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Review Article

A Form of Quantum Gravity Unification with the General Theory of Relativity

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I N F O

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A B S T R A C T

The problem still remains (in theoretical physics) of how gravity can be unified with quantum mechanics, in as much as it would be possible to explain a consistent theory of quantum gravity. Which, this unification theory should (to a sufficient extent) adhere to the Friedmann-Lemaitre-Robertson-Walker metric. In the preceding work, a universal model is formulated, considering the results of the theory of quantum gravity, as well as the General theory of relativity. The space-time continuum is modelled to arise from the gravity quanta. This is by allowing the universe to retain its homogeneous nature at scales near the plank scale in (relativistic) difference from the time of the Big Bang and treating the gravity particle as behaving, both as a wave and as a particle (as of the theory of wave-particle duality). Once space-time is modelled, the field equations of general relativity are considered, and briefly mentioned, in the modelling of repulsive gravity as being the cause of the expansion of the universe. The space-time metric is considered, as possibly moving at faster than the speed of light. This is considered as suggesting, an event (as of the Special theory of relativity) of which its occasion supersedes the symmetry of which the Special theory of relativity was modelled, this is considered with no changes to the frame of reference of the Special theory of relativity.

Keywords: Physics Beyond the Standard Model, Cosmology, Theoretical Physics, General Relativity, Special Relativity

Introduction

In the late 1890s, physicist Max Planck proposed a set of units to simplify the expression of physics laws. Using just five constants in nature (including the speed of light and the gravitational constant), everything in the universe could arrive at these same Planck units. The basic Planck units are length, mass, temperature, time, and charge. The proton is about 100 million trillion times larger than the Planck length. To put this into perspective. The Planck scale's purpose of invention was as a set of universal units, so it was a shock when those limits also turned out to be the limits to where the known laws of physics applied. Quantum gravity and superstrings are also possible phenomena that might dominate at the Planck energy scale. The Planck scale is the universal limit, beyond which the currently known laws of physics break.[1] The discovery of the universe's acceleration made a real sensation in the science world which led to the creation of the cosmological model 30/70. In astronomy (cosmology), Ω refers to the average density of the universe, also called the density parameter. In astronomy (orbital mechanics), Ω refers to the longitude of the ascending node of an orbit.[2–4] In Sir James Clerk Maxwell's time, It was known that Maxwell's electrodynamics—as they were usually understood at that "present time"—when they were applied to moving bodies, led to asymmetries that did not appear to be inherent in the phenomena. "Take, for example, the reciprocal electrodynamic action of a magnet and a conductor". The phenomenon that was observed depended only on the relative motion of the conductor and the magnet, whereas the customary view drew a sharp distinction between the two cases in which either one or the other of those bodies was in motion. For if the magnet was in motion and the conductor at rest, there would arise in the neighborhood of the magnet an electric field with a certain definite energy, producing a current at those places where parts of the conductor were situated. But if the magnet was stationary and the conductor in motion, no electric field would arise in the neighborhood of the magnet. In the conductor, however, they found an electromotive force, to which in itself there was no corresponding energy, but which gave rise - assuming equality of relative motion in those two cases discussed - to electric currents of the same path and intensity as those produced by the electric forces in the former case. Examples of that sort, together with the unsuccessful attempts to discover any motion of the earth relative to the "light medium," suggested that the phenomena of electrodynamics as well as of mechanics possessed no properties corresponding to the idea of absolute rest. They suggested rather that, as has already been shown to the first order of small quantities, the same laws of electrodynamics and optics would be valid for all frames of reference for which the equations of mechanics hold good. They rose that conjecture (the purport of which was thereafter to be called the "Principle of Relativity") to the status of a postulate, and also introduced another postulate. This was only apparently irreconcilable with the former, namely, that light is always propagated in empty space with a definite velocity -which is independent of the state of motion of the emitting body. Those two postulates sufficed for the attainment of a simple and consistent theory of the electrodynamics of moving bodies based on Maxwell's theory for stationary bodies.[5]

Semi-Riemannian manifolds have applications, particularly to modern gravitational theory and electrodynamics. Semi-Riemannian geometry is a branch of differential geometry, similar to Riemannian geometry. In fact, Riemannian geometry is a special case of semi-Riemannian geometry where the scalar product of nonzero vectors is only allowed to be positive. From a mathematical perspective, Semi-Riemannian manifolds proved theorems of geometry such as the existence and uniqueness of the covariant derivative of the Levi-Civita connection, and some properties of the curvature tensor. The Einstein tensor:

$$\boldsymbol{G = Ric - \frac{1}{2}gS}$$

is a symmetric, (0, 2) tensor field with vanishing divergence. From the Einstein tensor, it can be defined as a set of nonlinear partial differential equations solved for the geometry of the semi-Riemannian manifold *M* called the Einstein field equations, given by

