



Foundation of Theory of Everything: Non-living and Living Things

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Abstract

For the first time the concepts of absolute space, emergent & relative time and aether or ether of classical physics & dark energy now named as Luminiferous Energy have been conceived simultaneously. The mystery of the above three concepts, existed in the electromagnetic radiation or light as the phenomenon of electromagnetic radiations, was not understood correctly: resultantly the true nature of everything remained unknown to the mankind. A theistic Foundation of Theory of Everything: Non-living and Living Things is being proposed purely on scientific basis which would explain the yet unexplained concerns of human beings. The existence of ether is proved beyond any reasonable doubt and the electromagnetic properties of this medium have been defined. The mass, as we know it, is proved to be manifestation of the energy which constitutes the matter; due to the existence of ether the formula $E = mc^2$ has been proved to be incorrect. The correct coordinate transformation instead of Galilean and Lorentz transformations has been derived. The very concept of space-time has been proved to be a mathematical misrepresentation. A unified theory of forces in nature has been proposed. The present theory also envisages the theory for living things with primary concern of the life of human beings. The characteristics of the 'soul' energy has been defined; besides, proposal have been put forward regarding the characteristics of the 'energies' which being the source of life in all plants and animals. This article is in continuation of the author's previous works (Mohammad Shafiq Khan, 2010a, b, c).

Keywords: Luminiferous Energy, electromagnetic radiations, mathematical misrepresentation, work capacity, recessional acceleration, time frame, soul energy.

Introduction

The understanding of the true nature of everything, non-living and living, has been the concern of all human beings throughout the history. Plato as a true visionary philosopher believed that the material world as it seems to us is not the real world but the shadow of the real world. The article presented here proves that Plato's belief was accurate in describing the world and the universe. Aristotle and Newton looked at the world and the universe the way it appears to us and did not seriously consider the Plato's belief. The real scientific endeavour to know the true nature of things actually started in the 19th century and by the middle of 19th century two historical scientific events took place. One was the discovery of Doppler Effect and the other was introduction of 'Theory of Evolution'. The discovery of Doppler Effect had the potential of revealing the true nature of things which this article would substantiate. But, 'Darwin's Theory of Evolution' had the negative impact on the scientific inquiry into nature of living things. Maxwell made very significant and decisive contribution for understanding the electromagnetic phenomenon but all his work was wasted by introduction of Theory of Relativity. Maxwell's work was virtually neglected because of lack of experimental evidence of existence of the ether. The Michelson-Morley experiment having been misinterpreted stands already proved in the article 'Ultimate Proof of Energy Theory of Matter & Cosmology'. Poincare initially wrote 'whether the ether exists or not matters little - let us leave that to the metaphysicians....., while some day, no doubt, the ether will be thrown aside as useless' but he in later part of his scientific work was

strong advocate of ether. Lorentz introduced the Ether Theory which had inherent basic errors but on the other hand he introduced the incorrect Lorentz Transformation. By introduction of 'Theories of Relativity' the ether was thrown away as useless, as Poincare had said, and nobody looked back at ether seriously and true nature of things remained the mystery for whole of the twentieth century.

I will not discuss the physics which emerged in the 20th century with theories of relativity and Quantum Mechanics in the present form because this article will prove these to be incorrect. In the last decade of 20th century the ether had to be reintroduced in the form of dark energy to explain the anomalies and discrepancies of experimental observations posed by adopting the ether free space. With theories of relativity and the Quantum Mechanics in the present form become wrong concepts, the dependent mathematics and theories were manipulated suit to the wrong theories. With these theories Einstein has said in 1954 "all these fifty years of conscious brooding have brought me no nearer to the answer, to the question, 'what are light quanta'. Nowadays every Tom, Dick & Harry, thinks he knows it, but he is mistaken". This article will give a convincing answer as to what the light or radiation is?

To know and understand everything we have space, matter, time and electromagnetic radiation or light as the basic perceivable constituents of the universe. With these basic constituents of the universe mankind has to derive all the conclusions regarding the true nature of everything. Up to the latter half of the 19th century though we had no clear understanding of time, matter and



electromagnetic radiation or light but at least we had the clear concept about space from the time of Aristotle. Space was known to be absolute from Aristotle till the last decade of 19th century and none of scientists or philosophers considered space to be otherwise. But in the last decade of 19th century or so, Lorentz by introducing the Lorentz transformation and the concept of length contraction in the direction of motion and time dilation changed the whole scenario. Now everything, though apparently, was made clear but nothing right happened thereafter. Thereafter, Einstein converted the Lorentz transformation into space-time concept, then geodesics, metrics and what not. The theories of relativity along with misinterpretation of cosmic background radiation and Hubble observations of red-shift of visible spectrum of electromagnetic radiation from galaxies finally converted absolute space into an emergent concept. Einstein in the Special Theory of Relativity as well as in General Theory of Relativity put forward the space-time concept wherein the length contraction and time dilation, as proposed by Lorentz, was in built. Thus, the foundation of incorrect physics was laid and the Big Bang Theory was the outcome of wrong and incorrect physics which is being adopted as the origin of the universe and the matter. There is another more important reason for almost accepting the Big Bang Theory as the origin of the universe and the matter; the reason being that no genuine theory was put forward wherein the space was considered as absolute; the actual and factual condition of space. As stated in the article 'Energy Theory of Matter & Cosmology' (Mohammad Shafiq Khan, 2010a) any theory which does not treat space as absolute shall have to be rejected sooner or later and the Big Bang Theory shall meet the same plight as Hoyle's Steady State Theory and this article should be sufficient proof for outrightly rejecting the Big Bang Theory henceforth. The second most important factor which also needs to be considered is that Newton considered space to be absolute but time also to be absolute. Whereas, Einstein considered space as emergent and time to be relative but absolute but both of them were not correct. The time, as we perceive it, seems to be absolute subject to the condition that the matter is absolute; but if the matter is not absolute time cannot be absolute. This article will prove that matter is not absolute so naturally time cannot be absolute but emergent. Since we have wrong conceptions about all the constituents of the universe namely space, time, electromagnetic radiation and matter and once we understand the basic constituents of the universe in true perspective then the true nature of everything would unfold and this article is precisely meant to unravel the actual position of these basic constituents of the universe.

Without going into well known historical background I would like to state here that the turning point was the 'null result' of the Michelson-Morley experiment and

misinterpretation of this experiment as clarified earlier 'Ultimate Proof of Energy Theory of Matter & Cosmology' (Mohammad Shafiq Khan, 2010c). Hence, it need not be repeated here as to how the 'null result' of Michelson-Morley experiment in fact proves the existence of 'ether' as the medium in which the electromagnetic radiation propagates and the only possible explanation for invariability of velocity of electromagnetic radiation irrespective of the relative motion of the source and the observer. Lorentz and Einstein without assigning any reason for invariability of velocity of electromagnetic radiation introduced the Lorentz contraction and time dilation which Einstein converted into the space-time concept wherein the Lorentz transformation is in built. The article 'Ultimate Proof of Energy Theory of Matter and Cosmology' is lacking in the conceptual clarifications; which fact I did realize later and had to work hard to come up with all the required details and conceptual clarifications so as to put forward the detailed Foundation of Theory of Everything: Non-living and Living Things. Scientists of the present day world will have an open field to investigate the true nature of everything which finally would lead to the fact that there is a universal creator.

Maxwell proposed that light propagates as electromagnetic radiation or electromagnetic wave with a fixed velocity by solving his field equations of electromagnetic dynamics; but his every step required the presence of a medium; which medium Michelson-Morley experiment in 1887 was misinterpreted to be absent. In the same year i.e. 1887, Woldemar Voigt proved mathematically that under Galilean transformation of coordinates between two coordinate systems in relative motion the D' Alembert's wave equation of space & time dependent scalar wave function is not invariant or the wave equation is not satisfied. Voigt considered the question of finding the linear transformation of two coordinates systems in relative motion that leaves the wave equation unchanged. Voigt arrived at the same transformations which later-on is very well known Lorentz transformation. Voigt solved the wave equation.

$$\nabla^2 \phi(x, y, z, t) = \frac{1}{u^2} \frac{\partial^2 \phi}{\partial t^2}(x, y, z, t)$$

wherein u is the velocity of the wave motion. Mathematically Voigt solution or Lorentz transformation is alright if the velocity of the electromagnetic wave motion in any way is not dependent on relative motion of the source and the observer. But since velocity of electromagnetic radiation c is function of wave length and the frequency as represented by the formula.

$$c = \lambda \nu$$

Though c is constant but wave length λ and the frequency ν are dependent on the relative motion of the source and the observer as experimentally confirmed by the Doppler Effect and the Hubble observations. It is here the secret of existence of ether lies. The change of the



frequency and the wavelength of the electromagnetic wave motion due to the relative motion of the source and the observer is the proof of existence of the medium and without the existence of the medium there is absolutely no other alternative by which change in the frequency and the wave length can be explained. The final result is that Lorentz transformation is not valid though mathematically correct. Accordingly, we will have to look for the alternative transformation and this long pending task will be accomplished in the article.

The most serious problem which Lorentz transformation creates and which needs to be discussed in detail is that Lorentz transformation makes the space and time interconnected in the complex and absurd manner. The space is always contracted in the direction of motion due to the relative motion of the two coordinate systems; whether the two coordinate systems are approaching or receding while as time is dilated depending upon the direction of approach or receding. The one way contraction and two way time dilation is logically a very absurd proposition. Philosophically this transformation converts absolute space into an emergent concept whereas the absolute nature of time is retained but converts time as a relative concept. This is the most serious blunder which the physicists have committed.

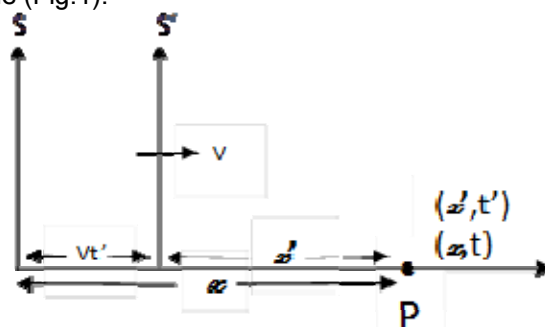
In Special Theory of Relativity, Einstein without assigning any reason to the invariability of velocity of electromagnetic radiation in the first postulate has assumed that laws of physics are invariable in different inertial reference frames in the second postulate. The invariability of the electromagnetic radiation defines the absolute reference frame, the reference frame in which ether is at rest. Thus, so far as the words of the first postulate on which Special Theory of Relativity is based is right but the reason of invariability of velocity of electromagnetic radiation makes the second postulate of Einstein; on which he based the Special Theory of Relativity; absolutely false. Lorentz transformation, Special Theory of Relativity and General Theory of Relativity would be proved to be incorrect through this article. Since in the 20th century these concepts and theories have found way in every branch of physics and thereby the foundation of wrong science was laid. Since the very foundation is wrong we need not discuss how the whole construction is wrong. It would be proper to correct the foundation and everything else would take care of itself.

Derivation of transformation between two coordinates systems in relative uniform motion

We will derive the alternative coordinate transformation between two coordinate systems which are in uniform relative motion with a uniform velocity say V. We will firstly derive the transformation graphically and then proceed to derive the transformation using the Maxwell's field equations. We will consider the simplest

possible situations so that even the undergraduate students of physics could also easily understand.

We will consider two coordinate systems or reference frames S and S' wherein the reference frame S' is moving with respect to reference frame S with a uniform velocity V in the direction of x - axis. The reference frame S is at rest. Assuming that at time zero in both reference frames the origins of the two coordinate systems are coinciding. This assumption could be objectionable to many readers but it will be subsequently proved that this assumption is valid. Let us assume that there is a source of light or electromagnetic radiation at the origin of S reference frame (Fig.1).



If V is positive it is the receding condition and if V is negative it is the approaching condition as V positive means that the origins are receding and V negative means the origins are approaching. The significance of this terminology would be clear subsequently.

For any point P, let the coordinates of distance and time be (x, t) and (x', t') in the two reference frames; where t and t' are the times which the light pulse would take to reach the origin of the two reference frames from the point P.

Keeping in view the invariability of velocity of light or electromagnetic radiation, the distance and time coordinates of any point P are connected by the formulae

$$x = ct \dots\dots\dots(1)$$

$$x' = ct' \dots\dots\dots(2)$$

Since the light pulse which reaches the origin of the reference frame S' has been emitted or reflected by point P before a time t' but during this period the origin of the reference frame must have moved ahead by a distant Vt'. Thus we have

$$x' + vt' = x \dots\dots\dots(3)$$

$$x' + vt' = x = ct$$

Since $x' = ct'$

$$ct' + vt' = ct$$

$$t'(c + v) = ct$$



$$t' = \frac{c}{c+v} t$$

$$t' = \frac{1}{1 + \frac{v}{c}} t \dots\dots\dots (4)$$

Now at $t = 0$; $t' = 0$, so the assumption of origins of two coordinates systems coinciding at time zero in both the coordinate systems is valid. These simple calculations would reveal that as the consequence of relative motion of two reference frames and keeping in view the invariability of velocity of light or electromagnetic radiation the two reference frames have different time frames and the transformation factor is

$$\gamma = \frac{1}{1 + \frac{v}{c}}$$

and if V is positive; then it is the receding condition and if V is negative; then that would be the approaching condition.

As the consequence of the difference in time frames of the two reference frames, let us take the equation (3).

$$x' + vt' = x$$

Since

$$t' = \gamma t$$

or

$$t' = \frac{t}{1 + \frac{v}{c}}$$

$$x' + \frac{vt}{1 + \frac{v}{c}} = x$$

$$x' = x - \frac{vt}{1 + \frac{v}{c}}$$

$$x' = \frac{x + x\frac{v}{c} - vt}{1 + \frac{v}{c}}$$

Since

$$t = \frac{x}{c} \text{ as per formula (1)}$$

$$x' = \frac{x + x\frac{v}{c} - x\frac{v}{c}}{1 + \frac{v}{c}}$$

$$x' = \frac{x}{1 + \frac{v}{c}} \dots\dots\dots (5)$$

As the consequence of the difference in the time frames of the two reference frames in relative uniform motion with a velocity V we have to adopt the equation (5). For receding condition V is positive the distance seems to be

contracted whereas for approaching condition distance seems to have increased or elongated.

Thus

$$x' = \gamma x \dots\dots\dots (6)$$

This should be the simplest possible proof that with the invariability of the velocity of electromagnetic radiation or light with respect to the observer the concept of only length contraction in the direction of motion and time dilation as proposed by Lorentz and which Einstein converted into space-time concept; wherein the length contraction and time dilation is in build; is not correct.

Thus the transformation of the time in two reference frames having the uniform relative motion with velocity V is

$$t' = \gamma t \dots\dots\dots (7)$$

Where

$$\gamma = \frac{1}{1 + \frac{v}{c}} \dots\dots\dots (8)$$

As the consequence of difference in time frames the coordinate or distances are to be adopted to have contracted or elongated depending upon the direction of motion of the moving reference frame.

The effect on space coordinates could be put as

$$x' + vt' = x \dots\dots\dots (3)$$

This is most significant and important transformation equation which has the potential of changing the whole of physics. Now if $t' = t$ then equation (3) becomes

$$x' = x - vt$$

This is the Galilean transformation which is not correct.

Now if we put it as $x' = \gamma(x - vt)$

Where

$$\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

That would be equivalent to the Lorentz transformation, which Einstein converted into the space-time concept which also would be proved absolutely incorrect.

