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Theory of Space Quantization (Tsq) Driven Version of the Conventional Theories of Physics, Relativity and Gravitation-A Concise Report

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Abstract

The global scientific community at the moment is awaiting passionately for a 'Theory of Everything' (TOE) and the level of expectation of the said community is, i) the Theory has to be very robust and versatile ii) the theory should be in a position to fully explain and connect all the happenings and aspects of the universe and iii) the said TOE has to be a multi block compatibilizing one (is in harmony with the existing theories of physics) and as well has to establish the fact that the theories of physics proposed so far, though have been presented in many different forms but they are inherently being identical by their origins or routes. In this small article it is being reported that the recently discovered ' Topological Theory of Quantum gravity (TTQG) or the ' Theory of Space Quantization' (TSQ) has already unified the theories of 'Newtonian physics or classical physics', 'thermodynamics', 'quantum mechanics', 'cosmological theories' and the 'theories of relativities' under a single umbrella and revealed the dimensionalities of 'time' , 'mass', 'space expansion-space inversion' of the universe , geometries of 'gravitation' the 'singularity' and the dimensionality of the universe itself and as well presented an 'Universal Graviton Cycle' to explain most of the cosmic/astronomical phenomena of the universe in a single frame. It is a first foot step of TSQ or TTQG to ultimately converge to the 'Theory of Everything'.

Keywords: Space Quantization; Universal Graviton Cycle; Relativity & Gravitation; Black Body Radiation

Abbreviations

TSQ: Theory of Space Quantization; TOE: Theory of Everything; TTQG: Topological Theory of Quantum Gravity; TSQ: Theory of Space Quantization; STR: Special Theory of Relativity; E: Energy Quantum; SPD: Spectral Power Radiance.

Introduction

The recently discovered theory of space Quantization, TSQ, also called as Topological Theory of Quantum Gravity (TTQG) has opened up an altogether new horizon in the fields of General physics, General physical chemistry, Cosmology, Astronomy, Quantum Thermodynamics,

Quantum mechanics and other streams of science [1-9]. The conventional Newtonian Physics, the Newton's Laws of Gravitation, the relativity theories (special and general relativities) all suffer from the problems of 'incompleteness' since in all the said theories, no attempt had been made to embody principally the two physical variables 'time' and 'mass' [10-18]. Retaining their states of 'abstractness' of the said physical variables, the following important propositions have been made:

- A physical variable 'acceleration' has been introduced in the Newtonian Physics with its unit or dimension as, distance per second per second. Another physical variable introduced as the product of mass and acceleration, which is force. Although force is very realizable but the dimensionalities of the said of all the said physical variables (time, mass, force and acceleration) were never presented to the readers, students and the researchers.
- Newton's 3rd law of motion has claimed the 'action and reactions' for any occurrence of the universe are equal and opposite to each other. However, although this is a practical reality which we realize from our day to day life experience, the underlying physics of the said day to day life experience or the said physical reality of the universe remained latent forever.
- Newton's proposition of 'conservation of momentum' was a hypothesis too and the physical significance of the said proposition in relation to the quantized 'space-time' of the universe were never being explored.
- All the three laws of motion of Newton were presented intuitively but all the three laws are very much 'disintegrated' in the sense that the impact of a moving body (being any celestial object of the universe) on the vast space surrounding it and the exchange of 'space quantum' between the two (the moving body and the 'space-time') was never thought off and hence the said laws are not the 'integrated' versions.
- The very famous law of Gravitation of Sir Isaac Newton, which from the day of its proposition and till today is considered to be a one of the wake-up propositions in science, however, the said law was an empirical one and tangibly it was an 'incomplete' one too since the dimensionalities or the topologies of the above said physical variables were never disclosed or evaluated till the inception of the theory of space quantization.
- The special theory of relativity (STR) of Sir Albert Einstein proposed a relation between Energy (E) and mass (m), $E = mC^2$, where C is the velocity of light (which was considered to be a constant for any frame of the universe). In the said equation, the biggest disharmony to the 'time-space' constitution of the universe is, as per the mathematics of the equation is being concerned, when mass tends to zero energy also tends to be zero. On the contrary, when mass would be tending to infinity, energy too will be infinity. The merging of energy and mass simultaneously towards zero or infinity is fully contradictory to the physical reality of the 'space-time' of the universe. The said reality of the 'space-time' of the universe is just the opposite. While in a 'Black-Hole' the mass is enormous and energy is tiny, in a 'plasma state' energy is too high and mass is tiny. As is discussed recently in TSQ at several occasions in the literature, that this is the main ambiguity in the equation , $E = mC^2$, and when the proper dimension of the physical variables as discovered in TSQ (of time, velocity and mass) is considered , the said equation is transformed to an equation of 'energy density constancy of the space-time of the universe' (which is one of the proposed equations of TSQ) and that is, E=3V or (E/V) = 3.0, (where E and V represents each of a space quantum of 'energy' and 'volume' respectively of TSQ [19-30].
- The GTR or General Theory of Relativity very intuitively proposed that 'Gravitation' is a phenomenon of acceleration (not a force) and there is somewhere existing in the universe a point of 'Singularity' and from the said 'singularity' only everything of the universe has evolved indeed. While the said propositions are quite different than that of the prediction of TSQ, since the geometries or topologies of neither of the 'gravitation', the 'space-time', the 'singularity' nor their dimensionalities could be presented in the right way in GTR but which TSQ has very success fully revealed.
- The consideration of an equilibrium in the universe existing between the 'Direct Space' and the 'Reciprocal Space' is the main key of TSQ to search out the cosmic mysteries of the universe and one of the prime findings that the 'time' (t) is a 'pull back force' or an 'attractive force' which is always trying to hold back the universe and the ' force or temperature' (T) is a 'push forward force' or a 'dispersive force' which is trying to always to take ahead the universe. At the state of equilibrium, the above said forces are just balancing each other and becoming the multiplicative inverse to each other such that