$$\boldsymbol{Ric - \frac{1}{2}gS = KT}$$

Where *T* is the stress-energy tensor, which represents the energy-momentum content of the universe in the physical model.[6] Space is generally considered to be a three-dimensional continuum. This means that it is possible to describe the position of a point (at rest) by means of three numbers (coordinates) *x, y*. Also, there is an indefinite number of points in the neighbourhood of this one, the position of which can be described by co-ordinates such as x_1, y_1, z_1, t_1 which may be as near as chosen to the respective values of the coordinates x, y, z of the first point. In virtue of the latter property we speak of a "continuum," owing to the fact that there are three coordinates to speak of it as being "three-dimensional." Similarly, the world of physical phenomena, which was briefly called "world" by Minkowski is naturally four dimensional in the space-time sense. It is composed of individual events, each of which is described by four numbers, namely, three space coordinates *x, y, z* and a time coordinate, the time value t. The "world" is in this sense also a continuum. For every event there are as many "neighboring" events (realised or at least thinkable) as it can be cared for to choose, the coordinates x_1, y_1, z_1, t_1 of which differ by an indefinitely small amount from those of the event *x, y, z, t* originally considered. To have not been accustomed to regard the world in this sense as a four-dimensional continuum is due to the fact that in physics, before the advent of the theory of relativity, time played a different and more independent role, as compared with the space coordinates. It is for this reason that it has been in the habit of treating time as an independent continuum. In fact, according to classical mechanics, time is absolute, i.e. it is independent of the position and the condition of motion of the system of co-ordinates. It can be seen expressed in the last equation of the Galilean transformation $t^1 = t$ the four-dimensional mode of consideration of the "world" is natural in the theory of Relativity.[7] What are the values: x_1, y_1, z_1, t_1 of an event with respect to K^1 (a reference frame in motion), when the magnitudes x_1, y_1, z_1, t_1 of the same event with respect to *K* (a reference frame at rest) are given? The relations must be so chosen that the law of the transmission of light in a vacuum is satisfied for one and the same ray of light (and of course for every ray) with respect to *K* and K^1. For the relative orientation in space of the co-ordinate systems, this problem is solved by means of the equations:

$$x^{1}=\frac{x-vt}{\sqrt{I-\frac{V^2}{C^2}}}$$

$$y^1 = y$$

$$z^1 = z$$

$$t^1 = \frac{t - \frac{v}{c^2} \cdot x}{\sqrt{I - \frac{V^2}{C^2}}}$$

This system of equations is known as the "Lorentz transformation.[8] If a stone was picked up and then let go of, why does it fall to the ground?" The usual answer to this question is: "Because it is attracted by the earth." As a result of the more careful study of electromagnetic phenomena, it has come to be regarded that action at a distance is rather a process impossible without the intervention of some intermediary medium. The effects of gravitation also are regarded in an analogous manner. The action of the earth on the stone takes place indirectly. The earth produces in its surroundings a gravitational field, which acts on the stone and produces its motion of fall. As it is known from experience, the intensity of the action on a body diminishes according to a quite definite law, as a body proceeds farther and farther away from the earth. From a point of view, this means that the law governing the properties of the gravitational field in space must be a perfectly definite one, in order correctly to represent the diminution of gravitational action with the distance from operative bodies. It is something like this: The body (e.g. the earth) produces a field in its immediate neighbourhood directly; the intensity and direction of the field at points farther removed from the body are thence determined by the law which governs the properties in space of the gravitational fields themselves. In contrast to electric and magnetic fields, the gravitational field exhibits a most remarkable property.

Bodies, which are moving under the sole influence of a gravitational field, receive an acceleration, which does not; in the least depend either on the material or on the physical state of the body. For instance, a piece of lead and a piece of wood fall in exactly the same manner in a gravitational field (in a vacuum), when they start from rest or with the same initial velocity. This law, which would hold most accurately, can be expressed in a different form in the light of the following considerations. According to Newton's law of motion: (Force) = (inertial mass) x (acceleration), where the "inertial mass" is a characteristic constant of the accelerated body. If now gravitation is the cause of the acceleration, it then had that (Force) = (gravitational mass) x (intensity of the gravitational field), where the "gravitational mass" is likewise a characteristic constant for the body. From these two relations follows: If now, it's found from experience, the acceleration is to be independent of the nature and the condition of the body and always the same for a given gravitational field, then the ratio of the gravitational to the inertial mass must likewise be the same for all bodies. By a suitable choice of units, it can thus make this ratio equal to unity. The following law is the present: The gravitational mass of a body is equal to its inertial law. It is true that this important law had hitherto been recorded in mechanics, but it had not been interpreted. A satisfactory interpretation can be obtained only if it's recognized that: The same quality of a body manifests itself according to circumstances as "inertia" or as "weight" (lit. "heaviness").[9]

