

**Overview of Sankhya theory with axiomatic mathematical proof**

*A correct theory should be simple, logically & numerically consistent and be in consonance with reality. It should be based on an axiomatic foundation, so that the principle of causality is not violated. The permanent foundation for a unified theory that defines all phenomena, at every point in space and time, must be a non-dimensional and scale-invariant formulation, if it is to fulfil the criteria of universality. In a unification paradigm, it is necessary to restrict the controlling parameter to a single variable, if it is to be effective mathematically. From an intellectual, logical and observational standpoint time or the interval between activities is the only parameter that can fill the role of a controlling parameter. The definition for the real and substantial nature of the substratum on which phenomena is based should evolve from within the theory as a consequence of its axiomatic foundation which consequently compels the inclusion of dynamic interactive states.*

*The intellectual dichotomy posed by the ordering of polarised concepts such as “maximum and minimum”, “static and dynamic”, “start and finish”, “left and right handedness”, “simultaneous and sequential”, etc. should be resolved through an axiomatic unification paradigm, again arising from within the theory. Simplification of logic, rigor of analysis and elimination of conundrums must form a vital part of the derivational process to establish integrity of theoretical conclusions. Since Universal phenomena existed long before the advent of human life, a correct theory must not depend on logic structured through intellectual analysis that is contrary to the observed characteristics of natural phenomena. A classical example of a conundrum in Physics and Cosmology is the assumption that space is a vacuum, void or devoid of substantiality because of the failure of experiments to detect the presumed characteristics of space. The assumption that is a void or vacuum or without identifiable characteristics has been the greatest error in logic for axiomatically it is impossible to accept the foundation of the most realistic Universe is a void. But axiomatically there is compelling logic to identify a real foundation of elemental components forming a field of elemental matter for it then leads to the quantum with mathematical rigor from the start. A real component or elemental matter must be volumetric and its dimensional property of length underlines and defines the unit value. Since there can be no smaller “unit” in an elementary field of matter the volume also must be unit cubed. The next incremental dimension must be two units with a cubic form changed to one side being longer than the other two. Hence the cubic volume axiomatically must be 2 cubed or 8 volumes. It is impossible to create cubic volumes of 2 to 7 units for its sides would increase fractionally as the cube root 2 etc to 7 and a fractional dimension is axiomatically forbidden in an elemental field. Therefore a cubic volume of one can only increase to on volume containing 7 additional volumes to equal 2 cubed = 8 elemental volumes. The quantum state of one containing 8 unit volumes is a natural and axiomatic consequence of elementarity where the 7 is the incremental ratio of the elemental “unit”, which attains the status of a fundamental state where the one uniform algorithm of a dynamic interactive state becomes operative. Another aspect of an elemental dynamic state is that the interval of stress transfer becomes the shortest and with a dense rigid state the concept of tunnelling, superconductivity and instantaneous transmission attain credibility.*

*The elemental field of air has a spectrum of seven vibratory states and water has a spectrum of 7 PH levels in both incremental and decreasing levels totalling 14. Hence quantisation is an axiomatic consequence of dynamism in a real but elemental field of matter.*

*Further, since the theoretical derivation forms the foundation for pursuing human activities efficiently, it must be amenable to observation and practical verification, for only then its utility would be confirmed intellectually. The process of verification through observation depends*

on a relative change which restricts its means to a dynamic parameter such as time. The proof for the completeness of a theory should rest on the unequivocal corroboration of its theoretical derivations, with every type of observational experience which naturally forms an element of physical reality.

As a specific case, the spectrum of phenomena observed in paranormal and spiritual domains have been widely reported through verified firsthand accounts, yet there is no place for it in current science, even as a hypothesis. Lastly, since the theory is based on axioms, its proof must be generated from within as a part of its derivational process and should not depend on arbitrary or external observational parameters. A rigorous test for the correctness of a unification paradigm lies in its ability to derive numerical solutions unambiguously, without dependence on constants that are structured through tenuous logic. The removal of uncertainty as a factor and establishment of the accuracy and correctness of a unification paradigm compulsorily leads to the concept of predestination as an operating parameter in reality.

The foregoing criteria form the derivational base for the unified field theory of Sankhya, (logic of counting in Sanskrit), created by Maharishi Kapilla in a pre-Vedic period. Sankhya forms the core of the Bhagavadgita, embedded in the Mahabharata. Based on the foregoing principle, its axiom based foundation, bound by rigorous logic, using combinatorial mathematics, inexorably leads to an austere formulation which is the epitome of intellectual elegance. It is the only unified field theory in existence that offers a complete scientific and mathematical solution to every aspect of reality, manifest or unmanifest, in space comprising substantial components. The 68 Sanskrit axiomatic theorems or sutras in Sankhya are transliterated, along with its mathematical derivations in part 2, for the first time, as all earlier translators could not decipher its scientific content based on combinatorial mathematics. While it may seem impossible to present a complete theory of manifestation of all forms of universal phenomena in just 68 theorems the ingenious method of presentation justifies its correctness. In the very first sutra or theorem a method of elliptical negation gives the clue to deriving factorial 68 numbers of solutions combinatorially from as many theorems. Hence the 68 Sutras derive the sequence of changes needed to complete just one interactive cycle. The logical derivational process is presented below but the comprehensive mathematical proof is given in appropriate chapters which gives simple explanations with mathematical proof for the numerous unexplainable anomalies in Physics and Cosmology. For instance the well known EPR paradox; Hubble's expanding Universe hypothesis or the unidentifiable spectrum of dark matter / energy phenomena are shown to be the product of misunderstanding the real structure of space.

Space as a large volumetric entity can be defined and described logically and simply but the introduction of dynamism that has been observed for eons needs a more rigorous approach. In Sankhya, counting interactive events between adjacent components, comprising the continuum of space, provides the means but it depends on a ratio of change that involves an interval, defined in Physics as 'time'. Any length compared to some length is just a numerical ratio but if one of them moves the same ratio becomes a time parameter defining a dynamic state. Additionally, any cycle of interaction between any two objects has three complementary phases, in which there is a 'compressive collision', a 'rebounding reversal' and an 'expansive separation'. All these three modes too are governed by the cyclic interval of time but again defined in three complementary phases, as a 'simultaneous instant of collision', a 'resonant period of reversal' and a 'sequential interval of separation', respectively. Colliding interaction creates compressive stresses at the point of impact. In the resonant interval, compressive stress reverses to become an expansive one. The sequential expansive stage initiates the transmigration of interactive stresses that expand beyond its boundary, to other components forming the continuum of space. The three states of the interaction within a single cycle occur as a simultaneous event. However, when the interaction expands to form the sequential transmigrating state, each cycle consists of a repetition of the

simultaneous state. The equality of the algebraic sum of the interactive or alternating interval leads to a perpetual harmonic oscillatory state (PHO) that sustains eternal dynamism and is the hallmark of the unification paradigm in Sankhya. The controversial and oft debated phenomenon of zero point energy is given an axiomatic mathematical foundation through the PHO derivation. The Perpetual Harmonic Oscillatory state is defined in Sanskrit as the Tri-Gana interactive states that are the cause of all phenomena in the Universe and forms the principle and singular theme in Sankhya. The axiomatic derivation of the eternally dynamic state through combinatorial mathematics is unique to Sankhya and it raises it to the acme of unification of phenomena in science.

As a preview of a PHO state a physical example will explain how such a state can exist perpetually. An archer's bow is the iconic model of the PHO state. The shaft of the bow is a flat long strip made up of a rigid material like wood or metal. When it is bent the outer curve stretches while the inner surface compresses at the same time or simultaneously and will spring back to its normally straight position if the bending pressure is removed. If a string is attached to both the ends when bent, it would resonate or vibrate as it is stretched and relaxed by the twin pressure form of stress of compression and expansion of the inner and outer layer of the bent strip. Depending on the rigidity of the strip and the elasticity of the string it would reach a balanced resonant state and remain in that state forever. An amplifier with a microphone attached to the bow at its mid stable position would reproduce the resonant frequency at an audible level. Unless the strip or string changes its state the sound would be produced perpetually and has been tested successfully. The key characteristics that make it possible is the rigidity of the strip where the compressive and expansive state is created simultaneously due to its degree of rigidity and the ability of the string to maintain the same tension at a vibrating rate that is constant. The conclusion is that unless two opposing states of compression and expansion are rigidly constrained a perpetual oscillatory state cannot exist. Consequently it will be shown below that space is a medium with the opposing states constrained to maintain eternal dynamic or interactive oscillatory state.

Theoretically, an instant would be defined in Physics as an infinitesimally small interval of time approaching zero. However in reality the instant of time must have a relative but discrete numerical value. The concept of the instant of collision can be understood simply, as the interval of time a solid object takes to transfer an impact from one side to its opposite one. Stating it differently, if a solid object is pushed from one side, the opposite side would seem to move at the same moment, depending on its rigidity. If the rigidity or density of the solid object is at its maximum, then that interval of time would be the minimum, forming an instant, because there would be minimal distortion. If two such similar objects collide, that interaction would take place within the same interval of time or simultaneously as an instant. There would neither be an interval smaller than that instant nor any distortion that could increase it. Consequently, the action of both objects within the instant must be defined as a simultaneous one. Similarly both ends of a rigid rod act simultaneously for if one end is pushed the other end also moves at the same instant despite the rods length. Hence simultaneous action can occur at two locations separated by the length of the rigid rod. Therefore simultaneous activity is synonymous with mass, density, rigidity, coherence and similar descriptions.

Taking the example of a moving train, consider the fixed wagon length  $L$  as the rigid rod in which both its ends act 'simultaneously in time', while the length of the gap  $G$  between two wagons acts as the 'sequential or variable aspect of time' that can change and hence not rigid. At constant train velocity let time taken by wagon be  $Lt$  while time taken by gap be  $Gt$  and if the gap  $G$  does not change then ratio of time at every instant as  $Lt/Gt$  will be constant at all train velocities. But the real length between two wagons is  $L+G$  and at constant train velocity, total time equals  $Lt + Gt$ . When the train velocity changes  $L$  being rigid  $Lt$  will change instantly

whereas the gap  $G$  being variable the  $L_t / G_t$  ratio will change instantly and similarly  $L_t + G_t$  as the interval between two wagons too will change instantly. An increase in  $L_t$  will require  $G_t$  to increase to keep ratio constant whereas  $G_t$  must decrease to keep interval constant. Depending on the rate of time change a series of opposing changes must take place to maintain balance. The axiomatic algorithm that resolves the above problem of maintaining eternal balance between simultaneous and sequential oscillatory states is derived below as  $1/x = 1+x$ . It sets rigid, dense, coherent states to one as a constant of simultaneity.

Simultaneous interactions between many objects merge into a single count, as it occurs within one or the 'instant cycle'. The simultaneous collision in an interaction is countable. Hence, counting interactions are real events whereas the interval in terms of time is a relative comparison. Hence counting as a process of evaluating phenomena is certain and accurate. As an example if the difference between initial time as  $T_0$  and final one as  $T_f$  as  $T_f - T_0 = \text{zero}$  the ratio  $T_0 / T_f = \text{One}$  is a statement that implies that the comparison is at the same instant and is confirmed by the interval  $T_f - T_0 = \text{zero}$ . Hence, the test for simultaneity of events is confirmed by two modes as the zero time intervals or the ratio of the two being one. Zero time difference does not mean zero space difference —rigid space shows zero time difference

The ratio of infinity/infinity also equals 1 conceptually; thereby allowing the observer to create unlimited variable ratios provided the sum is one. Whereas, time is a relative parameter and therefore, it is not a real but a subjective process. There is a similar concept in Physics where waves of different frequencies superposition to decrease the interval of time separating two adjacent ones and when that interval becomes zero the concept of waves, changes to a continuum. In the case of counting quantum in terms of an arbitrary interval as a second is relatively accurate but is not a definitive or certain process because there is no way of detecting if the count is a single or merged unit.

However, experience shows that sequential interactive events can be counted, because an interval of time separates two adjacent activities, but not those that occur simultaneously or within an instant. Ten claps can be counted as such if it occurs one after another but if all ten occur at the same instant it can be counted as only one. It causes an anomaly of nine vanishing counts when interactions synchronise to act simultaneously. Though the nine merged counts are not countable, it increases its intensity as the hidden clap-count density, within that single clap. Therefore, the number of interactions that take place simultaneously, within the time-interval of an instant, indicates its count density per 'instant of time-interval', whereas sequential ones indicate the number of such instants existing between interactions. Similarly, the moment of changeover from simultaneous to sequential interactive interval covers the 'resonant period of reversal', counted as numbers of such instants. Hence all phases of interactive states can be counted in terms of that instant but not those that occur simultaneously within the instant. There is no detectable method of separately identifying merged or superposed interactions but mathematically it can be evaluated by equating density with 'time squared'. The caveat is that such evaluation of discrete density values cannot be treated as separated or sequential events for it is a product of a simultaneous event. A dynamic state can be defined as the algebraic sum of a cycle of three states in coherent, resonant and harmonic interactive mode.

The gravitation and magnetic phenomena in Physics belongs to the simultaneously interacting domain and as it is not measurably separately as discrete interactive states the complication arises from the indirect mode of detecting it. The enigma of mass equal to energy/ $c^2$  is a classical example of the foregoing caveat for the mass factor is recognisable only when it has density in excess of unity. Such behaviour is a natural consequence of a substantial composition of

space. More over any process of measurement, being a relative activity, the measured and the means (measuring rod) have a real time value that must be included. A vehicle of length 10 units (measuring rod) going through a tunnel of length 100 units has a time ratio of  $100/10 = 10 + 1$  because the vehicle rear end must clear the tunnel for that dynamic to be completed.

In the dynamically quantised medium of Space volumetric density per interactive cycle and area flux density per interactive cycle, equalize in an inversely proportionate ratio to maintain perpetual balance.

Therefore the inversely proportionate ratio of stresses in a state of balance in a dynamic medium is  $\rho^2 \equiv G$  as the constant of acceleration per unit interactive cycle-time, where the ratio  $\rho$  is the relative interactive density and the ratio  $\tau$  is the relative interactive time interval.

