A Dialogue on Fifth Dimension, Empty-SPace

Prashant Chauhan (prashant.941022@gmail.com)
Kaushal Teleportation Lab https://orcid.org/0000-0001-6638-1318

Article

Keywords: gravitational-space-time, gravitational waves, kaushal constant, quantum gravity, theory of special connectivity

Posted Date: May 29th, 2021

DOI: https://doi.org/10.21203/rs.3.rs-562370/v2

A Dialogue on Fifth Dimension, Empty-Space

Abstract: Gravity and space-time are relative to each other because gravity or more precisely a gravitational wave is the only candidate responsible for empty-space around a mass and empty-space is the only candidate responsible for the mass of an object. It is true that a gravitational wave is a ripple in space-time but space-time is a result of a web of gravitational waves is also true and hence it is more appropriate to call space-time as gravitational-space-time and its known word to us is empty-space. Smallest unit of this web of gravitational waves is known as kaushal constant (K) [1]. Gravity is a result of the force of attraction in between two adjacent kaushal constants of the adjacent planes at a relative point in gravitational-space-time and hence this can be nicknamed as a web of gravity. The slower you move through space, the smaller your gravity web (or weaker the relative gravity) and hence the faster you move through time and vice versa. This paper is a solution to both mathematical and theoretical problems encountered in the field of quantum gravity [2] using theory of special connectivity [3].
Keywords: gravitational-space-time, gravitational waves, kaushal constant, quantum gravity, theory of special connectivity

1. Introduction

Theory of special connectivity [3] states that every mass from atom to black hole is a web of gravitational waves whose smallest unit is kaushal constant. This web starts from the centre of gravity of an object and ends up as a reason for the gravity of that object. Kaushal constant [3] or K is defined as:

- $K = \frac{mGh}{ga^2}$ (1)
- $K = \frac{ma^2}{t}$ (2)
- $K = \sqrt{Qma}$ (3)

Where m is mass, G is gravitational constant, h is plank's constant, g is acceleration due to gravity, a is radius, t is time and Q is heat. Kaushal constant is known as angular momentum.

2. Postulates of Special Connectivity

Postulate 1: whenever a mass, no matter how big or how small, changes its relative position in gravitational-space-time it radiates gravitational waves in the direction of motion and this change is opposed by the effective surrounding gravitational waves.

Postulate 2: Origin of gravitational waves is always the centre of gravity of a mass.

Postulate 3: Light is a particle and travels with the help of gravitational waves [10,11].

Postulate 4: Gravitational waves travel in a straight line.

Postulate 5: Mass can be seen as a web of pure energy created by gravitational waves and gravity can be seen as a web of pure energy created by mass.

Postulate 6: When two gravitational waves meet, some part of their quantised energy got converted into mass commonly known as dust ($m = \frac{E}{c^2}$). Also, energy of gravitational waves is always quantised in a form of its angular momentum known as kaushal constant.

3. Special Connectivity using Quantum Physics

This theory is a unified theory based on gravitational waves, let us first define what a gravitational wave is:

According to general relativity [4], the bend of a light ray is defined by the formula:

$$\alpha = \sin^{-1}\frac{4Gm}{c^2 a} \tag{4}$$

Where G is gravitational constant, m is the mass of the object, c^2 is the speed of gravitational waves in gravitational-space-time and a is the radius of the object.

Also, angle of consciousness derived on the basis of a thought experiment [5] based of a fact that our consciousness has a power to bend a gravitational wave by a certain angle is given by the formula:

$$\alpha = \sin^{-1}(\frac{\sin(\tan x)}{x}) \tag{5}$$

Where x is the ratio of the refractive index of two imaginary media given by: $x = \frac{n_2}{n_1}$

n_2 is the refractive index of the denser medium and n_1 is the refractive index of the less dense medium.

According to postulate 3 light is a particle and travels with the help of gravitational waves, hence on equating equation 4 and 5, we get:

$$ac^2 \sin(\sin x) - 4Gmx \sin(\cos x) = 0 \tag{6}$$

Equation 6 can be seen as a wave function Ψ, defined as:

$$\Psi = ac^2 \sin(\sin A) - 4GmA \sin(\cos A) \tag{7}$$

Where A is defined as, $A = 2\pi - \frac{xma}{\hbar t}$ (8)

Equation 8 is obtained using equations: $k = \frac{2\pi}{\lambda}$; $\lambda = \frac{\hbar}{p}$; $\lambda = \frac{\hbar}{mv}$; $v = \frac{K}{ma}$; $\lambda = \frac{ha}{K}$

$\hbar = \frac{h}{2\pi}$; h is Plank's constant, t is time.