Formulation of Theory

From some other analogous point of view, space-time itself becomes a direct solution to Sir Isaac Newton's action at a distance. When coming to think that all the mass in a Galaxy, e.g. the Milky Way Galaxy must be connected by the action at a distance that pulls all the mass in the Galaxy towards a specific gravitational centre within the Galaxy. All other galaxies in the same Galaxy cluster are moving towards the Great attractor, and thus, connected by the action at a distance field force. When this action at a distance is caused by some kind of quantum particle (gravity particle) accelerating a certain mass, and with the addition of the cold dark matter the whole universe becomes interconnected by gravity. The gravity becomes so great, that from the field equations of general relativity, it could become repulsive when a universal metric is introduced into the frame. The series of mathematics later on modelled the gravity particle as the makings of the space-time metric, and repulsive gravity resulting from this. The natural positioning of the cold dark matter and ordinary matter in the universe allows for the flow of the gravity particles in a circular motion, or spin from here on, along matter in the universe and not directed towards a specific great mass in the universe. As mass in the universe is accelerated by the gravity particle, the speeding gravity particle could as very well become the inertial frame of acceleration by which mass must deform as it's accelerated by the inertial frame. In this frame of acceleration, gravity by Sir Isaac Newton's action at a distance becomes so. In some other analogies, space-time itself becomes a direct solution to Sir Isaac Newton's action at a distance. When coming to think that all the mass in a Galaxy, e.g. the Milky Way Galaxy must be connected by the action at a distance that pulls all the mass in the Galaxy towards a specific gravitational centre within the Galaxy. All other galaxies in the same Galaxy cluster are moving towards the Great attractor, and thus, connected by the action at a distance field force. When this action at a distance is caused by some kind of quantum particle (gravity particle) accelerating a certain mass, and with the addition of the cold dark matter, the whole universe becomes interconnected by gravity. The gravity becomes so great, that from the field equations of general relativity, it could become repulsive when a universal metric is introduced into the frame. The series of mathematics, later on, modelled the gravity particle as the makings of the space-time metric, and repulsive gravity resulting from this. The natural positioning of the cold dark matter and ordinary matter in the universe would allow for the flow of the gravity particles in a circular motion, or spin from here on. The spin is of the gravity particle along the matter in the universe without the particles being directed towards a specific great mass in the universe. As mass in the universe is accelerated by the gravity particle, the speeding gravity particle could as very well become the inertial frame of acceleration by which mass must deform as it's accelerated by the inertial frame. In this frame of acceleration, gravity by Sir Isaac Newton's action at a distance becomes so great that it can become negligible. When the mass in the universe is positioned so that the net force is equal at all points in this frame of acceleration, when these gravity particles are moving, the space-time spin arises and unifying geometrical curvature of space-time as a force of gravity with Newtonian (quantum) gravity. This universal model would not break down at the small-scale observations of Newtonian net gravitational field force when the net field force is zero. This is through the insight that the inertial frame of acceleration is a quantum system, thus exhibiting the properties of quantum mechanics, such as the "wave-particle duality"; in which the inertial frame behaves like a particle and a wave at the same time. From the inertial frame of acceleration behaving like a particle point of view, at the observable small scale, the net gravitational field force between masses can be calculated to be at zero and the masses attract each other at the same rate and with the same intensity. Although, not necessarily contradicting the spin of the inertial frame of acceleration. The quantum particles/ waves causing the acceleration of the masses must flow along the masses in such a way that the spin-spin (the intrinsic form of angular momentum carried by particles) of gravity particles from multiple masses do not pull a certain mass in multiple directions. Instead, the mass is accelerated in a single direction, which can be said as an interference between the gravity particles, resulting in the mass being accelerated in a single direction. Although the net gravitational field force of gravitational masses is calculated to be at zero, this same gravitational field force is increased by the factor equal to the gravitational sphere of influence between the masses. In this way the gravitational force behaves like a wave; the amplitude of the gravitational field force is increased by the addition of a mass although causing a net gravitational field force of zero between the masses. In this way, the spin of the inertial frame of acceleration can occur at the grandest scale of universal interconnected gravity, with the natural positioning of matter that would allow for the spin. More on how this inertial frame of acceleration could cause the observed expansion of the universe: space-time in this universal model becomes the direct consequence of a large gravitational field. One such candidate, which could be causing the expansion of the universe is gravity itself, or repulsive gravity to be more exact. Repulsive gravity as it is a suspected candidate, that caused the inertial universal expansion, could be modelled to be the cause of universal expansion in the inertial frame of acceleration, where gravitational fields are the makings of space-time. The notion that space-time as gravitational field forces can be modelled to have existed when repulsive gravity came into effect from the Big Bang. An expansion of the universe in this inertial frame of acceleration becomes eminent. The recent observed increase in the acceleration of the expansion of the universe, could as very well be caused by an increase in the mass density in the universe, such as the formation of stars from their nebulae, causing an increase in the gravitational field force, in a system with a great enough gravitational field that it's repulsive. Similarly, the moving away of certain galaxies from other galaxies could very well be the cause of cold dark matter outside of galaxies.