$$Tt = 1$$

- The parameters those had always been kept abstract in science is 'time' and 'temperature' and TSQ embodies these parameters by straight forward definitions, i) the extent to which energy is pulling back entropy, is 'time' and ii) the extent to which energy is pushing forward entropy is 'force or temperature'.

$$\text{Time} = (\text{entropy}/\ \text{Energy})$$

$$\text{Force or Temperature} = (\text{Energy} / \text{entropy})$$

- The entire global scientific is saluting and will go on saluting forever Sir Isaac Newton and Sir Albert Einstein for their super brains and the highest level of intuitions. However, both of the super great personalities adhered to mathematics to a large extent but kept away the subjects of 'thermodynamics' and 'space quantization'

from the scope of their novel work. As a result of that, the curtain of the cosmological mystery of the universe were definitively stretched to a certain extent but the said curtain could not be fully exposed.

- In this mini article the principal salient points of the new discovery in science in the name of TSQ or TTQG is being presented

Methodology

In this research article the dimensional expressions of the TTQG [31-44] for the various physical variables like pressure, energy, time, temperature, acceleration, mass, force, etc. have been put in the equations of conventional Newtonian physics, Quantum physics and the theories of relativities and the outcome of the said fitting have been explained by the logic and the philosophies of the Theory of Space Quantization (TSQ) or the Topological Theory of Quantum Gravity (TTQG). The phenomenon of 'gravitation' have been newly defined interlinking the same to the 'molecular attractive forces' and an overlapping of two numbers of 'inverse acceleration' fields.

Results and Discussions

Changing Newtonian Physics

The physical variable, velocity v, of Newtonian Physics converges to a concept of volume [1] (V) in TSQ since distance being a length (L) divided by time [which is being a of inverse force or area (dimension = $1/L^2$].

Velocity = v = (Distance/time) = $(L/(1/L^2) = L^3$ = volume = V

The topological presentation is given in Figure 1 below:

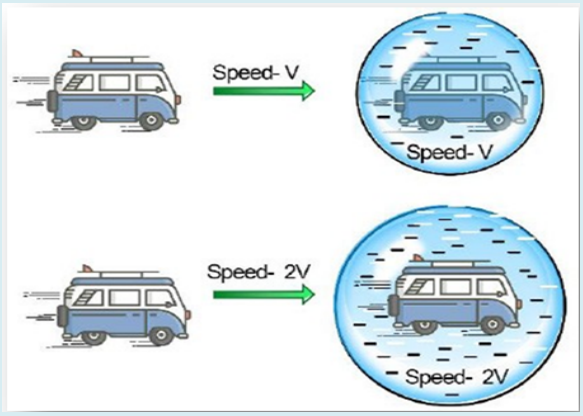

Figure 1: Pictorial Presentation of Creation of Volume as a function of the Speed of a Motor Vehicle.

'Acceleration' of Newton for the very obvious reasons transforms to a concept of 'changing volume of the space' or 'space expansion' [1-9] phenomena and becomes very visible to us in the form of 5- dimensional Cosmic phenomena as is being shown below in Figure 2.

