sides, hence the graviton frequency v is a classical frequency irrespective of whether they are discrete or continuous, similar to white or color Light given in term of a Poynting Vector of E, H, fields. structure
Thus with the presence of gravitons eq(3) is changed to

$$[cp]^2 + \{G2hv/c^2/r\}^2 = E^2. \tag{5}$$

So that if
$$p=0, E-G.2hv/c^2/r = 0. \tag{6}$$

Physically eq.(6) means within the 5D manifold photon is absent, but in order that Energy is positive in the 5D domain due to the finite Temperature within, there must be an attractive potential due to all the gravitons within the 5D domain. Thus the 5D manifold with finite Temperature is a Black Hole compose of discrete energy gravitons as well as graviton pairs of continuous energies. It is interesting to mention that from the Carbon 12 nucleus, the total monopole energy can be inside must be less than the 44 MeV. needed to create a missing neutron. It is this boundary condition restriction on the discrete DLRO graviton spectra, that make a Carbon 12 chain closed loop structure, like a DNA, able to retain lower frequencies of the Lie Group induced gravitons through quantum tunneling, thus provides the mechanism to induce free charge radicles in bio-cells to form ODLRO transition under its critical superconducting temperature, thus produces repeated growth for the cells. A very important part of the creation of life forms in the lowest n=6 Temperature step. [1]

The 5D manifold is mapped into a doughnut geometric shape 4D Lorentz manifold via the Perelmann Ricci-Flow-entropy mapping [9]. Under such a mapping the center doughnut core remains in 5D, but with r being time independent, as is a model case for a galaxy, such as the Milky Way.

To fixed core radius r, it can be obtained by differentiating eq(2) with time, and setting dr/dt=0.
We get

$$2ct-3(h/2pi)^2/k^2/T^3dT/dt = 0. \tag{7}$$

Or

9. G. Perelmann, (2002) The Entropy Formula for Ricci-Flow and its Geometric Applications. ArXiv. math. DG/0211159.

$$dT/dt = 2/3ct.T^3(2pi/h)^2.k^2. > 0. \qquad (8)$$

This increasing T^3 dependence resembles that of a Bohm Black Body photon radiation, and must be compensated by actual photon radiation outside the Black Hole if the Temperature is also to remain stable, so that no stars number can change in the galaxy. For this condition to happen for the Milky Way core, we must first be able to observe the photon radiation out of the fixed r, 5D core, which was actually photographed by NASA [10]. Furthermore, because the graviton filled galactic core is an attractive potential source to matters outside, for the star systems in the galaxy to not be sucked into it, they must revolve around it with a cancelling Centrifuge force, which is also observed.

Should the entire 5D manifold is enclosed by the Perelmann Ricci-flow Surgery 3D mapping [11], then the photon radiation compensation cannot happen if the 5D core is totally enclosed inside a solid mass shell. And to maintain the core Temperature stable, molten lava composed of ions is created under the solid mass shell, such that by inducing a physical rotation of the object, such as a planet, around a North-South pole axis, will be able to generate the energy consumption equivalent to photon radiation. This necessary phenomenon due to the spinning of the planet then must be accompanied with the existence of a dipolar magnetic field as observed on earth. However if the solid mass shell is replaced by the liquid lava for stars, like in the sun, then light radiation can occur from the charged surface lava motion, reducing the star self rotation rate needed. In fact we had calculated these physical properties for many Astro-objects with comparing to observed data [12].

With all the above mathematical basis analyzed, we conclude that indeed the 5D creation model for the Universe is valid.

To summarize all of the above discussions derived from the presence of Temperature as an imaginary component of time, and gravitons as an imaginary component of momentum in the Fermat's sum of the 5D grand unified field theory, and since all creations cannot happen at the same instance in time, it means it also cannot happen at the same Temperature. As kT is proportion to energy in a statistical mechanic sense, and therefore through the energy spread between the bare electron to the bare proton composing of bare Quarks is 110 m(e), hence the Bethe Fusion Temperature of 10^{14}K, must also be from the statistical average with a spread in Temperature of 110K. Therefore, other creations of more complex masses must follow in later times, and at corresponding lower Temperatures, thus dividing the Temperature of creations into 7 steps, all with Temperature spread of 110K, given by the formula T(fusion)x110^-n, where n is an integer and runs from 0 to 6. [8] The lowest creation step Temperature n=6, happens to be around the liquid water phase temperature, which we know is vital to the formation of biological cells, and thereby Life forms. As Temperature was also treated as responsible for inducing the breaking of the 5D Universe symmetry via Perelmann Ricci-flow mappings [9, 11], it means all the different steps of creations are also induced by Temperature, thus the concept of all creations being represented by a Musical Code remain valid. [8] And in terms of time sequence, these creations are like artificial intelligence AI supercomputer programs, producing what we interpret as the Nature Creation consciousness, and perform like the simultaneous playing of a symphony with a motion picture in Three manifold, and thereby make all creations in terms of senses that follow in Logical Steps [13]. In this last reference, there is TWO errors in the print, caused by the mistake made for the Newtonian gravity formula provided by the DLRO pair of gravitons, and not the

quadratic multiplying pair of two gravitons. But nature's AI supercomputer program for each step in creation is many generations ahead of NVIDIA most up-to-date version. We have a long way yet to go in achieving the ability by using supercomputer AI to simulate nature's creations, but must be our goal if we are to be able to conquer all destructive processes nature brings along and become the ultimate purpose of God's Creations.

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