Predictions of Theory

The curvature caused by the inertial frame of acceleration as it accelerates matter can be said as

$$\boldsymbol{tan\theta} \text{ a } \boldsymbol{c} < \boldsymbol{c'} \text{ a } \boldsymbol{\Omega_M}$$

c < c'(c' is the known speed of light that is 299 792 458 m/s) because light has to travel a longer distance between the two points that can be said as

k = 0 Between,

where the curvature:

k < 0

can be observed.

c < c'

Becomes an outcome of gravitational time dilation. tanθ represents the path that the gravitational field force wave/ particle must take as it accelerates a mass. This path can be said as:

$$\boldsymbol{tan\theta} \rightarrow \frac{(\lambda)c \geq}{\boldsymbol{R}} \Rightarrow \boldsymbol{tan\theta}$$

λ Is the wavelength of the interconnected gravitational field force of the universe, where the wavelength is directly proportional to its amplitude. The momentum in the equation

$$(\lambda = h/p)$$

of a wavelength, when it's that at this scale, it becomes the proportionality resultant by which the inertial frame of acceleration is causing acceleration to the matter in the universe and multiplied by the mass in the universe (as all the mass in the universe is now connected). With the natural positioning of the matter in the universe causing a net gravitational field force between the matter in the universe, all the gravitational force must be directed towards the centre within space-time; it has a greater Newtonian gravitational field force activity in that direction. *R* is the repulsive intensity of spacetime. It's $c \geq$ because the gravitational field force waves/ particles might be moving faster than the speed of light, as Newtonian action at a distance happens faster than the speed of light. The speed of the gravitational field force waves/ particles is included in the equation because the waves/ particles are the inertial frames of acceleration. The equation also shows that Newtonian gravity might make for a small correction that the geometrical curvature wouldn't be able to account for, with total net zero influence of Newtonian gravitational field force, due to the direction of acceleration of the inertial frame of acceleration. Factors such as the angle at which a mass hanging in space must fall, inside the gravitational field. This is when the repulsive nature of gravity is less than its attractive nature in a region with mass density. At the plank scale, all the energy in the universe was repelled (this is the understanding of Big Bang cosmology). The inertial frame of acceleration is from Plank time, from the plank scale, this acceleration reduced over time and is now increasing. Although, there is a tremendous amount of gravity present, the mass in this universal wouldn't necessarily collapse under gravitational field stresses from the plank scale due to repulsive gravity.

Modelling Mathematics of Gravity/ Repulsive Gravity

The intensity by which the universe repels matter, by a form of repulsive gravity can be modelled as

$$g \rightarrow \Omega_M + \Omega_{CDM}$$

Where Ω_M is the region compactness of matter in a region in space-time, Ω_{CDM} is the region compactness of cold dark matter in a region in space-time and *g* is gravity. In this model, gravity is limited by the amount of energy and cold dark matter in a region in space-time, as it is shown below.

$$\Omega_M + \Omega_{CDM} > g$$

When the gravity in a region in space-time is repulsive, and

$$\Omega_M + \Omega_{CDM} = g$$

when the gravity in a region in space-time is attractive. $> g$ Is a resultant of repulsive gravity adding a negative value to gravity, as it acts in the opposite direction of gravity. The Einstein field equations can support the claim of gravity being repulsive at the Plank scale, as being part of an observable universe. This can also be the case, by saying

$$\Omega_M + \Omega_{CDM} > g$$

When the Plank scale is the inertial frame of observation, in the driving force of repulsive gravity, when the amount of gravity in the universe is acting at the Plank scale; in a proportionality difference. When the frame of difference is that of the amount of gravity in the universe and the distance by which it is acting. At the Plank scale gravity becomes repulsive, this being a solution in the field equations of General relativity. Repulsive gravity is a suspected candidate for causing the initial expansion of the universe. This can be modelled as

$$h(\Omega_M + \Omega_{CDM}) > g$$

In order to yield real-world observations. The gravitational repulsive intensity of this model is constant when the amount of gravity in the universe and the scale of frame of reference- the Plank scale, are constant. The repulsive intensity of repulsive gravity reduces with the increase in size of the scale factor, so repulsive gravity and the scale factor are inversely proportional. Using the plank scale as a reference, from the time when all the mass and energy in the universe is from this point (from Plank time), it can also be modelled as a transformation that is;

$$R \rightarrow g,\ g \rightarrow R$$

Both gravity and repulsive gravity are acting in opposite linear directions.

Extra Gravity Within Galaxies

More on the extra gravity within galaxies. The virtual particles (quantum fluctuations) in space are a form of energy with momentum, from general relativity they will have the ability to constitute gravity. Also from General relativity, events happening for a large mass are happening at a relatively slower rate than for another relatively less compact mass. This can be seen from the two relativistic clocks which are $t = 0$ (which is a clock at rest) and the one in a space-time curvature at $t = -1$. From this, once a quantum fluctuation is created in the frame of $t = -1$, the time that the quantum fluctuation could take to decompose could as very well be much less than for an event of a quantum fluctuation in the $t = 0$ frame. If the time the quantum fluctuation is created is independent of the events of the curvature. As the quantum fluctuation is not affected by gravity when it is not created, this could constitute a relative gravitational field contribution of the quantum fluctuation from the time after the virtual particles are created to the time they are destroyed, and the relativity of which corresponding to the amount by which the time in the curvature is slowed.