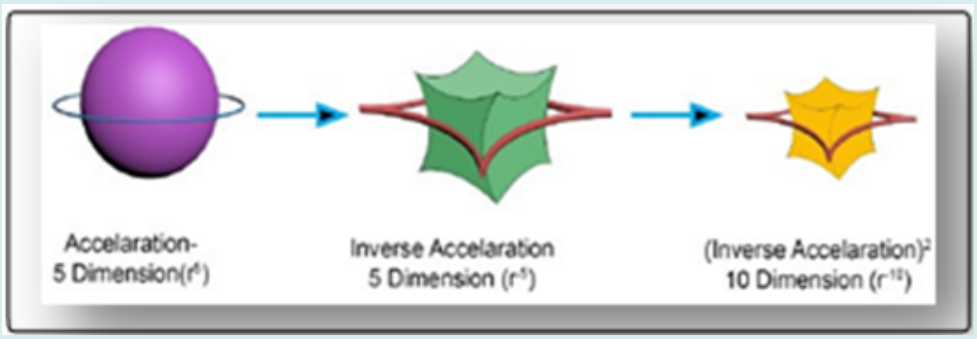

Figure 2: Schematic representation of "Acceleration", "Inverse Acceleration" and "Gravitation".

Newton's laws of motion were totally silent about the dimensionalities of the physical variables like 'Force' and 'mass' too. TSQ embodies those and the first topological or geometrical proof in the history of science [31-44] of the Newton's Second law of motion is given by TSQ is shown in Figure 3 below:

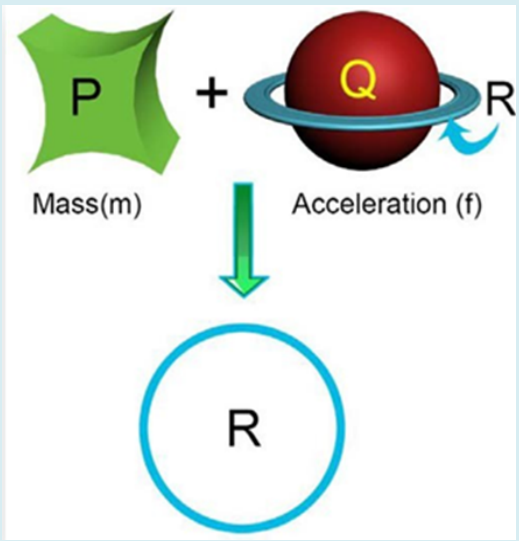

Figure 3: Mass and space expansion (acceleration) interaction to produce force.

The point to note that the Newton's 2nd law mathematical formula of expressing 'Force' as the hybrid of 'mass' and 'acceleration' is only a single representation of force out of many to many relations involving the other physical variables of the universe can be fabricated through TSQ or TTQG and which is the foundation of the 1st law of thermodynamics to be shown later in this article.

iii) Newton's 3rd law of motion in the form of 'To every action there does exist an equal and opposite reaction' could not depict the reason for the same. However TSQ not only depicted it but the law has been modified in TSQ as 'To every push forward space quantum of the universe there does exist an inverse (not opposite) pull back space quantum and they are the conjugate pairs only (Table 1) and being multiplicative inverse to each other' [1-9]. The most striking example of the existence of such equilibrium of the direct space to the reciprocal space of the universe is Tt = 1.0 as shown below in Figure 4 below and for that only the universe is existing in a state of equilibrium and otherwise which the universe would have busted out or would have disintegrated.

SI. No.	Type of Anti Graviton		Type of Graviton
I	Distance Collapsing Graviton or Order Graviton (r^{-1})	⇋	Entropy Graviton, Index of Randomness Voltage/Potential Difference(r^{1})
2	Time Graviton, Viscosity. Magnetic Potential (r^{-2})	⇋	Force, Temperature Charge(r^{2})
3	Mass Graviton(r^{-3})	⇋	Energy Graviton, Intensity, Volume(r^{3})
4	Inverse Magnetic Field(r^{-4})	⇋	Em Wave Graviton/So Called Photons(r^{4})
5	Space Inversion, Inductance, Mass Localisation, Color Graviton of Object in Mass Form (r^{-5})*	⇋	Space Expansioin, Delocalisation Of Mass, Color Graviton in Em Wave Form(r^{5})
6	Condensed State Mass Graviton or Second Degree Mass Graviton(r^{-6})	⇋	2nd Degree Energy Graviton, Photo-Electricity(r^{6})
7	Nuclear Fusion Graviton(r^{-7})	⇋	Nuclear Fission Graviton(r^{7})
8	Gravitational Collapse Graviton(r^{-8})	⇋	X-Ray, Gamma Ray Graviton(r^{8})
9	Black Hole Graviton(r^{-9})	⇋	3RD Order Energy. Plasma State Graviton(r^{-9})
10	Superentropic/Singularity Graviton(r^{-10})	⇋	Anti-Gravity or Supernova(r^{-10})

Table 1: Push forward Graviton-Pull back graviton conjugate pairs.