Since there cannot be only the approaching and receding conditions of movement of the moving reference frame; so this transformation i.e. equation (4) and (3) would require generalization for different conditions of movement

Equation (4) could be written as

$$\left(1 + \frac{v}{c}\right) t' = t$$

Now this could be written as

$$\left(1 + \frac{v \cos \theta}{c}\right) t' = t$$

Where θ is the angle between the direction of movement of the moving frame of reference and the line drawn from



origin of the at rest frame of reference towards the point of observation. This equation could be also written as

$$\left(1 + \frac{\hat{c} \cdot \mathbf{v}}{c}\right)t' = t$$

Where \hat{c} is the unit directional vector of the light or electromagnetic radiation when placed at the origin of the at rest frame of reference. Thus

$$\gamma = \frac{1}{1 + \frac{\hat{c} \cdot \mathbf{v}}{c}} \dots\dots\dots(9)$$

and

$$t' = \gamma t \dots\dots\dots(7)$$

The other important equation is

$$x' + vt' = x \dots\dots\dots(3)$$

Equations (9), (7) and (3) would form the basis of all the transformations. But if the distances or coordinates are assessed with the help of electromagnetic radiations then we have to adopt equation (5) which could be written as

$$x' = \gamma x \dots\dots\dots(10)$$

These elementary derivations have great significance for working out the coordinate transformation and for clarification readers need to refer the article 'Ultimate Proof of Energy Theory of Matter & Cosmology' wherein it is stated that Michelson-Morley experiment in fact proves the existence of the ether; when we consider the wavenature of the electromagnetic radiation and the Doppler Effect.

Since velocity=distance/time; velocity being invariable and different observers have different time frames therefore as the consequence of difference in time frames we have to adopt the transformation factor for distances also for mathematical computations. Factually the space neither is contracted nor elongated due to the relative motion of observers.

Keeping in view the invariability of velocity of the light irrespective of the relative uniform motion of the source and the observer; then since the length of the arms of the Michelson- Morley experiment is the same; so in the reference frame of the ether at rest; the time taken by the light or electromagnetic radiation in traversing the two arms is the same and hence there has not to be any fringe-shift.

Now if we consider the experiment in the reference frame in which earth is at rest, which implies that this reference frame is in relative motion with respect to the ether at rest frame of reference with the velocity; say V . Due to the motion of the earth the reference frame in which earth is at rest, the time frame is different according to the equation (7). Now consider the Fig.2 of the article 'Ultimate Proof of Energy Theory of Matter & Cosmology' (Mohammad Shafiq Khan, 2010c). If t_{L1} and t_{L2} is the time taken by the light to travel in the two arms, going and

coming back, of the Michelson Morley experiment in the ether at rest frame of reference; then since the velocity of the light or electromagnetic radiation is invariable; the time taken is

$$t_{L1} = t_{L2} = \frac{2l}{c}$$

In the earth at rest frame of reference, since earth is in motion with respect to the ether so the time frame of the earth at rest frame of reference is different. The time t'_{L1} in the earth at rest frame of reference is equal to

$$t'_{L1} = \gamma t_{L1} \text{ and } t'_{L2} = \gamma t_{L2}$$

and since $t_{L1} = \frac{2l}{c}$ and the velocity of light being the same

$$t'_{L1} = \frac{2l'}{c} \qquad t'_{L2} = \frac{2l'}{c}$$

So $\gamma t_{L1} = \frac{2l'}{c}$ and $\gamma t_{L2} = \frac{2l'}{c}$

$$\gamma \frac{2l}{c} = \frac{2l'}{c} \qquad \text{Hence } l' = \gamma l.$$

This is exactly as derived in the graphical method in equation (10) (γ for two arms could be different depending upon the component of velocity of earth along the two arms of the Michelson-Morley experiment). Thus, as the consequence of the difference in time frames of two reference frames in uniform relative motion, we have to adopt length contraction or elongation for the mathematical computations. Though the length is the same but in the moving frame of reference we have to adopt a contracted or elongated length depending upon the direction of motion of the earth.

There is actually no change in distances or space due to motion of the reference frames & if we carry out the measurements of physical quantities from the moving reference frame physically no change is to be introduced excepting in respect of time; but if we carry out the measurements of physical quantities through the electromagnetic radiation or light we have to allow for the contraction or elongation of the distances depending upon the direction of motion of the moving reference frames due to peculiar nature of the electromagnetic radiation or light and difference of the time frames.

In order to derive the correct general coordinate transformation between two reference frames in the uniform relative motion and if any observation is carried out with the help of radiation or light we have to keep following main characteristics of the light or radiation in mind.

- (i) The wave nature of the light or radiation.
- (ii) Invariability of the velocity of electromagnetic radiation irrespective of the relative motion of the source and the observer.
- (iii) Doppler Effect.

Any coordinate transformation between two reference frames in uniform relative motion should fulfill these three



basic conditions to be valid and correct. To accomplish this task it would suffice to very briefly mention here that Maxwell considered light or radiation as an electromagnetic wave motion by arriving at a wave equation of electric and magnetic fields with the velocity

$$c = \frac{1}{\sqrt{\epsilon_0 \mu_0}}$$

where the value of c exactly coincides with the measured value of velocity of light. But the Maxwell's concept of light or radiation being the electromagnetic radiation needed the medium which was named as aether or ether and due to the misinterpretation of the 'null' result of Michelson-Morley experiment this concept was almost rejected but then different concepts and theories were put forward and adopted which include the concept of photon & quanta etc. Since through this article the concept of existence of the medium, the ether is being revived and according the starting point has to be the Maxwell's field equations which are as under:

$$\nabla \cdot \mathbf{E} = \frac{\rho}{\epsilon_0} \dots\dots\dots(11)$$

$$\nabla \cdot \mathbf{B} = 0 \dots\dots\dots(12)$$

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \dots\dots\dots(13)$$

$$\nabla \times \mathbf{B} = \mu_0 \mathbf{J} + \mu_0 \epsilon_0 \frac{\partial \mathbf{E}}{\partial t} \dots\dots\dots(14)$$

$$\mathbf{J} = \mathbf{v} \frac{\partial \rho}{\partial t} \dots\dots\dots(15)$$

Due to the 'null' result of the Michelson-Morley experiment it was presumed that there is no medium and the permeability μ_0 and permittivity ϵ_0 are applicable for vacuum.

Since vacuum can have neither charge density nor any current can pass through the vacuum and accordingly for vacuum the Maxwell's field equations reduce to

$$\nabla \cdot \mathbf{E} = 0 \dots\dots\dots(16)$$

$$\nabla \cdot \mathbf{B} = 0 \dots\dots\dots(17)$$

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \dots\dots\dots(18)$$

$$\nabla \times \mathbf{B} = \mu_0 \epsilon_0 \frac{\partial \mathbf{E}}{\partial t} \dots\dots\dots(19)$$

Where

$$c = \frac{1}{\sqrt{\epsilon_0 \mu_0}}$$

Applying $\nabla \times$ on both sides of equation (18) & (19)

$$\nabla \times (\nabla \times \mathbf{E}) = -\frac{\partial}{\partial t} (\nabla \times \mathbf{B}) = -\epsilon_0 \mu_0 \frac{\partial^2 \mathbf{E}}{\partial t^2}$$

$$\nabla \times (\nabla \times \mathbf{B}) = \mu_0 \epsilon_0 \frac{\partial}{\partial t} \nabla \times \mathbf{E} = -\mu_0 \epsilon_0 \frac{\partial^2 \mathbf{B}}{\partial t^2}$$

Since $\nabla \times (\nabla \times \mathbf{P}) = \nabla(\nabla \cdot \mathbf{P}) - \nabla^2 \mathbf{P}$

So finally $c^2 \nabla^2 \mathbf{E} = \frac{\partial^2 \mathbf{E}}{\partial t^2} \dots\dots\dots(20)$

$$c^2 \nabla^2 \mathbf{B} = \frac{\partial^2 \mathbf{B}}{\partial t^2} \dots\dots\dots(21)$$

A special reference of the article 'Collapse of SRT 1: Derivation of Electrodynamics Equations from Maxwell Field Equations' by Sankar Hajra and Anita Ghosh (2005) is required here; wherein they have showed the invariance of the equations (20) and (21) under Lorentz transformation but raised serious questions about the applicability of Lorentz time transformation between two reference frames in relative uniform motion as the said transformation contradicts the principles of electrodynamics and also showed that consideration of Lorentz transformation as 'real' would be over simplification of the electrodynamics and of the nature. It would be interesting to note that while considering the Doppler Effect especially the transverse Doppler Effect they accidentally arrived at the transformation factor at equation (46) and (47) of the article which I have arrived at by the graphical method.

Since through this article the existence of the ether as medium of propagation of electromagnetic phenomenon is being revived; hence we assign ϵ_0 as permittivity and μ_0 as the permeability to the ether with ρ as the charge density and \mathbf{J} as current density. The concept of charge and current densities will be clear in the latter part of the article. Taking Maxwell's field equations (11) to (15) without going into discussions regarding the units:

Now Laplacian could be expressed as

$$\nabla^2 \mathbf{P} = \nabla(\nabla \cdot \mathbf{P}) - \nabla \times (\nabla \times \mathbf{P})$$

Now applying $\nabla \times$ to the equation (13) on both sides

$$\nabla \times (\nabla \times \mathbf{E}) = -\frac{\partial}{\partial t} (\nabla \times \mathbf{B})$$

$$\nabla(\nabla \cdot \mathbf{E}) - \nabla^2 \mathbf{E} = -\frac{\partial}{\partial t} (\epsilon_0 \mu_0 \frac{\partial \mathbf{E}}{\partial t} + \mu_0 \mathbf{J})$$

$$\nabla(\frac{\rho}{\epsilon_0}) - \nabla^2 \mathbf{E} = -(\epsilon_0 \mu_0 \frac{\partial^2 \mathbf{E}}{\partial t^2} + \mu_0 \frac{\partial \mathbf{J}}{\partial t})$$

$$\nabla^2 \mathbf{E} - \epsilon_0 \mu_0 \frac{\partial^2 \mathbf{E}}{\partial t^2} = \nabla \frac{\rho}{\epsilon_0} + \mu_0 \frac{\partial \mathbf{J}}{\partial t}$$

Electric field would adopt the wave characteristics with the velocity of

$$c = \frac{1}{\sqrt{\epsilon_0 \mu_0}} \text{ if}$$

$$\nabla \frac{\rho}{\epsilon_0} + \mu_0 \frac{\partial \mathbf{J}}{\partial t} = 0 \dots\dots\dots(22)$$

So that

$$\nabla^2 \mathbf{E} - \epsilon_0 \mu_0 \frac{\partial^2 \mathbf{E}}{\partial t^2} = 0 \dots\dots\dots(23)$$

Equation (22) could be also written as



$$\nabla \rho = -\mu_0 \epsilon_0 \frac{\partial \mathbf{J}}{\partial t} \dots\dots\dots (24)$$

Similarly

$$\nabla \times (\nabla \times \mathbf{B}) = \epsilon_0 \mu_0 \frac{\partial}{\partial t} (\nabla \times \mathbf{E}) + \mu_0 \nabla \times \mathbf{J}$$

$$\nabla (\nabla \cdot \mathbf{B}) - \nabla^2 \mathbf{B} = -\epsilon_0 \mu_0 \frac{\partial^2 \mathbf{B}}{\partial t^2} + \mu_0 \nabla \times \mathbf{J}$$

$$\nabla^2 \mathbf{B} - \epsilon_0 \mu_0 \frac{\partial^2 \mathbf{B}}{\partial t^2} = -\mu_0 \nabla \times \mathbf{J}$$

In order magnetic field would also adopts the wave characteristics with the velocity of $c = \frac{1}{\sqrt{\epsilon_0 \mu_0}}$

$$\nabla^2 \mathbf{B} - \epsilon_0 \mu_0 \frac{\partial^2 \mathbf{B}}{\partial t^2} = 0 \dots\dots\dots (25)$$

$$\text{if } \nabla \times \mathbf{J} = 0 \dots\dots\dots (26)$$

Now applying $\nabla \cdot$ on both sides of equation (22)

$$\nabla \cdot \nabla \rho = -\mu_0 \epsilon_0 \frac{\partial}{\partial t} (\nabla \cdot \mathbf{J})$$

$$\nabla^2 \rho = -\mu_0 \epsilon_0 \frac{\partial}{\partial t} (\nabla \cdot \mathbf{J}) \dots\dots\dots (27)$$

From equation (14) we have

$$\mu_0 \mathbf{J} = \nabla \times \mathbf{B} - \epsilon_0 \mu_0 \frac{\partial \mathbf{E}}{\partial t}$$

Applying $\nabla \cdot$ On both sides of this equation

$$\mu_0 \nabla \cdot \mathbf{J} = \nabla \cdot (\nabla \times \mathbf{B}) - \epsilon_0 \mu_0 \frac{\partial}{\partial t} (\nabla \cdot \mathbf{E})$$

$$\mu_0 \nabla \cdot \mathbf{J} = \nabla \times (\nabla \cdot \mathbf{B}) - \epsilon_0 \mu_0 \frac{\partial}{\partial t} \left(\frac{\rho}{\epsilon_0} \right)$$

Since $\nabla \cdot \mathbf{B} = 0$ so

$$\mu_0 \nabla \cdot \mathbf{J} = -\mu_0 \frac{\partial \rho}{\partial t}$$

$$\nabla \cdot \mathbf{J} = -\frac{\partial \rho}{\partial t} \dots\dots\dots (28)$$

Applying equation (28) to equation (27)

$$\nabla^2 \rho = \mu_0 \epsilon_0 \frac{\partial^2 \rho}{\partial t^2}$$

So

$$\nabla^2 \rho - \mu_0 \epsilon_0 \frac{\partial^2 \rho}{\partial t^2} = 0 \dots\dots\dots (29)$$

Thus the charge density also adopts the same wave characteristics with the same velocity of $c = \frac{1}{\sqrt{\mu_0 \epsilon_0}}$

Now taking up equation (26) and applying $\nabla \times$

$$\nabla \times (\nabla \times \mathbf{J}) = 0$$

$$\nabla (\nabla \cdot \mathbf{J}) - \nabla^2 \mathbf{J} = 0$$

Applying equation (28) to this equation

$$-\nabla \left(\frac{\partial \rho}{\partial t} \right) - \nabla^2 \mathbf{J} = 0$$

$$-\frac{\partial}{\partial t} \nabla \rho - \nabla^2 \mathbf{J} = 0$$

Now applying equation (24) to this equation

$$-\frac{\partial}{\partial t} \left(-\epsilon_0 \mu_0 \frac{\partial \mathbf{J}}{\partial t} \right) - \nabla^2 \mathbf{J} = 0$$

$$\epsilon_0 \mu_0 \frac{\partial^2 \mathbf{J}}{\partial t^2} - \nabla^2 \mathbf{J} = 0$$

$$\text{Or } \nabla^2 \mathbf{J} - \epsilon_0 \mu_0 \frac{\partial^2 \mathbf{J}}{\partial t^2} = 0 \dots\dots\dots (30)$$

Hence the current density \mathbf{J} also adopts the same wave characteristics of a wave motion with the same velocity of $c = \frac{1}{\sqrt{\epsilon_0 \mu_0}}$.