The classical equation  $\rho v^2 = P$  as dynamic pressure which is proportionate to relative density  $\rho$  and relative displacement as velocity  $v$ , is axiomatically not applicable in a continuum with limiting density  $DD$ , limiting metric elasticity  $ST$  and frequency constant  $G$ , all of which are ratios per unit cycle-time, whereas velocity is a sequential transfer of stresses over a period covering many interactive cycles. Therefore the logical imperative in Physics is to maintain the fundamental cyclic time as the constant over velocity that is a subsequent event.

During an interaction between two very rigid components, the instant of collision, reversal and separation between the two, marks the transition from the simultaneous to the sequential states. The transition point is related to the rigid components as a self similar ratio for both the ends of the rigid state acts simultaneously or in zero time-interval which must explicitly be derived through axiomatic methods. Ratios are valid only if the comparison of two parameters relate to the same instant or moment of measurement. Also ratios can equal one if volume / volume / cubic or area / area / square or liner / linear / unit index parameters are compared. Interactive cyclic states where coherent, resonant and harmonic states are compared in a combinatorial manner the ratio must be other than unity for perpetual dynamism has hidden not parameters that does permit an identical state, which signifies a static form.

In a dynamic environment even a ratio must exist for at least the period of one interactive cycle. If not the comparison becomes a sequential act where an interval of time is involved. Hence the 'simultaneous state of activity' of two or more components, within the instant, must equal **a numerical ratio** of two similar parameters whereas the 'sequential separation interval' must equal **the sum** of both, as it is not within the minimum interval. At the impact point the simultaneous instant as a ratio must equal the sequential interval as a sum when it is in balance, as shown below :

$$1/x = 1 + x. \quad [1.1]$$

This equation can be satisfied by solving the expression for a self-similar interactive displacement interval, between two components as an axiomatic value  $1+1=2$

$$x = \left[ \sqrt{1+2^2} - 1 \right] / 2 = 0.618034 \quad [1.2]$$

Then

$$1/x = 1 + x = 1.618034 \quad [1.3]$$

On transposing  $x$  it becomes

$$1 = x + x^2 \quad [1.4]$$

Raising it as powers as simultaneous ratios, it changes to

$$x^n = x^{n+1} + x^{n+2} \quad [1.5]$$

Continuing, as the sum of infinite powers of  $x$  with  $n$  equal to infinity, it forms a loop as [1.3]:

$$\sum_1^{\infty} x^n = 1/x = 1 + x \quad [1.6]$$

Finally, the combinatorial sum of the sequence of powers of  $x^n$  to  $x^{n+n}$  equals one, as a super-symmetric series with combinatorial coefficients  $a, b$  etc forming the Pascal triangle, shown below as an example :

$$x^{n+0} + n x^{n+1} + ax^{n+2} + ax^{n+n-2} + n x^{n+n-1} + x^{n+n-0} = 1 \quad [1.7]$$

The above sequence [1.7] enables the identification of self similar and scale invariant ratios which form a coherent volume as in nuclear, black-hole, bounded or similar agglomerate states in asymptotic freedom in Physics, which act as one single unit or simultaneously.

The sequence of derivational changes form an extraordinary and unique logical-loop, based on combinatorial values. It shows the characteristics of self-similarity and scale invariance which exists at the instant of collision & separation, between two adjacent components. The interactive phase of compressive collision being smaller, it is denoted by  $x^2$  and the separation interval being larger, is similarly denoted by  $x$ , leading to the period of reversal as:

$$x - x^2 = x^3 \quad [1.8]$$

Therefore, the compressive displacement interval after, adding  $x^3/2$  is:

$$x^2 + (x^3/2) = 1/2 \quad [1.9]$$

This is equal to the expansive phase, after subtracting  $x^3/2$  as:

$$x - (x^3/2) = 1/2 \quad [1.10]$$

Since both the compressive and expansive intervals are equal, the algebraic displacement is zero and the interactive point must remain at the centre, if all the interactive parameters do not change. Further, the asymptotic sum of the interactive ratio  $1/2$  approaches 1, confirming the consistent location of the collision at the centre, even at higher interactive count-rates:

$$\sum_1^n 1/2^n + 1/2^n = 1 \quad [1.11]$$

The foregoing derivation lays the foundation for the principle of self-similarity and scale invariance but the rigorous mathematical proof is derived in a later chapter. The axiomatic value of a cycle is obtained by combining  $x/2=0.309017$  iteratively with  $1/2^n$  combinatorially through the expression:

$$A_{n+1} = \sqrt{\left[1 - \sqrt{1 - (A_n)^2}\right]^2 + A_n^2 / 2} \dots \text{where} \dots A_0 = x/2 \quad [1.12]$$

This leads to an axiomatic cycle of 10 interactions as  $n$  approaches infinity

The equivalence of coherent states to synchronous states is equated through rewriting the above as follows:

$$\pi / (2^n A_n) = 10 \dots n \text{ when } n \rightarrow \infty \rightarrow \quad [1.13]$$

$$\frac{1}{2} = A_n \frac{10}{\pi} \quad [1.14]$$

Axiomatically, a resonant interactive cycle is limited to ten interactions for the cosine of the angle at 36 degree interval is  $(2\pi / 10) = 0.809017$  equal to half the golden mean as  $1.618034/2$  and is totally in consonance with the derivation above. Hence a simultaneous cycle of 10 interactions can be presented as a logarithmic index of one. Hence all numerical values in Sankhya are presented as a mathematical code with the logarithmic index to base ten, which was the prime reason earlier translators failed to do justice to the extraordinary theory. In order to be transparent to the scientific reader the constants as ratios are derived at the relevant sequences whereas in Sankhya it forms the preliminary sequence from which larger ratios are derived axiomatically.

The number of interactions taking place simultaneously within the instant cycle defines the intensity of its activity or density of interactive stresses. The maximum density of interactive counts and the minimum interval of time as the instant, form an inversely proportionate ratio leading to an axiomatic, numerical constant  $K_x$ , in Sankhya. Though the interactive colliding point remains at ratio  $1/2$ , the constant  $K_x = 0.9149879$  defines its boundary limit as an asymptotic sum of combinatorial number of simultaneous interactions forming the instant and is equivalent to Catalan's constant in mathematics.  $K_x$  is a pivotal factor in Sankhya and is derived through axioms as shown below.

$$K_x = \frac{10^{1+x}}{2^3} \frac{2^{1/3}}{2^3 - 1} \frac{10^2 - 2}{10^2} = 0.9149879 \quad \underline{\hspace{10em}} [1.16]$$

The interactive count rate rises to  $C$  when the colliding interaction reverses to expand or when the simultaneous state changes to a sequential one as in [1.8], as an expanding ratio of  $2/x^3$ :

$$C = 10^{2/x^3} = 296575967 \quad [1.15]$$

The constant  $C$  is the axiomatic count rate of interactions per cycle between the components comprising space following self similar and scale invariant rules of proportionality of simultaneous ratios. ( $C$  is the axiomatic frequency of an electromagnetic wave of a meter wavelength in Physics).

The interactive count rate rises to  $C^x$  on the compressive part of the cycle and falls to  $C^{1-x}$  on the expansive phase.

$$C^x = 10^{2/x^2} = 172213 \dots C^{1-x} = 10^{2/x} = 1722. \quad [1.16]$$

The factor  $C^x$  acts as a merged simultaneous group within one interactive cycle and is the stress count density which transmigrates, as a set  $C^{1-x}$  times to total  $C$  counts in a cycle such that the displacement upon period is always  $C$ . Its interactive density rises and falls cyclically that creates an accelerative state or force.

[ It will be shown later that  $C^x$  forms the magnetic current and its transmigratory rate is not limited whereas  $C^{1-x}$  forms the electric current limited by a transfer rate of  $C$ . The magnetic current or transmigration of simultaneous interactions, like gravitational acceleration is not restricted or obstructed whereas the transmigration of an electric current needs a connected path for it to be sustained ]

Time is not a constant in space like the second in Physics. Since  $C$  is an axiomatic constant of an interaction between two adjacent components, then length upon time gives the displacement. Hence it depends on whether length, displacement or time is kept as a constant to derive its mutual proportionality. However, in Sankhya, there is no alternative to counting

interactions as the method of deriving theoretical propositions, because the axiomatically derived  $C$  is a universal constant. In the foregoing derivation the interactive cycle is balanced where the compressive and expansive stresses are equal within that cycle, simultaneously. It leads to profound consequences shown later. In a self similar and scale-invariant resonant cycle the interactive count must be constant.

The simultaneous count rate balances, maximises or minimises into a unit count, depending on the algebraic sum of the logarithmic index.

$$10^{\frac{1}{x^3}} = 17221.....10^{\frac{1}{x^3} + \frac{1}{x^3}} = 296575967.....10^{\frac{1}{x^3} \cdot \frac{1}{x^3}} = 1 \quad [1.17]$$

At an interactive count rate of 17221 the compressive and expansive states are equal and the algebraic sum of stress is zero. At count rate  $C$  the ratio of compressive to expansive stress counts is 100 or two simultaneous cycles.

In the sequential interactive state the difference between compressive and expansive phases of the interactive cycle is  $Dc$  as  $C^x / C^{1-x}$ :

$$Dc = C^x / C^{1-x} = 10^{2/10^2} / 10^{2/10^2} = 10^2 = 100 \quad [1.18]$$

The delay  $Dc$  of 100 interactive cycles is in the sequential state when the volumetric change becomes 2 and the radial ratio equals  $2^{1/3} = k = 1.259921$ . Hence the incremental ratio becomes  $(k-1) = 0.259921$ . Therefore the delay  $Dc / (k-1)$  form a ratio with a loss of two interactions per cycle, as the impedance to stress transmigration in space as  $Si$ :

$$Si = \left[ 10^2 / k - 1 \right] \left[ 10^2 - 2 / 10^2 \right] = 377.0376 \quad [1.19]$$

The impedance to the transmigration of interactive stresses in space occurs only when there is an accelerative displacement that causes the breakup of the simultaneous coherent state to crossover to a sequential resonant state. It transfers the added stress count to the adjacent component as a transmigratory process. The  $Si$  count per cycle as impedance is effective only when transmigration is initiated by breaking the coherent state.

In space the interactive oscillations among the components are volumetric. Therefore the interactive count in all three axial directions would be  $C^3$ . However, in a coherent interactive state all the oscillations would act simultaneously and synchronously whereby two axes would merge and its interactive counts would reduce to  $C$ . But the entire surface area would oscillate in the breathing mode creating a unified surface area or flux of stress. Hence the detectable count rate of the coherent volume would only be  $C$  but the merged and hidden surface area count as  $C^2$  would initiate the oscillatory transmigration of stresses in both the compressive and expansive mode. The changes in stress count densities would initiate accelerative transmigration in both the simultaneous and sequential modes. The inward displacement would increase stress density and counts would merge, while the outward expansion would decrease stress densities to increase counts that cause detectable transmigratory displacements.

The volumetric compressive phase density count ratio would be  $(C^x)^3$  and  $(C^x)^2$  its expansive area flux density count, while  $C^x$  would be the axial linear phase. Similarly  $(C^{1-x})^3$  would represent the relative volumetric expansive count density,  $(C^{1-x})^2$  its expansive flux count while  $C^{1-x}$  would equal the decrease count due to expansion in any axial direction. However, the product of compressive and expansive phases would equal  $C^3$  as volumetric,  $C^2$  as area and  $C$  as linear interactive values respectively.

Stress transmigrates through an interactive cycle of compression and expansion. The period of reversal impedes the stress count transfer rate proportionate to  $Si$ . In the compressive phase  $C$  is increased as  $C \cdot Si = Cc$  and in the expansive phase it is reduced to  $C / Si = Ce$ :

$$Cc = C \cdot Si = 1.1182E + 11.....Ce = C / Si = 7.866E + 5 \quad [1.20]$$



The product of Cc and Ce equal C<sup>2</sup> as the simultaneously oscillating surface and these merged interactive counts cannot be observed but the accelerative changes can be detected and measured as a force. The changes from compressive to expansive or simultaneous to sequential states are carried out over a displacement distance ratio of (k-1)/1 in a cycle of C counts and causes a shortfall in the stress transmigratory distance covered in that period as:

$$Dl = k - 1 / C = 8.764E - 10 \quad [1.21]$$

Dl is a relative ratio and if C is defined in metres/second then there would be a metre shortfall in the distance covered in approximately 36.15 earth years. It has been observed experimentally as 'the Pioneer anomaly' where the estimated position of Pioneer in orbit and interval of electromagnetic signal reception time did not match and it was observed to progressively increase with distance.

In electromagnetic theory in Physics the reciprocal as 1/Cc is defined as the electric field permittivity  $\epsilon$  and 1/Ce as the magnetic field permeability  $\mu$ , in free space.

$$\epsilon = 1 / Cc = 8.847E - 12, \dots, \mu = 1 / Ce = 1.258E - 6 \quad [1.22]$$

The Sankhyan derivation above simplifies and unifies all phenomena which are only due to the interactive state of the components in space. C is the number of interactions per simultaneous cycle comprising 10 interactions which is the 'instant interval' of a cycle. It is approximately equal to the experimentally measured frequency of an electromagnetic wave of 1 metre wavelength, if the duration of that cycle is a second. The difference between it and the experimental value of CL=29979258 are due to a shift in frequency that is 'logarithmically proportional to distance' in a gravitational field, as Fc, with the Solar boundary radius RS=6.985E+8 and the orbital radius of Earth Ro=1.491E+11:

$$Fc = 10^{Rs/Ro} = 1.0108455 = CL / C \quad [1.23]$$

This confirms the Sankhyan derivation that all electromagnetic waves, including light and gravity waves, are interactive stresses created between the components forming the substratum of space and transmigrate from a higher to a lower stress count. The resonant interactive stress in space is at a self-similar and scale-invariant oscillatory rate of C per simultaneous interactive cycle formed by 10 such interactions. If the wavelength and time cycle of a light wave is set at a metre and second then the frequency of the measured light wave CL would be higher than the rate C.

$$CL - C = 3.2165E + 6, \dots, \text{and } \dots, CL / C = 1.01084548 \quad [1.24]$$

It is based on an axiomatic logic that stresses in any physical medium must always transmigrate from a higher to lower count and in space the interactive rate gives the intensity of these stresses. Therefore C is the perpetual interactive rate and any transmigration of any type of stress must have a higher rate than C. The observed Cosmological red shift is a conceptual error as CL is much higher than C, because the Sun is the closest light emitting body. Since the light from every stellar source is further than the Sun, it must have a lower count value than CL but higher than C. Therefore Fc must be the largest blue shift for observers on the earth. The interpretation of Hubble's finding that space is expanding is axiomatically impossible in space comprising substantial components. However the numerical value of Hubble's red shift with distance has a logical explanation. He defined the CL-C = 3.2E+6 as a mega-parsec and invented a new aspect of an expanding Universe. The entire spectrum of such shifts are derived theoretically and tabulated in a later chapter.