Figure 4: Schematic Presentation of time & Temperature.

In Newtonian Physics the 3 principal Physical variables of the universe (L, M & T) were considered non-quantized and independent to each other. If this be so, the universe would have attained infinite numbers of shapes arising out of the innumerable combinations of L, M & T (mathematically expressed as $L^x M^y T^z$ where x, y and z are variables). It is TTQG only which has very firmly established the fact that the said 3 variables are interwoven to each other as [7]:

$$MT^{-2} = L$$

This is the reason the universe is not taking up any shape of desire.

Newly Defining the Thermodynamic Laws and their Geometrical Proof

i) The 1st law of thermodynamics is restated as 'Any Space quantum of the universe can be represented through permutations and combinations in many forms with the other space quantum of the universe keeping the magnitude of the space quantum constant'. The geometrical or topological proof (5) is given below in Figure 5.

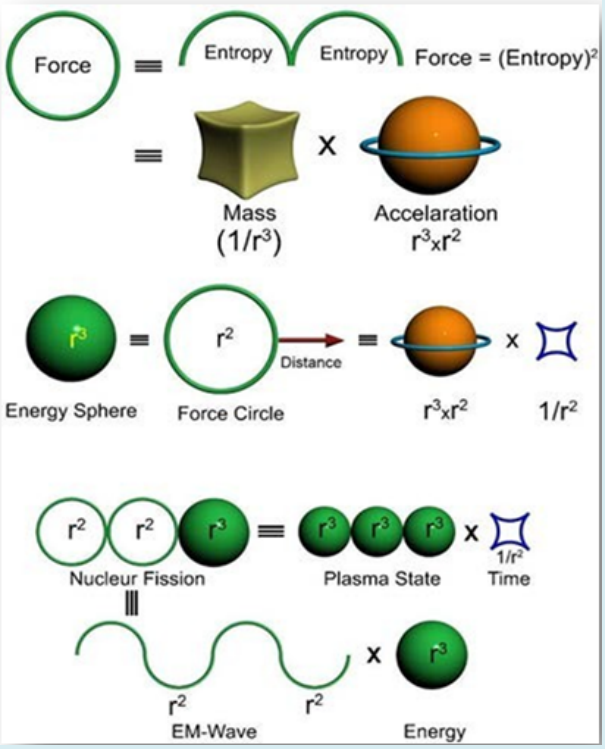

Figure 5: Quantum gravity theory driven geometrical presentation.

The 2nd law of thermodynamics is restated as 'The heat or energy is a 3D sphere and which is the integrated form and it passes out to the differential form in the form of Force and entropy (or distance) while generating work but the time attractive force (t) does not allow the entropy to fully emerge out and as result of that Heat cannot be completely converted to work.' This is being shown diagrammatically in Figure 6, which is being self-explanatory [45-50].

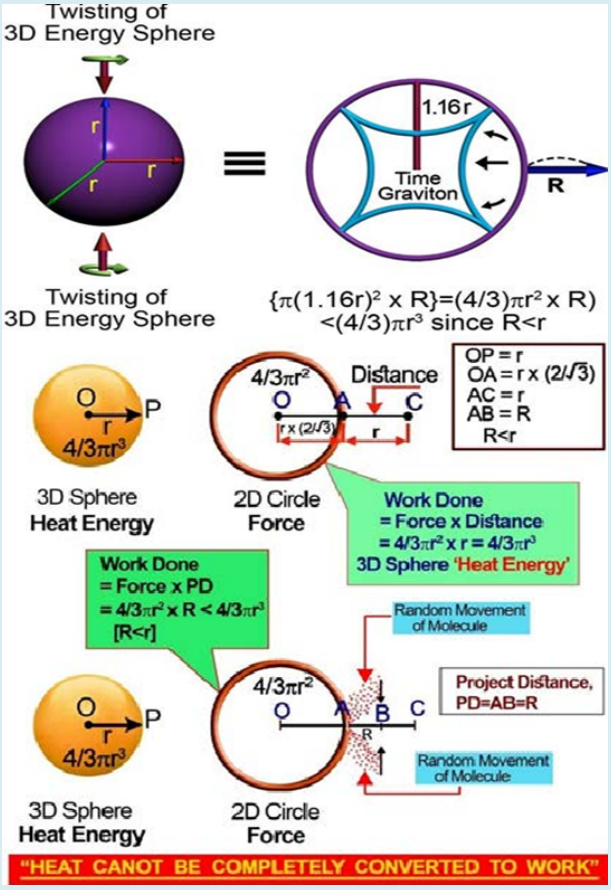

Figure 6: Quantum gravity theory driven geometrical presentation of second law of Thermodynamics.