Thus by adopting the charge density and the current density to the medium of ether the wave characteristics of the electromagnetic waves remains unchanged. Hence we have the following two wave equations for the electric and magnetic fields while taking $c^2 = \frac{1}{\epsilon_0 \mu_0}$ and for the ether ϵ_0 and μ_0 are the permittivity & permeability of the ether.

$$c^2 \nabla^2 \mathbf{E} = \frac{\partial^2 \mathbf{E}}{\partial t^2} \dots\dots\dots (31)$$

$$c^2 \nabla^2 \mathbf{B} = \frac{\partial^2 \mathbf{B}}{\partial t^2} \dots\dots\dots (32)$$

Where $C = \frac{1}{\sqrt{\epsilon \mu}}$ is the general electromagnetic wave equation for electromagnetic radiation or light where ϵ and μ are the permittivity and permeability of the electric field and magnetic field respectively of any of the medium. The perusal of these equations would reveal that the electromagnetic radiation propagates in the medium with the velocity defined by the permittivity and permeability of the medium and has no reference to the relative motion of the source of the radiation and the observer. However these equations confirm the wave nature of the radiation or light which is in accordance with the first condition required to work out the transformation. The second important condition for deriving transformation is the invariability of velocity of the radiation or light irrespective of the relative motion of the source and the observer. From the graphical method we have derived the following four equations.

$$t' = \gamma t \dots\dots\dots (7)$$



$$x' + vt' = x \dots\dots\dots (3)$$

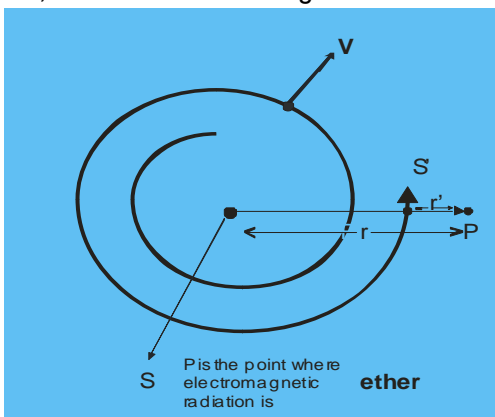
As the consequence of above, we have to adopt

$$x' = \gamma x \dots\dots\dots (10)$$

where

$$\gamma = \frac{1}{1 + \frac{\hat{c} \cdot \mathbf{v}}{c}}$$

Though we know the value of γ ; we will have to derive the value of γ from Maxwell's field equations and wave equations for this transformation to be correct. We will adopt the spherical polar coordinates as this coordinate system represents the motions in nature. For representing this transformation in spherical polar coordinate, let us consider the Fig.2 below:



Let S' be the moving frame of reference and at time $t=t'=0$ origins of two reference frames S' and S be coinciding where S is the reference frame which is at rest with respect to ether. Let V be the recessional velocity of the S' frame of reference. Then the graphically derived transformation for these spherical polar coordinates could be written as

$$\begin{aligned} \mathbf{r}' + \mathbf{v}t' &= \mathbf{r} \\ \text{or } \mathbf{r}' &= \mathbf{r} - \gamma \mathbf{v}t \\ t' &= \gamma t \end{aligned}$$

as the consequence of equation (10) we have to adopt for space (because $t' = \gamma t$)

$$r' = \gamma r$$

Accordingly we will apply this transformation to the electromagnetic wave equations (23) & (25). We will adopt the spherical polar coordinates where under the solution for a monochromatic electromagnetic radiation or light includes the wave number and angular frequency. The solution in the reference frame S being

$$\mathbf{E} = \mathbf{E}_0 e^{i(k_0 \hat{c} \cdot \mathbf{r} - \omega_0 t)}$$

Let us consider the coordinate transformation between two reference frames in the relative uniform motion with the recessional velocity V . For simplification of the mathematical representation we will consider that

the origins of the two reference frames coincide at the zero time in both reference frames. This assumption has already been showed to be right in the graphical method. The perusal of the electromagnetic wave equations reveal that the electromagnetic phenomena requires the wave motion to propagate in a medium; with the permeability μ_0 and permittivity ϵ_0 ; with the velocity $c = \frac{1}{\sqrt{\epsilon_0 \mu_0}}$ without any reference to the relative motion of

the source and the observer. This evidently is a very strange phenomenon which has not been resolved in true perspective till date. This phenomenon would have been since resolved had the Michelson Morley experiment not misinterpreted? Let us resolve this problem once for all times. The Laplacian in spherical polar coordinates could be written as

$$\nabla^2 = \frac{\partial^2}{\partial r^2} + \frac{2}{r} \frac{\partial}{\partial r} + \frac{1}{r^2} \frac{\partial^2}{\partial \theta^2} + \frac{\cos \theta}{r^2 \sin \theta} \frac{\partial}{\partial \theta} + \frac{1}{r^2 \sin^2 \theta} \frac{\partial^2}{\partial \phi^2}$$

In the conditions in which we have placed the two coordinate systems Laplacian will reduce to

$$\nabla^2 = \frac{\partial^2}{\partial r^2} + \frac{2}{r} \frac{\partial}{\partial r}$$

Since wave equation has second order derivatives and by not taking imaginary numbers into consideration the Laplacian in the defined conditions is reduced to

$$\nabla^2 = \frac{\partial^2}{\partial r^2}$$

The wave equation could be written under the defined conditions of spherical polar coordinate, in the reference frame which is at rest with respect to ether as

$$c^2 \frac{\partial^2 \mathbf{E}}{\partial r^2} = \frac{\partial^2 \mathbf{E}}{\partial t^2} \dots\dots\dots (33)$$

$$c^2 \frac{\partial^2 \mathbf{B}}{\partial r^2} = \frac{\partial^2 \mathbf{B}}{\partial t^2} \dots\dots\dots (34)$$

With the solution for the monochromatic electromagnetic radiation as

$$\mathbf{E} = \mathbf{E}_0 e^{i(k_0 \hat{c} \cdot \mathbf{r} - \omega_0 t)}$$

The electromagnetic wave equations for the monochromatic electromagnetic radiation in the moving frame of reference S' would be

$$c^2 \frac{\partial^2 \mathbf{E}'}{\partial r'^2} = \frac{\partial^2 \mathbf{E}'}{\partial t'^2} \dots\dots\dots (35)$$

$$c^2 \frac{\partial^2 \mathbf{B}'}{\partial r'^2} = \frac{\partial^2 \mathbf{B}'}{\partial t'^2} \dots\dots\dots (36)$$

With the solution

$$\mathbf{E}' = \mathbf{E}'_0 e^{i(k_1 \hat{c} \cdot \mathbf{r}' - \omega_1 t')} \dots\dots\dots (37)$$



The transformation in polar coordinates could be written under the defined conditions as

$$\mathbf{r}' + \mathbf{v}t' = \mathbf{r} \dots\dots\dots (38)$$

Or $\mathbf{r}' = \mathbf{r} - \gamma\mathbf{v}t' \dots\dots\dots (39)$

and $t' = \gamma t \dots\dots\dots (40)$

As the consequence we have to adopt

$$\mathbf{r}' = \gamma\mathbf{r} \dots\dots\dots (41)$$

Now taking up the (35) and applying the transformation

$$c^2 \frac{\partial^2}{\partial r'^2} \mathbf{E}'_o e^{i(k_1 \hat{c} \cdot \mathbf{r}' - w_1 t')} = \frac{\partial^2}{\partial t'^2} \mathbf{E}'_o e^{i(k_1 \hat{c} \cdot \mathbf{r}' - w_1 t')}$$

We have to apply $\partial r' = \gamma \partial r$ & applying the transformation

$$\frac{c^2}{\gamma^2} \frac{\partial^2}{\partial r^2} \mathbf{E}'_o e^{i\{k_1 \hat{c} \cdot (\mathbf{r} - \gamma\mathbf{v}t) - w_1 \gamma t\}} = \frac{1}{\gamma^2} \frac{\partial^2}{\partial t^2} \mathbf{E}'_o e^{i\{k_1 \hat{c} \cdot (\mathbf{r} - \gamma\mathbf{v}t) - w_1 \gamma t\}}$$

$$-\frac{c^2}{\gamma^2} \{k_1^2\} \mathbf{E}' = -\frac{1}{\gamma^2} \{-k_1 \gamma \hat{c} \cdot \mathbf{v} - \gamma w_1\}^2 \mathbf{E}'$$

$$c^2 k_1^2 = \gamma^2 (k_1 \hat{c} \cdot \mathbf{v} + w_1)^2$$

As $w_1 = k_1 c$

$$\gamma = \frac{ck_1}{k_1 \hat{c} \cdot \mathbf{v} + k_1 c}$$

$$\gamma = \frac{1}{1 + \frac{\hat{c} \cdot \mathbf{v}}{c}}$$

This should be the proof that electromagnetic wave equation is invariant under this transformation.

Now taking the equation (12) in the two reference frames

$$\nabla_{r'} \cdot \mathbf{B}' = \nabla_r \cdot \mathbf{B} = 0$$

Since $\mathbf{B}' = \mathbf{B}'_o e^{i(k_1 \hat{c} \cdot \mathbf{r}' - w_1 t')}$

and $\mathbf{B} = \mathbf{B}_o e^{i(k_o \hat{c} \cdot \mathbf{r} - w_o t)}$

$$\nabla_{r'} \cdot \mathbf{B}'_o e^{i(k_1 \hat{c} \cdot \mathbf{r}' - w_1 t')} = \nabla_r \cdot \mathbf{B}_o e^{i(k_o \hat{c} \cdot \mathbf{r} - w_o t)}$$

So $ik_1 \mathbf{B}' = ik_o \mathbf{B}$

Hence $k_1 \mathbf{B}' = k_o \mathbf{B} \dots\dots\dots (42)$

Now taking the wave equation (36)

$$c^2 \frac{\partial^2 \mathbf{B}'}{\partial r'^2} = \frac{\partial^2 \mathbf{B}'}{\partial t'^2}$$

From equation (42) we have $\mathbf{B}' = \frac{k_o}{k_1} \mathbf{B}$ and applying this to the right side and applying the transformation.

$$c^2 \frac{\partial^2 \mathbf{B}'}{\partial r'^2} = \frac{1}{\gamma^2} \frac{\partial^2}{\partial t^2} \left\{ \frac{k_o}{k_1} \mathbf{B} \right\}$$

$$c^2 \frac{\partial^2 \mathbf{B}'}{\partial r'^2} = \frac{k_o}{k_1 \gamma^2} \frac{\partial^2}{\partial t^2} \mathbf{B}$$

$$-c^2 k_1^2 \mathbf{B}' = -\frac{k_o}{k_1 \gamma^2} w_o^2 \mathbf{B}$$

Applying equation (42) back on right side

$$-c^2 k_1^2 \mathbf{B}' = -\frac{k_o}{k_1 \gamma^2} w_o^2 \frac{k_1}{k_o} \mathbf{B}'$$

Hence

$$c^2 k_1^2 = \frac{w_o^2}{\gamma^2}$$

Since $w_o = k_o c$

$$c^2 k_1^2 = \frac{k_o^2 c^2}{\gamma^2}$$

Hence $\gamma k_1 = k_o \dots\dots\dots (43)$

$$k_1 = \left(1 + \frac{\hat{c} \cdot \mathbf{v}}{c} \right) k_o \dots\dots\dots (44)$$

Since $k_1 = \frac{2\pi}{\nu_1}$ $k_o = \frac{2\pi}{\nu_o}$

Hence

$$\nu_1 = \frac{\nu_o}{1 + \frac{\hat{c} \cdot \mathbf{v}}{c}} \dots\dots\dots (45)$$

Under receding condition $\hat{c} \cdot \mathbf{v}$ is +ve; so observed frequency in moving reference frame is

$$\nu_1 = \frac{\nu_o}{1 + \frac{\hat{c} \cdot \mathbf{v}}{c}}$$

and wavelength is $\lambda_1 = \left(1 + \frac{\hat{c} \cdot \mathbf{v}}{c} \right) \lambda_o$

Thus under the receding condition frequency of the electromagnetic radiation is observed to be reduced and the observed wave length of the electromagnetic radiation is increased which means red-shifting.

Under approaching condition $\hat{c} \cdot \mathbf{v}$ is -ve

We have

$$\nu_1 = \frac{\nu_o}{1 - \left| \frac{\hat{c} \cdot \mathbf{v}}{c} \right|}$$



$$\text{and } \lambda_1 = \left(1 - \left| \frac{\hat{\mathbf{c}} \cdot \mathbf{v}}{c} \right| \right) \lambda_o$$

Thus, under approaching condition the observed frequency is increased and the observed wavelength of the electromagnetic radiation is reduced which means blue-shifting.

Hence the third condition for the transformation to be correct and valid being that the Doppler Effect should be justified. This condition is perfectly justified by this transformation.

Readers must have realized that we have derived the transformation under very simplified situations. The $\hat{\mathbf{c}}$ is the unit directional vector of electromagnetic radiation when placed at the origin of the coordinate system which is at rest with respect to the ether. This transformation could now be generalized for all conditions and coordinate systems. The transformation is represented by the formulae (38) to (41).

The conclusion which could be drawn from the coordinate transformation between two reference frames in uniform relative motion; while one reference frame is at rest with respect to the ether are:

- There is an absolute reference frame and this reference frame is at rest with respect to the ether.
- Time frame of any reference frame which is in motion with respect to the ether is different and the time frame of the moving reference frame depends upon the velocity of the reference frame with respect to the ether and the direction of the motion of the moving reference frame; so time is a relative concept.
- Space is absolute.
- Light or radiation is the electromagnetic phenomenon.
- When the observations about physical quantity is carried out with the help of electromagnetic radiation and because of the nature of the electromagnetic phenomenon which involves both space as well as time and as the time frame of the moving frame of reference is different so we have to allow for the contraction or elongation of the space depending upon the direction of motion and the velocity of the moving frame of reference for the mathematical computations.

The experimental proofs of these conclusions are

- The invariability of velocity of electromagnetic radiation or light irrespective of the relative motion of the source and the observer.
- The Doppler Effect and Hubble observations.
- The exact coinciding of the value of velocity of electromagnetic radiation or light c with the value of

$$\frac{1}{\sqrt{\epsilon_0 \mu_0}}$$

as experimentally verified. This declares clearly that light or radiation is an electromagnetic phenomenon.

If we assume that Doppler Effect is due to the contraction or elongation of the space because of the

relative motion of the source and the observer of electromagnetic radiation and the difference of time frames is due to and as the consequence of this phenomenon then there had to be the reverse phenomenon of the Doppler Effect i.e. for receding conditions we should have blue-shifting and for approaching conditions we should have red-shifting. Hence our conclusion that only the time frame of the moving reference frame changes is absolutely justified and correct. That is why Doppler Effect is of great significance for drawing these conclusions. Since the moving reference frame or the observer is having a different time frame naturally the observer on the moving reference frame would observe the electromagnetic phenomenon of the electromagnetic radiation on its time frame and according the transformation factor

$$\gamma = \frac{1}{1 + \frac{\hat{\mathbf{c}} \cdot \mathbf{v}}{c}}$$

be incorporated for the moving observer. Thus the observer would see red-shifting under receding conditions and blue-shifting of the electromagnetic radiation under approaching condition; whereas the velocity of the electromagnetic radiation would remain unchanged; a condition laid by the wave equation of the electromagnetic radiation.