Using equation 8 in 7, we get:

$$\Psi = ac^2 \sin\left(\sin(2\pi - \frac{xma}{\hbar t})\right) - 4Gm(2\pi - \frac{xma}{\hbar t}) \sin\left(\cos(2\pi - \frac{xma}{\hbar t})\right) \tag{9}$$

Schrödinger's equation [6] of motion is defined as:

$$i\hbar\frac{\partial\Psi(t)}{\partial t} = \hat{H}\Psi(t) \tag{10}$$

Where $\hat{H}$ is Hamiltonian operator, defined as:

H=T-V

T is kinetic energy and V is potential energy.

In special connectivity, Kinetic energy and Potential energy [3] is given by the formula:

$$T = \frac{K^2}{2ma^2} \tag{11}$$

And $V = \frac{K^2}{2ma^2}$

Where K is kaushal constant, m is mass and a is the radius.

Hence, Hamiltonian becomes zero, thus equation 10 is reduced to:

$$i\hbar\frac{\partial\Psi(t)}{\partial t} = 0 \tag{12}$$

On solving equation 12 using equation 9, we get the solution:

$$\tan\cos A\,[ac^2 \cos A - 4Gm] + 4GmA \sin A = 0 \tag{13}$$

Equation 13 represents the general solution of a gravitational wave equation. Below are observations:

1. If $a = 0, then\ A = 2\pi$, equation 13 holds true
2. If $\mathrm{m} = 0, then\ A = 2\pi$, equation 13 holds true
3. Equation 13 also holds true when m is equal to infinity

According to equation 7, speed of gravitational waves traveling in mass is c and in gravitational-space-time is c^2 [1].

3.1 Uncertainty Principle

In special connectivity, uncertainty [19] occurs in between space and empty space since momentum is a property of empty space and is defined as:

$$\Delta x . \Delta \frac{K}{a} \geq \frac{\hbar}{2}$$

Where K is kaushal constant, a is radius, x denotes position and $\hbar$ is reduced plank's constant.

Now let us explore other areas of physics including EM waves, Electrodynamics and classical physics including Newtonian mechanics before moving onto relativity theory.

4. Special Connectivity using Electromagnetic Waves

Electromagnetic waves are special type of gravitational waves. Let us apply formulas form special connectivity on electromagnetic wave equations.

4.1 Electric Field

Charge is defined in terms of kaushal constant as:

$$q = \sqrt{\frac{K}{R}} \qquad (14)$$

Where K is kaushal constant and R is the resistance.

Electric field can be defined using coulomb's law [7]:

$$E = \frac{1}{4\pi\mathcal{E}0} \frac{\sqrt{K}}{\sqrt{R} r^2} \qquad (15)$$

Where r is the distance in between two charges.
Also, using equation 2, $\sqrt{K}$ can be defined as:

$$\sqrt{K} = \sqrt{\frac{m(x^2+y^2+z^2)}{t}} \qquad (16)$$

As $a = x_i + y_j + z_k$

Thus, $|a| = \sqrt{x^2 + y^2 + z^2}$ (17)

Using equation 16 and 17 in 15, we get:

$$E = \frac{1}{4\pi\mathcal{E}0} \frac{1}{r^2} \sqrt{\frac{m(x^2+y^2+z^2)}{Rt}} \qquad (18)$$

Equation of motion in electric field [8] is given by the equation:

$$\nabla^2 E - \frac{1}{c^2} \frac{\partial^2 E}{\partial t^2} = 0 \qquad (19)$$

Using equation 18:

$$\nabla^2 E = \frac{1}{4\pi\mathcal{E}0} \frac{1}{r^2} \sqrt{\frac{m}{Rt}} \left(\frac{(x^2+y^2+z^2)^2+3}{\sqrt{x^2+y^2+z^2}} \right) \qquad (20)$$

And $\frac{\partial^2 E}{\partial t^2} = \frac{1}{4\pi\mathcal{E}0}\frac{1}{r^2}\sqrt{\frac{m(x^2+y^2+z^2)}{R}}\frac{3}{4\sqrt{t^5}}$ (21)

Using 20 and 21 in 19, we get:

$a = 0$, meaning kaushal constant (K) is 0 using equation 2 and infinite using equation 1 at the same time. Also, equation 19 holds true when special connectivity is applied.