The number of interactions taking place simultaneously within the instant cycle defines the intensity of its activity or density of interactive stresses. The maximum density of interactive counts and the minimum interval of time as the instant, form an inversely proportionate ratio leading to an axiomatic, numerical constant Kx, in Sankhya. Though the interactive colliding point remains at ratio 1/2, the constant Kx=0.9149879 defines its

boundary limit as an asymptotic sum of combinatorial number of simultaneous, resonant and harmonic interactions forming the instant and is equivalent to Catalan's constant in mathematics.  $Kx$  is a pivotal factor in Sankhya and is derived through axioms in a later chapter.

In Sankhya, the concept of deriving a non-dimensional and scale-invariant theory is fulfilled perfectly by defining the instant numerically through axioms, because all phases of a fundamental interaction can be counted in terms of it. A colliding impact between two objects gave the principle of identifying both the instant and its intensity through the simultaneity of action. In three-dimensional space, the maximum number of simultaneously colliding interactive events between elemental objects is limited to six, as the top, bottom, front, back, left and right sides of an object. Earlier, a simultaneous interaction's intensity or density was specified in terms of the number of interactions within that instant.

Since in this section the mathematical derivation is shown as a single stream of algorithms to establish its axiomatic logic, the Sankhya equivalent states from sutra 3 will be listed here as follows. Fundamental quantum as Purusha =  $Kx$ ;  $Mps$  as Mahad = Planck mass;  $PM$  as Prakriti = nuclear or hadron mass;  $Mep$  as Vikeriti = leptonic or electron mass;  $Ne$  as Vriti = Neutrino or transmigrating stress mass.  $7Ne$  as  $Vikharo$  = 7 Neutrino or photon or quanta as radiation mass;  $Mly$  as Moolaprikriti = elemental quantum  $h$  mass or Planck's constant  $/C^2$ . The derivation of all these will be shown axiomatically from **basic source** and will be equated to the standard model in Physics as a complete, unified and accurate dynamic state of space. These will increase in self similar mode to repeat the same algorithms at every larger level up to the Universal mass as the final state. The distance the stresses can expand or radiate acts as the observer's boundary for no stresses will transmigrate beyond its driving potential.

Then in principle, taking the numerical rate of interactive counts as  $C$  in each of the six direction, its intensity or simultaneous count density at the point of collision becomes  $C^6$  and its relative instant, the Moolaprakriti in Sanskrit, as  $Mly = Kx/C^6$ . In Sankhya all derivations are strictly dimensionless numerical interactive stress count ratios in terms of  $Mly$ , which is the instant of time in an interactive cycle of ten simultaneous counts. Stating it differently, a circular and recurring displacement path can only be maintained by ten self-similar interactive intervals forming a cycle. Therefore the complete mathematical derivation of the entire manifestation process is based on the principle of only counting interactions that indicate discrete changes in cyclic time.

Applying the numerical value of  $C$ , the ratio of the simultaneous instant in dimensionless form is  $Mly = Kx/C^6 = 1.344620Eminus51$ . The axiomatic derivational concept and the numerical value of  $Mly$  is new to science but is approximately equal to Planck's constant  $h/C^2$ ; hence is consistent with values in Physics. Contrary to the practice in Physics, the oscillatory rate  $C$  in Sankhya is measured against a self-similar and axiomatic cycle of ten of its resonant interactions forming the simultaneous instant or ten sequential interactions within the cycle as instant of time and is not an arbitrary interval like the second. The procedure above leads to self-similarity and scale-invariance, which factors are vital to sustain a unified law of manifestation at all levels. Reiterating, the dimensionless ratio  $Mly$  is the minimum cyclic interval, when two objects collide at the maximum interactive stress density and components in space act as a continuum within that interval.

Logically, unless the numerical count of 'sequential interval of separation' is greater than the 'simultaneous instant of collision', the interaction among the components in space cannot be counted or detected. Only a discrete change in time could be detected but when both the simultaneous and sequential intervals are equal, there would be no difference. In a balanced state both intervals remain equal. Hence space must remain undetectable. It is the main reason why all efforts to detect space (as aether) failed totally, despite numerous intricate experiments carried out

by Michelson, Morley and several others. Since  $Mly$  forms the unit count, the interaction can become detectable only when the sequential interval increases to  $Mly + Mly = 2Mly$  counts, but there is a caveat.

When the ratio of the instant to sequential time-interval becomes one by two or half, a state of resonance is initiated among the components in space. The equations [1.1] to [1.14] spell out the rationale of how and why an interactive resonant rate is initiated and maintained in a sea of components forming space. Stating it simply, when continuous interactive vibrations or oscillations between two components remain in the same location it is a state of resonance. When two similar objects vibrate resonantly at the same rate between two constraints separated by some distance, the colliding point will always remain in the middle of the distance. When resonance is broken the meeting point would shift progressively towards a lower interactive count rate. Interactive stresses would begin to transmigrate beyond the point when resonance breaks and creates harmonics.

Reiterating, the only reason stresses transmigrate is due to a difference in the interactive count rate from the resonant constant rate of  $C$ . Interactive stresses transmigrate from a higher count rate to the resonant rate  $C$  and is absorbed into its simultaneous state of interaction. The commonly observed mechanism of temperature transfer occurs for the same reason but at another density level, to equalise oscillatory counts and reach thermal equilibrium. A  $Mly$  ratio of  $1/2$  created a resonant state in one direction in which two components in the substratum of space interacted simultaneously as a single entity thereby reducing the stress count at the colliding central location. In a three dimensional continuum the stresses in a resonant state would transmigrate inward from all six directions as top, bottom, right, left, front and rear to regain balance. Hence 8 components would be confined by the inwards transmigration of stresses towards its centre where the resonant interactive counts would reduce by merging, in attaining the simultaneous state. The difference in stress intensity or interactive count density will change by a ratio 7 because  $2^3=8$  less the primary state of 1. The acceleration of interactive stress counts towards the centre of the 8 components forming a larger scale-invariant aggregate count would be  $Ab$ :

$$Ab = [(1+1)^3 - 1] / Mly = 7 / Mly = 5.206E + 51 \quad [1.25]$$

The astronomical value of the interactive count indicates the intensity of stress transmigrating towards the centre of the eight components. It is because all eight act as a single unit thereby reducing the 8 interactive counts to a single count per cycle by merging 7 counts as a simultaneously interacting state in synchrony with the one.  $Ab$  binds the 8 components together in a simultaneous and resonant state, to display the very first coherent particulate state at maximum stress density. Transmigration of stresses towards its centre initiates the phenomena of gravitation at the very fundamental level where the maximum accelerative stress intensity is  $Ab$ . The value of  $Ab$  is in counts of interactions per sequential cycle of 7 expanding volumes. It is self-similar, scale-invariant and dimensionless.

$Mly$  defined the interval in time after which the simultaneously interacting continuum changed to a sequential state wherein the interactions could be counted as discrete intervals of time that existed between adjacent interactions. As shown earlier, the cycle of ten interactions is equal to  $2\pi$  as a ratio of radius to circumference. In all three directs it becomes  $(2\pi)^3$  which gives the increase in ratio as  $(2\pi)^2$ . Similarly the increase in volume within which the transitions occurs is 7. Therefore the ratio of change per unit radial increase of 7 volumes would be  $Tr$ :

$$Tr = \left[ \frac{2\pi^3}{2\pi} \right] \left[ \frac{1}{7} \right] = 5.6398 \quad [1.26]$$

Similarly, taking the volume increase as 2, the radial displacement becomes  $2^{1/3} = k = 1.259921$ , and the incremental or sequential difference is  $k-1 = .259921$ . Therefore comparing these two factors as a ratio of change of 2 volumes, as  $T_c$ :

$$T_c = \left[ \frac{2\pi^3}{2\pi} \right] \left[ \frac{1}{k-1} \right] = 151.8862 \quad [1.27]$$

$T_r$  is the constant that defines the ratio of counts needed to break the coherent state symmetry to change to a resonant state.  $T_c$  defines the ratio of counts that triggers the sequential transmigration process by breaking the coherent volumetric state into harmonically resonant states. As defined earlier, in the coherent state the  $C_c$  and  $C_e$  oscillatory state maintains the area parameter as  $C^2$  in synchronisation and therefore  $T_c$  is needed to break that large value. The mathematical formulation of breaking the synchrony is shown further below, after the derivation of the Hadron / Lepton or Proton / Electron states from first principles.

The maximum, simultaneous stress count density in all three axial directions is  $K_x / M_y$  and in any one such direction it becomes  $(K_x / M_y)^{1/3}$ . The maximum inward acceleration  $A_b$  will compress interactive stress counts between two components in space into a rigid and dense continuum such that both act as a single unit as  $L_p$ :

$$L_p = [(K_x / m_y)^{1/3}] / A_b = 1.6896E - 35 \quad [1.28]$$

Extending that logic further the 8 components in space will project a rigid interactive and relative volumetric state of  $L_p^3$ :

$$V_p = L_p^3 = 4.82E - 105 \quad [1.29]$$

Therefore in principle  $L_p^3$  would be the volumetric ratio, with the densest interactive stresses per count, going inward towards the centre of the 8 components forming a single group. Hence the ratio  $L_p$  would be the smallest displacement interval. In order to establish  $L_p$ 's connection with dimensional characteristics in Physics,  $C$  can be taken as the stable axiomatic oscillatory rate per cycle, as in Sankhya. Then  $C$  into  $F_c$  metres as wavelength would equal  $CL$  metres per cyclic second as velocity, confirmed experimentally. Then,  $L_p$  equals Planck Length in metres and  $L_p / C = 5.697E - 44$ , would equal Planck time in seconds. In a dynamic and resonant substratum the axiomatic value of  $C$  must be the stable and constant motivating potential as shown earlier. On converting  $A_b$  to its equivalent value of time in seconds in Physics:

$$A_b c = 7 / M_y C = 1.76E + 43 \quad [1.30]$$

The reciprocal of  $A_b c$  signifies the minimum time in seconds where two interactions can merge to form a single event and is equal to Planck's time as  $T_p$  or  $L_p / C$ . Reiterating,  $M_y$  is the axiomatic instant of time that separates two interactions at maximum interactive count density, whereas the 'second' in time is defined in many experimental ways but is standardised on the frequency of the caesium atom.

$$T_p = M_y C / 7 = 5.697E - 44 \dots \text{sec onds} = L_p / C \quad [1.31]$$

Stating it differently, on an interval less than  $T_p$  seconds, the components in space act as a continuum as the interactive stress density is at its maximum. Therefore the components in space will behave as a solid or rigid or incompressible object of length  $L_p$  metres in an interactive cycle of  $C$  interactions per second. Acceleration  $A_b$  is also confirmed by the following classical ratios:

$$L_p / T_p^2 = C / T_p = A_b = 7 / M_y = 5.206E + 51 \quad [1.32]$$

If  $L_p$  as the smallest, rigid and coherent displacement changes its stress level to a resonant state, as  $N_e$ :

$$N_e = L_p^3 T_r / L_p^2 = 9.5287E - 35 \quad [1.33]$$

The parameters,  $L_p$  in metres and  $T_p$  in seconds form the smallest length and time interval in space. But  $L_p$  is the length of one side of the volumetric component in space which has a dynamic volume  $V_p$  as  $L_p^3$  cubic metres, in an oscillatory state with the highest interactive stress density. Similarly  $T_p^3$  into  $C^3 = L_p^3 = V_p$  which must be interpreted as the instantaneous ratio of the 8 'component volume' to the cube of the 'interval of time' that yields the value of the simultaneous interactive stress counts, as an axiomatic three dimensional constant. Because  $V_p$  is at the maximum volumetric stress density and rigidity, stresses would tunnel instantly across any number of such units that are directly in a straight line with the accelerating stress. The break in tunnelling creates the  $N_e$  states, depending on stress count densities. Hence  $N_e$  states of various levels, from one to seven, can appear instantly at great distances. Reiterating, the 8 real components in space are bound together by the inward acceleration of stress counts  $A_{bc}$  that merge into a simultaneous interactive state at the centre where the stress counts reduce to a single cycle but at high density.

**Therefore, each component in space has a relative volume  $V_p$  equal to  $L_p^3$  and stress count density  $C^3$  in a coherent state where the time is  $T_p^3$  but with  $T_p^2$  merged to give the proportional flux density parameter for the inward accelerating interactive stress-counts at a rate  $A_h$  as gravitational acceleration. The gravitational acceleration as the fundamental and ubiquitous force has the greatest rate in simultaneous interactive states, but reduces in proportion to change in area and is not a the weakest force as surmised in Physics. In fact all other forces have the same mode of action which is that higher interactive count rates transmigrate towards lower ones that have become so through merging. (Recall the 10 clap example as proof).**

The coherent combination of 8 components bound by the phenomenal  $A_h$  accelerative stress transmigration towards its centre establishes not only the rational for the gravitation process but also provides the mechanism for a particulate state formation. The constant  $K_x$  forming the coherent state core boundary value would also increase by the same factor of  $8-1=7$  states. But the incremental value in cyclic time would be proportionate to  $G_m$  as:

$$G_m = [(2^3 / 7) - 1] + 7 = 7.142857 \quad [1.34]$$

$G_m$  is a universal constant that defines the transformation of a volumetric coherent state into a resonant state. Volume of each component as  $G_m/7$  is in a perpetual resonant state as  $R_s$ :

$$R_s = G_m / 7 = 1.020408 \quad [1.35]$$

The cycle of 10 resonant and simultaneous interactive counts would become  $10^3=1000$  sequential interactive counts when the resonant state is broken and the increase in ratio would be  $1000/10=100$  during a period of change of 2 cyclic instants. Therefore the rate of loss of resonance or decay would be the asymptotic sum of the ratio of the difference rates as  $R_s$ :

$$R_s = \sum_0^{\infty} \frac{2^n}{100} = 1.0204081633 \quad [1.36]$$

The factor  $R_s$  ensures that resonance decays in infinite cyclic time or is virtually perpetual. Any comparative equation that equals the ratio  $R_s$  signifies its perpetually resonant status or that the decay in resonance will occur in infinite cycles or time.