In fact once the electromagnetic radiation is emitted by a source then the medium defines the velocity of the electromagnetic radiation and in case of ether as the medium the permittivity ϵ_0 and permeability μ_0 defines the velocity of the electromagnetic radiation. Secondly the nature has balanced the difference in the time frames in such a manner that the velocity of the electromagnetic radiation with respect to the observer on the moving reference frames remains unchanged. There, then is the secret of existence of the luminiferous ether as the cause of invariability of the velocity of light or electromagnetic radiation and that the light or radiation is the electromagnetic phenomenon.

It would be interesting to know the brief history of ether. The concept of the ether was firstly proposed by one of the great philosophers namely Rene Descartes in 1683. Newton rejected the concept of ether and the concept that light is the wave motion traveling in ether. Then the nature of light in true sense baffled the scientists and ether was accepted by some and rejected by some and no formal theory of existence of ether was put forward till Clerk Maxwell formally introduced the concept of luminiferous ether in 1864 in 'A Dynamical Theory of the Electromagnetic Field' which lacked in details of the medium of propagation of electromagnetic radiation but stress was laid on the mathematical formulations. There were several clues in the article even to the extent that gravitation could be an electromagnetic phenomenon but in absence of the proof of the luminiferous ether no



attention was paid to Maxwell's pioneering work on electromagnetic dynamics. In 1873 Clerk Maxwell wrote 'A Treatise on Electricity and Magnetism' in which he again put forth the concept that light is the electromagnetic phenomenon in the chapter 'Electromagnetic Theory of Light' with sufficient mathematical and experimental basis along with the concept of the medium as the means of propagation of the electromagnetic phenomenon. Finally with the misinterpretation of the Michelson-Morley experiment the concept of luminiferous ether was almost buried for good. Lorentz and Einstein without going into the cause of invariability of velocity of light or radiation were misled by mathematical illusion and the theories of relativity were born and thereby the doors of the understanding and knowing everything were closed. Thereafter every absurd thing happened in every field of physics. Absolutely wrong foundation was laid and the true nature of everything continues to be mystery till date. Mathematical misrepresentation of everything followed and is being pursued till date.

As already stated that in order to understand the universe we need to be clear about the basic constituents of the universe namely space, time, matter and radiation. Absolute space was converted into an emergent concept, emergent time was converted into relative concept but its absolute nature was retained, light or radiation was given the name of photons or quanta without even clarifying as to what the same is; which as already stated has been honestly conceded by Einstein. Matter though understood but there are several drawbacks with the understanding of the actual nature of matter. Forces in nature are yet to be properly explained. Everything seems to be explained by mathematical misrepresentations but in true sense there is absolute confusion and chaos as to the actual nature of everything and the natural forces because of lack of proper understanding of the basic constituents of the universe.

So far we have established that space is absolute, time is relative concept and the radiation or light is an electromagnetic phenomenon and in addition to the matter there is ether which fills the space. The knowledge of existence of ether in true sense removes the curtain behind which the nature of everything is hidden which Plato has philosophically visualized centuries before.

Classical physics, though not correct, but since the time frame of the world and the reference frames which are moving at low velocities with respect to earth does not change considerably, so the classical physics is valid for some phenomena but the theories of relativity and Quantum Mechanics in the present form cannot be correct and accordingly the space-time concept, Minkowski space-time geometry, Big Bang Theory and every concept and theory based on these theories cannot be correct as the very foundation of these theories is not right. These derivations were made in the simplest

possible manner so that there is no controversy and nobody could unnecessarily challenge these derivations.

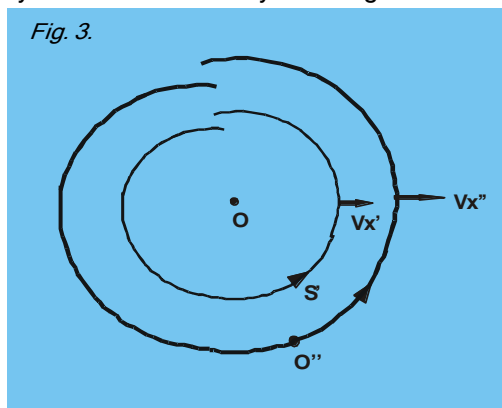


Fig. 3.

Consider the Fig.3 where the source of the electromagnetic radiation O'' is the reference frame S'' and the component of the velocity due to which there is recessional motion be $V_{x''}$. The time frame of reference frame S'' is connected to the time frame of the absolute reference frame by the formula.

$$t'' = \gamma_2 t$$

$$\gamma_2 = \frac{1}{1 + \frac{V_{x''}}{c}}$$

Thus the wave length as observed by observer in the absolute reference frame at O would be

$$\lambda'' = \left(1 + \frac{V_{x''}}{c}\right) \lambda_o \dots\dots\dots (46)$$

So
$$\lambda_o = \frac{\lambda''}{1 + \frac{V_{x''}}{c}} \dots\dots\dots (47)$$

Now if there is an observer of the same electromagnetic radiation on the reference frame S' which has the outward velocity component $V_{x'}$ (where $V_{x''} > V_{x'}$; receding condition) then the observer will observe the wavelength in accordance with his time frame with respect to the medium. Since this is also a receding condition so observer on S' will see the radiation with the wavelength

$$\lambda' = \left(1 + \frac{V_{x'}}{c}\right) \lambda_o$$

Since λ_o is given in (47)

$$\lambda' = \frac{\left(1 + \frac{V_{x'}}{c}\right)}{1 + \frac{V_{x''}}{c}} \lambda''$$

$$\lambda' = \left(\frac{C + V_{x'}}{C + V_{x''}}\right) \lambda'' \dots\dots\dots (48)$$

This is the simplest possible derivation of Doppler Effect and it should be the sufficient proof for the correctness of transformation derived herein and the concept that the reference frame with uniform recessional motion with



respect to the ether has its own time frame. Hubble observations are simply the observations of the Doppler Effect and have the reference point of the time frame of the sun; since earth being in almost circular motion with respect to the sun so the time frame of the earth is the same as that of sun. Making the law out of the Doppler Effect would just not be right because correlating distances with the red-shift would not be correct but simply the mathematical misrepresentation. Since sun is also having the spiral movement as do the other stars and galaxies; for reasons which would be clear in the latter part of the article; and distances requiring the correction for mathematical representations and additionally the distances between stars and galaxies ever increasing the whole Hubble observation data need to be re-evaluated and as such the age of the universe as deduced cannot be correct. To this extent the inferences drawn in the article 'Ultimate Proof of Energy Theory of Matter & Cosmology' need the correction.

Red-shift is represented by $\frac{\Delta\lambda}{\lambda}$. From the above formula

we can derive that if λ_o is the wave length of the radiation emitted by the far off galaxy as observed by the observer in the absolute reference frame and λ_{so} is the same of the sun as received by the observer in the absolute reference frame; then

$$\text{Red-shift} = \frac{\Delta\lambda}{\lambda_{sun}} = \frac{\lambda_o - \lambda_{so}}{\lambda_{so}}$$

λ_o and λ_{so} depends upon the time frame of the far off galaxy or star and the sun respectively which has nothing to do with the distances which are ever increasing. Even if there may be some correlation between red-shift and distances then the Hubble constant will vary with time because the distances are never constant.

In classical physics the space is absolute, time is absolute, electromagnetic radiation not properly understood & matter not understood; the mathematical physics of classical physics is not valid or correct. In the relativistic physics and the physics which evolved in the twentieth century space is emergent, time relative but absolute; electromagnetic radiation & matter supposedly understood but factually misunderstood; so the mathematical physics which evolved is neither applicable nor correct. This article is meant to set the fundamentals right and accordingly different mathematical physics shall have to evolve to represent the true nature of everything. The objective of this article is to conceptually clarify the true nature of everything for subsequently devising the correct mathematical physics. Thus, not much stress is laid on the mathematical representations.

Foundation of Theory of Everything (Non-living Things)

Maxwell could not have dreamt of the significance and importance of his field equations for representing the nature of everything and similarly Einstein did not even

dream of the fact that it is because of the recessional accelerations of the astronomical bodies there is gravitation. Einstein believed that because of the gravitation the objects are forced to accelerate.

Maxwell though on the perfectly right track treated time to be absolute and had absolutely no idea of time being relative. Einstein was misled by the mathematical illusion because of which he put forward the space-time concept and General Theory of Relativity. This article is unique in the scientific history because for the first time in the scientific history three concepts have been conceived simultaneously; which are

- a. Time is relative and emergent
- b. Space is absolute
- c. There is aether or simply ether which fills the space

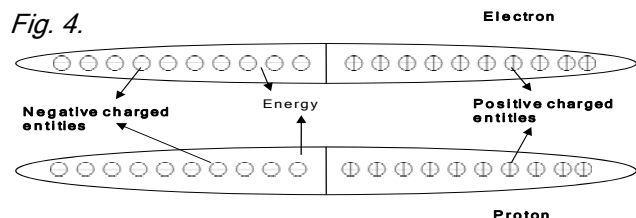
Newton had, at least, perfect understanding of space and Mach put forward the Mach principle to challenge this belief of the Newton and suggested that the cause of the forces in nature are outside the object and Einstein used the Mach principle to put forward his theories. But factually cause of the forces in nature lies in the object itself, medium of ether and outside.

Coming to the core of the Foundation of Theory of Everything; there are no free charges in nature and all the forces in nature are electromagnetic forces. The nuclear forces and even gravitational force are also electromagnetic forces. The ether consists of the electric dipoles whereas matter consists of spinning electric dipoles which act as magnetic dipoles. The electromagnetic radiation is the electromagnetic phenomenon which will be described in this part of the article. For any force to act there has to be a medium through which the forces in nature can act. Since the medium, the ether, consists of only electric dipoles thus only electromagnetic forces can act. With this core idea of the theory; almost every concept in physics and science changes and true nature of everything unfolds which finally leads to the existence of the universal creator. The concept of mass and energy changes so much that we have to rename certain terms. However, we will retain the name of 'energy' as the actual content of matter and define the term of 'capacity to do work' as work capacity. Mass becomes the electromagnetic manifestation of the 'energy' due to electromagnetic interaction between the ether, the electric dipoles, and 'energy' which constitute the matter, the magnetic dipoles.

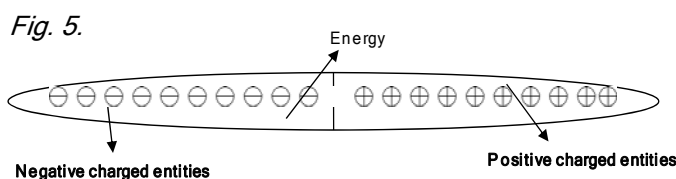
With this background there seems to be only one possibility; so far as non-living things are concerned; that energy and the ether originally existed in a uniformly mixed up state like smoke wherein energy as well as ether was at rest in a different time frame. The energy which constitutes the matter was also in the form of electric dipoles and ether was also in the form of electric dipoles. We could assume the ether to be made up of a single uniform type of electric dipoles. The energy, of which matter is made up of, being of mainly two types.



Both types of energies, of which the matter is made up, being in the form of strings of energies having equal longitudinal dimensions and carrying the equal number of opposite charged entities on either sides of the string from the centre. However the two types of strings carry different quantity of energies. The strings along with the charges are mass-less. Thus, we could represent two types of strings in Fig. 4.



Similarly, ether consists of the uniform single type of the strings of entirely different dimensions (Fig.5).



Having proposed this as the basic nature of the matter and the ether, I would like to reproduce Para 74 of Maxwell's 'Dynamical Theory of the Electromagnetic Field'.

'In speaking of the energy (work capacity; in accordance with the definition of energy in this article) of the field, however, I wish to be understood literally. All energy (work capacity) is the same as mechanical energy (work capacity), whether it exists in the form of motion or in that elasticity or in the other form. The energy (work capacity) in electromagnetic phenomenon is mechanical energy. The only question is where does it reside? On the old theories it resides in the electrified bodies, conducting circuits, and magnets, in the form of an unknown quality called potential energy or the power of producing certain effects at a distance. On our theory it resides in the electromagnetic field, in the space surrounding the electrified and magnetic bodies, as well as in those bodies themselves, and is in two forms, which may be described without hypothesis as magnetic polarization and electric polarization, or according to a very probable hypothesis, as the motion and the strain of one and the same medium'.

I have reproduced this Para of Maxwell because this Para could be of great help in understanding this theory. The Maxwell has been right as well as wrong; right because the work capacity has to be mechanical and stored in the object itself and wrong because he supposed that the work capacity is in the field (which mistake Einstein repeated) which surrounds the objects. This theory supposes that the work capacity is stored in the motion of the objects and secondly is stored within the object itself and the medium acts as transmitter of the

work capacity; however in respect of the electromagnetic radiation during the transmission of the work capacity some work capacity may remain in the medium. This is in short the crux of this theory. This theory does not recognize the work capacity in the field but however this theory accepts the concept of potential work capacity associated with the matter. The work capacity is either in the form of physical motion or as intrinsic potential work capacity in the form of electromagnetic work capacity.

Since we know that electric or magnetic potential work capacity, which actually is the intrinsic potential work capacity, is proportional to the square of the electric or magnetic field likely to be produced by the magnetic or electric dipole provided the medium, the ether, permits the transmission in the form of the displacement of the electric dipoles and the same is also inversely proportional to the permittivity and the permeability of the medium.

$$\text{Hence } W_E = k_1 \frac{E^2}{\epsilon_0}$$

$$W_B = k_2 \frac{B^2}{\mu_0}$$

$$\text{Since } \epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$$

$$\mu_0 = 1.2 \times 10^{-6} \text{ H/m}$$

k_1 and k_2 as well as E^2 and B^2 are comparable and so we have

$$W_E = K_1 \times 10^{12}$$

$$W_B = K_2 \times 10^6$$

Since K_1 and K_2 are comparable and the conversion of the electric dipoles into magnetic dipoles would result in release of large amount of work capacity. Thus, energy which constitutes the matter, in the form of electric dipole strings due to the scalar field started spinning and thereby the electric dipole strings were converted into magnetic dipoles and a large amount of work capacity was released which these magnetic dipoles retained in the form of motion; which presently is (the scalar field is mentioned to differentiate the mechanism from force as there has to be yet unknown electromagnetic phenomenon through which spin could be imparted to the electric dipoles. Though this theory does not recognize the concept of fields but since no work capacity is transferred as such the words of scalar field are to be understood in that sense) being known as kinetic energy; with respect to the ether, the electric dipoles. The electric dipoles of the ether were not affected by the scalar field could be due to the reason that the electric dipoles of the ether are having more content of energy than the energy of the electric dipoles of which the matter is made up of; and the scalar field not having that much of intensity to be in a position to make the electric dipoles of the ether to spin. Further, only two types of magnetic dipoles exist in nature for which we could retain the names of electron



and proton; thus electron being a magnetic dipole having lesser quantity of mass-less energy and proton also being a magnetic dipole having higher quantity of mass-less energy. Since the electrons and protons have same longitudinal dimensions and the strength of the dipole being equal owing to the equal charge on the electron and proton when in the form of electric dipoles; thus angular velocity of the spin of the electron as well as the proton also being the same. Since during the process of conversion of electric dipoles into magnetic dipoles equal quantity of work capacity is released and accordingly the motion/velocity of the protons and the electrons with respect to the stationary ether has to be the same. The magnetic dipoles were uniformly distributed with respect to the electric dipoles of the ether at the beginning of the universe. At the time of conversion of magnetic dipole the magnetic attraction set in; the movement of those magnetic dipoles which were lying towards the periphery of the universe was towards the centre of the universe whereas inside the universe the direction of movement of the magnetic dipoles was in all possible directions. Due to the mutual attraction of the magnetic dipoles clustering was set in to form the stars and star systems, galaxies and other astronomical objects. To conserve the work capacity due to the motion of the clustered magnetic dipoles; which presently is being termed as momentum; and for stability of the universe all the magnetic dipoles in the clustered form started revolving; the stars and star systems revolving within the galaxies around the centre of the galaxies and galaxies in turn started revolving around the centre of the universe. Besides the clustered magnetic dipoles there are un-clustered magnetic dipoles also in the universe which are still in the process of clustering as observed by Herschel (called Herschel Infrared Space Observatory of European Space Agency) and reported in the article 'Energy Theory of Matter & Cosmology' (Mohammad Shafiq Khan, 2010b).