Symmetry of Space-Time

Aspects of the 4 dimensions overlapping in such a way, that the tesseract folds inward (and the 1 dimension of time that adds an extra dimension to the 3 dimensions is overlapped by the 3 dimensions), that the 1 dimension is the one carrying the negative value on the linear line of space-time. This aspect will allow for the 4 dimensions of space-time to exist. Operations of the Hilbert vector space arise from this factor; this is a Hilbert space given by the vectors

$$x_1,\ y_1 + x_2,\ y_2 + x_3,\ y_3 - x_4,\ y_4$$

This operation then also generalises the dot product in Euclidean vacuum space, as a product moving towards the vacuum, or as a decomposing string in the vacuum. When this operation is present; the dot product in Euclidean space becomes a vector towards the dimension carrying the negative value on the linear line. Generalising this operation in Euclidean space, when the first 3 vectors are that of a vibrating string, the 4th vector becomes the vacuum that would allow for the decomposition of the vibrating string. In 3 space the 4th vector also can be the null set, as it is carrying a negative value. A manifold of space-time folding in this way would mean that, although not directly observed in the special 3 world as being so, the 1 dimension of time could very well be a physical entity that is experienced in more ways than through the interaction of mass and energy. The below diagram is a representation of a relativistic frame of reference known as a light cone, in which space-time is represented in causal terms.

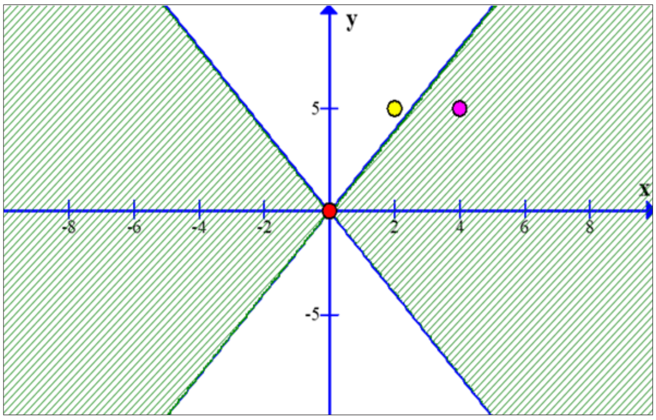

Figure 1.Relativistic Light Cone in the CT Frame, Where Nothing can Travel Faster than the Speed of Light

By observational means, when to say the vacuum that would allow for causality to be, within the inertial frame. When the inertial frame is moving faster than light (*c* >). This would allow for the modification of the Lorentz transformations and adjusting of the world lines of the light cone, in order to compensate for a relativistic frame of reference, where the modification is by the gradient of the slop of the world lines, where the inertial frame of acceleration for the universe is moving faster than the speed of light. Allowing for the addition in the angle of the slope of the light cone's gradient would allow for the accommodation of events happening for the inertial frame of acceleration, as it is moving faster than the speed of light. In this case, the inertial frame of acceleration when the events are happening in a frame, where faster-than-light (or *ct* > frame) becomes a causal event, the faster-than-light body accelerating the universe changes from being the inertial frame to being a causal event in this frame, as indicated in the diagram below.

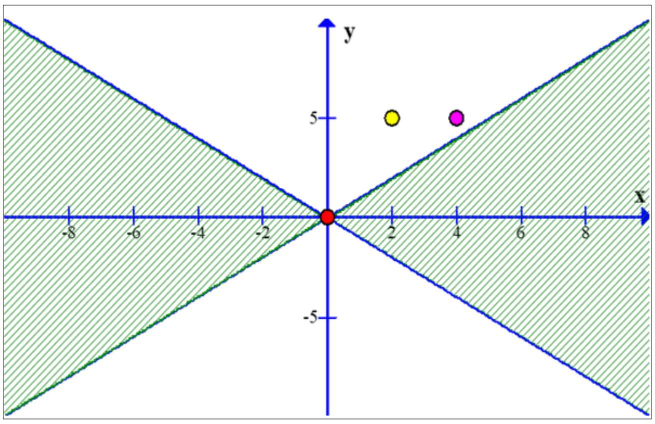

Figure 2.Relativistic Frame of Reference of the Light Cone with a CT > Interval Reference. In this frame, an event that would have been paradoxical in the CT frame becomes a casual event.