4.2 Magnetic Field

Magnetic field using special connectivity is given by:

$$B = \frac{\mu}{2\pi}\sqrt{x^2 + y^2 + z^2}\sqrt{\frac{m}{rt^3}} \quad (22)$$

Where current, I, is defined as:

$$I = \frac{K}{ma^2}\sqrt{\frac{K}{R}} \quad (23)$$

Equation of motion in magnetic field [9] is given by the equation:

$$\nabla^2 B - \frac{1}{c^2}\frac{\partial^2 B}{\partial t^2} = 0 \quad (24)$$

Hence:

$$\nabla^2 B = \frac{\mu}{2\pi r}\sqrt{\frac{m}{Rt^3}}\left(\frac{3}{\sqrt{x^2+y^2+z^2}} - \frac{(x^2+y^2+z^2)^2}{\sqrt{(x^2+y^2+z^2)^3}}\right) \quad (25)$$

Also, $\frac{\partial^2 B}{\partial t^2} = \frac{\mu}{2\pi r}\sqrt{\frac{m(x^2+y^2+z^2)}{R}}\frac{15}{4\sqrt{t^7}}$ (26)

Using equation 25 and 26 in 24, we get:

$$7 = 0 \quad (27)$$

Equation 27 is one of the equations of consciousness which can only be applied according to the reasonable will of a conscious mind and also proves that magnetic field is the reason responsible for the statement that white light is a combination of seven colours.

5. Special Connectivity using Electrodynamics

Equation of motion in electrodynamics [20] is given by:

$$F = q(E + v \times B) \quad (28)$$

Where F is the force, q is charge, E is electric field, v is velocity and B is magnetic field.

In special connectivity:

- $F = \frac{K^2}{ma^3}$ (29)
- $q = \sqrt{\frac{K}{R}}$
- $E = \frac{1}{4\pi\mathcal{E}0}\frac{\sqrt{K}}{\sqrt{R}r^2}$
- $v = \frac{K}{ma}$ (30)
- $B = \frac{\mu}{2\pi r}\frac{K}{ma^2}\sqrt{\frac{K}{R}}$

Using above equations of special connectivity in 28 while considering angle to be 0 degree, we get:

$r = (\frac{\pi-1}{2})^{\frac{1}{3}} or \sim \pm 1$ (31)

Equation 31 is the reason why sine and cosine have a range of ± 1.

6. Special Connectivity using Classical Physics

Let us first see Hamiltonian and Lagrangian mechanics:

6.1 Hamiltonian and Lagrangian

Since Hamiltonian in special connectivity is zero and hence equation of motion in LaGrange Mechanics [12] is defined as:

L=T-V

$$\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{a}}\right) = \frac{\partial L}{\partial a} \quad (32)$$

Lagrangian is defined as, $L = \frac{K^2}{ma^2}$ (33)

From special connectivity:

$$a = \sqrt{\frac{Kt}{m}} \quad (34)$$

$$\dot{a} = \frac{1}{2}\sqrt{\frac{m}{Kt}}\frac{K}{m} \quad (35)$$

Rearranging equation 35:

$$\frac{K}{m} = 2\dot{a}\sqrt{\frac{Kt}{m}} \quad (36)$$

Equation 33 can be written as:

$$L = \frac{2\dot{a}K}{ma^2}\sqrt{\frac{Kt}{m}} \quad (37)$$

Hence, $\frac{\partial L}{\partial a} = \frac{-4\dot{a}K}{ma^3}\sqrt{\frac{Kt}{m}}$ (38)

And, $\frac{\partial L}{\partial \dot{a}} = \frac{2K}{ma^2}\sqrt{\frac{Kt}{m}}$ (39)

Using equation 38 and 39 in equation 32, we get:

$K = \frac{ma^2}{t}$ which is equation number 2. Also, equation 32 holds true for special connectivity.