Microscopically or macroscopically there is no electric field in the ether of electric dipoles; the electric field will be created when the electric dipoles of the ether are disturbed and that will be possible only as the result of an extraneous electric field or a magnetic field which is changing with respect to time.

Big Bang Theory being conceptually as well as mathematically incorrect; which is substantiated in the articles 'Energy Theory of Matter & Cosmology' and 'Ultimate Proof of Energy Theory of Matter & Cosmology'; would be further substantiated in this article. The above described phenomenon seems to be the only possible phenomenon by which the universal matter, time and electromagnetic radiation could have come into existence for reasons which would be explained in this article.

Having showed that time is a relative concept and moving reference frames have their own time frames depending upon direction of movement and the velocity with respect to the ether; the absolute reference frame.

With this the whole scenario would change. Let us rewrite the Maxwell's field equations as given in the equations (11) to (15). These equations are valid in the absolute reference frame, the reference frame in which ether is at rest

$$\begin{aligned}\nabla \cdot \mathbf{E} &= \frac{\rho}{\epsilon_0} \\ \nabla \cdot \mathbf{B} &= 0 \\ \nabla \times \mathbf{E} &= -\frac{\partial \mathbf{B}}{\partial t} \\ \nabla \times \mathbf{B} &= \mu \mathbf{J} + \mu_0 \epsilon_0 \frac{\partial \mathbf{E}}{\partial t} \\ \mathbf{J} &= \mathbf{v} \frac{\partial \rho}{\partial t}\end{aligned}$$

Having defined the electromagnetic properties of the medium; the applicability of these Maxwell's equations depends on the movement of the reference frames because different reference frames have their own time-frames. This must not have been imagined even by Maxwell and this is the fundamental mistake committed by Lorentz and Einstein. Thus the whole of the electromagnetic dynamics would require a total review because neither classical electromagnetic dynamics which additionally is based on free charge and electromagnetic potentials nor relativistic electromagnetic dynamics could be correct. There is a genuine question which needs the answer as to how I have applied the Maxwell's field equations since this theory does not accept the concept of electric & magnetic fields? The electric and magnetic fields \mathbf{E} & \mathbf{B} represent the actual displacements of the electric and magnetic dipoles due to the electrical and magnetic forces. Setting right the mathematical formulations is not within the scope of this article as the primary objective of this article is to set right the fundamentals which could be of great help to set right the mathematical formulations. In fact the whole of physics shall have to be rewritten once the fundamentals are set right

The Maxwell's field equations are valid for the absolute reference frame and for any other reference frame the Maxwell's field equation would require following corrections. The time frame of the reference frame in which Maxwell's field equations are to be applied; shall have to be taken into account and for any physical quantity involving space & time the transformation factor will have to be applied as the consequence of difference in time frame for the mathematical formulations as derived in the chapter of transformation. The electric & magnetic fields \mathbf{E} & \mathbf{B} represents the actual displacements of the electric dipoles of the medium & the magnetic dipoles of the matter. Since the medium consists of the electric dipoles and matter consists of the magnetic dipoles so the displacements of electric dipoles and magnetic dipoles would result in changing electric and

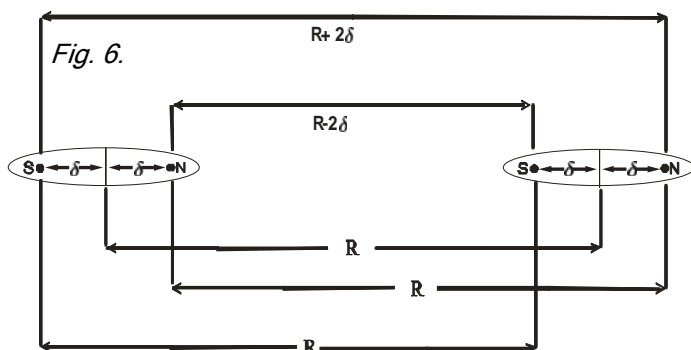


magnetic fields with respect to time as represented by equations (13) & (14). Since in nature there are mostly circular motions and for circular motions there is no difference in the time frame but for the spiral motion of the objects there is a component of receding or approaching and that component only is responsible for the difference in the time frames.

Theory of Unification of Forces in Nature

In the classical physics the electromagnetic phenomenon is presumed to be known and also the electromagnetic phenomenon is presumed to be known in the relativistic physics. But both claims are not correct for the reasons already defined. The electromagnetic phenomenon could now be understood properly after incorporating the corrections partly defined & partly to be defined. However following discourse will clarify corrections to be incorporated for study of the electromagnetic forces.

Let us consider two magnetic substances or two magnetic dipoles which are aligned (Fig.6).



Assuming the magnetic force to be an inverse square law force as this is the present notion about the electromagnetic forces including the gravitational force.

Now there will be attraction between the north and south poles of the magnetic substances or dipoles and repulsion between the same poles.

Assuming that the force is represented by $F = \frac{X}{R^2}$

where X is a constant and R is the distance between the centers of the poles.

The attractive force between opposite poles is represented by F_A and repulsive force by F_{Re} where δ is the distance of the actual pole from the centre of the magnetic substance or the dipole

$$F_A = \frac{X}{(R - 2\delta)^2} + \frac{X}{(R + 2\delta)^2}$$

Accordingly the repulsive force would be

$$F_{Re} = \frac{2X}{R^2}$$

Now net attraction between the two dipoles is

$$F_A - F_{Re} = \text{Net attraction} = A$$

$$A = \frac{X}{(R - 2\delta)^2} + \frac{X}{(R + 2\delta)^2} - \frac{2X}{R^2}$$

$$A = X \left\{ \frac{1}{(R - 2\delta)^2} + \frac{1}{(R + 2\delta)^2} - \frac{2}{R^2} \right\}$$

$$A = X \frac{R^2(R + 2\delta)^2 + R^2(R - 2\delta)^2 - 2(R^2 - 4\delta^2)^2}{R^2(R^2 - 4\delta^2)^2}$$

$$A = 2X \frac{R^4 + 4\delta^2 R^2 - R^4 + 8\delta^2 R^2 - 16\delta^4}{R^2(R^2 - 4\delta^2)^2}$$

$$A = 2X \frac{12\delta^2 R^2 - 16\delta^4}{R^2(R^2 - 4\delta^2)^2}$$

$$A = 8X\delta^2 \frac{3R^2 - 4\delta^2}{R^2(R^2 - 4\delta^2)^2}$$

$$A = 8X\delta^2 \frac{3R^2 - 4\delta^2}{R^2(R^2 - 4\delta^2)^2}$$

If $\delta \ll R$; then $3R^2 - 4\delta^2$ could be equated to $3R^2$ and $R^2 - 4\delta^2$ could be equated to R^2

$$A = X8\delta^2 \frac{3R^2}{R^6}$$

$$A = X8\delta^2 \frac{3}{R^4} = \frac{24X\delta^2}{R^4}$$

For a magnetic dipole δ is a constant and this will apply for the sun as well as the earth. This could be simply written as

$$A = \frac{G}{R^4}$$

If we assume that electromagnetic forces honour inverse square law then the gravitational force of the earth and the sun should honour inverse - quadruple law if we presume that gravitational force to be the electromagnetic force. Since it will be proved that gravitation is because of the electromagnetic interactions so we will have to review the inverse square law of the electromagnetic forces as it is a well known fact that gravitation does not honour the inverse quadruple distance law. Secondly so far the electromagnetism has been studied with free electric charges and electromagnetic field in space but according to this theory there are no free charges in nature and there is no electromagnetic field in space carrying the work capacity. So we will have to take a fresh view of whole of the electromagnetism keeping in view the fundamentals of this theory. Accordingly I am not depending upon the mathematical formulations of the classical physics or the relativistic physics. However I have used the Maxwell's field equations wherein \mathbf{E} & \mathbf{B} would represent the actual displacement of the electric dipoles and magnetic dipoles.

Gravitation is the basis of the cosmological stability but without proper understanding and explanation of the



gravitation it would be like the study of the universe and matter without understanding the basic constituents of the universe. Without the coordinate transformation derived herein in the article and without recognizing the existence of ether any study of gravitation would not be correct and it is because of the incorrectness of Newton's dynamics and General Theory of Relativity there are several anomalies and discrepancies which cannot be explained. To explain these anomalies and discrepancies physicists had to introduce the concept of dark energy which is just another name of ether. The explanation of the electromagnetic properties of this medium together with the relativity of time independent of space is the proper foundation for correct understanding of the phenomenon of gravitation. Gravitation as a phenomenon could only be explained correctly when the foundations of the physical phenomenon are rightly understood.

It is misconception in classical as well as the relativistic physics that forces in nature act in space/vacuum. But factually all forces would require a medium to transmit the force and since the medium consists of the electric dipoles; so only the electromagnetic forces act in nature. Since ether consists of electric dipoles thus the medium would transmit the electric field or the magnetic field which is changing with respect to time in the form of displacement of the electric dipoles. Matter being made up of magnetic dipoles and capable of only the magnetic field which as per this theory is the displacement of magnetic dipoles as such the ether could transmit the forces between matter which could be caused by changing magnetic field with respect to time. This changing magnetic field could be produced by continuously changing magnetic polarity of the objects/matter and secondly since the matter is in continuous motion with respect to the medium as such the matter has its own time frame and in case the matter is in recessional acceleration (which would be clarified) the time frame of the matter would be changing with time and accordingly the magnetic field of the matter would be changing with time with respect to the ether.

Now since the medium has its time frame; the medium will experience the magnetic field with respect to its time frame.

Applying the formula which was derived under equation (42)

$$k_1 \mathbf{B}' = k_o \mathbf{B} \dots \dots \dots (42)$$

It was also shown

$$\gamma k_1 = k_o \dots \dots \dots (43)$$

Hence $k_1 \mathbf{B}' = \gamma k_1 \mathbf{B}$

So $\mathbf{B}' = \gamma \mathbf{B}$ $\mathbf{B} = \frac{\mathbf{B}'}{\gamma}$ thus

$$\frac{\partial \mathbf{B}}{\partial t} = \frac{\partial}{\partial t} \left(\frac{\mathbf{B}'}{\gamma} \right)$$

Now since $\gamma = \frac{1}{1 + \frac{\hat{\mathbf{c}} \cdot \mathbf{v}}{c}}$

$$\frac{\partial \mathbf{B}}{\partial t} = \frac{\partial}{\partial t} \left\{ \mathbf{B}' \left(1 + \frac{\hat{\mathbf{c}} \cdot \mathbf{v}}{c} \right) \right\}$$

$\hat{\mathbf{c}} \cdot \mathbf{v}$ in spherical polar coordinate could be written as $\frac{\partial r}{\partial t}$

$$\begin{aligned} \frac{\partial \mathbf{B}}{\partial t} &= \frac{\partial}{\partial t} \left\{ \mathbf{B}' \left(1 + \frac{1}{c} \frac{\partial r}{\partial t} \right) \right\} \\ \frac{\partial \mathbf{B}}{\partial t} &= \frac{\partial \mathbf{B}'}{\partial t} + \frac{1}{c} \frac{\partial \mathbf{B}'}{\partial t} \frac{\partial r}{\partial t} + \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2} \\ \frac{\partial \mathbf{B}}{\partial t} &= \left(1 + \frac{\hat{\mathbf{c}} \cdot \mathbf{v}}{c} \right) \frac{\partial \mathbf{B}'}{\partial t} + \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2} \\ \frac{\partial \mathbf{B}}{\partial t} &= \frac{1}{\gamma} \frac{\partial \mathbf{B}'}{\partial t} + \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2} \dots \dots \dots (49) \end{aligned}$$

Here we have assumed that γ is a function of time because of recessional acceleration of the astronomical bodies. Now if $\mathbf{B}' = \text{constant}$ with respect to time; in that case

$$\frac{\partial \mathbf{B}}{\partial t} = \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2}$$

\mathbf{B}' would be constant only under the condition that the astronomical body is not emitting the electromagnetic radiation (which would be explained) like planets.

$$\frac{\partial \mathbf{B}}{\partial t} = \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2}$$

Now if $\frac{\partial r}{\partial t}$ is a constant, which means that reference frame of the matter is moving at constant recessional velocity then $\frac{\partial^2 r}{\partial t^2}$ is equal to zero and as such no

magnetic force could be transmitted. Now if $\frac{\partial^2 r}{\partial t^2}$ is having

a positive or negative value, which means recessional acceleration or recessional deceleration (spiral motion) with respect to the ether or centre of galaxy or centre of universe, then only the magnetic force could be transmitted. Since the magnetic field is changing with respect to time so as per the equation (13); electric field would be created which would be experienced by the medium which results in displacement of the electric dipoles of the ether. This electric field/electric dipole displacement would propagate in the medium with a velocity to be determined by the permittivity of the ether and when this electric dipole disturbance reaches the other reference frame of moving matter with the recessional acceleration or deceleration the other moving matter reference frame will experience the magnetic force and thereby other moving matter reference frame will experience the gravitational force. The net result is; according to equation (13) and (14); that if the two reference frames are receding and having recessional



acceleration with respect to each other there will be attraction and in case the reference frames are approaching each other there would be repulsion. Now taking the equation (49)

$$\frac{\partial \mathbf{B}}{\partial t} = \frac{1}{r} \frac{\partial \mathbf{B}'}{\partial t} + \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2}$$

In case of stars which do emit electromagnetic radiation \mathbf{B}' is changing with respect to time but the rate of change of the magnetic polarity of the star is extremely slow as the result of which the dominating factor in the

above equation is $\frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2}$ and for all practical purposes

we could write

$$\frac{\partial \mathbf{B}}{\partial t} \approx \frac{\mathbf{B}'}{c} \frac{\partial^2 r}{\partial t^2}$$

Thus, the magnetic field changing with respect to time as experienced by the medium will depend upon the recessional acceleration or deceleration. It is already proved by Hubble observation that there are only receding conditions in nature in respect of stars within the galaxies and also between the galaxies. In case there is

recessional acceleration $\frac{\partial^2 r}{\partial t^2} > 0$ then there will be attraction and in case there is recessional deceleration

that is $\frac{\partial^2 r}{\partial t^2} < 0$ then there would be repulsive force with respect to the other reference frame (or astronomical body) which is having the uniform recessional velocity or

is having the recessional acceleration less than the $\frac{\partial^2 r}{\partial t^2}$.