iii) The 3rd law of thermodynamics is restated as 'In the domain when the time attractive force quantum (t) overcomes the energy quantum (E), the direct space passes on to a reciprocal space and the ordered phases are formed'. The topological presentation of the 3rd law of thermodynamics is given below:

To the end the TTQG sums up as below regarding the three laws of thermodynamics [5]:

a. The 1st law of thermodynamics is applicable to any domain of E and t.

b. The 2nd law of thermodynamics is meant for the domain when E > t.

c. The 3rd law of thermodynamics is operative in the domain t > E

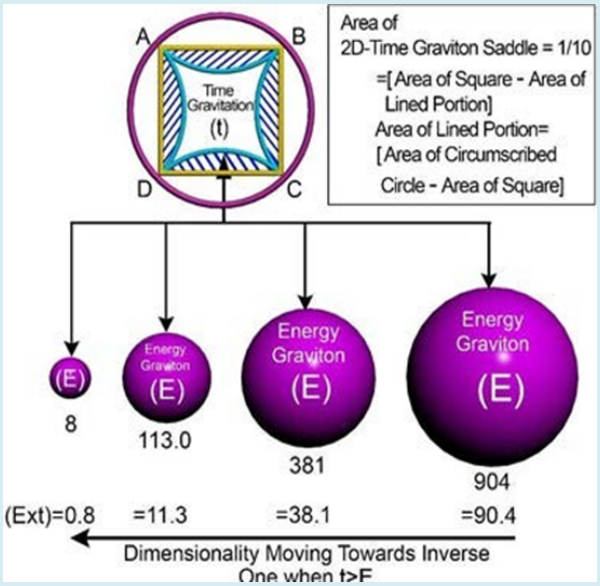

Figure 6a: Quantum Gravity theory driven geometrical presentation of 3rd law of thermodynamics.

Embodying the Quantum Physics of Planck and Einstein

The concept of 'photon' of Einstein has been superseded in TTQG by the concept of 'EM-wave gravitons' or 'EM- wave space quantum' and the underlying physics, mathematics and topology has been presented in TTQG. In the Figure 7 below, the integrated, semi-integrated and full differential form of ' EM-wave space quantum' is being shown [51-79].

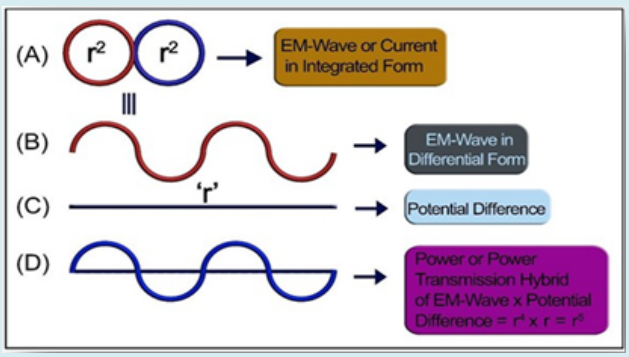

Figure 7: Representation of Power Generation as a hybrid of EM- wave (I) and Potential Difference (P=I X V).

Max Planck had to adhere to some stiff mathematics to explain the 'Black Body Radiation phenomena or curves' since he could not embody the 'spectral power radiance' (SPD) physical variable but TTQG by evaluating the proper dimension of SPD could explain [1-9] the SPD's of Black Body Radiation at ease. This is being shown below in Figure 8.

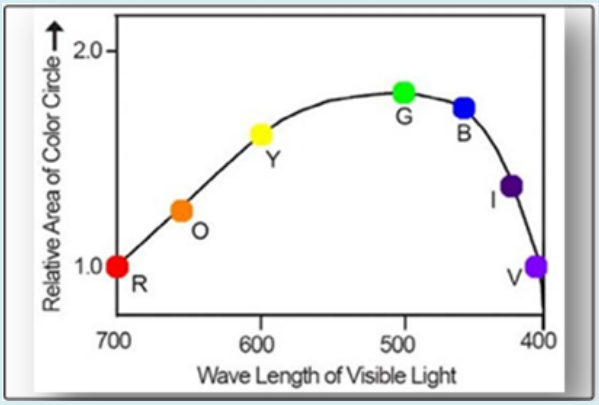

Figure 8: Representation of SPD against Wave Length of Visible Light.