The core  $K_x$ , increases to its maximum interactive count level as  $M_p$  in an additional cycle and breaks its coherence to reach a resonant state through the  $G_m$  factor:

$$M_p = K_x(G_m) = 6.536....also....M_p / 7K_x = R_s \quad [1.37]$$

$M_p$  the maximum stress density parameter in a resonant state that equals  $R_s$  and hence it is a perpetual oscillatory state or resonance decays in infinite cycles / time.

On converting it to the time value of a second in Physics, it creates the Planck Mass as  $Mps$  and if 1 cubic metre per second accelerative displacement is equated to a kilogram in terms of a coherent mass:

$$Mps = Mp / C = 2.2037E - 8..Kgs \quad [1.38]$$

The maximum core stress density ratio as Planck density is  $Dp$ :

$$Dp = Mps / Lp^3 = 4.57E + 96..kgs / m^3 \quad [1.39]$$

Similarly the space stress intensity ratio as  $St$  in kgs per second, identified as the metric elasticity of space by Sakharov and Chandrashekhar in Physics is:

$$St = Mps / Tp = 3.868E + 35 \quad [1.40]$$

The stress intensity above has been adjusted to the cyclic instant of time  $Tp$  in seconds. The intensity in terms of a change in relative volume during a second would give the constant rate of change of volumetric stress in space, within the same time period, as  $G$  Sankhya or  $G_s$ :

$$G_s = St / C^3 = \left[ \frac{C^{\times 2}}{k^3} \right] = 1.482879E + 10 \quad [1.41]$$

The proof for  $G_s$  is confirmed by breaking the coherent volumetric state into its equivalent resonant state as minimal area times maximum acceleration into  $G_s$  must equal the maximum coherent stress density as mass:

$$G_s = Mps / \left[ Lp^2 \times 7 / My \right] = 1.482879E + 10 \quad [1.42]$$

There are three more modes of proof for the constant  $G_s$ :

$$Mps / Tp \left[ C^3 \right] = Mps / Lp \left[ C^2 \right] = \left[ Mps \times Tp^2 \right] / Lp^3 = Dp \times Tp^2 = G_s \quad [1.43]$$

From the foregoing, the structure of each component in space can be expressed in terms of a real object, where  $D$ =maximum density,  $T$ =minimum time,  $M$ =maximum unit mass,  $V$ =the limiting volume and  $Lp$ = the smallest length of a rigid object.

$$(Area \times acceleration \times flux \times D) = (V \times (flux \times D / T^2)) = (V \times mass \times D) = M \quad [1.44]$$

$$Lp^2 \times Lp / Tp^2 \times G_s = Lp^3 \times G_s / Tp^2 = Lp^3 \times Dp = Mps \quad [1.45]$$

Hence the relative dimensional attributes of each component in space is  $Lp^3$  as volume,  $Dp$  as density and  $Mps$  as mass and the process of derivation has established the parameters to be the limit in each of its type relative to the axiomatic value of  $C$ .

$G_s$ , the surface area flux stress intensity that separates the simultaneous or compressive or continuum state of the components in space from its sequential or expansive or quantised characteristics forms a universal constant. Value of  $G_s$  provides the dividing parameter between the coherent volume and resonant volume or when exactly the solid surface characteristics alter into a fluid state. The stresses in the three axial directions are in phase so that the components act as a single, rigid, dense mass but breaks coherence to attain the resonant and expansive phase at stress intensity rate of change less than  $G_s$ . The interval of time between interactions is minimal as  $1/G_sFc = G$ , which forms the Newtonian gravitational constant in Physics:

$$G = 1 / G_sFc = 6.6712819E - 11 \quad [1.46]$$

**It is evident from the above derivation that the Newtonian form of the gravitational constant is a consequence of the merged simultaneous interactive counts  $C^{\times}$  squared in a compression cycle that increased the stress density to 2 (=k<sup>3</sup>) shown in equation [1.41]. It occurs in space that has a maximum stress intensity of  $St$  as in equation [1.40], which has been**

**identified by both Sakharov and Chandrashekhara as the metric elasticity of space. Hence space cannot be treated as a void in a vacuous state.**

The real nature of  $G$  is an interval of cyclic time that separates the interactions before it merges into a continuum or combines the components in space into a rigid group by an inward acceleration because the interactive rate has reduced by combining. Further, the merging can take place only when the time interval reduces in each axial direction identically to attain a coherent state. The reason for the failure to see its true characteristics lies in not realising that dynamism is an inherent part of the cyclic time parameter. Plurality of elemental components must naturally lead to interactive states. Therefore components in space act as a rigid aggregate when its interactive interval of time, in seconds, is less than  $G$  or compressive stress intensity is more than  $G_s$ . It determines when the coherent state of mass with a centre of action is formed from the balanced resonant state.

The merging of  $Tp^2$  in a coherent state gives an addition proof that  $G_s$  is equal to the maximum interactive stress intensity as an accelerative flux in relation to  $Dp$  as the maximum volumetric stress density:

$$Dp \cdot Tp^2 = G_s \quad [1.47]$$

The proof for  $G_s$  can be strengthened by deriving both  $Dp$  and  $G_s$  through an alternative method. As shown before  $C$  transmigrates as  $C^x$  in the dense mode of a simultaneous state within the instant and its volumetric value as  $C^3$  hides a merged ratio of  $(C^x)^2$  during the period of volume or density change of 2 units. Therefore  $G_s$  should equal:

$$G_s = [C^x]^2 / 2 = 1.4829E + 10 \quad [1.48]$$

In the compressive mode  $C^x$  is increased  $C$  times per cyclic second as  $C^{1+x}$  and when the instant is increased to 2 the volumetric increase is  $8-1 = 7$  as a simultaneous interaction into  $k$  as the radial increase. Therefore the maximum stress density would be  $Dp$ :

$$Dp = \left[ [C^{1+x}] k \right]^7 = 4.596E + 96 \quad [1.49]$$

The fact that the maximal values of  $Dp$ ,  $Tp$  and  $G_s$  can be individually derived in separate ways without destroying its mutual proportionality is the acme of precision, self-similarity, scale-invariance and logical rigor, based on axioms. **Such conformity cannot be accidental.**

Unless the interactive counts are greater than  $Tc$  between two axial directions across a radial gap with a ratio of  $k-1$ , both would act as a single interactive surface. Therefore the ability to count, detect and measure interactive states is possible only after a cyclic interval equal to  $(Tc-1)$  times  $Tp$  in seconds. Converting it to a displacement ratio in which stresses would begin to transmigrate is  $[(k-1) C] m/s$ . Therefore the constant  $h$  as Planck's constant must be:

$$h = Tp \times Tc - 1 \times k - 1 \times C = 6.62619863 \times 10^{-34} \quad [1.50]$$

**The spectrum of simultaneous interactive stresses, from  $Mly$  to  $h$ , is hidden and undetectable from direct experimental observation because these interactive counts have merged to become a dense and coherent stress count volume as a single quantum that transmigrates from component to adjacent component in space  $Tq$ :**

$$Tq = h / Mly = 4.9278E + 17 \quad [1.51]$$

Therefore each accelerative quantum transfers  $Tq$  interactive stress counts simultaneously to the next component in space which is at the  $Ne$  state. Therefore the total reduction in the stress counts is  $(h-Ne)/Mly$  as  $Tb$ :

$$Tb = h - Ne / Mly = 4.2192E + 17 \quad [1.52]$$

The quantum  $h$  transmigrates from one quantum to the next in a volumetric resonant oscillatory ratio by expanding from 1 to 2 volumes, which gives a radial displacement ratio of  $k$ . Therefore the total transmigratory count is  $kTb$  as  $Hp$ :

$$Hp = kTb = 5.3158E + 17 \quad [1.53]$$

$Hp$  is the equivalent of the Hubble's expansion parameter which was interpreted as a redshift in the frequency of light received from distant stellar sources. The displacement of light at  $C$  frequency is  $Fc$  metres per interactive cycle per second which gives the transmigratory distance of  $Hp$  as  $FcHp$  and  $L_y = 1$  mega parsec as the distance Hubble's had used to obtain the ratio of expansion. Then  $Er$  as the expansion ratio is:

$$Er = L_y / FcHp = 3.084E + 22 / 5.373E + 17 = 57395m. \quad [1.54]$$

Therefore  $L_y/Er = FcHp$  is indeed the distance at which the entire potential of simultaneous stress counts of  $Tb$  is expended over that distance after which the second harmonic at  $1/8$  the stress density transmigrates over a similar distance  $Hp$ . The reduction in volumetric stress density increases the interval of separation between interactive counts which is reflected in the frequency spectrum of the light received from a distant stellar body. **In Sankhya theory space can never expand as it must absorb any interactive stress count rate higher than  $C$ .**

The Planck's constant  $h$  indicates that when resonance is broken by  $Tc$ , the distance that the interactive stresses in space would transmigrate across a resonant radial gap ( $k-1$ ) to create the first volumetrically resonant harmonic. It is defined as the Compton wavelength in Physics and is a linear term, whereas it is indeed a volumetric displacement of cyclic interactive stress, as shown later on. The description of Planck's constant  $h$  in Physics as the quanta or photon indicates it is the first holographic quantum of stress that is accelerated to transmigrate across the gap created by the second sequential volumetric harmonic, which resonates in step with the primary volume. From this derivation the definition of mass and charge can be established as; when interactive stresses in space can be compressed it is a charge whereas when it acts as rigid continuum it is a mass. But the transition from charge to mass is not sudden but takes  $Tc$  interactive stress counts over a distance of  $k-1$  and volume change of 7, which has been equated to  $h$  in seconds. Therefore the quantum of stresses transmigrating over a relative distance  $k-1$  constitutes work or energy and a photon must decay over distance. Hence this transition spectrum of stresses as  $Ne$ , remain in the same or ( $k-1$ ) location of the boundary as a resonant holographic quantum in a perpetual oscillatory state and is measured as the Compton wavelength. As long as the  $Ne$  oscillatory stresses do not transmigrate the oscillations continue. When 7  $Ne$  are accelerated simultaneously across the  $k-1$  to equal  $h$  as the quanta or photon, the loss in sequential stress per quantum is  $Lq$  counts per cyclic second:

$$Lq = \frac{7Ne}{Mly} - \frac{h}{Mly} = C^2 \frac{k-1}{7} = \frac{k-1}{7} Cc \times Ce = 3.275E + 15 \quad [1.55]$$

$$Lq = \left[ \frac{h}{Mly} \left[ \frac{1}{Tc-1} \right] \right] = 3.275E + 15 \quad [1.56]$$

$Lq$ , the difference in coherent potential, is also equal to the variation in surface area flux density of the electromagnetic field and is shown above. It is also equal to the stress count that breaks coherence to initiate sequential transmigration. Count values above  $Lq$ , the resonant interactive stress count, stresses transmigrate with outward acceleration whereas, from 1 to 6  $Ne$  where the counts are less, the acceleration is inward that gets progressively larger.

At  $7/Mly = Ab$ , the maximum accelerative count, it is evident that the resonant  $Ne$  state must be triggered instantly to  $7Ne$  for a photon to radiate. Unless at least one  $Ne$  is motivated to transmigrate no stress transfer takes place and no work or energy functions.  $Ne$ , the



resonant state, is the neutrino in Physics and does not transmigrate but any change in stress count in excess of  $T_r$  creates it at that location. In Physics  $L_q$  is equal to 13.6 volts. As  $G_m$  is the transfer constant from coherence to resonance,  $13.6/G_m = 1.89$  volts which is the work function value in the photoelectric effect.

$G_s$ , the Sankhyian interactive stress ratio that determines when a volumetric interaction is coherent or resonant. Recalling that inward acceleration is caused by reduced interactive counts due to merging, transmigration of stresses towards the centre increases compressive stresses around the components in space and maximises when the interactive count difference between each axial direction becomes less than  $T_c$ . The reverse outward transmigration commences when the counts between two axes become more than  $T_c$ . Within the transition period of  $T_c$ , a resonant state prevails.