6.2 Newtonian Mechanics

Let us first examine newton's equations of motion [13]

6.2.1 Equations of Motion

1. $\boldsymbol{v = u + at}$ (40)

In special connectivity,

Distance: $a = \sqrt{\frac{Kt}{m}}$

Velocity: $\dot{a} = \frac{1}{2}\sqrt{\frac{K}{mt}}$

Acceleration: $\ddot{a} = -\frac{1}{4t^2}\sqrt{\frac{Kt}{m}}$

Since this equation denotes various instances of a same object and hence let the web of kaushal constant at speed u be K_1, at speed v be K_2 and during acceleration and distance travel be K_0 Using velocity and acceleration along with equation 2, we get:

$$K_0 = 4(\sqrt{K_1} - \sqrt{K_2})^2 \tag{41}$$

2. $\boldsymbol{v^2 = u^2 + 2as}$ (42)

Taking same assumption as above we get:

$$K_0 = 2(K_1 - K_2) \tag{43}$$

3. $\boldsymbol{s = ut - \frac{1}{2}at^2}$ (44)

Taking same assumptions as above we get:

$$K_0 = \frac{1}{4}(\sqrt{K_1} - \frac{\sqrt{K_2}}{4})^2 \tag{45}$$

On solving equations 41, 43 and 45, we get the following results:

- $K_1 = K_2 = K_0$; It implies that these are different stages of a same web of gravitational waves or mass.
- $7 = 0$; It is an equation of consciousness and was defined in earlier parts of this paper.
- $5 = 0$; It is also an equation of consciousness and implies that every living and non-living in this universe is composed of only 5 elements. {Air, Water, Fire, Dust & Empty-Space}

Equation of consciousness can only be used according to the reasonable will of a conscious mind.

6.2.2 Laws of Motion

Postulate one of special connectivity is a different viewpoint of the first law of motion [14] i.e. law of inertia. So, let us see second law of motion:

$$F = ma \tag{46}$$

Acceleration in special connectivity is given by the equation:

$$\ddot{a} = -\frac{1}{4t^2}\sqrt{\frac{Kt}{m}} \tag{47}$$

Using equation 47 in 46 we get:

$$F = -\frac{K^2}{4ma^3} \tag{48}$$

Force of gravity in special connectivity is given by the formula:

$$F = \frac{K^2}{ma^3} \tag{49}$$

Hence equation 48 becomes:

$$F = -\frac{F}{4} \tag{50}$$

This is an important result which states that every action has an opposite reaction but it may or may not be equal.

7. Special Connectivity using Special Relativity

Special relativity is composed of two parts, time dilation and length contraction [15]. Special connectivity introduces a new frame of reference in which each mass is identified by a web of gravitational waves. Let us see time dilation and length contraction one by one:

7.1 Length Contraction

It is defined by the formula:

$$x' = \frac{x-vt}{\gamma} \tag{51}$$

Where $\gamma = \sqrt{1-\frac{v^2}{c^2}}$ (52)

In special connectivity, $x = \sqrt{\frac{Kt}{m}}$

And velocity, $v = \frac{K}{ma}$

And time, $t = \frac{ma^2}{K}$

Using above information in equation 51, we get:

$$K' = \frac{K}{\gamma^2} \tag{53}$$

Equation 53 denotes the change in the web of gravity or gravitational waves.

7.2 Time Dilation

Time dilation is defined by the formula:

$$t' = \frac{t-\frac{vx}{c^2}}{\gamma} \tag{54}$$

In special connectivity, time is defined as: $t = \frac{ma^2}{K}$

Using the above equation in equation 54, we get:

$$K' = \frac{\gamma K}{\left(1-\frac{x}{a}\right)} \tag{55}$$

Equation 53 and 54 must be equal, hence on equating equation 53 and 54, we get:

$$\gamma^2 = \frac{\left(1-\frac{x}{a}\right)}{\gamma}$$

Putting the value of γ^2 in equation 53, we get equation 55, hence:

Equation 53 and 55 produces same result. When x=a, there is a periphery of mass. When x<a, mass can be identified as a point of energy. When x>a, mass can be identified as a point of gravity.

8. Special Connectivity using General Relativity

Gravity can also be seen as a field phenomenon [4].

Line element in special connectivity is given by:

$$ds^2 = dx^2 + dy^2 + dz^2 - \frac{Kt}{m} \tag{56}$$

A point in space can be described by the coordinates (x, y, z, t, K), where K denotes empty space. Equation 56 can be written using tensor [16] as:

$$ds^2 = (dx^1)^2 + (dx^2)^2 + (dx^3)^2 - (dx^4 . dx^5) \quad (57)$$

Also, as: $ds^2 = g_{uv} dx^u dx^v$ (u, v = 1, 2, 3, 4, 5)

Where g_{uv} is a fundamental tensor and $dx^u,\ dx^v$ is are covariant vectors. It is different for a medium and vacuum and is defined as:

$$g_{uv} = \frac{\partial x^j}{\partial \bar{x}^u} \frac{\partial x^k}{\partial \bar{x}^v} g_{jk} \quad (58)$$