iii) The 'particle -wave' duality concept in physics is basically being an equilibrium phenomenon of the universe between the masses and the EM-wave gravitons (or the space Quantum). It is being shown in TTQG that a 'singularity' space quantum of the reciprocal space (termed as super- entropic graviton) in the form of inverse 10 dimensionality through different stages by emitting 'entropy space quantum' gives rise to all the 'Cosmic Phenomena' of the universe. This has been represented by a 'UNIVERSAL GRAVITON CYCLE' UGC) in TTQG. The UGC is shown in Figure 9 [80-90].

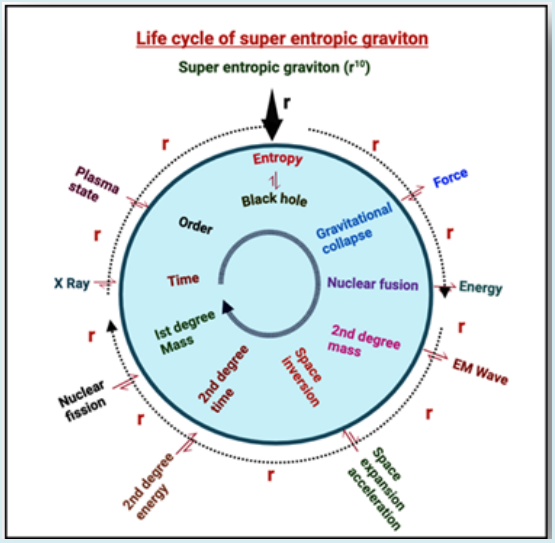

Figure 9: Life cycle of a super entropic graviton.

New Shapes of the Theory of Relativities

As per the logic and philosophy of TSQ or TTQG is considered, there is no need of adhering to any theory of 'relativity' to explore the cosmic mysteries of the universe [91-99] due to the following reasons:

i) The Energy density of the space of the universe is constant and hence there cannot exist different inertial frames of the universe. The universe is isotropic and homogeneous and all the cosmic phenomena of the universe are arising out of the 'exchange of quantum forces. The length, area and volumes of the 'space gravitons or space quantum' and their geometries and dimensions are the real operating keys . Velocities of the celestial bodies are important but ultimately, they generate volumes. For any celestial body to move has to overcome some or the other attractive forces and then only it covers some distance. The hybrid effect of the two as shown at the very beginning of this article gives rise to the generation of a volume. So the special theory of relativity considerations of 'length contraction', 'time dilation', 'volume contraction' are all the effects of 'distortion of space quantum' and which is topological and not 'relativistic' ones. The shapes of the space quantum (curved line, circle, sphere) do vary in the space due to different stress – strain situations and a result of that a curved entropy line might be straightened, a force circle may be longitudinally more stretched than the lateral one, a 3D energy sphere can attain homogeneous or inhomogeneous shape of ellipsoids, a 2D time saddle might be more squeezed or get enlarged…like so. All the said distortions are geometric or topological leaving no chance of being relativistic. The famous equation of Einstein of special theory of relativity simply merges to a different form when the light of TTQG is being showered on it as shown below:

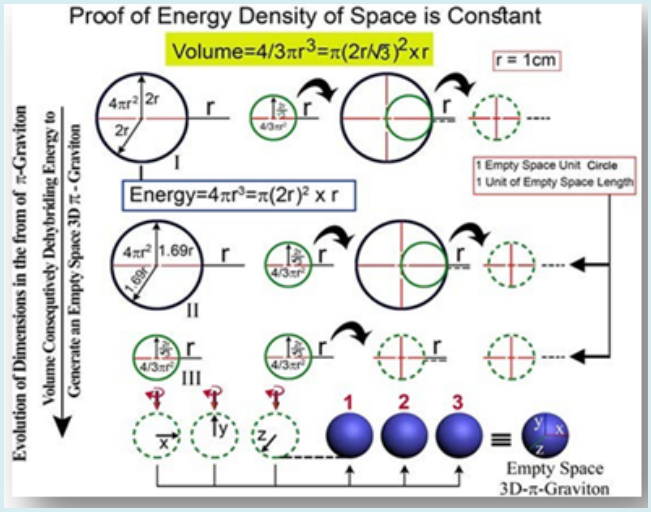

Figure 10: Quantum gravity theory driven geometrical representation of energy density of space is constant.