The foregoing derivation establishes the nature of interactive states of the components, comprising space, in the simultaneous and resonant modes. The combining of 8 components into a simultaneous state, through the Abs inward accelerative stress as gravitation, led to the derivation of the 7 incremental volumetric states of  $M_p$ . At the same time the stress intensity or interactive count density at the resonant boundary would change to a lower level as ratio  $P_x$ :

$$P_x = \left[ \frac{1}{2} \sqrt{\left[ \frac{10}{\pi} \right]^2 + \left[ \frac{10}{\pi} \right]^2 + \left[ \frac{10}{\pi} \right]^2} \right]^3 = 20.94799 \quad [1.57]$$

The change, compared to  $K_x$ , as a ratio  $P$ :

$$P = K_x / P_x = 0.04367904 \quad [1.58]$$

The factor  $10/\pi$  denotes the interactive transition from the coherent state to the resonant state in each axial direction. Extending it to the domain of experimental Physics, with the value of time in seconds, (in volumetric form,) PM in  $\text{kg s as } m^3/s^3$  and the same dimensional process can be continued though the values are derived as dimensionless interactive count ratios.

$$PM = P / C^3 = 1.67442 \times 10^{-27} \quad [1.59]$$

PM is the transitional state of the coherent core  $M_p$ s state into a resonant particulate state and forms the resonant nucleus in Physics. It is an undetectable resonance at the surface boundary of the 8 combined components of space. Analysing the entire spectrum of transition from the coherent  $M_p$  to the resonant  $P$  and  $M_p$ s to PM, the compressive and expansive interactive stresses remains in total balance, confined within the same location. It therefore provides a dynamic potential head that would radiate the stresses in a sequential transmigratory mode when the difference in the interactive interval exceeds  $T_c$ . Therefore the ratio of compressive to expansive stresses in the simultaneous and resonant states can be derived as  $M_p/P$  or  $M_p$ s/PM in terms of the second in Physics:

$$(M_p)(P_x) = 149.62847 \quad [1.60]$$

$$M_p s / PM = 1.316 E + 19 \quad [1.61]$$

$$\left[ \frac{M_p s}{PM} \right] \left[ \frac{P}{M_p} \right] = C^2 = \left[ \frac{1}{\epsilon \mu} \right] = 8.796 E + 16 \quad [1.62]$$

$$\frac{M_p s}{P M_x P_x} = C^2 G_m = \left[ \frac{2\pi}{10} \right] 10^{18} \quad [1.63]$$

The above transition marks the ratio of change from a resonant to a coherent state and is extremely significant. Firstly,  $M_p/P$  is less than  $T_c$  thereby ensuring that the coherent state will never be broken spontaneously to attain a resonant state. Secondly the transition from the resonant sequential to the simultaneous coherent states has a merged ratio  $C^2$ , signifying that the charge to mass and vice versa conversion is exactly the same as found experimentally. The source of the permittivity and permeability constants arises from changes in the  $M_p$ s/PM

domain, which has never been identified in Physics. Hence the erroneous idea had evolved that electric and magnetic fields were mutually induced and therefore it had the ability to propagate its force to infinite distances. Thirdly, there are 18 orders of interactions, each equal to  $2\pi/10$  of a cycle, merged into simultaneous state at high interactive stress density and conceptually it can be seen as winding numbers or cycles frozen together. It forms the potential well as stress counts merged into the simultaneous state that causes the tremendous inward acceleration as the source for gravitation.

The dynamic potential in the coherent state as merged simultaneous interactions provides the acceleration to radiate a quantum of stress as Ps:

$$Ps = \left[ \frac{Mps}{PM} \right] \left[ \frac{1}{P\kappa} \right] = 6.2827E + 17 \quad [1.64]$$

The ratio of dynamic potential Ps and the intensity of stress in space St is a perpetual state as:

$$Rs = \left[ \frac{Ps^2}{St} \right] = 1.02040816 \quad [1.65]$$

The sequential interactive counts required to accelerate a stress quantum is Ks:

$$Ks = b / Mly = 4.9278E + 17 \quad [1.66]$$

The difference as a ratio of Ps/Ks is Pp:

$$Pp = \frac{Ps}{Ks} = 1.27495 = \left[ \frac{7}{2\pi} \right]^2 Rs \left[ 1 + \frac{1}{Tc-1} \right] \quad [1.67]$$

The simultaneous to sequential transition ratio Pp is larger than the needed displacement ratio  $k$  in order to provide the coherent symmetry breaking constants shown on the right. Reiterating, the nucleus, comprising 8 components bound by gravitational acceleration Ab, is a simultaneously interacting combination of a coherent and resonant interactive oscillations, compressive at the core as Mps and expansive at the boundary surface as PM, providing the potential to sustain a perpetual harmonic oscillatory state and initiates the transmigration of stresses when its harmonic balance is upset.

While the compressed Mps had the  $Lp^3$  forming  $Vp$  with extremely high density interactive stresses PM as the expansive state, has a relative volumetric state  $Vm$  created by Rp:

$$Rp = k-1 / C^{T+\infty} = 5.089E - 15 \dots \dots \dots Vm = Rp^3 = 1.318E - 43 \quad [1.68]$$

The resonant state commences by expanding to twice the volume and  $k-1$  is the incremental displacement. Along with it the constant C increases by  $C^\infty$  to occupy the incremental displacement gap. The Mps stress density Dp reduces to PM/Vm as Pd:

$$Pd = PM / Rp^3 = 1.27E + 16 = \left[ \frac{C^\infty}{k-1} \right]^3 \left[ \frac{K\kappa}{P\kappa} \right] \quad [1.69]$$

The gravitational acceleration at the boundary surface reduces to a very small value Pg:

$$Pg = \left[ \frac{PM}{Rp^2 Gs} \right] = 4.36E - 9 \quad [1.70]$$

Because the inward acceleration is very low as Pg, the outward stress transmigration can be initiated easily. The period of cyclic time (second) is Pt:

$$Pt = \sqrt{Rp / Pg} = \sqrt{Gs / Pd} = 1.08038E - 3 \quad [1.71]$$

Also the Permittivity and Permeability parameters are directly connected to Rp as the radial distance of the coherent surface of PM. Hence the mode of derivation of the two parameters in Physics is an approximation as the existence of the Pbo state had not been established.

In Sankhya time is not a separate parameter for it only indicates the interactive interval in an axiomatically dynamic oscillatory state. Therefore, as Mly was derived on the bases of an accelerative transmigration from all six sides of a volumetric state, then  $Pt^6 \times Ps = 1$ :

$$Pt^6 \times Ps = (1.59E-18) \times (6.283E+17) = 1 \quad [1.72]$$

Two important principles are covered in this equivalence. Volumetric change in interactions in the simultaneous state is equal to the change in the cyclic interval thereby proving that no stresses are unaccounted for. Or that the algebraic sum of the exchange of compressive and expansive stresses are zero. Since measurable time is not involved no work or energy is lost in resonant decay, hence the entire oscillatory process can continue perpetually. Therefore the complex nuclear state will decay in infinite cycles or time. Its proof is provided by the constant of resonant decay in infinite cycles Rs:

$$Mps / [(PM)(Pc)(C^2)(7)] = Rs = 1.02040817 \quad [1.73]$$

Beyond the PM boundary the resonant state can change to an outward accelerative stress transmigratory transfer when the resonant symmetry is broken. Gm is the constant that transforms the coherent state to a resonant one. The incremental displacement ratio k-1 and the seven incremental volumes during the expansive phase form a ratio Ke = (k-1)/7 in each axial direction and in all three it is Ke<sup>3</sup> and the ratio of increase is Ke<sup>2</sup>. The increase in volumetric ratio when expanding resonantly is 2 or k<sup>3</sup>. When PM expands the stress density must reduce to Pm:

$$Pm = \frac{PM \cdot 2 + Gm}{Gm \left[ \left[ 1 + Ke^2 \right] + 2 \right]} = 1.67262151E - 27 \quad [1.74]$$

When PM expands it reduces to Pm and on the compressive cycle it increases to Pn:

$$Pn = \frac{PM \cdot 2 + Gm}{Gm \left[ \left[ 1 + Ke^2 \right] + 2 \right]} \left[ 1 + Ke^2 \right] = 1.67492765E - 27 \quad [1.75]$$

Pn is the Neutron mass and Pm is the Proton mass in kgs while PM is not yet recorded in Physics. PM is a pivotal coherent state in substantial space. The proof that Pn, PM and Pm are in a perpetual harmonic oscillatory state is given below:

$$\left[ \frac{PM - Pm}{Pn - PM} \right] \left[ \frac{2}{Gm} \right] = 1, \text{ (and)} \cdot \left[ \frac{PM - Pm}{Pn - PM} \right] \left[ \frac{2}{7} \right] = Rs = 1.02040817 \quad [1.76]$$

The above proof shows that compression and expansion stress exchange takes place perpetually within the same cyclic time and the average value is Gm/2 as Gmr:

$$Gmr = Gm / 2 = 3.57142857 \quad [1.77]$$

Gmr is the dimensionless nuclear gyromagnetic ratio in a free field of space. The difference between Gm/2 and 7/2 = 1/14 and confirms the perpetual status as 7-(-7) = 14, as a precisely balanced interactive state. Both Mps and PM are factored by Gm, proving again that the coherent and resonant states exchange coherent mass in the Gm cycle whereas the Pn & Pm states exchange coherent charge as mass. The exchange of compressive and expansive stress within the nuclear boundary is a change in the stress density as a potential. The similar exchange at the 2<sup>nd</sup> harmonic boundary accelerates stresses to transmigrate to the adjacent component in space. The symmetry breaking parameter Tc and the impedance to stress transmigration Si/Rs form a ratio as Si/(Tc Rs) and the stress count intensity of PM is reduced at its harmonic boundary as Mep as kgs:

$$Mep = PM \cdot Ke^2 \cdot \frac{k-1}{100} \cdot Tc = 9.114E - 31 \quad [1.78]$$

Simplifying PM/Mep can be written as:

$$\left[ \frac{7}{k-1} \right]^2 \left[ \frac{10}{2\pi} \right]^2 = 1837.187315 \quad [1.79]$$

Mep is the compressive flux stress density at the 2<sup>nd</sup> harmonic surface boundary oscillating as a single spherical envelope around PM, at the resonant rate of C but with a volumetric displacement of twice that of Vm. The Mps density of Dp was derived using (C<sup>1+x</sup> k)<sup>7</sup> as the

compressive state. Similarly the expansive state is  $C^{1-x}$  and its sequentially interactive and merged density is  $Dm$ :

$$Dm = \left[ C^{1-x} \right]^7 \quad [1.80]$$

$$Me = \left[ \frac{Dm}{Ab} \right] \left[ 1 - \frac{2}{\sqrt{5}} \right] = 9.11023E - 31 \quad [1.81]$$

$Mep$  is the resonant stress flux density value when the PM boundary compresses.  $Me$  is the merged stress flux density when Mps expanded. Therefore, PM in the Pbo state has a  $Gmr$  ratio that would resonate with its boundary if the oscillations are to continue perpetually. Therefore the difference in compressive stress density between  $Mep$  and  $Me$  must enable the derivation of the expanded density state as  $Mee$  or the Electron in Physics. But the 2<sup>nd</sup> harmonic boundary has a displacement ratio of  $k$  that would modify the  $Gmr$  proportionately.

$$Mee = Me - \left[ \frac{Mep - Me}{kGmr} \right] = 9.10938382E - 31 \quad [1.82]$$

$Mee$  is the Electron stress density and matches experimental findings precisely. The proof is shown below:

$$\left[ \frac{PM - Pm}{Pn - PM} \right] = Gmr = 3.57142857 = \left[ \frac{Mep - Me}{(Me - Mee)k} \right] \quad [1.83]$$

$Gmr$  is the ratio of the finest level of difference between compressive and expansive oscillatory states and has a value of  $GmrC$  oscillations per second as  $Ls$ :

$$Ls = GmrC = 1.0591998E + 9 \dots \text{cycles / sec} \quad [1.84]$$

$Ls$  is the increased rate needed to create the  $Gmr$  ratio from the normal Pbo rate.

**It is an extraordinary state of dynamic balance but is made to seem sterile mathematically. The left side of the  $Gmr$  equation is in the simultaneously interactive state  $C$ , at a much higher stress density level and the compressive and expansive stresses exchange counts too are at the same rate  $Gmr$ . Whereas the right side is in the sequentially resonant state  $C$ , but at a much lower stress flux density level, at a displacement ratio  $k$  and rate of  $Gmr$ . Change in sequential time at the  $Mee$  or Electron level as charge is converted to a simultaneous potential level as mass at the Pm or Proton level, within the same period. The mechanism of converting both the simultaneous counts as potential and the sequential count as a time interval is by varying the stress count rate change both additively and logarithmically at the same time. It is a tunnelling process where density is increased by converting the count to its logarithmic value or by creating the simultaneous state through incremental stress counts that breaks resonance. The**

The ratio of two sequentially interacting components will have a cyclic ratio difference as

$$\left[ 1 - \left[ 1 / \sqrt{1 + 2^2} \right] \right] = 0.5527864 \quad [1.85]$$

In the simultaneous interaction the logarithmic increase of  $C$  will be  $Lsq$ :

$$Lsq = L\log(C) + .5527864 = 9.02492235 \dots (and) 10^{9.02492235} = 1.05906436E + 9 \quad [1.86]$$

The logarithmic value  $Lsq$  is less than  $Ls$  because the perpetual resonance factor  $Rs$  has been changed by the increase in count rate consequent to decrease in the Pp ratio of change from simultaneous to sequential states. The compressive stress count as  $C^x / Pp = 1.35076825E + 5$ , is the ratio needed to break resonance but the cyclic time in which this interaction occurs must be

reduced from  $Pp$ . The ratio of radius to circumference is  $2\pi$  and  $1/(2\pi)^3$  is the coherent or simultaneous time value for a coherent cycle. Therefore:

$$C^x / \left[ Pp - 1/2\pi^3 \right] = 1.35505304E + 5 \quad [1.87]$$

Correcting  $L_s$ :

$$L_s q - 1.35505304E + 5 = [1.05906438.E + 9] \left[ \frac{2}{7C} \right] = 1.02027762 \quad [1.88]$$

The value above is less than  $R_s = 1.02040817$  providing the proof that the simultaneous potential stress count has reduced through a logarithmic factor to provide the increase in the sequential count at the expense of a change in  $R_s$ .

$L_s$  is the Lamb shift, found experimentally in Physics and it gives proof of the continual exchange of stress quanta as photons that keeps the  $Pm$  as Proton and  $Mee$  as Electron in a dynamic state. Here again  $Mep$ ,  $Me$  and  $Mee$  exchange sequentially resonant charges, ready to transmigrate. However, as stated earlier, the  $Mee$  or the Electron has an interactive displacement of  $k$ , which would affect experimental measurement by a proportionate impedance factor  $Si$  as follows:

$$\left[ 1 / \left( 1 + \frac{1}{k-1} \right) 100 \right] + 1 = 1.002063. (\text{and}) L_s / 1.002063 = 1.05701926E + 9 \quad [1.89]$$

The measured value of 1057 Mcs is a convincing proof for Sankhyan theory as it is an axiomatic derivation in which there are no uncertainties, hence all the interactive stress count values are shown precisely and unambiguously. Further proof is provided by precise matching of ratios of important parameters for which there is no theoretical reason in Physics but as shown the Sankhyan axiomatic derivation leaves no room for doubt.