Using equation 56, 57 and 58, fundamental tensor (g_{uv}) for a medium is defined as

x = x^2 $\quad x^1 = x = \bar{x}^1$

y = y^2 $\quad x^2 = y = \bar{x}^2$

z = z^2 $\quad x^3 = z = \bar{x}^3$

t = it $\quad x^4 = t = \bar{x}^4$

K = $i\frac{K}{m}$ $\quad x^5 = K = \bar{x}^5$

Hence coefficient becomes:

$g_{uv} = 0\ for\ u \neq v$

$g_{11} = 4x^2$

$g_{22} = 4y^2$

$g_{33} = 4z^2$

$g_{44} = -1$

$g_{55} = -\frac{1}{m^2}$

Using equation 56, 57 and 58, fundamental tensor (g_{uv}) for vacuum is defined as:

x = x^2 $\quad x^1 = x = \bar{x}^1$

y = y^2 $\quad x^2 = y = \bar{x}^2$

z = z^2 $\quad x^3 = z = \bar{x}^3$

t = $i\frac{ma^2}{K} = i\frac{m(x^2+y^2+z^2)}{K}$ $\quad x^4 = t = \bar{x}^4$

K = $i\frac{a^2}{t} = i\frac{(x^2+y^2+z^2)}{t}$ $\quad x^5 = K = \bar{x}^5$

Hence coefficient becomes:

$g_{11} = 4x^2 - \frac{m^2 4x^2}{K^2} - \frac{4x^2}{t^2}$

$g_{12} = -\frac{m^2 4xy}{K^2} - \frac{4xy}{t^2}$

$g_{13} = -\frac{m^2 4xz}{K^2} - \frac{4xz}{t^2}$

$g_{14} = \frac{2x(x^2+y^2+z^2)}{t^3}$

$g_{15} = \frac{m^2 2x(x^2+y^2+z^2)}{K^3}$

$g_{21} = -\frac{m^2 4xy}{K^2} - \frac{4xy}{t^2}$

$g_{22} = 4y^2 - \frac{m^2 4y^2}{K^2} - \frac{4y^2}{t^2}$

$g_{23} = -\frac{m^2 4yz}{K^2} - \frac{4yz}{t^2}$

$g_{24} = \frac{2y(x^2+y^2+z^2)}{t^3}$

$g_{25} = \frac{m^2 2y(x^2+y^2+z^2)}{K^3}$

$g_{31} = -\frac{m^2 4zx}{K^2} - \frac{4zx}{t^2}$

$g_{32} = -\frac{m^2 4zy}{K^2} - \frac{4zy}{t^2}$

$g_{33} = 4z^2 - \frac{m^2 4z^2}{K^2} - \frac{4z^2}{t^2}$

$g_{34} = \frac{2z(x^2+y^2+z^2)}{t^3}$

$g_{35} = \frac{m^2 2z(x^2+y^2+z^2)}{K^3}$

$g_{41} = \frac{2x(x^2+y^2+z^2)}{t^3}$

$g_{42} = \frac{2y(x^2+y^2+z^2)}{t^3}$

$g_{43} = \frac{2z(x^2+y^2+z^2)}{t^3}$

$g_{44} = -\frac{(x^2+y^2+z^2)^2}{t^4}$

$g_{45} = 0$

$g_{51} = \frac{m^2 2x(x^2+y^2+z^2)}{K^3}$

$g_{52} = \frac{m^2 2y(x^2+y^2+z^2)}{K^3}$

$g_{53} = \frac{m^2 2z(x^2+y^2+z^2)}{K^3}$

$g_{54} = 0$

$g_{55} = -\frac{m^2(x^2+y^2+z^2)^2}{K^4}$

Hence, we can see that g_{uv} is symmetric and g_{uv} for vacuum can also be written as:

$$g_{uv} = \left(\frac{m}{Kt}\right)^2 g_{uv} \quad (58)$$

According to Newtonian theory of gravitation [17]:

$$\nabla^2\Phi = 4\pi G\rho \quad (59)$$

Where Φ is gravitational potential, ρ is the density of matter and G is gravitational constant. Equation 59 is generalised into tensor form and is given by:

$$R_{uv} - \frac{1}{2} g_{uv} R = -8\pi T_{uv} \quad (60)$$

Where R_{uv} is ricci tensor, $R = g^{uv} R_{uv}$, g_{uv} is the fundamental tensor and T_{uv} is the material-energy tensor. We have seen two type of fundamental tensor in special connectivity. Now let us examine ricci and material-energy tensor.