$E = mC^2$, where m is mass, E being energy and C is the velocity of light. In TTQG velocity is volume and so it can be written as $E = mV^2$ (V =volume). Now in TTQG the momentum is the product of mass and velocity and it has been proved in TTQG that mV = 3 (conserved or constant) and then the said equation converges to E = 3V or (E/V) =3, or the energy density of the space is constant. So, the 'relativistic' equation of Einstein is being transformed to a topological equation. The topologically (E/V) = 3 signifies that when a quantum of 'energy' is been divided by a quantum of volume, 3 numbers of empty pi gravitons [88-99]. This is being shown in Figure 10.

ii) The GTR has claimed that the physical variable mass is the warp of the space time of the universe. However, this is a very qualitative one since it could not be split into the concepts of physics, mathematics and topology. The next proposition was that 'Gravitation' is a phenomenon of 'acceleration' (not a force) and again could not show in black and white in papers what this could be? However, the TSQ findings are

a. Mass is a 3D saddle or a 3D inverted sphere, squeezing type by its nature and is a physical variable of the reciprocal space of the universe.

b. Gravitation is not a phenomenon of 'acceleration' in the true sense. It is indeed an overlapping of two numbers of 'inverse acceleration fields' and which is the 'singularity' in the form of inverse 10 dimension.

c. The phenomenon of Gravitation or the 'Gravitation function' has been represented as 'G' (which is not the constant of gravitation of Newton) in TSQ and is represented as: (overlapping of 2 inverse acceleration fields.

$$G = (9/16\pi^2 r^5) \times (9/16\pi^2 r^5) = (81/256\ \pi^4 r^{10})$$

Where the term, $(9/16\pi^2 r^5)$ stands for the 'inverse acceleration' and the G converges to a state or a point of 'singularity' of inverse 10 dimensions.

The topological presentation of the phenomenon of gravitation is shown in Figure 11.

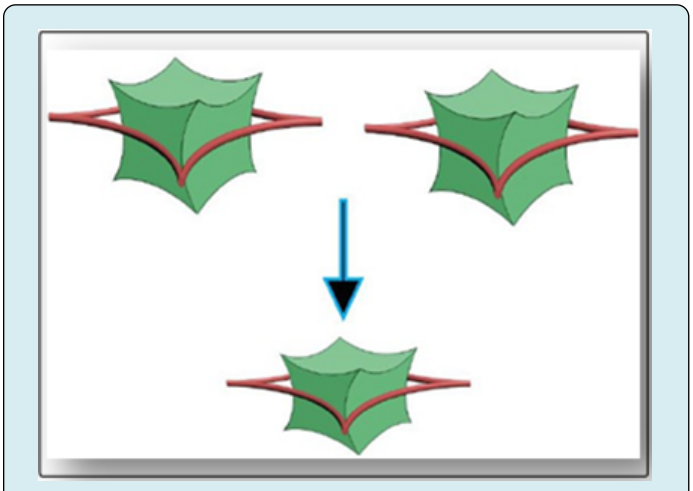

Figure 11: Overlapping or Hybrid of 2 no. of Inverse acceleration fields.

Symmetry Breaking of the Universe and Origin of Mass

This 'symmetry breaking' phenomena [101] are much discussed subject of the current 'standard model of physics' for quite some time. It is being proposed that the mass of the universe has originated from the symmetry breaking of somewhere or the other in the universe. Many research articles have published but no one could put up a concrete scientific argument to establish this phenomenon. This phenomena as the TSQ analyzed is very true and has arisen out of quantized 'space-time 'constitution of the universe [1-9]. In a tripartite fashion TSQ has proved this phenomenon being true (from the angle of physics, mathematics and geometry) and the occurrence of inter convertibility or interchange of the space quantum among themselves is fully responsible for this. The said occurrence is being shown in the following Figures 12-15.

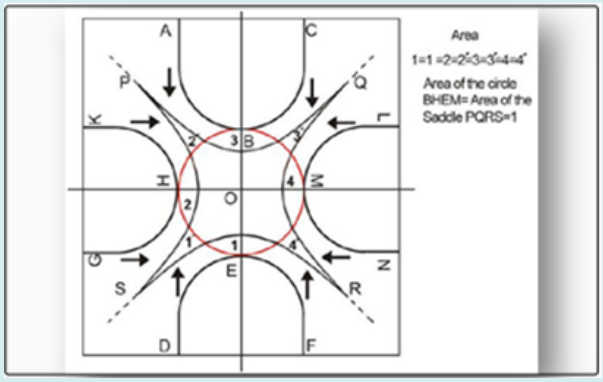

Figure 12: The inversion of a circle BHEM to form a Saddle PQRS (same area as that of the circle). The equation of a circle is y2 = (1-x2) and the inverse function of circle y'2 = 1/(1-x2) ABC is the inverse HBM portion of the circle. The inverse portions ABC, GHK, DEF and NML attract each other and the saddle PQRS is formed.