In Figure 1, the dot at 0, 0 cannot proceed with the dot at 4, 5 as this would cause violations in causality in the *ct* frame of reference. In Figure 2, this dot is able to proceed to the corresponding dot without any causal violations and this is possible by adjusting the speed of light limit, in the event were the space-time Metric is moving faster than the speed of light. Both frames can be observed simultaneously, in which the events occurring in the *ct* > frame are observed as a paradox for an observer in the *ct* frame. Such paradoxes that an observer in the *ct* frame would observe would include the space-time continuum, in which the space-time Metric is moving faster than the speed of light, another paradox would be the vacuum that facilitates events in the *ct* frame, and allowing for the inertial frame to be an event in the *ct* > frame, now facilitating events as causality in both the *ct* and *ct* > frames. In this way, the vacuum facilitating both events becomes of higher-order symmetry and can be said to be of higher dimensions, depending on the geometrical displacement observed on the Lorentz transformations caused by the paradoxes in which it's facilitating 2 frames of reference, in which one is paradoxical for the other. From the field equations of general relativity, it can be determined that both the inertial frame of acceleration and matter occupying space-time, as being in relative motion to one another. By mass curving space-time the time interval of the mass is also slowed so all processes move slower for this mass. When both the inertial frame of acceleration and matter curving space-time are in relative motion to one another, it becomes a possibility that a paradox can be within the *ct* frame. This paradox could explain why the space-time Metric is not visible. If the relativity in motion between a light ray and the inertial frame of acceleration was sufficient. Being that the inertial frame of acceleration was moving faster than light, it becomes apparent that even if the inertial frame was able to emit a form of light ray, an observer in the *ct* frame would not observe the light ray, firsthand, as the light ray would be sent into the observer's future. The vacuum in which causality is facilitated for the 2 frames of reference represented in the figures, this vacuum can be said to be of higher-order symmetry. Evidently, because causality is different in the 2 frames of reference. In the *ct* frame of reference, nothing can travel faster than the speed of light, while in the *ct* > frame of reference, faster than light becomes a casual event. This could very well be evidence of higher special symmetry, in which both the frames of reference are part of a high-order special symmetry. Like how the 2 dimensions are part of the 3 dimensions, but are special geometrically restricted.

Relativistic Aether

It then becomes clear that adjustment to the Lorentz transformations by the world lines will imply an addition to the number of translatory relativistic frames in order for spacetime to remain relative in all these frames, with increasing velocity. By the introduction of the present unknown candidate to the symmetry of the vacuum facilitating the relativistic frames, it could very well be translated to be that the axis of the relativistic frames are simultaneously present in this vacuum, in which they are translatory measurable by light velocity reflected at points with resting clocks present, in all present frames, due to length restrictions-that a light wave has superposition because of its quantum size. A light ray propagated through space has a constant velocity

c^2

It then follows that the present unknown candidate:

$\emptyset$

can be introduced in the number of relativity frames and complimenting the order of symmetry of this vacuum, it then follows that

$$c, c^2, c^3, \ldots$$

In which case this symmetry translates to a Hilbert vector space, so that the translatory motion of light, allows for the measurements of (relativistic) clocks that are synchronous in their own respective frames. In which case for this to be observational, the light waves are propagated in a translatory motion perpendicular to the frames, it then follows that

$$\xi = (cr)_x\,(cr)_y\,(cr)_z$$

This series would now allow for length contractions of a wave of length propagated through space. Given that the speed of light in vacuum remains constant in each frame, as it superimposes in/ on the frame. With decreasing frame space in each axis direction as observed in the 3 or 4 dimensions. The propagating wave must travel perpendicular to the present frames. With increasing frames, the more perpendicular the wave has to traverse and the more its length contracts, so that with much space the wave takes on a spherical shape with decreasing length, as the number of frames increases. The mechanics of relativistic length contraction translate to this wave given the increasing symmetrical spaces of the vacuum act as if (it was/ they were) a sort of Aether for the propagating wave. With increasing frames-meaning increase in the velocity of the additional frames these frames are a sort of medium through which this wave must traverse. This could as very well result in a waveform of the light ray propagating through this Aether, due to the quantum size of the propagating wave, and the symmetrical positioning of the frames in the vacuum. This wave is propagated in spherical form parallel to the observer in the 3 or 4 dimensions. With the addition of a continuity factor to the propagation of the spherical wave, a number of them are emitted in sequence from the emitting body and the emitted spherical waves have wave energy as well as angular momentum. The absence of the Aether for a body at rest in the 3 dimensions remains true as this body is unable to access the high symmetrical spaces (frames) due to "length restrictions".

On the note of black body radiation: It can be stated that as two of the spherical waves approach, the present unknown candidate can be introduced, in which case the two waves either translate their spaces to each other due to at present unknown relativistic mechanics, as they merge, increasing angular momentum, or they don't and the interference is angular, in which case when the interference causes an increase in wave frequency it very well causes an increase in angular momentum and thus relatively translating the two spherical wave frames. In this case, when the spherical wave passes through a medium, the translatory consequence can either be a loss in angular momentum relative to a decrease in the frames traversed by the spherical wave at the same time. As the spherical wave transverses through the particles also, or the spherical wave breaks down into the individual spherical waves by means of the equation

$$\emptyset = (n)(dt),$$

in which n is the number of spherical waves adding up in the same waveform and

dt

representing the frames traversed by the spherical wave, so much that the clocks in the frames remain at rest when measured relativistically.