Ricci tensor is defined as:

$$R_{uv} = \frac{\partial \log\sqrt{g}}{\partial x^u \partial x^v} - \frac{\partial}{\partial x^\lambda}\Gamma^\lambda_{uv} + \Gamma^\alpha_{u\lambda}\Gamma^\lambda_{\alpha v} - \Gamma^\alpha_{uv}\Gamma^\lambda_{\alpha\lambda} \quad (61)$$

$$\sqrt{g} = \frac{8xyz(x^2+y^2+z^2)}{K^2 t^2} \quad (62)$$

Where u, v = 1, 2, 3, 4, 5

On solving, ricci tensor in special connectivity is defined by the coefficients:

$R_{11} = \frac{2}{x^2}$
$R_{12} = \frac{1}{xy}$
$R_{13} = \frac{1}{xz}$
$R_{14} = -\frac{2}{xt}$
$R_{15} = -\frac{2}{xK}$
$R_{21} = \frac{1}{yx}$
$R_{22} = \frac{2}{y^2}$
$R_{23} = \frac{1}{yz}$
$R_{24} = -\frac{2}{yt}$
$R_{25} = -\frac{2}{yK}$
$R_{31} = \frac{1}{zx}$
$R_{32} = \frac{1}{zy}$
$R_{33} = \frac{2}{z^2}$
$R_{34} = -\frac{2}{zt}$
$R_{35} = -\frac{2}{zK}$
$R_{41} = -\frac{2}{xt}$
$R_{42} = -\frac{2}{yt}$
$R_{43} = -\frac{2}{zt}$
$R_{44} = \frac{3}{t^2}$
$R_{45} = \frac{4}{tK}$
$R_{51} = -\frac{2}{Kx}$
$R_{52} = -\frac{2}{Ky}$
$R_{53} = -\frac{2}{Kz}$
$R_{54} = \frac{4}{tK}$
$R_{55} = \frac{5}{K^2}$

Let us now find the material-energy tensor in terms of special connectivity:

$$T^{uv} = \rho \frac{dx^u}{dt}\frac{dx^v}{dt} + \frac{\rho p^2}{a^2-1}\frac{dx^u}{dK}\frac{dx^v}{dK} - \frac{E}{a} \quad (63)$$

Where ρ is coordinate density of the matter, p is momentum, a is radius, K is kaushal constant and E is energy.

Hence, considering u, v, w as the components of velocity, T_{uv} is defined as:

$T_{11} = -\rho u^2 - \frac{\rho}{a^2-1} + \frac{E}{a}$

$T_{12} = -\rho uv - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{13} = -\rho uw - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{14} = -i\rho u - \frac{\rho p}{E(a^2-1)} + \frac{E}{a}$
$T_{15} = -\rho uE - \frac{i\rho p}{m(a^2-1)} + \frac{E}{a}$
$T_{21} = -\rho uv - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{22} = -\rho v^2 - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{23} = -\rho vw - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{24} = -i\rho v - \frac{\rho p}{E(a^2-1)} + \frac{E}{a}$
$T_{25} = -\rho vE - \frac{i\rho p}{m(a^2-1)} + \frac{E}{a}$
$T_{31} = -\rho uw - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{32} = -\rho vw - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{33} = -\rho w^2 - \frac{\rho}{a^2-1} + \frac{E}{a}$
$T_{34} = -i\rho w - \frac{\rho p}{E(a^2-1)} + \frac{E}{a}$
$T_{35} = -\rho wE - \frac{i\rho p}{m(a^2-1)} + \frac{E}{a}$
$T_{41} = -i\rho u - \frac{\rho p}{E(a^2-1)} + \frac{E}{a}$
$T_{42} = -i\rho v - \frac{\rho p}{E(a^2-1)} + \frac{E}{a}$
$T_{43} = -i\rho w - \frac{\rho p}{E(a^2-1)} + \frac{E}{a}$
$T_{44} = \rho - \frac{\rho p^2}{E^2(a^2-1)} + \frac{E}{a}$
$T_{45} = -i\rho E - \frac{i\rho p^2}{Em(a^2-1)} + \frac{E}{a}$
$T_{51} = -\rho uE - \frac{i\rho p}{m(a^2-1)} + \frac{E}{a}$
$T_{52} = -\rho vE - \frac{i\rho p}{m(a^2-1)} + \frac{E}{a}$
$T_{53} = -\rho wE - \frac{i\rho p}{m(a^2-1)} + \frac{E}{a}$
$T_{54} = -i\rho E - \frac{i\rho p^2}{Em(a^2-1)} + \frac{E}{a}$
$T_{55} = -\rho E^2 + \frac{\rho p^2}{m^2(a^2-1)} + \frac{E}{a}$