The Proton to Electron mass ratio as a dimensionless number is an enigma in Physics. The  $Pbo$  state derivation demonstrated the equivalence of the Electron as the boundary state of the Proton, both of which oscillated at the same rate  $C$ .

$$\left[ \frac{Pn}{Pm} \right] = 1.00137875 = 1 + \left[ \frac{k-1}{7} \right]^2 \quad [1.90]$$

$$\left[ \frac{PM}{Mep} \right] = 1837.18731507 = \left[ \frac{7}{k-1} \right]^2 \left[ \frac{10}{2\pi} \right]^2 \quad [1.91]$$

$$\frac{Pn}{Me} = 1838.512267 \dots \frac{Pn}{Mee} = 1838.6838 \dots \frac{Pm}{Mee} = 1836.1522 \quad [1.92]$$

$$\left[ \frac{Pm}{Mee} \right] \left[ \frac{1}{\beta} \right] = 1.00000025846445 \quad [1.93]$$

The  $Pm/Mee$  ratio 1836.15219687196, as the Proton to Electron mass ratio, referred to as  $\mu$  or  $\beta$  in Physics, is recorded as 1836.1526724718. It is slightly larger because the hidden  $PM/Mep$  ratio that forms the reference base which is not yet discovered in science has coloured the experimental measurement. The proof given here discloses the real nature of the  $Pm/Mee$  ratio which has been derived axiomatically and confirms its correctness compared to the measured value

$$\left[ \frac{7}{k-1} \right]^2 \left[ \frac{10}{2\pi} \right]^2 \left[ \frac{1}{\beta} \right] = 1.00056348397 \square \frac{PM}{Mep} \frac{Mee}{Pm} = 1.000563743 \quad [1.94]$$

The comparison of  $\beta$  with  $PM/Mep$  and the same with  $Pm/Mee$  as the actual value of the Proton and Electron in a resonant state of balance shows a small difference. Any experimental measurement interferes with the resonant state and hence both the Proton and Electron have a different measured value from that shown in Sankhya. It must be reiterated strongly that axiomatic derivations cannot be changed and therefore form a benchmark, as it has been proved by the foregoing.

All the ratios match precisely, considering that the axiomatically derived values cannot be changed but experimental measurement errors need tolerance levels. Since all the states

relate to stress levels on the components in space, the accelerative environment on the earth would induce errors in measurement too. Reiterating, the derivation of the Pho state and all its concomitant ratios based on axiomatic fundamentals, at the most important core level of Physics, have never been carried out nor attempted. However, the precise equivalence of experimental findings provides unequivocal confirmation for Sankhyan logic that all phenomena can be derived by the process of counting interactions combinatorially. The single variable needed to balance phenomena is cyclic time.

The derivation of the Kx as Purusha, Mps as Mahad, PM as Prakriti, Pn as Mabamoha, Pm as Moba, Mep as Vikriti, Me as Abhiman, Mee as Abnkar, Ne as Vriti and Mly as Moolaprakriti states from fundamentals are possible because the relative time-interval remains constant in a coherent and resonant environment comprising the components in space. However the Mee or Electron is the balancing outer surface boundary of Pm or Proton and therefore neither its relative oscillatory interval nor the boundary displacement ratio is ever constant. Since the process of balancing involves changes in the transmigration rates and flux density, the Mee state mass value is only correct at the instant of balance in sustaining the Pho state. Hence it is the only parameter that cannot be derived independently but it has to be equated to an axiomatic constant of balance. Because of its changing characteristics it is the only state that can be directly detected by counting.

The Pho stress is compressive at Mep, resonant at Me, attains coherence at Mps and expansive at the second harmonic level of Mee, at a radial displacement ratio  $k$  forming the boundary of PM. Similarly the higher density stress is compressive at Pn, resonant at PM, attains coherence at Mps and expands at Pm. All oscillate at the resonant Pho rate of C, at twice the volumetric displacement  $V_m$ . While the interaction between adjacent components is sustained at an axiomatic rate of C, any accelerative change increases the count rate by a logarithmically proportionate decrease in the potential ratio  $P_p$ . Therefore the harmonic state of the continuum in space is kept in dynamic balance perpetually. If and when any interactive rate goes below C, it is absorbed and the local potential rises through logarithmic conversion. The interactive control mode is based on modulating stress count densities through logarithmic variation of count rate of the standard C. All the other coherent states mentioned above cannot be counted directly but can be inferred through the state of the Mee electron state due to changes in stress count density and interactive intensity. However all the stable particulate states can be calculated precisely because of the single self-similar and scale-invariant Guna law of interactions, shown earlier.

Further proof of the internal nuclear structure of the coherent Mps and resonant PM in the Pho state is derived as follows. Stress density variations in the coherent and compressive state, changes mass proportionately whereas in the resonant and expansive interactions the sequential time interval alter as frequency of charge transmigration. In the Mps/PM mass change cyclically, both compressive as  $C^{1+x}$  and expansive as  $C^{1-x}$  interact simultaneously within a cycle and produce two phases. In the expansive phase of 7 sequential changes take place additively but in the simultaneous compressive phase it changes logarithmically. The three modes of compressive, resonant and expansive as  $D_p \& D_m$ ,  $C^{1+x} \& C^{1-x}$  and  $C_c \& C_e$  respectively are shown below at its maximum value in the coherent domain.

$$[D_p \times D_m] / k^7 = [(C^{1+x})(C^{1-x})]^7 = (1/C_c \ 1/C_e)^7 = C^{2 \times 7} \quad [1.95]$$

$$C^{2 \times 7} = 4.07289E+118$$

The ratio of compressive and expansive stress is in the same order of the three modes, as given above:

$$P_x^7 = 1.77E+9 \quad [1.96]$$

$$(C^{1+x}/C^{1-x})^7 = (Gs \times k^3)^7 = 2.018E+73 \quad [1.97]$$

$$(Ce/Cc)^7 = Si^{2 \times 7} = 1.173E+36 \quad [1.98]$$

The product total of the three ratios must equal the maximum stress density in the coherent domain if the Pho state is:

$$[Px^7][Si^{2 \times 7}][Gs^7 \times k^{3 \times 7}] = 4.19114E+118 \quad [1.99]$$

There is a considerable excess over the maximum which necessitates a revision in the resonance parameter, in the Si ratio only, as the other ratios cannot be changed from its axiomatic base.

$$[Px^7][\frac{100}{(k-1) \times 1.02249621}][Gs^7 \times k^{3 \times 7}] = 4.073E+118 \quad [1.100]$$

Therefore the impedance Si is corrected for resonance and is a final proof that during transmigration the resonance must be broken but instead of making an arbitrary choice of the Rs factor, the equation of balance yields 1.02249621 as the correct rate when maximum stress levels are reached in the coherent state. The modified Si value is:

$$Si1 = \frac{100}{k-1 \times 1.02249621} = 376.2676 \quad [1.101]$$

The value of the maximum electric field permittivity  $\epsilon$  as  $1/Cc$  and the magnetic field permeability  $\mu$  as  $1/Cc$  is:

$$\epsilon \text{ max} = 8.96E-12 \dots \dots \mu \text{ max} = 1.268E-6 \quad [1.102]$$

Since CL is used in Physics instead of the axiomatic C, applying the correction Fc gives the measured values:

$$\epsilon \text{ max}/Fc = 8.854E-12 \dots \dots \mu \text{ max}/Fc = 1.25663E-6 \quad [1.103]$$

Therefore the nuclear domain has the highest level of 118 orders of interactively stressed states that increase the intensity of Gs and Si as the constants that change the interactive stresses from simultaneous to resonant state. It also provides the maximum coherent potential for the three modes of stress as the density Dp, Pd and Dm for the Mps, PM and Mee particulate states respectively. Hence there is only one potential source for all the three accelerative stress transmigration characteristics as gravitation when stress density changes as mass; electromagnetic when flux density varies as charge; accelerative transmigration when interactive count rates vary. There are two transition stages. Firstly, when the simultaneous states stress density as mass, changes to a resonant state stress as flux density and vice versa, by altering its coherent symmetry to attain resonance, it has 2 modes of change. When expanding, Tc is the constant that breaks the coherent symmetry. In the reverse mode of compression, Tc is modified by Ke=7/k-1 but logarithmically as:

$$Tcn = Tc \left[ \frac{k-1}{7 \times 2} \right] = 5.6398 \dots \dots Tcne = 10^{1/5.6398} = 1.50422247 \quad [1.104]$$

Tc and Tcne have extremely great relevance to the Pho state balance at every level. Tcne affects Cosmological and Nuclear states with equal validity. The maximum compressed density Dp at minimum relative volume  $Lp^3$  of the Mps mass and the maximum expanded relative volume  $RU^3$  at minimum density DD of the MU mass, provide a ratio of the extreme limits. The median resonant density Pd and volume  $Rp^3$  has a dual but balanced relationship to the ratio of the maximum and minimum extreme limits that provides a control to keep the Pho state perpetually in dynamic balance, through Tcne. The Mps, Dp,  $Lp^3$ , PM, Pd and  $Rp^3$  states have been derived through rigorous axiomatic logic above but MU is the overall mass of the Universe, DD is the critical space stress density and  $RU^3$  is the relative volumetric state of the Universal boundary. Since the latter are connected, through proportionate ratios to the former group, its values can be derived using combinatorial mathematics. Using the principle of self-

similarity and scale-invariance the three parameters are derived combinatorially below to establish the connection to Tnce.

The ratios of change in the compressive-simultaneous, resonant and expansive-sequential state respectively are as Crs:

$$Crs = \left[ \frac{10}{KV} \right] \left[ \sqrt{\frac{2^3}{1-(2/\sqrt{5})}} \right] \left[ \kappa^7 \right] = 7.7036516 \quad [1.105]$$

The following combinatorial ratios would enable the derivation of all three parameters:

$$MU = \left[ \frac{Rp}{Lp} \right]^3 \left[ \frac{Mps}{Crs} \right] = 7.817E + 52 \text{ kgs} \dots \text{OMU} \quad [1.106]$$

OMU is the maximum observable mass of the Universe.

$$RU = \left[ \frac{Rp^3}{Lp^2} \right] Crs = 5.99334E + 25 \text{ metres} \dots \text{ODU} \quad [1.107]$$

ODU is the maximum observable distance or radius of the boundary.

$$DD = \left[ \frac{Lp}{Rp^3} \right] \left[ \frac{Mps}{RU} Crs \right] = \left[ \frac{MU}{RU^2} \right] = 3.63E - 25 \text{ kgs} / \text{cu.m.} \dots \text{Critical density.} \quad [1.108]$$

The critical volumetric density of interactive stresses in space is the vital parameter that sustains the Perpetual Harmonic Oscillatory state everywhere in space.

The time period of the observable distance TT:

$$TT = \sqrt{Gs / DD} = RU / C = 2.02084E + 17. \text{sec} \quad [1.109]$$

The observable time period of the stress transmigratory boundary is :

$$TT / \text{yr} = 6.4E + 9 \quad [1.110]$$

RU is the distance that transmigrating stresses can reach with the available potential Ps, on the basis that the drop in potential per interaction is:

$$1 - 2 / \sqrt{5} = 1 / (1 + 2 / \sqrt{5}) = .1055728 \quad [1.111]$$

The ratio of the merged stresses is  $TT^3 / TT = TT^2$  and since the maximum stress intensity in space is St:

$$\frac{TT^2}{.1055728} = 3.868E + 35 = St \quad [1.112]$$

Proof of the above is in fact due to the merged state  $(Ps / TT)^2$  that drops potential resonantly as

$$Ps^2 / (TT^2 / .1055728) = Rs = 1.02040816 \quad [1.113]$$

Therefore the stress quantum or the photon cannot transmigrate further than RU with the stress density it is accelerated with at source as Ks. The proof lies in the Tnce control of the Ps potential and PM state as follows:

$$\left[ \frac{Dp}{DD} \right]^{1/3} \frac{DD}{Pd} = \frac{Dp^{1/3} DD^{2/3} Rp^3}{PM} = .66479 = 1 / Tnce \quad [1.114]$$

Any change in the three coherent stress density states of Dp, DD and Pd immediately affects Tnce, the log of which is Tcn, the constant that either makes or breaks coherent symmetry to transmigrate an accelerative stress quantum. The density of the space is rigorously connected to the coherent stress density of the nucleus and any unbalance in the Pbo state's resonance, can upset the perpetual state of balance. In a static volume the logarithmic ratio of volume to area is  $3/2=1.5$  but the marginally larger Tnce maintains the perpetual dynamic state of the Universe and the nucleus.

*reminder*



Levitation occurs when  $2/3 - 1/T_{cne} = 2/(C^{1-x}) \times = 1/532$ . At 532 RPS lift or floating occurs.

The most significant proof of unification is shown below in a simple comparative form so that it can be seen at a glance. There are four vital stages of symmetry breaking interfaces in the substratum of space that loop back to control all of them extremely rigorously through a single coupling constant that is applied in both the sequential and simultaneous interactive modes. First is the neutrino to photon transmigrating interface where the parameters  $7 Ne$  and  $Mly$  apply. Second is the electron to neutrino resonant interface of  $Mep$  to  $7 Ne$ . Third is the nuclear / electron boundary, with the resonant to coherent transition interface between  $PM$  and  $Mep$ . Fourth is the simultaneous high density interface between  $MU$ ,  $Mps$  and  $PM$  coherent mass states.

$$\left[ \frac{7Ne}{MlyC^2} \right] = T_{cn} = 5.6398 \quad [1.115]$$

$$\left[ \frac{7Ne}{Mep} \right] \left[ \frac{k-1}{7} \right]^2 \left[ \frac{2\pi}{10} \right]^2 \left[ \frac{C}{Px} \right] = T_{cn} = 5.6398 \quad [1.116]$$

$$\left[ \frac{7Mep}{PM} \right] \left[ \frac{10}{7} \right]^2 = T_{cn} = 5.6398 \quad [1.117]$$

The resonant symmetry is broken sequentially in the three states shown above. In the simultaneous state the coherent state is maintained by a logarithmic change in the coupling constant  $T_{cn}$  as  $T_{cne}$ .

$$\left[ \frac{Dp}{DD} \right]^{\frac{2}{3}} \left[ \frac{PM}{Rp^3 Dp} \right] = 10^{\frac{1}{T_{cn}}} = T_{cne} = 1.504235 \quad [1.118]$$

$$1 / \log(1.50423) = 5.6398 = T_{cn} \quad [1.119]$$

$$10^{\frac{1}{5.6398}} = 1.50423 = T_{cne}$$

The symmetry shown above is an extraordinary confirmation that a single law of dynamic interaction operates in the substantial substratum of space in a self similar, scale-invariant mode based on axiomatic foundations. This unique feature in the universal manifestation process has been exposed only because there is only a single parameter of cyclic time operating in two modes of sequential and simultaneous states. Both modes exist in the substantial foundation of space that follows a combinatorial counting procedure which is rigorous and accurate. The existence of a simultaneous state of interactive phenomena cannot be detected through experimental verification but can only be derived through rigorous logic based on axioms which eliminates uncertainty in formulating a theory.