In case the other reference frame (or astronomical body) has the recessional deceleration then there would be opposite phenomenon. Since there are only receding conditions prevailing in respect of stars and galaxies we could safely presume; for the reasons which will be explained; that only the uniform angular velocity (or almost uniform angular velocity) can exist in respect of planets whereas all the stars are having the recessional acceleration. Accordingly, no recessional deceleration would be possible in nature because in that case repulsive nature of gravitation will be called into play. Besides, it will be also proved that though stars and the planets of the stars have the same time frame, yet there is the gravitational force between the stars and its planets. In order to prove the latter statement, we know that stars are in the receding condition with recessional acceleration with respect to the centre of the galaxies. Naturally, the time frame of the medium and the star would be changing and the medium would experience the electric field. Accordingly, the electric field will be transmitted to the planet in the form of magnetic field due to the changing time frame between the medium and the planet as the result of the Maxwell field equation (14), and

accordingly there will be gravitational attraction between the stars & planets.

The concept of gravitational, electric and magnetic potential carrying the work capacity is just the outcome of the misrepresentation and mathematical manipulations by relativistic physics and these concepts had been there in the classical physics also; thus whole classical electromagnetism also would require the fundamental changes and the relativistic electromagnetism is simply to be out-rightly rejected. The simple conclusion is that the gravitational force is the electromagnetic force and the gravitation is because of the recessional acceleration and the continuous change of time frames of the moving reference frames. The conclusion of Einstein that the reference frames are in the accelerating state of motion because of the gravitational force and that there is gravitational potential in the space which carries the energy (work capacity according to this theory) is simply the mathematical misrepresentation because the very fundamental axioms of Einstein are incorrect. It must be clear to the readers that the very recessional state of motion of the astronomical bodies or reference frames is responsible for the gravitational force. This all has been because the space and time were interconnected in the illogical and absurd manner in relativity and this has found way differently in the Quantum Mechanics.

However, unless and until there is proper justification for the receding motion of stars and galaxies the theory that the gravitational force is also an electromagnetic force would not be unquestionably acceptable. There are two work capacities with the magnetic dipoles, of which the matter is made up of, one is the work capacity which is due to the motion of the magnetic dipoles and the second is the electromagnetic work capacity. The work capacity due to the motion of the magnetic dipoles is not being utilized by magnetic dipoles and the crystal clear proof of which is that stars do not shed the matter while in motion. Had the work capacity of the matter particles due to the motion (which presently is being called kinetic energy) being utilized by the stars then due to this phenomenon some of the magnetic dipoles would lose what is presently being called momentum and the stars would have been losing the matter continuously? No such phenomenon has been ever reported or observed till date. Thus, in nature the matter is utilizing only the electromagnetic work capacity and this electromagnetic work capacity is being utilized in the form of electromagnetic radiation.

Fortunately, while describing the phenomenon of electromagnetic radiation, the nuclear force would be explained as also an electromagnetic force. It stands discussed that the matter is basically in the form of the two types of mass-less magnetic dipoles which in turn are spinning electric dipoles namely electrons and protons. Both the dipoles are of equal longitudinal dimensions carrying equal quantity of charged entities on either side



from the centre of the strings. Both types of dipoles have capability of equal strength of magnetic field and work capacity. Since, initially these magnetic dipoles started moving in all possible directions and those on the periphery of the universe started moving towards the centre and during the process of clustering some dipoles being in the opposite direction, the collisions happened between the protons and the electrons. These collisions resulted in the entanglement of the strings such that both the strings are in the state of spin while as the negative charged side of the electron string coincides with the positive charged side of the proton and net result is that a neutron is produced which has spin but has no magnetic polarity and in this process the magnetic work capacity of the proton and the electron is dissipated in the form of electromagnetic radiation.

During the process of approach of the electron and the proton and due to the magnetic polarity of the electron and the proton the two particles will align such that the opposite poles face each other. Since the electrons & protons have a high momentum in the opposite directions, the particles comes so close that instead of the magnetic polarity electric field of the electron and the proton starts interacting resulting in the superposition of the negative charge of the electron superimposes on the positive charge of the proton and vice-versa. This results in the loss of magnetic work capacity of the electron as well as the proton; the magnetic field of electron and the proton changes with respect to time during the small period of time of the collision and this develops the electric field in the medium, the ether the electric dipoles, as the result of which the electric dipoles of the medium start vibrating and the vibrations are transmitted in the medium. This vibration of the electric dipoles creates an electromagnetic field wave in the medium as the result of which a wave of an alternating current passes in the medium. This is perfectly in accordance with the Maxwell's field equations as these equations are valid for the absolute reference frame of the medium, the ether. Now we could discuss the importance of deriving the equation (29) and (30)

$$\nabla^2 \rho - \mu_0 \epsilon_0 \frac{\partial^2 \rho}{\partial t^2} = 0 \dots\dots\dots(29)$$

$$\nabla^2 \mathbf{J} - \epsilon_0 \mu_0 \frac{\partial^2 \mathbf{J}}{\partial t^2} = 0 \dots\dots\dots(30)$$

The above two equations were derived in order to prove that the charge density also adopts the characteristics of a wave motion over the area over which the electric and magnetic field of the electromagnetic wave motion is produced. The relevant equation is equation (30) because it is this equation which defines as to what the electromagnetic radiation in true sense means. This equation defines the electromagnetic radiation as the package of alternating current (not necessarily sinusoidal) which carries the work capacity equal to the loss of magnetic work capacity of the

electron and the proton. This package of alternating current is in the form of the vibrations of the electric dipoles of the ether which vibrations propagates in the ether with the velocity defined by the medium

as $\frac{1}{\sqrt{\epsilon_0 \mu_0}} = c$. This explains as to why the velocity of electromagnetic radiation is always constant with respect to the medium and nature has balanced the time frame of the moving reference frames such that the velocity as observed by the moving observer would also observe the velocity of the electromagnetic radiation as $c = \frac{1}{\sqrt{\epsilon_0 \mu_0}}$.

Thus, the secret of nature of everything being in the electromagnetic radiation and since neither in classical physics nor in the relativistic physics ether was conceived; and additionally the secret of concept of relativity of time independent of the space is also contained in the electromagnetic radiation; which too was not conceived in classical physics or in the relativistic physics resultantly the nature of everything was neither known or understood by the mankind.

The package of the wave motion of the alternating current is having the direction of the radiation and is perpendicular to the direction of the electric and magnetic fields of the electromagnetic wave motion. This package carries the work capacity which is being received by the matter, the magnetic dipoles.

However, in the stars just one such conversion of the electron and proton into neutron is sufficient to trigger the chain of reactions wherein the electromagnetic radiation is being used for making and breaking the neutrons and the net result is that as many neutrons are being produced in the star as the electromagnetic radiations leave the star. Thus, with the loss of every electromagnetic radiation there is the loss of the two magnetic dipoles in the star. Hence, there is the net loss of magnetic polarity of the star with time. Since we have already stated as to how the star do not utilize the work capacity due to the mechanical motion accordingly what is presently known as momentum is conserved and as such the linear velocity of the star is not affected. Due to the loss of magnetic polarity with time; what is presently known as centripetal force is reduced; as the result of which the stars move away continuously from the centre of the galaxies. It stands already clarified that the receding nature with recessional acceleration of the stars is responsible for the gravitational force between the stars. This should explain as to how and why the stars have the receding motion only. That should also prove that the gravitational force is an electromagnetic force.

The recessional velocity $\left(\frac{\partial r}{\partial t}\right)$ and recessional acceleration $\left(\frac{\partial^2 r}{\partial t^2}\right)$ in spherical polar coordinates would



depend upon the loss of the magnetic dipoles or the number of electromagnetic radiations emitted by the star or the galaxy rather than on the distance and accordingly one could decide about the correctness of the Hubble Law.

The combination of the proton magnetic dipole and the electron magnetic dipole at some distance would convert these dipoles into a quadrupole which will also act as a dipole with less magnetic polarity and according further magnetic work capacity would be released in the form of electromagnetic radiation. But as soon as the hydrogen atom would receive the required work capacity in the form of electromagnetic radiation the two dipoles will fall apart. The formation of helium also results in emission of electromagnetic radiation and loss of magnetic polarity of the star.

Nuclear force is called into play when the magnetic dipoles are so close and arranged that the electric charge within the magnetic dipoles are interacting and a strong bond is existing between the protons and neutrons and during the formation of such nuclei considerable work capacity is emitted in the form of electromagnetic radiation and breaking of such nuclei would require considerable work capacity in the form of the electromagnetic radiation. The density of the electromagnetic radiation in the star would be deciding factor for the formation of the nuclei in the stars. The nuclear force is called into play between magnetic dipoles when the magnetic dipoles are so close to each other such that there is no need of medium and the electric charges in the magnetic dipoles start interacting directly.

As there are chain of reactions taking place within the stars as the result of which the electromagnetic radiations are emitted from the stars and more the electromagnetic radiation emitted by the stars more loss of the magnetic polarity of the stars. More the number of protons, neutrons and electrons in the atoms less is the magnetic polarity of the atom. Thus, stars have much more magnetic polarity than the planets like earth because stars have extremely high percentage of protons, electrons, hydrogen and helium whereas the earth has the atoms of higher number of the protons, neutrons and electrons. The fact that the nuclear force is due to the close proximity of the constituent energy entities which are ordinarily as magnetic dipoles; where the interaction of electric charge which exists in the magnetic dipoles takes place such that negative charged entities are close to the positive charged entities and a strong bond of attraction exists resultantly the large amount of work capacity is needed to break the bond and conversely large amount of work capacity in the form of electromagnetic radiation is emitted when the bond is created. On earth it is possible to break these nuclear bonds with the help of high velocity magnetic dipoles or neutrons. Discussing the mechanism and structure of the atoms is not within the scope of this article. However, the

explanation that nuclear force is also the electromagnetic force has been the objective of this article which I hope is accomplished.

This should conclude the theory of unification of natural forces in nature. There is not a single experimentally observed phenomenon which cannot be explained correctly under this theory. In view of the theory proposed in this article the statements made in the article 'Ultimate Proof of Energy Theory of Matter & Cosmology' [11] would require corrections particularly the statements regarding the Quantum Mechanics, Cosmic Background Radiation, Hubble Observations and wherever mass has been assigned to the electromagnetic radiation. However, the article [11] should be considered for the contents wherein the proof of the fact that Michelson Morley experiment had been misinterpreted for concluding the absence of the medium, the ether, has been provided and in respect of the statements made under 'Theory of everything'.

Since the very basis of Theories of Relativity have been proved to be wrong; we need not discuss the corrections by General Theory of Relativity to the Newton's law of gravitation, and radar time dilation as this theory takes care of all the phenomena especially the radar time dilation. However one of the greatest triumphs of the General Theory of Relativity was the so called mathematical explanation of the bending of electromagnetic radiation when passing nearby the stars. The electromagnetic radiation is not being affected by the cosmic background radiation because of the anisotropy of the cosmic background radiation which would imply that the packets of alternating currents or packets of electric dipoles vibrations of the ether are having polarization in all possible directions and the net effect on the electromagnetic radiation will be zero. Since we know that the stars are in motion with a constant linear velocity in the ether and while the stars move there is the displacement of the electric dipoles of the medium and the highest displacement would be near the star and as we recede from the star the displacement would reduce as shown in the Fig.7.

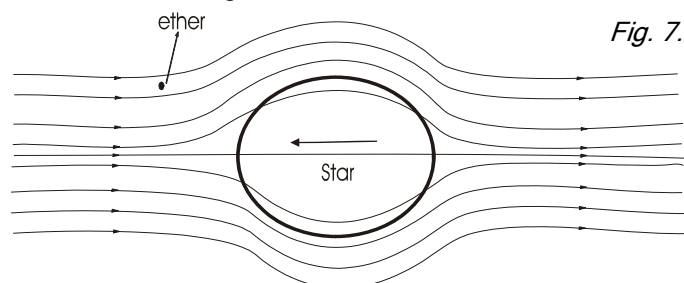


Fig. 7.

Since the electromagnetic radiation is the work capacity being carried in the form of vibrations of the electric dipoles as such the electromagnetic radiation would change its direction depending upon the direction of movement of the star and the direction of movement of the electromagnetic radiation.



Lastly as per Newton’s dynamics or General Theory of Relativity there has to be huge mass of a star at the centre of every galaxy around which the stars should revolve but physically no such star mass has been observed in most of the galaxies studied so far. This is essential for the motion of the stars which are near the centre of galaxies according to Newton’s dynamics or General Theory of Relativity. As per this theory the stars near the centre of the galaxies are forced to be in the orbit around the centre of the galaxy by the repulsive mode of the gravitational force of the stars which are revolving away from such stars. However the stars near the centre of the galaxies do have some recessional acceleration as the repulsive force caused by stars away from such stars also have the recessional acceleration.

Cosmic background radiation

The conclusion drawn in the article ‘Ultimate Proof of Energy Theory of Matter & Cosmology’ regarding the cosmic background radiation as the sonic boom condition of the electromagnetic radiation is not correct. As conceived in the article ‘Energy Theory of Matter & Cosmology’ that universe consists of the finite space surrounded by the energy of the universal creator. Some space was shown without any colour between ether & the energy of the universal creator just to clarify the existence

of another type of energy which is defined in the book ‘Natural World Order & the Islamic Thought (Mohammad Shafiq Khan, 2009) as the ‘soul energy’. However, it is clarified that cosmologically the ether is surrounded by the energy of the universal creator as shown in the Fig.8a,b.

Since the electromagnetic radiation is being continuously emitted by the stars in all the galaxies and this electromagnetic radiation would not be utilized by other stars but a minimal part of the electromagnetic radiation could be utilized by only the planets like earth which has life and atmosphere. This electromagnetic radiation when it reaches the periphery of the universe would be reflected back into the universe as the energy of the universal creator has been conceived to be without any electromagnetic properties or in other words the electromagnetic radiation has no medium within the energy of the universal creator so that it could propagate and hence the radiation is reflected back. Since in the article ‘Energy Theory of Matter & Cosmology’ it has been conceived that the universal matter is receding and accordingly the electromagnetic radiation would remain in the space. On the one hand the electromagnetic radiation is being emitted by the stars and the galaxies and the universal matter is continuously receding; then there is

one likely question as to where is the space for the universal matter to expand. The answer of this question is already replied in this article as the electric dipoles which were converted into the magnetic dipoles near about the periphery of the universe were attracted by the magnetic dipoles within the universe thereby a huge space was created near the periphery of the universe for the universal matter to expand.