T_{uv} can also be written as:

$$T_{uv} = T_{ij} + \frac{E}{a} g_{uv} \quad (64)$$

Field equation in special connectivity is given as:

Using equation 60 along with Einstein field equation [24], we get

$$R_{uv}\left[1 - \frac{\delta_u^v}{2}\right] + \Lambda g_{uv} = -8\pi T_{uv} \quad (65)$$

Equation 65 is partially correct and hence using equations 58, 60 and 64, we get:

$$R_{uv}\left[1-\frac{\delta_u^v}{2}\right]+\left(\frac{m}{Kt}\right)^2 g_{uv}=-8\pi T_{uv}-8\pi\frac{E}{a}g_{uv} \quad (66)$$

Equation 66 represents kaushal field equation and contains dark energy in L.H.S. and dark matter in R.H.S. of this equation. It can be rewritten as:

$$R_{uv}\left[1-\frac{\delta_u^v}{2}\right]+\frac{1}{a^4}g_{uv}=-8\pi T_{uv}-4\pi\frac{F}{a}g_{uv} \quad (67)$$

Where F is the force of gravity given by the formula:

$$F=\frac{K^2}{ma^3} \quad (68)$$

For medium, Equation 67 will be reduced to:

$$R_{uv}\left[1-\frac{\delta_u^v}{2}\right]+g_{uv}=-8\pi T_{uv}-4\pi F g_{uv} \quad (69)$$

Equation 67 and 69 represents kaushal field equations in vacuum and in medium respectively. Comparing equation 66 and 65, we get:

Cosmological constant in vacuum, $\Lambda=\left(\frac{m}{Kt}\right)^2=\frac{1}{a^4}$ (70)

Where a is the radius and K is kaushal constant.

9. Tests of General Relativity Explained

There are three crucial tests of general relativity [18], namely:

1. The advance of the perihelion of the planet which is rightly explained as c^2 is the speed of gravitational waves in gravitational-wave-time.
2. Light is a particle and travels with the help of gravitational waves. Our consciousness has a power to bend a gravitational wave by a certain angle called as angle of consciousness [5]. Bend of 1.76 sec is a result of 36 different consciousness acting together.
3. Gravitational shifts are only possible because in gravitational-space-time, speed of gravitational waves is faster than that of light. This is the reason the frequency of light decreases as it leaves the gravitational field and when it is received in gravitation free space or vice versa.

10. Universe in Special Connectivity

Theory of special connectivity predicts hyperbolic universe. Line element in special connectivity is given by:

$$ds^2=dx^2+dy^2+dz^2-\frac{Kt}{m}$$

It can be written as: $s^2=m^2-a^2$, which is an equation of hyperbola [22].

Hence, every galaxy must have its inverted parallel replica about its supermassive black hole hidden in our plane sight and universe is a sphere (not so perfect!) with its spherical inverted parallel replica making it an equation of hyperbola and hence there must be an ultra-massive black hole at the centre of the universe. Thus, there are only 3 advanced civilizations with us in this universe and of course universe is finite.

10.1 Natural Frequency of Vibration

According to special connectivity, capacitance [23] is given by the formula:

$$C=\frac{ma^2}{KR} \quad (70)$$

And Inductance, $L = \frac{ma^2R}{K}$ (71)

Frequency of resonance will become:

$$f_r = \frac{1}{2\pi\sqrt{LC}} \tag{72}$$

Using equation 70 and 71 in 72, we get:

$$\frac{f_r}{f} = \frac{1}{2\pi} \tag{73}$$

Hence natural frequency of vibration becomes:

$$f_N = \frac{1}{2\pi} \tag{74}$$

10.2 Motion of Test Particle in Gravitational Field

Motion of test particle in gravitational field [4] corresponding to the line element described by equation 56 can be given by the formula:

$$\frac{d^2x^\alpha}{ds^2} + \Gamma^\alpha_{uv}\frac{dx^u}{ds}\frac{dx^v}{ds} = 0 \tag{75}$$