$\emptyset$

is on the left-hand side of the equation because it's only known whether the spherical wave momentum will decrease, or whether it will split into individual spherical waves after the values on the righthand side of the equation are found.

It's now established that light rays can result from the relativistic Aether. It then becomes consistent in this article that space-time can exist in a vacuum where all bodies present are in free fall (in which case both relativity and Newtonian mechanics complement each other) on the note that the number of spherical waves are squared, so that it's represented as n^2.

So that a traversing spherical wave is capable of producing a secondary spherical wave outside its traversable space. Of which the secondary spherical wave effects are linearly opposite to the effects of the producing spherical wave; as of Newtonian mechanics. It then follows that the effects of gravity; being caused by quantum particles, the gravity quanta would then produce a secondary spherical wave of which its effects are linearly opposite and outside its sphere of influence. What then is to stop the proposed spherical wave from producing a third one, and so on?

$\emptyset$

becomes a candidate for this case; for which the definite number of the produced spherical waves is unknown. In this case, it becomes the same as saying that the number of produced spherical waves is proportional to the present frames in the vacuum; for one quanta. On the note of the gravitational quanta communicating faster than the speed of light! This can be translated from the Newtonian vacuum being infinite to the spaces or frames present in the vacuum. The capability of which becomes that when the length of the spherical wave reaches zero and it can no longer traverse perpendicular to any more additional spaces, its angular momentum can be translated linearly and the spherical wave can then be relativistic observed as travelling faster than light. In this case, it must remain parallel in its own frame. The spherical wave can no longer produce any more quantum waves at this point and this is inherent in Newtonian mechanics. Because there are no other spin-spin possibilities for any more produced spherical waves it's no longer able to traverse any more spaces. In this case, the spin-spin nature of a spherical wave can be a possibility following in all its traversable spaces. With different spherical waves having different spin-spin potentials, it then becomes a possibility that two spherical waves superimposing at the same point in space may not interfere that their wavelengths shorten or grow longer. This means that the wave path of the two waves can be drawn that-their superpositioning becomes asymmetric and nonlinear. That an angle of

$\tan\theta > \tan\theta$

or

$\tan\theta^{-1} < \tan\theta^{-1}$

can be drawn from a point of intersection (the centre of the spherical waves) between the two waves and the angle of the waves is found to be unequal. In which the spherical wave has angular momentum so may be able to alter the direction of another spherical wave, as it approaches. It can then be that

$$n \to \frac{n}{\frac{1}{2}} \propto c >$$

producing relativistic length contraction at faster-than-light speeds; in which the spherical wave splits in two. So that the spin-spin of the produced spherical waves are linearly opposite.

Applications for the Formulation of an Equation for Gravity

The applications of gravity can be transformed from the mathematics of the theory of Relativity (since gravity in this case results from relativistic effects). The going about transforming the equations of the theory of relativity into an equation for gravity is as follows. The series

$\xi = (cr)_x\ (cr)_y\ (cr)_z$

translates the symmetry of space-time that the point x appears elongated as the length of the propagated wave contracts. For deriving a mathematical form for gravity-in this case, only the 3 relativistic (linear) frames are needed for the mathematics to remain partially linear throughout the formulation. To start off, a wave propagating through space appears to be linear in direction when the 2 frames K' and k are neglected. By Newtonian mechanics, it becomes almost an impossibility for this wave to propagate in the y-axis of the stationary system when the second frame is introduced that ct is now transformed into c^2t^2. The impossibility becomes possible when the 3rd frame is now introduced and (like the second frame) is not at all empty. So that c^2t^2 now becomes a linear function, in which the wave is propagated in a linear direction through the frames k, $K + 1$ and $K' + 1$ to a point x' or x in the stationary systems. For applications where the wave is observed in the axis x, y, and z for an observer at x, the linear function is transformed. In which case the velocity of the observer at x is increased to that for *K′* so that *K′* + 1, and -v is the observer stationary in the *K′* frame; that the observer now takes the position of a point in *K′* + 1 and the observer's position in the stationary system is at x + 1, −y. In this case, this observer is now enclosed in a space where the 3 frames are linear to the observer. In this case, the observer can be seen as the one in motion and the frame *k* being stationary. In this case, the motions of the observer in the *K′* + 1 frame can be relativistically translated to the *k* frame in order to avoid the addition of any more frames. So that $c^2 = v^2$ can now be said as

$c^2 = c$

,

$v^2 = v - u$

$u - v$ is the initial and final velocities of the moving observer in the *K′* + 1 frame. In which case when a second body in the *K′* + 1 frame gets close enough to the observer in the, it is then represented as

$(c^2)^2 = c^2$,

$(v^2)^2 = v^2 - u^2$

following the equation for gravity is now obtained from length contraction, where the contraction of the x-axis in the second frame influences the length of a point in the *K′* + 1 frame relative to the other frames. So that when