Since the electromagnetic radiation is being continuously emitted by the stars naturally the intensity of the electromagnetic radiation would increase as the time progresses. However since the electromagnetic radiation in the form of packages of alternating currents or the package of the electric dipole vibrations would remain in the space as such everywhere in the space we would find the packages of alternating currents or the package of the electric dipole vibrations in the space which with time has to increase. This is the cosmic background radiation which by its nature has to fluctuate and be anisotropic. Since the cosmic background radiation has been detected very recently as such the increase in the intensity of the cosmic background radiation in a few decades would not be detectable. However the fluctuations and anisotropy of the cosmic background radiation is the proof that the same is not as the result of the so called Big Bang as already stated in the article ‘Energy Theory of Matter & Cosmology’ and as confirmed by the

Fig.8

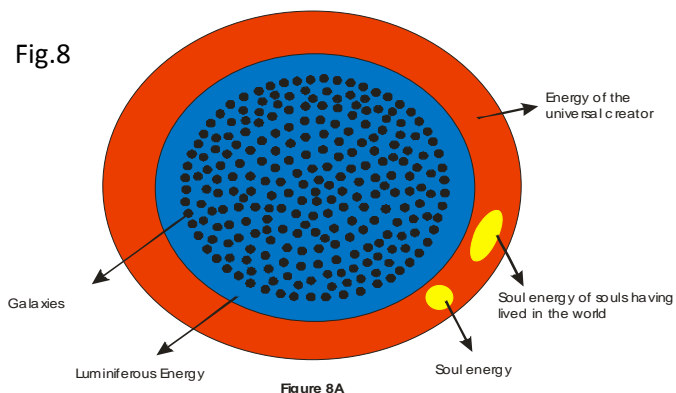


Figure 8A

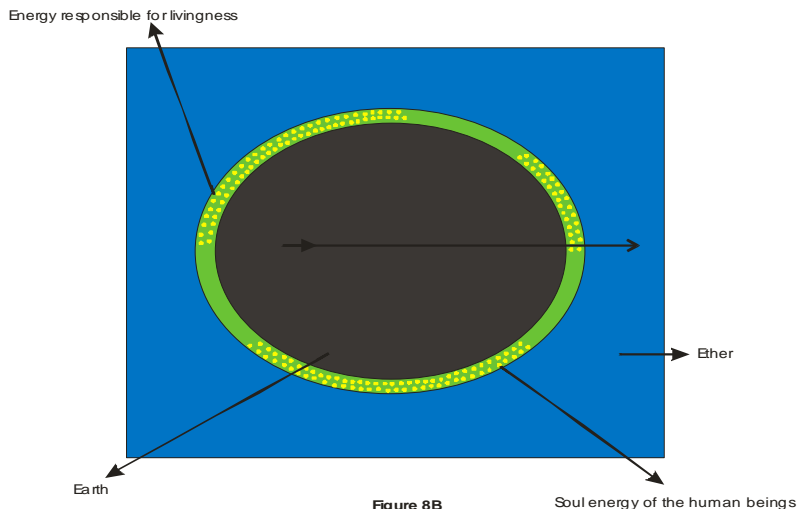


Figure 8B



Herschel (ESA). The Hubble observations and the existence of the cosmic background radiation are supposed to be the basic evidences of the Big Bang Theory but this article should be sufficient proof for out rightly rejecting the Big Bang Theory henceforth. Since the very theories of relativity are fundamentally wrong; cosmic background radiation and the Hubble observation all combined together in view of this theory should be more than a sufficient proof that the Big Bang Theory is absolutely incorrect.

Concepts of Mass, Energy and Emergent Time

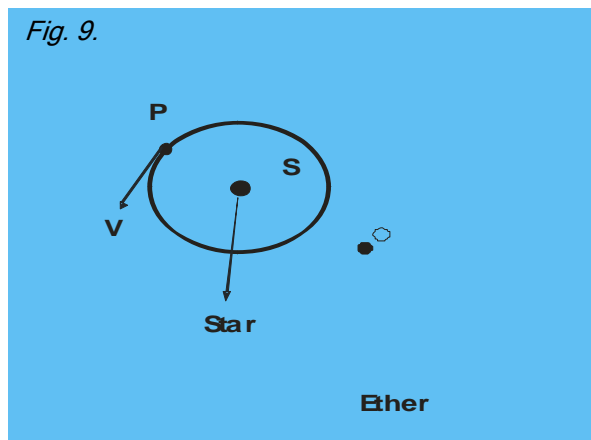
This article will change the concepts being in vogue in physics and I am handicapped by the fact that the whole new mathematical physics will have to evolve to represent the nature and the natural forces. The classical physics is not correctly representing the factual state of existence nor does the relativistic physics represent the factual state of existence. However, without indulging into the mathematical formulations I would clarify the concepts of mass, energy and emergent time so that correct mathematical physics evolves.

The very concept of energy in the present day physics is absolutely wrong. The energy is being taken as 'capacity of doing work' and the formula $E = mc^2$ implies that energy and mass are transmutable. We have retained the name of energy as the content of matter which in no case could be converted into the 'work capacity'. Secondly the concept of mass is also not correct as the mass, as we perceive and measure it, is simply an electromagnetic phenomenon due to the motion of magnetic dipoles in the medium. The mass is basically the inertial mass and solely due to the interaction of the magnetic dipoles of the matter with the electric dipoles of the medium. As the matter moves in the ether the electric dipoles of the ether are displaced resultantly the electric field is developed which in turn produces the magnetic field and the magnetic dipoles of the matter experiences a magnetic field which would oppose the motion of the matter as per the equation (13) and (14). This opposition is the reason of the inertial mass and so the very concept of $E = mc^2$ is evidently not correct. Since the magnetic dipoles of the matter are basically mass-less as such no work capacity is consumed for the motion of the matter in the ether. Mass, as we understand it conceptually, is the electromagnetic phenomenon which depends upon the electromagnetic properties of the medium and the magnetic dipoles of the matter. I am handicapped to derive the mathematical formulations because the whole new electromagnetic

dynamics shall have to be devised on the basis of this theory. Relationship of mass with the electromagnetic properties of electric dipoles of the ether and the magnetic dipoles of the matter should be the first objective after the mathematical physics of electromagnetic dynamics evolves.

To further clarify the concept of mass, as we perceive it on this planet, and to study the phenomenon of gravitation we are supposed to know the fundamentals thoroughly. Consider the Fig.9:

Let O be the centre of the universe or that of the galaxy and S be the star and P be a planet moving around the star. In case the star is at rest with respect to the centre of the universe or the centre of the galaxy, the planet would not revolve round the star because there is no gravitational force as the time frame of the medium, ether, and the star is same and the magnetic force between the magnetic dipoles of the star and those of the planet cannot be transmitted. Even if the star is moving in the circular motion



around the centre of the universe or the centre of the galaxy, even then there would not be any gravitational force between the star and the planet, because the star has no recessional acceleration with respect to the centre of the universe or centre of the galaxy and according to the medium and the star has the same time frame and the magnetic force cannot be transmitted. The gravitational force will be called into play only when the star has the receding motion with recessional acceleration with respect to the centre of the universe or centre of the galaxy. The component of the velocity of the star along the line from centre of the universe or the centre of the galaxy towards the star is the velocity that would define the velocity V of the transformation.

As already stated if

$$\frac{\partial^2 r}{\partial t^2} > 0 \text{ then there will be attraction, but if}$$

$\frac{\partial^2 r}{\partial t^2} < 0$ then there will be repulsion. But when the recessional acceleration would start reducing and as and when

$$\frac{\partial^2 r}{\partial t^2} = 0$$

the gravitational attraction would be zero and the linear velocity of the star would force the star to recede again and thereby the attraction will set in again. Thus this could be generalized that no approaching condition can prevail. Now this will apply within the galaxies and also between the galaxies such that no approaching



conditions prevail and stars will adjust due to the resultant gravitational forces and only receding conditions prevail between stars within the galaxies, between galaxies and between stars of different galaxies. As the result of this Hubble has observed only the red-shifting in respect of all the stars and galaxies. It is because of this nature of gravitation that astronomical bodies would not collide in the universe; however there is only one possibility that neutron star may collide.

The gravitational force would depend upon the recessional acceleration of the star and magnetic polarity of the star whereas the mass, as we perceive it, depends upon the velocity of the reference frame on which the matter is and the electromagnetic properties of the matter and the ether. Now since there are defined properties of the ether and the magnetic dipoles of the matter, so the gravitation on earth would depend upon recessional acceleration & magnetic polarity of the sun and the nature of magnetic polarity of the earth. The time frame of the sun and that of the planets of the sun is the same, so in the solar system the gravitation would depend upon the recessional acceleration of the sun, because the recessional acceleration would determine how forcefully the magnetic field will be transmitted between sun and the planets around it and the magnetic polarity of the earth and the sun. Thus study of gravitation is not as simple as the Newton's laws and also not as complicated as Einstein's General Theory of Relativity. This all is due to the existence of the ether and difference in time frames in the reference frames in motion. In the factual terminology used in this article, the mass is the electromagnetic phenomenon depending upon the motion of magnetic dipoles of the matter and the electromagnetic properties of the matter in question and the electric dipoles of the ether and as such mass has absolutely no relationship with the energy content of the matter. Matter as clarified has no utilizable work capacity due to the mechanical motion as this work capacity is not being dissipated and secondly matter consists of the intrinsic energy and the work capacity due to the electromagnetic properties of the magnetic dipoles. The formula $E = mc^2$ could have any relevance only with respect to the work capacity due to the electromagnetic work capacity: as such $E = mc^2$ could not be the absolute formula as it is being treated till date.

Let us discuss the emergent nature of time. Since we have understood that the time is relative and the relativity of the time depends upon the receding motion of the reference frame whereas the receding motion in turn is dependent on the electromagnetic properties of the matter and the medium and the rate at which electromagnetic radiation is being emitted by the stars. Since the universal creator has the capability of creating the scalar fields by which electromagnetic properties of the energies could be changed as such the time has to be an emergent concept. I have already conceived the

existence of different types of energies in the book 'Natural World Order and The Islamic Thought' [8].

Since the linear velocity which the magnetic dipoles attain after the electric work capacity was converted in the magnetic work capacity is already defined at the time of the creation of the universe. This mechanical work capacity is not being utilized by the matter by any phenomenon. Thus the matter on the whole has a defined linear velocity but since the motions in nature are generally spiral motions, recessional velocities change such that the linear velocity is always constant.

The linear velocity in no case can be more than velocity of the electromagnetic radiation. If we assume that matter is in motion with the linear velocity as V . Now the highest recessional velocity by any star from the centre of the universe or that of the galaxy could be V but in that case the star would not have any magnetic polarity so that the gravitational force could retain its angular velocity and that is possible only when the star is devoid of any magnetic polarity and that can be possible only when all the electrons and protons in the star are converted into neutrons and thereby all the magnetic work capacity of the star which could be there is consumed. There cannot be anything beyond a neutron star and the very concept of the black holes is incorrect and that is exactly why there is absolutely no evidence of the black hole ever conclusively having been observed (Black holes and the LHC by S. Sahoo - Indian Journal of Science and Technology Vol. 3 & 4 April 2010). There being no gravitation whatsoever with neutron star as such the question of gravitational collapse occurring in the astronomical bodies does not arise.

Now consider the two neutron stars moving in opposite directions with respect to the centre of the galaxy or the centre of universe. The velocity of each of the neutron star would be V and according the time frames of the two Neutron stars be t'

$$t' = \gamma t$$

Where t is the time in the absolute reference frame where

$$\gamma = \frac{1}{1 + \frac{\hat{c} \cdot \mathbf{v}}{c}}$$

Let two incidents take place in one neutron star at times t'_1 and t'_2 and on the other neutron star the same incidents be observed at t''_1 and t''_2 . Then

$$\left(1 + \frac{\hat{c} \cdot \mathbf{v}}{c}\right) (t'_2 - t'_1) = t_2 - t_1$$

Where t_2 and t_1 be times of observed time of incidents in the absolute reference frame

$$\left(1 + \frac{\hat{c} \cdot \mathbf{v}}{c}\right) (t''_2 - t''_1) = t_2 - t_1$$

Since \mathbf{v} is the same; hence

$$t'_2 - t'_1 = t''_2 - t''_1$$



This should demonstrate that the transformation derived herein has no problem of any paradoxes. The dark energy conceived in the last decade of twentieth century could be nothing but ether and better name for the dark energy would be Luminiferous Energy and the very concept of dark matter is absurd according to this theory and that should explain as to why the dark matter has not been detected till date. I just laugh when I read scientists claim to have detected dark matter without having any knowledge of as to what the dark energy and dark matter is. Similarly huge resources are being wasted for expecting work capacity by making the protons, electrons, neutrons and other magnetic dipoles to collide. The intrinsic energy of the magnetic dipoles is just not transmutable in the work capacity of the electromagnetic radiation and not even the intrinsic mechanical work capacity due to the motion of the magnetic dipoles is transmutable.

I have already made a mention on an article of Sankar Hajra and Anita Ghost and I would like to make the mention of two more articles by Sankar Hajra (2006) namely 'Collapse of SRT 2: Earth Carries Along Electric and Magnetic Fields' wherein it has been concluded, though on the wrong foundations, that Earth carries the electromagnetic fields along with it, in its rotation as well as the revolutions as prescribed by this theory and 'Collapse of GRT: EM Interactions with Gravity Derived from Maxwell and Newton' (Sankar Hajra, 2007) wherein he has derived the equation {equation (21) in the article}.

$$\frac{\partial^2 u}{\partial \theta^2} + u = \frac{GM}{H^2} + \frac{3GM}{C^2 r^2}$$

Where $u = \frac{1}{r}$ and G, H & M are constants in respect of a point charge in the gravitational field. This equation would represent the perihelion of the Mercury. Assuming the point charge to be the Mercury (which as per this theory is a magnetic dipole on the whole) the author writes 'The equation (21) may aptly be used to explain the advance of the perihelion of Mercury, if we assume that all material bodies are fully electromagnetic in origin. However, we are not in a position to accept such a doubtful proposition'.

This article removes all the doubts and thereby the perihelion of the Mercury could simply be explained when we assume Mercury to be magnetic dipole and sun also a magnetic dipole and the phenomenon of gravitation as the electromagnetic phenomenon. All the three articles of this physicist are worth reading because he could derive many conclusions contained in this article accidentally as the idea of the existence of ether never happened to him.

Nature of Time in the Time Frame of Universal Creator

Readers need no further clarification that there are different time frames for different types of energies which would depend upon the electromagnetic properties of the energy. Thus, the concept of time, as we know and

perceive, is basically an emergent concept. Since the time frames of two or more reference frames are; as per the formula $t' = \gamma t$; are connected by the formula.

$$\left(1 + \frac{\hat{c} \cdot \mathbf{v}''}{c}\right) t'' = \left(1 + \frac{\hat{c} \cdot \mathbf{v}'}{c}\right) t'$$

Let in the reference frame of time t' two incidents take place at times t'_1 and t'_2 and the same incidents are recorded in reference frame of time t'' with the interval of T. The time intervals are connected by

$$\left(1 + \frac{\hat{c} \cdot \mathbf{v}''}{c}\right) T = \left(1 + \frac{\hat{c} \cdot \mathbf{v}'}{c}\right) (t'_2 - t'_1)$$

V'' and V' being the recessional or approaching velocity of the two reference frames. If the energy of the reference frame of time t'' is having no electromagnetic properties and it is approaching the centre of universe it could have the velocity of c; then $\hat{c} \cdot \mathbf{v}'' = -c$

$$\left(1 - \frac{c}{c}\right) T = \left(1 + \frac{\hat{c} \cdot \mathbf{v}'}{c}\right) (t'_2 - t'_1) \quad \text{as} \quad \left(1 + \frac{\hat{c} \cdot \mathbf{v}'}{c}\right) > 0$$

So in the reference frame of time t'' whatever be the time interval T in this reference frame, for all practical purposes.

$$t'_2 = t'_1$$

Accordingly, the reverse phenomenon of incidents taking place in the reference frame of time t'' would be observed to have happened at the same time in reference frame of time t' .

Hence, any interval of time between any two incidents in any reference frame which has any time frame will be zero in the reference frame of the energy which has no electromagnetic properties. All the incidents in the reference frame of the energy which has no electromagnetic properties happen at the same time. This is how the energy of the universal creator has been conceived and here lies the secret of predetermination or predestination. This is how the universal creator has predetermined everything about the universe as well as the planet earth and the life on the planet earth. That is exactly how the concept of predetermination was explained in the book 'Natural World Order & The Islamic Thought'.