Where u, v, α = 1, 2, 3, 4, 5

Conclusion

Empty space is the fifth dimension which is the basis of all other four known dimensions. Kaushal constant is the smallest unit of empty space and can only be seen relatively. Theory of special connectivity is a unified theory and can be applied to all the existing and forthcoming realms of science and technology. According to it, mass is a pure web of energy or consciousness and gravity is a pure web of energy created by the mass. Time can also be seen as a decreasing perspective if we accept the fact that death comes before birth. We all are a result of a same fabric of empty space and this is the only reason why no fringe shift was observed in Michelson and Morley's Experiment [21]. Last but not the least, gravitational wave is the only source of energy, frequency and vibration in the universe and every wave we know as of today is a special type of gravitational wave including gravitational waves itself because we have measured gravitational waves traveling in mass and not in gravitational-space-time.

Data Availability

The data that support the findings of this study are openly available in [Open Access], reference number [1, 5, 10, 11, 23]. The data that support the findings of this study are available in [Scholars' Press, Book Publisher (ISBN: 978-6202314763)], reference number [3].

References

[1] Prashant. Kaushal and Gravity. J Phys Astron. 2018; 6(1):133

[2] Smolin, L. (2017). *Three roads to quantum gravity*. New York: Basic Books.

[3] Chauhan, P. (2018). Theory of Special Connectivity (Ser. 1). Moldova: Scholars' Press

[4] Gupta, K. (2019). Relativistic Mechanics (19th ed.). Meerut, Uttar Pradesh: Pragati Prakashan. ISBN:978-93-88925-71-6

[5] Chauhan P (2019) Introduction to Consciousness; *Advance Research Journal of Multidisciplinary Discoveries*. 33(2) pp. 10-11

[6] Dürr, D., & Teufel, S. (2009). Schrödinger's equation. *Bohmian Mechanics,* 129-143. doi:10.1007/b99978_7

[7] Coulomb law (electrostatics). (2005). *Van Nostrand's Scientific Encyclopedia*. doi:10.1002/0471743984.vse2154

[8] Năstase, H. (2019). *Classical field theory*. Cambridge, United Kingdom: Cambridge University Press.

[9] Blakely, R. J. (1995). *Potential theory in gravity and magnetic applications*. Cambridge England: Cambridge University Press.

[10] Prashant. Wave-Particle Duality? J Phys Astron. 2018; 6(1):142

[11] Prashant, (2021). An Experiment on Wave-Particle Duality. *Newest Updates in Physical Science Research Vol. 3*, 115–117. https://doi.org/10.9734/bpi/nupsr/v3/1832F

[12] Lagrangian mechanics. (2008). *An Introduction to Lagrangian Mechanics,* 35-71. doi:10.1142/9789812818386_0002

[13] Chow, T. L. (2013). *Classical mechanics*. Boca Raton: CRC Press/Taylor & Francis.

[14] Newton's laws of motion. (n.d.). *The Encyclopedia of Astronomy and Astrophysics*. doi:10.1888/0333750888/4567

[15] Ramakrishnan, A. (2005). *Special relativity*. Chennai: East West Books (Madras) Pvt.

[16] Nelson, E. (2016). *Tensor analysis*. Princeton University Pres.

[17] Newtonian gravitation. (1999). *An Introduction to Relativistic Gravitation,* 1-40. doi:10.1017/cbo9781139174213.002

[18] Tests of general relativity. (2019). *Modern General Relativity,* 539-546. doi:10.1017/9781108181938.031

[19] Heisenberg: The uncertainty principle. (2017). *Heisenberg: The Uncertainty Principle*. doi:10.5040/9781350064881.00000005

[20] Herrera, J. C. (1977). Equation of motion in classical electrodynamics. *Physical Review D, 15*(2), 453-456. doi:10.1103/physrevd.15.453

[21] Raith, W. (2018). Michelson-Morley-Experiment. *Physik Online*. doi:10.1515/physiko.2.163

[22] Hyperbola. (n.d.). *The Encyclopedia of Astronomy and Astrophysics*. doi:10.1888/0333750888/4559

[23] Prashant. (2019). “KAUSHAL ELECTRONICS.” *International Journal of Research - Granthaalayah*, 7(1), 83-87. https://doi.org/10.5281/zenodo.2550108.

[24] Carlip, S. (2019). The einstein field equations. *General Relativity,* 52-58. doi:10.1093/oso/9780198822158.003.0006