The density values above are consequent to the volumetric parameter, which leads to the derivation of its equality with associated changes at the limiting levels shown above.

$$\frac{MU}{Mly} = 5.8136E + 103 \quad [1.120]$$

$$Klp = \left[ \left[ \sqrt{1+2^2} - 1 \right]^2 Lp \right]^3 = 5.8133E + 103 \quad [1.121]$$

The comparison of maximum stress density as mass of Universe with minimum  $M_y$  as a ratio is slightly larger than  $K_p$ , the comparison with the relative volumetric expansion ratio to  $L_p$ . The difference is due to merging of stresses from a resonant to coherent state, where  $K_e$  and  $T_c$  govern the ratio and the reduction in stress density as mass is proportional to  $K_{cu}$ :

$$K_{cu} = \left[ K_e / \left[ 1 + 1 / T_c - 1 \right] \right]^3 = 1.9924E + 4 \quad [1.122]$$

Applying the correction the ratio maximum to minimum change in the volumetric state is exactly equal to the merged stress density change in ratio.

$$\left[ \left[ \frac{MU}{M_y} \right] - \left[ \frac{MU}{M_y K_{cu}} \right] \right] / K_p = 1 \quad [1.123]$$

A similar merging of stresses in the coherent state takes place due to the synchronisation of the interactions in all three axial directions, where only  $K_e$  is involved, as  $P_{sr}$ :

$$P_{sr} = \left[ \frac{M_{ps}}{PM} K_e^3 \right] = \left[ P_{\times} \frac{c^{1+\times}}{2} k \right] = 6.74E + 14 \quad [1.124]$$

$P_{sr}$  is the unification ratio where mass and charge are at equal states of stress in every cycle. However, in the reverse process, the sequential addition of stress count densities is limited at the PM boundary as the Mee or Electron state. The compressive ratio increase is  $\alpha$ :

$$\alpha = \left[ \left[ \sqrt{\frac{S_i}{T_c}} K_e^2 \right]^3 \left[ \left[ \frac{3}{4\pi} \right] \right] \right]^{1/2} \left[ \frac{M_{ee}}{P_n} + 1 \right]^{-1} = 137.0359893537 \quad [1.125]$$

The ratio  $\alpha$  is defined as the fine structure coupling constant in Physics. While there is no clear cut derivational process in Physics, as shown above it is linked to  $S_i$ ,  $T_c$  and  $K_e$  to form the volumetric state. It has the same characteristic gravity field ratio of volumetric stress density change to flux density change or  $(L1/L2)^3 = (T1/T2)^2$ .

The accuracy of the above values confirm the axiomatic logic on which Sankhyian principles are based and precision of numerical values through combinatorial mathematics cannot be excelled by any other method of calculation.

**From the foregoing the incontrovertible and extraordinary proof is given here of the perpetual interaction in space:**

$$\frac{\left[ \frac{M_{ps}}{PM(P_{\times})} \right] \left[ \frac{M_{ps}}{PM(P_{\times})} \right]}{C^3 G_s} = R_s = \frac{P_s \times P_s}{S_t} = 1.02040816 \quad [1.126]$$

The maximum stress intensity in space is directly due to the sequential interaction of two adjacent nuclei, each comprising 8 space-components bound by the Ah gravitational acceleration, in coherent internal oscillation in the simultaneous state. The unequivocal proof is confirmed by:

$$\frac{M_{ps}}{S_t} = T_p = 5.696 E - 44 \text{ sec} \quad [1.127]$$

$T_p$  is equivalent of the impulse interval between two states of stress densities of compression and expansion in interactive space. The substratum of space is in perpetual oscillation at maximum stress intensity within the instant  $T_p$ . The stresses transmigrate, due to the perpetual oscillatory state determined by  $R_s$ , in a sequential and expansive mode till the primary stress level is expended in time  $TT$  as:

$$\frac{MU}{St} = TT = 2.02E+17 \text{ sec} = 6.4E9 \text{ yrs.} \quad [1.128]$$

**The subsequent harmonics at the second, third level etc will continue at the same interval of 6.4 billion years at every lower level of stress intensity to set its ultimate rate of decay in:**

$$\left[ \frac{\log(St)}{\log(2)} \right] = 118.219.....\text{or}.....6.4^{118.219} = 2.02E+95 \text{ Billion. yrs} \quad [1.129]$$

**Therefore the theoretical rate of decay of its resonant state has a half life of 6.4 billion years, which can extend to 2.02 +95 billion years to completely expend its stress intensity level St, from the instant the perpetual interactions in space ceases but that can never be unless the basic 8 space-components, in a coherent state, are rent asunder.**

The current scientific view that the expansion-contraction cycle will lead to a Big-Bang has no theoretical validity because the axiomatic derivation in Sankhya, which is self generated through axiomatic logic that needs no experimental inputs to complete it, shows the perpetual nature of the phenomenal Universe. There can be no doubt because of the extremely accurate equality of its derived constants with Physic's experimental values. It cannot be a coincidence either. For statistically, that specific method Physics depends on to support its core hypotheses, it is not possible for every constant in Physics to be matched exactly by Sankhyan axiomatic derivations by sheer coincidence. The characteristics of space can never change and hence the components in it are permanent, leading to the classic Vedic phrase **Parama Purusha** or **Nitya Purusha**, for the value of Kx is the Purusha state in Sankhya.

Recalling that the inward gravitational acceleration  $A_b$ , at the Mps surface, reduces to  $P_g$ , at the PM surface, any outward transmigration of stress requires an expansive interactive state that overcomes the inward force. Therefore  $P_x$ , which forms the transition resonant state, must be accelerated simultaneously by the  $T_{cne}$  factor. At the PM level any increase in stress levels must overcome the  $P_x$  ratio instantly or logarithmically. The  $P_z$  ratio defines the simultaneous stress intensity increase and  $P_w$  as a sequential increase in ratio.

$$P_z = [P_x^{T_{cne}}] = 97.11994.....\text{and}...P_w = \left[ \frac{2}{\sqrt{1+2^2}} [P_x^{T_{cne}}] \right] = 86.8667 \quad [1.130]$$

The simultaneous stress potential  $P_s$  is modified by  $P_z$  and  $P_w$  as follows:

$$\frac{\left[ \frac{Mps}{(PM)(P_x)} \right]}{\left[ \frac{Mps}{(PM)(P_x)} \right] - \left[ \frac{Mps}{(PM)(P_z)} \right]} = 1.275 \quad [1.131]$$

$$\frac{\left[ \frac{Mps}{(PM)(P_x)} \right]}{\left[ \frac{Mps}{(PM)(P_x)} \right] - \left[ \frac{Mps}{(PM)(P_w)} \right]} = 1.3718 \quad [1.132]$$

Both the  $P_z$  and  $P_w$  factors are larger than the minimum drop in potential ratio  $P_p=1.2749$  needed to accelerate a stress quantum into a transmigratory mode.  $P_z$  is just marginally greater than  $P_p$  and is equal to the  $h/Mb$  ratio for accelerating 7 Ne as Neutrinos. The  $P_w$  state has a large enough potential-drop ratio to accelerate the nucleus, which creates one

Me state and 7 Ne at the boundary. The details are in the relevant chapters. In Physics the Pn is defined as the W + - boson and the Pz the Z boson.

There is a conceptual difference in the principle of generating force or accelerative transfer of stresses between Sankhyan theory and Physics. Balance between high and low density stresses is maintained by keeping the oscillatory count identical. Interactive stresses transmigrate always from a higher count rate to a lower one. However, a higher density stress region can have a lower interactive count rate if many stress counts merge to act as a single unit simultaneously. The Pn and Pm states are the compressive and expansive displacements of the dense and rigid nuclear volumetric surface of PM, at a resonant rate C. At the same time the flexible and resonant boundary at an incremental volume, at a displacement distance ratio of plus k-1, oscillates at the same rate of C. Here the Me and Mee states act as the compressive and expansive states relative to the stable state of Mep. It is coupled to the PM state synchronously through resonance at the Gmr volumetric ratio. Any change in the rate C at both surface levels, initiates stress count transmigration either way but always towards the lower rate. The Pn and Pm increase or decrease stress density which is in the simultaneous or merged state. Hence a single interactive count difference can alter many counts that are merged at that instant. Multiple counts as stress densities are varied within the coherent state of the PM ensemble. It is a case of one interactive count varying many counts in the same count cycle as a potential amplification process.

Multiple stress counts merged together do not 'weigh' more but only react on a count to count basis, because the stresses are only the oscillatory state of the components in space. As stress densities increase the oscillatory flexibility of components become less and turn rigid, leading to the concept of the metric elasticity of space. Large bodies of air or water too, behave in exactly the same way but a broad based scientific bias treats these in a generalised mode where interactive stress density is treated as pressure and interactive count rate as temperature.

In the Me and Mee lepton region the displacement is over a k-1 distance ratio and therefore stresses move sequentially. If the number of stress count, in both forward and reverse directions, remain equal the balance is kept. But if for example the Pm rate is higher, stresses will accelerate towards the Mep state and depending on the count-rate above C in the k-1 region, sequential transmigration begins in that direction. It is a three dimensional or volumetric expansion and contraction process that is transferred to the next component in space. It is an extraordinary process of converting simultaneous stress density into sequential count numbers in every cycle and vice versa at the same axiomatic resonant rate of C across a displacement gap ratio of k-1. Because the components in space maintain a resonant interactive rate at C, higher rates transmigrate but lower ones get absorbed.

The stress intensity in space, synonymous with pressure in Physics, is:

$$St = C^3 Gs = Mps / Tp = MU / TT = 3.868E + 35 \quad [1.133]$$

It is highly indicative that the ratios of maximum simultaneous mass to minimum compressive time and maximum sequential mass to maximum expansive time are equal to St. Unless the ratio of mass/time-cycle exceeds St there can be no transmigration of stresses and as shown it is not possible in the regions between the limits. Therefore no gravitational 'waves' are possible. However, light from the Sun, as stress transmigration quanta, has a higher ratio stress count rate shown above as Fc, which is the reason that it transmigrates outwards. Hence any higher rate of expanding stress must transmigrate. The constancy of C, the resonant oscillatory rate per cycle is ensured in the substratum of space as follows:

$$C = \left[ \frac{Kx(Gm) Tp}{Mps} \right] = \left[ \frac{Kx(Gm)}{St} \right] \quad [1.134]$$

Hence Mps, as maximum mass, can only reduce. It can then react to increase C, since Kx and Gm are constants. St has two control modes where MU/TT, as Universal mass and time, is an

extremely long duration mode of 6.4 billion years, which virtually assures constancy of  $St$ . Hence if  $Mps$  reduces then  $Tp$  must also reduce as  $St$  is constant, which instantly brings  $C$  back to its stable level in displacement distance  $Lp$ . Hence it is virtually impossible for  $C$  to increase as a part of the  $Pbo$  state and the action is within the  $Tp$  time cycle. Further the process is bootstrapped as  $Gs/Tp^2 = Dp = Mps/Lp^3$ . It is an extraordinarily instantaneous process because it introduces a new concept in Physics which in Sankhya is defined as the third order constraint or damping force. Since  $Lp$  is fixed and  $C$  cannot increase,  $Mps$  can reduce only if  $Tp$  increases. When  $Tp$  increases  $C$  must reduce and along with it flux, volumetric density and mass too reduce appropriately. Since it is at the basic level it affects all levels.