$(c^2)^2 = c^2$,

$(v^2)^2 = v^2 - u^2$

is obtained, the equation for length contraction becomes proportional to

$$\frac{C^2 - V^2}{M}$$

= m/m

for each of the gravitating masses. So that for 2 gravitating masses, it becomes

$$\frac{C^2 - V^2}{M_1} - \frac{C^2 - V^2}{M_2}$$

and the smaller mass is observed as relatively gravitating towards the larger mass with a certain force at a point on the x-axis. These implications require a stationary system moving with the observer and the body in K′ + 1 (the second frame) so that with sufficient distance

$(c^2)^2 = c^2$,

$(v^2)^2 = v^2 - u^2$

is transformed into

$c^2 = c$,

$v^2 = v - u$

and gravitation doesn't necessarily occur. The equations of gravitation measure gravity by the gravitating potential of one mass towards the other. Since the observer and the second body can't move at the speed of *K′* + 1, their position in *K′* + 1 is translated to their corresponding gravity wave that is capable of superimposing into the *K′* + 1 frame and represented in the equation for gravitation as M_1 and M_2. In this case, the force of gravity can be viewed as caused by a spherical wave influencing the other frames where a force of attraction occurs between 2 masses.

For a more accurate estimation of the valid distance, the contraction of length for 2 masses is capable of supporting a gravitating effect of 2 masses, this distance can be limited within the space of an emitted light ray. Where there's energy there's gravity. The going about limiting this distance is as follows. The shortening of wavelength evokes the shortening length of the mass emitting the light ray so as for the principle of relativity to remain true for all the observers. The shortening of the emitting mass follows the compression or the stretching of the other frames and the principle of relativity is once again valid for all observers. The established fact that gravitation can result from the aforementioned relativistic effects is enough to establish that with reducing distance from the emitting mass the weaker that the gravitational force gets as the wavelength increases in size. Furthermore, all present relativistic frames add that the symmetry of space-time remains simultaneous in all its postulates. For all the symmetric spaces introduced herein to remain simultaneous with those based on the theory of relativity, the cosmological constant is introduced and increased by a factor so much as with the increasing symmetry of the light ray-the principal of the constancy of the velocity of light in vacuum remains true, but the principle of relativity is momentarily broken as the light ray contracts faster than the emitting mass. This asymmetry is corrected by the introduction of $\frac{C^2 - V^2}{M}$ that the length of the emitting mass isn't contracting linearly but in a quadratic manner. The emitting mass and the mass absorbing or reflecting the light ray both contract in length towards each other. In this way, the principle of relativity approaches towards being true for both gravitating masses. Yet no claim has been made as to how the k frame remains relative to the others. In this instance, the k frame is viewed as contracting with the present mass, in as much as the cosmological constant remains true for the contracting light ray. So to prevent any infinities caused by the cosmological constant and the contraction of the light ray; the k frame contracts in such a way that the approaching light ray is slowed by a factor that the contraction of the k frame remains relative to the other frames. In other words, it's said that an increase in energy would cause an increase in the curvature and matter must follow this curvature in order for the principle of relativity to remain for all observers. And it has been established that the presence of energy constitutes gravitation.

And now it can be deduced as action at a distance having a postulate. This postulate is anchored to the principle of relativity. For a practical approach to how the other frames are able to pose negative mass as the symmetry of space-time increases; the velocities in the equations of relativity are transformed into the distance the deliberations of an observer at rest are the same when the body in so-called motion has velocity. While the speed of light "c" is transformed to be p (the perceivable limit of the observer) which is the point beyond which the observer can't perceive anything. With increasing distance of the so-called body in motion, the more that the observer at rest views the size of the body to reduce. With sufficient distance, the body vanishes to the observer at rest but appears to grow larger in size to a second observer far from the first observer, and the body approaching the second observer is being moved closer to the second observer as it moves further from the first. It then emphasised that the decreasing of length as velocity increases only has to do with the principle of relativity and because a certain body vanishes as it approaches the speed of light and faster, this does not necessarily mean that this body also ceases to exist as it can still be observed elsewhere. Then exists the observation that with increasing distance the less there would be a sort of linear interaction between the observer at rest and the body with increasing distance. That with sufficient distance the body even ceases to be perceived. So now the distance in the practical approach is relative to the velocity, and the interaction with distance is the same with velocity. There then exists a limit between the interaction of the observer at rest and the body in motion, and this limit is within the energy of the two. More energy would constitute faster velocity. As the speed of light is approached the interaction with a body moving faster than light becomes more observable. Now the light wave would have a medium of negative mass to travel through. Also there now exists a medium mediating length contraction.

Conclusion

The universal model described above tries to unify gravity with quantum mechanics, in order to derive a universal theory in which gravity is quantised. The results of the theory were attained by unifying General relativity with Quantum gravity.

Conflict of Interest: None

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