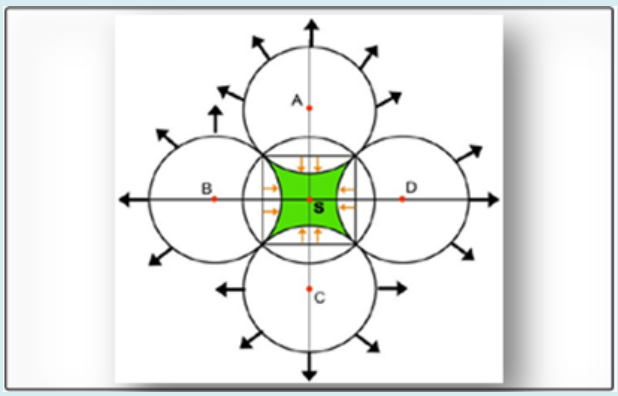

Figure 13: Formation of a 2-Dimensional Saddle (S) from 4: no. of Circles A, B, C & D.

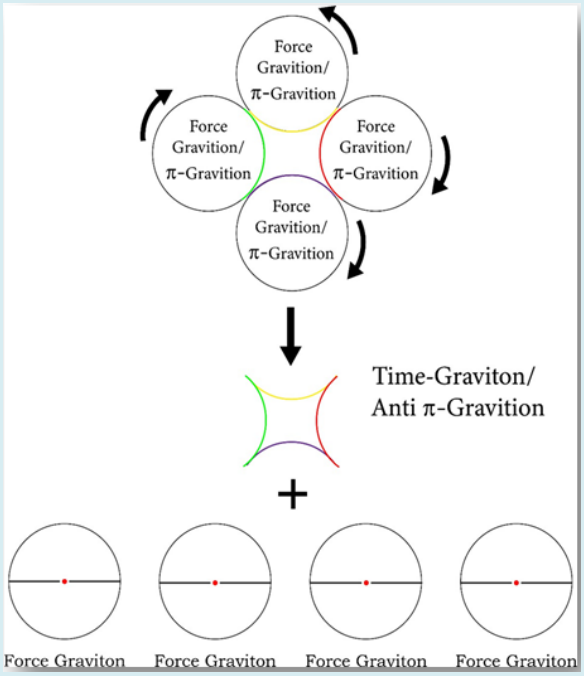

Figure 14: The inter- convertibility of 'empty π quantum' and 'empty anti- π quantum' or a ' Force Quantum' and a ' Time Quantum'.

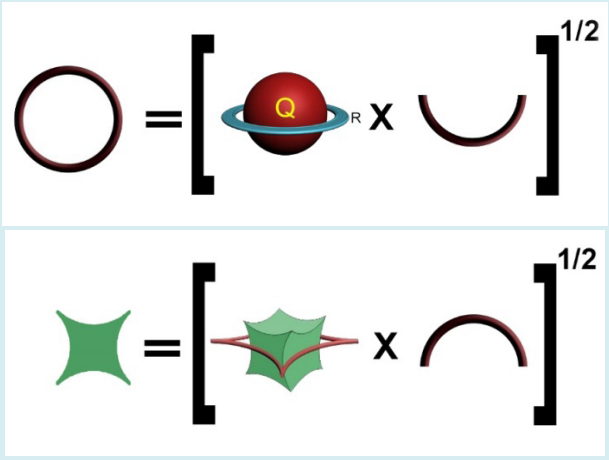

Figure 15: Topological of representation of geometric mean concepts of 'force' and 'time'. The upper figure circle in the LHS representing 'force' is a geometric mean of 'space expansion and order' and the lower one 2D saddle representing 'time' in the LHS, is a geometric mean of 'space inversion and entropy'.

Conclusion

The conclusions are:

i) The basic text books of physics need to be written out in an entirely different fashion in terms of the quantized

'space-time' constitution of the universe of TSQ.

ii) The specialized branches of Physics like thermodynamics, Cosmology, Astronomy, super-conductivity, Fluid mechanics all are required to be rebuilt in the light of TSQ.

iii) The postulates or the findings of TSQ are to be applied in Biological science especially in fields like protein folding, genome sequence and the outcome to be observed and verified through experiments.

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