Mathematically Planck length  $Lp = C Tp$  depicts a linear equation. But space is volumetric or three dimensional. The component in space has been shown to  $Lp^3 = C^3 Tp^3$  and therefore when events are dealt with linearly the area aspects becomes submerged or is overlooked. Then the ratio  $Lp^3/Lp = Lp^2 = C^2 Tp^2$  must also be accounted for when dealing only with linear aspects as it is hidden as a simultaneously interacting or merged state that acts as a single unit. In Physics, the experimental approach has been to find a solution without first addressing the principles involved. Since it is a key issue the display of numerically solved expressions given below is to enable the understanding of the crossover in logic, between Sankhyan and current theories, through mere visual inspection. As an example, the correct stress transmigrator rate at the Solar surface is shown as  $V$  and  $Vs$  as the ratio  $C/V$  and Solar mass  $MS = 1.97E + 30$  and Solar radius  $= 6.98E + 8$

$$V = \left[ \sqrt{\frac{R_s}{L_p} \frac{Mps}{MS}}^{-1} \right] C = 4.3627E + 5 \dots Vs = C / V = 679.8 \quad [1.135]$$

Since the stress transmigrator rate has reduced to  $V$  the time  $Tp$  must increase, as a relative ratio to the merged and undetectable parameter  $Lp^2$ . as both  $Lp$  and  $Lp^3$  can be dealt with explicitly. The expression below gives the ratio of  $Tp$  increase to compensate for the reduction of  $C$  to  $V$  by the ratio  $Vs$ .

$$\left[ \frac{Lp^2 - Tp^2 V^2}{Lp^2} \right]^{1/2} = 1.0000010819 \quad [1.136]$$

The ratio reflects the increase in time needed to reduce the oscillatory rate of  $C$  by merging  $Tp$ ,  $Vs$  times, which is shown above, relative to  $Lp^2$ . Any transmigratory stress in the linear direction must affect the area of each component as the stresses are transferred through colliding interactions where the cross-section is  $Lp^2$ . The averaged and overall view in Physics is that it is a velocity parameter but that cannot be correct in a continuum of high density components where only stresses can be transferred. In Special Relativity and in Electromagnetic theory the above factor is interpreted as a contraction in length and increase in time which is calculated through the Lorentz transformation to justify the change observed experimentally. The solved expression, using  $V$  and  $C$  as above, along with a simplified version with  $Vs$  is shown as:

$$\left[ 1 / \sqrt{1 - \frac{V^2}{C^2}} \right] = 1.0000010819 \dots = \left[ 1 + \frac{1}{2Vs^2} \right] \quad [1.137]$$

The Sankhyan transformation shows the logic on which this change comes about and yet its value is identical to the Lorentz formulation. The fact that it is really dependant on the ratio of change from  $C$  to  $V$  simplifies the process of understanding that logic. However, the explanations in SR and EM theories have been based on a tenuous and construed logic where measuring rods contract and clocks slow down, due to the lack of understanding in depth of the structure of space. The apparent reduction in the oscillatory rate of  $C$  due to super-positioning of interactive stress counts on a real component in space with a consequent increase in the time interval has been interpreted as a contraction in length and a slowing down of clock ticks showing a corresponding increase in

time. It must be emphasised here that the rate  $C$  is a constant but merges in compressed or simultaneously interactive states that give the impression of reduced counts and therefore the interval of time between two adjacent counts seem to lengthen. The discontinuity in logic is evident when a linear change in time needs a squared parameter for its correction. As shown, only two possible simultaneous variations exist as reduction in the rate  $C$  with a proportionate increase in  $T_p$  as  $Lp^3$  is a constant. Applying it to all three methods makes it clear that  $Lp^2$  is kept constant.

$$\left[ \left[ \frac{1/\sqrt{\frac{Lp^2 - Tp^2V^2}{Lp^2}}}{1p^2} \right] = 1/\sqrt{1 - \frac{V^2}{C^2}} \right] = \left[ 1 + \frac{1}{2V_3^2} \right] = 1.0000010819 \quad [1.138]$$

$$\left[ \left[ \frac{1/\sqrt{\frac{Lp^2 - Tp^2V^2}{Lp^2}}}{1p^2} \right]^2 \right] = \left[ 1/\sqrt{1 - \frac{V^2}{C^2}} \right]^2 = \left[ 1 + \frac{1}{2V_3^2} \right]^2 = 1.0000021638 \quad [1.139]$$

$$\left[ \left[ \frac{1/\sqrt{\frac{Lp^2 - Tp^2V^2}{Lp^2}}}{1p^2} \right]^3 \right] = \left[ 1/\sqrt{1 - \frac{V^2}{C^2}} \right]^3 = \left[ 1 + \frac{1}{2V_3^2} \right]^3 = 1.0000032458 \quad [1.140]$$

The three transforms of 3 orders have relevance and its application is shown in later chapters but in Physics only the first order formula with  $V^2/C^2$  ratio is used as the Lorentz transform.

The foregoing example is a confirmation of the real nature of space. The Newtonian development of gravitation theory was effective because the interactive states of bodies in space occurred in the simultaneous and resonant modes where clock time was ineffective. In Electrodynamics however, the measurement of time becomes necessary as a part of the dimensional concept in Physics, from the outer resonant surface of the nucleus that forms the electron or leptons as a category. In Sankhyan space the leptonic states including the electron are the Pbo state oscillatory boundary where resonant stresses oscillate and transmigrate on the components in space. The oscillatory excursions shown before as Mep, Me and Mee, at the compressive, neutral and expansive interactive limits, which do not and cannot occur in the same location and time, has lead to the concept of orbit and spin. Therefore it cannot be an independent object but is a quantum of stress in a holographic state supported by the components.

However, using Sankhyan logic, the problem of the classical radius of the electron, its boundary distance and its gravitational acceleration that keeps it bound to the nuclear PM state is given here, with total accuracy and interactive balance, probably for the first time. In principle if two states with different stress densities as mass remain at the same distance the inward going acceleration must be equal and opposite. The PM and Mep states that maintain the Pbo state remain at the neutral position in the interactive exchanges. Hence the equation that gives that solution is:

$$\left[ \frac{PM}{Gs} \left[ \frac{2\pi}{10Rp} \right]^2 \right] = \left[ \frac{Mep}{Gs} \left[ \frac{7}{k-1 Rp} \right]^2 \right] = Mg = 1.72E - 9 \quad [1.141]$$

Both PM and Me have the same accelerative parameter  $Mg$  at the modified value of  $Rp$  that forms the radial boundary of PM. Using the Newtonian expression the equivalence of the both transmigrator rates are as shown as being equal as a force value:

$$\left[ \frac{PM}{Gs} \left[ \frac{2\pi}{10Rp} \right]^2 \right] Mep = Mep \times Mg = 1.569E - 39 \quad [1.142]$$

Therefore both PM and Mep can retain its interactive distance of separation constantly. From this equivalence the structural details of Mep can be obtained as follows where Dm is volumetric stress density:

$$Dm = \left[ \frac{7}{k-1 R_p} \right]^3 Mep = 1.35 E + 17 = \text{stressdensity} \quad [1.143]$$

The radial distance of Mep boundary from its centre is Rm:

$$Rm = R_p \frac{k-1}{7} = 1.8896 E - 16 \quad [1.144]$$

Its stress transmigration time at its boundary is Tm:

$$Tm = \sqrt{G_s / Dm} = \sqrt{Rm / Mg} = 3.313 E - 4 \quad [1.145]$$

Therefore stress transmigration rate per cycle C is Ct:

$$Ct = Tm C = 9.8266 E + 4 \quad [1.146]$$

The potential available for stress transmigration in its Pho state is Stm:

$$Stm = \left[ \frac{P_s - Dm}{h} Mby \right] = 1.00083 \quad [1.147]$$

The Dm value is just enough to allow Stm as just one quantum h to transmigrate either way in its normal state of balance. It is indeed the finest state of balance that has already been confirmed in Sankhya as the parameter Ls, or the Lambshift in Physic. Since C can only reduce with a consequent increase in time Tm the density Dm drops ( $G_s / Tm^2 = Dm$ ) and volume expands thereby increasing Stm to initiate transmigration. When C returns to its correct value the Mep goes back to its coasting state. The Sankhyan derivation of the electron states is simple, balanced and equates with Physics, especially if Ct is recognised as the Faraday or coulomb constant.

Further proof that the derivation above is correct is given by the ratio of Pn to Pm.

The differential value is:

$$Q = Pn - Pm = Mee \left( \frac{Si}{Tc} \right) = 2.3 E - 30 = 1.295 \text{Mev} \quad [1.148]$$

The Neutron Pn gains only the fraction Q of Mee as incremental stress density which is equal to the merged spin angular momentum component of Gmr that keeps both Pm and Mee in the balanced Pho state. As shown in the derivation of the Pho interactive exchange, Pn is the compressive part of the cycle or to be correct it is the limit of stress density reached in the oscillatory PM state and is not a separate particle or independent entity. Similarly Pm is the limit in decrease in stress density due to expansion of the Pho cycle. Again Me and Mee are similar changes of displacements due to decreased stress levels through expansion. Because the Mps to PM coherent oscillatory state is already at the limits of compressive density change, as potential and the expansive volumetric change limit from Mps to Me states, as charge. Therefore the significant part of the Mee state Q1 remains in the region between the PM surface and it's Mep boundary across the 'k-1' gap, in a resonant and undetectable state.

$$Q1 = \left[ PM \left[ \frac{Tc}{Si} \right] \right] = 6.61 E - 28 \text{kgs} = 370.813 \text{Mev} \quad [1.149]$$

As shown above, Q1 has an undetectable relative mass equivalent of 313.64 Mev, consisting of PM or Mep interactive stress ratios. It therefore has a compressive stress at the PM surface and an expanded boundary stress at the Mep surface, both with the same relative value but could transmigrate either way. In Physics this hidden state is defined as an Up Quark associated with Pn and a Down Quark with Pm. Since it is in a transition phase (resonant to coherent and vice versa), its interactions are not countable.

The expansion of the interactive states of the 8 component-agglomerate in space, follows a logical interactive process that enables the derivation of the ratio of relative expansion per change in unit incremental volume. It is a constant ratio in Physics which is called the Boltzman's constant of change in energy per change in volume defined as a temperature rise.

Volumetric ratio of change sequentially along all three axes per cycle is given in the expression below in terms of  $M_b$ , which is almost identical to Boltzman's constant:

$$\left[ \left[ \left[ \frac{2\pi}{6} + \left[ \frac{7}{k-1} \right]^2 \right]^{-1} + 1 \right] 2 \right]^3 7^3 C^3 M_b = 1.380658e - 23 \quad [1.150]$$

The  $Pho$  state expands and contracts volumetrically in a resonant mode that synchronises and resonates with 7 volumetric expansions, within the same time that the primary volume expands by one additional volume over a radial displacement  $k$  or  $2^{1/3}=1.2599$ . Unless the coherent state changed over to the resonant state no transmigration of stresses could commence. Hence the fractional ratio needed to initiate transmigration is  $1+1/7^2$ . Applying it allows the axiomatic derivation of the volumetric ratio of change for each unit increment in displacement equal to the Centigrade temperature scale in Physics as  $Tk$ :

$$Tk = \left[ 2^3 - 1 \right]^3 + \left[ k + \frac{k}{7^2} \right] \frac{1}{k} = 273.259688 \quad [1.151]$$

The measured value in Physics is obtained by deducting the  $1/7^{th}$  fractional value needed to obtain a reading or result as  $Tkex$  which is the absolute temperature measured in the laboratory:

$$Tkex = \left[ \frac{Tk}{7} - \frac{bc}{kb} \right] 7 = 273.15897 \quad [1.152]$$

The displacement per unit temperature change involves 7 volumes as a coherent group and the relative displacement per interactive interval would be:

$$T\lambda = 1 / \left[ 2^3 - 1 \right]^3 + \left[ k + \frac{k}{7^2} \right] = 2.904565E - 3 \quad [1.153]$$

It is a transfer in the  $Pho$  mode and hence is in two parts as (Pn-PM) and (PM-Pm), the ratio of which is  $Gmr$  that keeps the coherent state in perpetual oscillation resonantly with its boundary states of (Mep-Me) and (Me-Mee). The Pn state exists always, in a state of balance which is confirmed by the activity of the electron Mee.

**It has been shown that in substantial space the agglomeration or binding of 8 components, each volume  $V_p = L_p^3$  with the maximum coherent density, initiated the gravitational acceleration  $Ah$ . It led to the development of the  $Pho$  state that kept the substratum of space in perpetual dynamism. The  $Pho$  state provided the interface to convert sequential interactive stress transmigration as a kinetic phase into a simultaneous state of merged interactive stresses at higher densities to provide the negative potential for sustaining gravitational acceleration. Therefore the entire nuclear state ensemble provided the dynamic 'potential well' to balance two modes of interactive states in perpetual dynamism while maintaining an interface where sequential time was merged into its simultaneous counterpart through time independent operation of tunnelling through this conversion barrier. The existence of this barrier as an axiomatic process in nature is the deciding proof for the logic of derivation of the entire process of manifestation as defined in Sankhya. The resonant separation of the nuclear core PM and its boundary Me by the factor  $Ke$  as  $(k-1)/7$  &  $1/k-1$  and the ratio of increase in compressive stress to normal stress is derived below to demonstrate the axiomatic, accurate, tunnelling state of the  $Pho$  region or the potential well.**

$$\left( \left[ \frac{1}{k-1} \right]^3 C + C^{1+x} \right) \left[ \frac{k-1}{7} \right]^3 \left[ \frac{1}{7Ck} \right] = 1 \quad [1.154]$$



*In the foregoing the coherent, resonant and transmigratory states were derived from fundamental derivations based on axioms and yet its precise numerical equivalence values obtained through experimental verification confirms the logical basis of Sankhyan derivations of how and why interactive phenomena function in the way it does. In Physics the measurement of transmigratory phenomena, (essentially electromagnetic in nature) have been accurate and transparent because it could be quantised due to the existence of an interval time between two successive interactive events. However, in the coherent and resonant regions, inconsistencies have cropped up that has compelled Physicists to introduce hypotheses that apparently seem contrary to the quantum ideas. Further, the inconsistencies grew by several orders of numerical difference that forced Physics to categorise that region into weak and strong forces. Even then the problem did not end for, gravity as the so called weakest force seemed to be the link everywhere and in fact clearly formed the base for all macro phenomena. In short there was no explicit logical connection that could provide a rational mathematical connection to the operational uniformity of the entire spectrum of phenomena. But it is not so. There are two major conceptual differences in Physics that has led to a mathematical and logical dead end which prevents unification.*

*The Sankhyan intellectual process based on axioms provides a clear clue to redirecting Physics to the path of true unification. That clue is already strongly evident in the fact that electromagnetic phenomena leaves no hidden parameters in the radiant spectrum yet its source of origin in the inelastic and elastic interactive region hides the entire process. The conceptual differences lies in the fact that space has identifiable qualities which inexorably leads to the necessity of understanding the behaviour of the time parameter in a real three dimensional space. Three dimensional space is compulsorily operated by the three mutually dependant aspects of time too. Intellectually and logically time cannot be introduced into the derivation of phenomenon as an independent and isolated parameter. Because the human concept of time is merely an observable aspect of changing phenomena whereas real time is an inherent and qualitative factor in a space that is perpetually dynamic due to specific axiomatic numerical factors that control it. Physics must reorient its views that time exists or is born because space is and must be perpetually dynamic. Creating dynamism from a static base needs an external input whereas plurality of components in freedom leads to dynamism spontaneously at a particular axiomatic ratio. Sankhyan logic and combinatorial mathematics shows the invincible process.*