Thus, the universal creator consists of the energy which has no electromagnetic properties and is powerful enough to create the scalar field due to which the electric dipoles of matter were converted into the magnetic dipoles. This would require desire and power on the part of the universal creator to create the universe; hence the universal creator has to be living, thinking and powerful to have created the universe and since the living universal creator has been responsible for the creation of the universe; he would be having the power to know all the consequences of the creation. The purpose of the creation of the universe has to be there and it was the



duty of the mankind to at least to know the purpose of creation of the universe. The purpose of the creation of the universe could be philosophically arrived at for which the mankind had sufficient intellectual capabilities and I have tried to analyze this matter at length in my book 'Natural World Order & the Islamic Thought'.

Discussion

As already stated in the article 'Ultimate Proof of Theory of Matter & Cosmology' (Mohammad Shafiq Khan, 2010c) that the energy which constitutes the matter has actually not two but three natures. The energy has the wave nature, particle nature and the pure energy nature. We could make studies of the energy in wave nature or particle nature but it would be very difficult to understand the real true nature of the energy. Since matter moves in the ether, the Luminiferous Energy and the movement of the matter in the Luminiferous Energy is an electromagnetic phenomenon which obeys the wave characteristics as such the matter also adopts the wave nature in its motion. The electromagnetic radiation and all small magnetic dipoles up to the molecular level display the properties of wave nature and for objects with bigger dimensions the wavelength is much higher for detection of the wave nature.

The electromagnetic radiation could only be studied as the wave motion of electromagnetic phenomenon and its study as the photon having a mass while in motion would not be correct. Thus the article 'Ultimate Proof of Energy Theory of Matter & Cosmology' should stand corrected wherever a mass has been assigned to the electromagnetic radiation. The limit of the linear velocity of all the magnetic dipoles, whether in the form of a single magnetic dipole or in the form of astronomical bodies cannot exceed the velocity of electromagnetic radiation. The matter, the magnetic dipoles consists of intrinsic energy, the work capacity in the form of physical motion with the defined velocity and the magnetic energy. The intrinsic energy of the matter is not transmutable and nor the work capacity in the form of physical motion is transmutable but only one work capacity is transmutable and that is the magnetic energy. Thus

$$\text{Energy} + \text{work capacity} = E_{in} + W_{cm} + W_m$$

where E_{in} is the intrinsic energy, W_{cm} is the work capacity due to the motion of matter and W_m is the magnetic work capacity of the magnetic dipole. The magnetic dipoles of electrons and protons along with the neutrons, latter having no magnetic polarity, while forming atoms lose the magnetic energy because thereby atoms become magnetic multipoles and the net effect is that atoms act as weak magnetic dipoles, much less than the sum total of the individual magnetic dipoles of electrons and protons in the atom. All studies so far have been conducted in so far as W_m is concerned. One can imagine the absurdity of the formula $E = mc^2$ which is one way or the other has been used in the article 'Ultimate Proof of Energy Theory of Matter & Cosmology' and the article

should be treated as corrected to that extent. One has to look at mass as an electromagnetic phenomenon rather than the way we have been looking at it and the very concept that mass represents the total energy (work capacity) in the matter which is transmutable and the very concept of Big Bang Theory seems to be incorrect. With the article 'Foundation of Theory of Everything' the doors of the natural state of matter have been opened and mankind can now study the nature theistically.

The contents of this article must have made it clear that the solar system; especially the planets in the solar system are of special concern to the universal creator because of the physical and chemical composition of these planets. But the planet earth must be of most special concern of the universal creator which is evident by the fact that it has everything in proper proportion to sustain life. Keeping in view the physical and chemical nature of earth and its atmosphere there could just not be any other mode of its creation excepting the fact that the universal creator must have created the planet earth with his special powers whereby everything is in perfect place and proportion to sustain life. Mankind was misled by the wrong science during last one and a half centuries as the result of which doubts were created in the minds of mankind about the existence of the universal creator. Science dominated the world and philosophy & theology received a set back and this all had negative impact on the social structure of the mankind. We have made tremendous advances not in science but in technology. Now the technology available with the mankind could be used to explore the theistic nature of everything.

As soon as the scalar field; responsible for conversion of electric dipoles of the matter into the magnetic dipoles; is withdrawn by the universal creator the movement including the spinning motion of all the magnetic dipoles in the form of electrons, protons, neutrons and atoms would stop and the work capacity in the form of linear velocity of these magnetic dipoles will be utilized for conversion of these magnetic dipoles into electric dipoles and all the cosmic background radiation will be absorbed back by these electric dipoles to be in the state in which the universe was before the matter was created. That will be an end of the universe as we see it presently. What will remain after the doom's day would be described 'Fundamentals of Theory of Everything (Living Things).

Fundamental of Theory of Everything (Living Things)

This part of the article is in continuation to the article 'Theory of Origin and Phenomenon of Life' (Mohammad Shafiq Khan, 2010a). For complete understanding of this part of the article the reading of the said article and the book written by the author (Mohammad Shafiq Khan, 2009) is a pre-requisite.

The conclusions drawn in the said article could be summarized as under:

1. There has to be driving force within the cells, organs or organisms which could be responsible for livingness of



the cells, organs or organism. This driving force has been identified as highly complex 'energy'. The main four characteristics of this highly complex energy stands identified in the said article.

2. In so far as the human beings are concerned there is 'soul' associated with every human being and 'soul' is also in the form of the 'energy' with entirely different characteristics.
3. The DNA can at the most represent the physical characteristics of the organ or the organism.

As we have realized in the previous part of this article that physical appearance of the universe and the world is not all what exists, there could be other things besides what is perceivable. The existence of the ether or Luminiferous Energy though not visible has been proved, I think beyond any reasonable doubt. Similarly the existence of the universal creator; also in the form of a special energy; has to the cause behind the existence of the universe has been also established in the previous part of this article. Thus with the help of this theory we could safely conclude that there could be other forms of energies.

In the article 'Theory of Origin & Phenomenon of Life' it is stated that 'soul' energy contains the 'ego' of the human being and besides the 'ego' it has the innate knowledge of existence of the universal creator & the innate knowledge of rightness and wrongness of every action, thought or opinion.

Through this part of the article the physical characteristics of the all the types of 'energies' due to which there is the phenomenon of life on the planet earth have been conceived.

For sufficient philosophical reasons which stand described in the book 'Natural World Order & The Islamic Thought' which need not be discussed in detail in this article; human beings is the only species who have 'soul'. Since human beings should be our primary concern and I would like to describe the physical characteristics of the soul energy.

The soul energy has been conceived as the energy without any electromagnetic properties and accordingly there is no time frame associated with the soul energy. Thus, soul of every human being has to be eternal. All the forces in nature through which mankind could investigate into the nature of soul energy being electromagnetic forces which as such cannot have any effect on the soul energy resultantly the nature of the soul energy cannot be scientifically and physically investigated by the mankind. This is the simplest possible conclusion one could draw and this conclusion would be valid till the Day of Judgment or Doom's Day. However, the existence of the soul energy is perceivable to the human beings in the form of 'ego', innate knowledge of existence of the universal creator and the innate knowledge of right and wrong of the actions, thoughts and opinions. This knowledge was with the first human beings Adam and

Eve and this knowledge has been with every human being dead or alive. The human being could be the best judge about the existence of the soul energy and it was the basic task of the philosophers of the world to make mankind aware about this fundamental and basic constituent of the human being wherein purpose of human being on this planet is defined. Socrates had rightly said 'know thyself' and there being the secret of purpose of the human beings. The whole philosophy concerned with this issue is discussed in great detail in the book 'Natural World Order & The Islamic Thought'.

Thus the creation of at least the planet earth has to be specially concerned with human beings and the life of the human beings on this planet has a special bearing with the life of the soul after the universe is restored to the form in which it existed before the matter was created. The decision of the state of existence of the soul after the Day of Judgment has to be taken on the basis of information about the actions of the human being during his life time on the planet earth. Without going into philosophical discourse, that in case the information about the actions of the life time of the human beings is not stored then the creation of the planet earth having a special bearing with the human life will not be a justified conclusion. Thus there has to be means of storage of information about the actions of life time of the human beings. These means of storage of information have to be associated with every human being.

In the book 'Natural World Order & The Islamic Thought' I have conceived five types of energies namely:

1. Special energy of the universal creator.
2. Energy with abundant qualities & properties which form the source of life in all the life forms.
3. Energy which constitutes the matter
4. Energy in the form of ether or dark energy which has been also named as Luminiferous Energy.
5. Soul energy.

As discussed in this article the energy type (1) and (5) cannot be scientifically and physically investigated. The energy type (3) and (4) stands discussed in the first part of this article. Thus, we are left with energy which forms the source of life.

It has been conceived that there could be three main types of such energies which could be responsible for the phenomena of life. All the three types of energies conceived must be having the electromagnetic properties. The most important type of energy which must be associated with the human beings is the energy which must be in a position to store the information about the

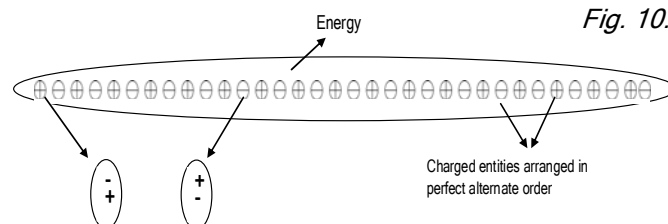


Fig. 10.



deeds of the human beings during their lifetimes. The nature and structure of this type of energy has been conceived herein and is given in Fig.10.

This energy though having the electromagnetic properties but microscopically or macroscopically the energy would neither behave as the electric dipole nor as the magnetic dipole. The information must be stored in this energy by change in the alignment of the charged entities as we do the same in the form of 0 and 1 in respect of the computers and other electronic devices meant for storage of information. The conception of such energy storing the information regarding the actions of the life time of the human beings would not be an assumption which could not be acceptable because mankind has been in a position to do exactly the same. However there could be just one objection by the present day atheistic scientists because they seem to have the notion that this information is stored in the brain but the reply would be that besides the brain storing the information; the information is also stored in the energy meant for the purpose in respect of the human beings. There is no need of such energy in respect of plants and animals since these living things have no innate knowledge of right and wrong and they do as dictated by the energy which is responsible for instincts of growth, reproduction, and behavior.

This has a very important bearing on the philosophy of creation of the human beings and that of the planet earth. In case the information of the actions of the life time of the human being is stored only in the brain, then after death all the information would be destroyed and the concept of Day of Judgment gets defeated except under one condition that the universal creator is recording the actions of the human beings at his level. But the most convenient option would be that information of actions of the life time is stored by an energy which has to be associated with soul energy.

Thus human being besides the matter consists of the soul, the energy responsible for storage of information regarding the actions of the life time and the energy responsible for the livingness of the human being.

It has been conceived that there could be just two main types of energies responsible for livingness of the living organisms namely: 1) Energy responsible for functioning of the living cells of the living organisms and 2) Energy responsible for the instincts of the growth, reproduction and behavior of the living organism.

These energies have to be of very complex form having the defined and codified electromagnetic properties which could have the control over the well defined bio-chemical changes which take place within the cells and the organism. Biologists including microbiologists and molecular biologists, bio-chemists and genetic scientists know the bio-chemical changes which take place within the living organisms but there has to be causative factor of these well defined bio-chemical

changes. Biologists have worked hard and collected sufficient information as to what is happening and they know almost everything about what is happening but the philosophical question as to how the well defined biochemical and other changes take place within the living organisms has not received proper attention. For understanding the phenomenon of life we need to investigate and inquire into the causative factors responsible for phenomenon of life. This part of the article is concerned with this basic question; which is also a philosophical question; which must be addressed to by biologists on priority. Darwin and others were carried away by the physical appearance of the matter and the life which led to the proposal of 'Theory of Evolution' wherein the human life has been proposed to be as the result of the evolution. The phenomenon of life has to be because of some natural force contained in the two types of 'energies' introduced herein. These energies should be cause of converting the matter into the living matter.

Life of human being is special because of existence of the soul energy with which is associated the 'ego', the innate knowledge of existence of the universal creator and innate knowledge of right and wrong about the actions and thoughts. Plant and animal life is simply the living matter with the properties of livingness due to one type of 'energy' and properties of reproduction, growth and behavior due to the other type of energy. These characteristics have to be encoded into the 'energies' in a complex form through the electromagnetic properties of these two types of energies. This encoding must be in the form similar to the encoding in the DNA. As already stated that encoding of the physical characteristics of the organism is in the DNA whereas the encoding in the 'energies' must be that of living characteristics of the organism. The energy responsible for the livingness of the cells and the organisms could be uniform for all living organisms including human beings but the energy responsible for instincts, growth, reproduction and behavior would have different sub types depending upon the species. Readers must have realized from the first part of the article that as space, time, matter and electromagnetic radiation was not understood correctly by the scientists and the world resultantly the science misunderstood the matter and the nature of things. Same has been the case with phenomenon of life and biologists could now explore the phenomenon of life theistically. The energy due to which there is livingness and energy due to which the living organisms have senses of growth, reproduction, instincts and behavior have to be in the form of energies having the complex and complicated electromagnetic properties which biologists and other scientists could explore. The four articles including this article, which I have produced, were to substantiate that science has wrongly conceived the material world including the phenomenon of life and there has to be a platform where science, philosophy and theology could



exist in a symbiotic state. The contradictions between science, philosophy and theology has been due to the misunderstanding of all the three subjects as the universe, world and human beings contain all the replies to the questions due to which the three subjects are contradictory. The reasons due to which there are contradictions between these three subjects on the social, political and also philosophical levels have been described in the book 'Natural World Order & The Islamic Thought' and on the scientific level have been discussed in this article. Strange circumstances prevailed in the nineteenth and twentieth centuries at all the levels including theological level; the so-called religious scholars and philosophers did not perform in the sincere manner, resultantly the science, philosophy including political philosophy was taken over by people who had the atheistic approach to life and they forced the world to adopt the atheistic science and social structure. In view of the atheistic science and social structure which the world has adopted the most important loss to the human being is the loss of the purpose of life and once the purpose of life is lost the human beings are reduced to the living matter. This is the crux of this article that human beings are basically the 'ego' and this 'ego' is in the form of an energy which energy human beings can feel and could be investigated only philosophically and psychologically as this energy has no electromagnetic properties. The 'ego' of the human being is eternal and the state of existence of this 'ego' after the universe is restored to the form when matter was not created would depend upon as to how the human beings conducted his life in view of the innate knowledge of existence of the universal creator and innate knowledge of right and wrong about the actions and thoughts.

All the five energies conceived herein, constitute the perceivable universe, are of different intrinsic nature. The absence of electromagnetic properties in the energy of the universal creator and the soul energy should not be misunderstood as the energies being the same. The nature of the two energies has to be similar in some respects but the nature of the two in totality has to be entirely different. As the soul energy is associated with the 'ego' of the human being and in the same way there is 'Super Ego' associated with the whole of the energy of the universal creator which surrounds the whole of the physical universe. This is the most important commonality of the two energies and from this it could be concluded that the 'ego' is associated with the energy which has no electromagnetic properties. Such energies possess the knowledge; as in case of the human beings there is limited knowledge whereas in case of the universal creator the energy has all the possible knowledge. The power of every sort is with the energy of the universal creator whereas the soul energy of the human being is almost powerless except the power of conducting the human being during his lifetime.

Lastly, I would like to reproduce the words of Laplace (Essai Philosophique Sur les probabilités -1814) "An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes". This is the exact description of the universal creator and the universe which has been conceived and proved through this article.

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