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Gravity and Electrostatic

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Abstract

Integration of gravity and electrostatic forces and uncertainty principal , standard model origin, effect of space fluid (dark matter). Any energy field increases inertia of system by $E=MC^2$. Curving of space time by matter in 4 d will become stretching of space in 2 d By applying Hooks law and general relativity, energy mass equivalence electrostatic field can be derived from gravitational field.

***Keywords:** General theory of relativity; Special theory of relativity; Hooks law*

Introduction

Laws of physics do not change by adding or removing dimensions. 2 d, 3 d, or 4 d, gravitational force equation remains same. Hence super string theory may not work Space is homogenous fluid at cosmic level with positive elasticity but at quantum level exhibits properties of fluid with properties like quantum surface tension and quantum capillary actionSuch space shows –k elasticity at quantum level With this –k space fluid uncertainty principal can be explained Space fluid changes elasticity from –k to k for attractive forces and –k is maintained for repulsive forces. Each time difference is released as energy which is explained by standard model Gravity is fundamental force ,which do not require particle exchange Integration of gravity with electromagnetic force will be empirical only Gravity do not require particle exchange, rest of the forces require because asymmetric nature of space time due to space fluid (dark matter) [1].

Presumptions

We consider space-time as a two dimensional for simplicity of calculation. We can extend this to X, Y, Z and time axis permitted by principal of finite induction. Also mass curves space time in 4 d, so in 2 d curving becomes stretching. Space fluid is homogenous at cosmic level having +ve elasticity. At quantum level, as short distance, space fluid is liquid in nature with K – ve (Elasticity Constant).

For M2 ∠∠∠ M1

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So neglecting M2 effect on medium (2 d space, 2 d flat masses)

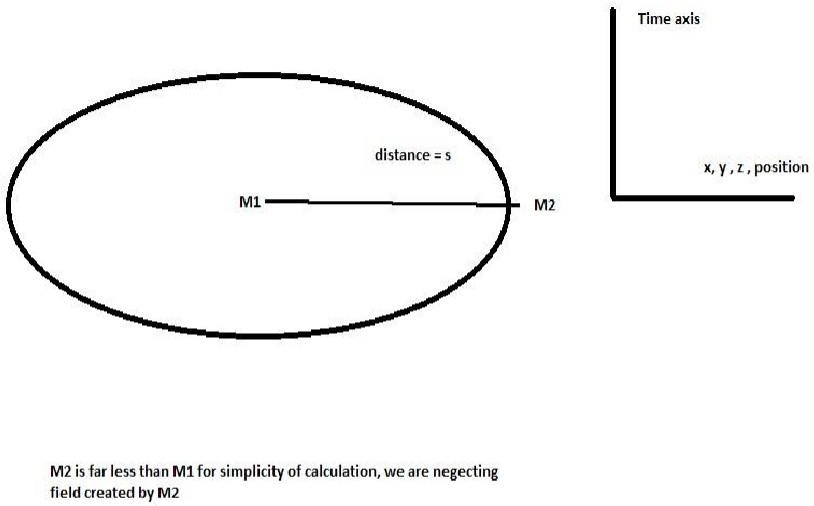

FIG. 1. Two mass system M1 and M2.

Let of consider two mass system M1 and M2. M1shown in **(FIG. 1)** stretches space fluid hear after referred of medium by Δ x potential energy because of stretching is E=½ K Δ x^2 -------Hooks law. So rate of stretching,

d/dx E=d/dx ½ K Δ x2.

ΔE= ½ x 2 K Δ x2. =K Δ x

New such increase in potential energy will lead to increase in inertia of M1 by ΔM1 .So increase in energy will be

ΔE= Δ M1.C2 -------(II)

From I and II

Δ M1.C2=K Δx

∴ Δ x=(Δ M1C^2.)/K

So total stretching will be

$\therefore \sum \Delta x = \sum \frac{\Delta M1C^2.}{K}$

$S=\frac{M1C^2}{K}$ --- (III)

New $\frac{S}{T}$=V, V is speed of stretching.

So $\frac{S}{T}=\frac{M1C^2}{KT}$ ----- (IV

kinematic equation.

v=AT V=U+AT

For U=0

So A=V/T (A is acceleration)

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Substituting in (IV)

$A=\frac{M1C^2}{KT^2}$

For Mass M2

F=M × A

so for mass M2

$F=\frac{M1C^2}{KT^2} \times M_2$ ------ (V)

Now Substituting $T=\frac{S}{V}$

$F=\frac{M1C^2}{KT^2} \times M_2$

Hence $F=\frac{C^2V^2}{K} \frac{M1M2}{S^2}$

So F=force of gravity

F gravity $=\frac{C^2V^2}{K} \frac{M1M2}{S^2}$

Now we know gravitational disturbance travel medium of velocity of light so Substituting V=C

F gravity$=\frac{C^2V^2}{K} \frac{M1M2}{S^2}$

F gravity$=\frac{C^4}{K} \frac{M1M2}{S^2}$

We know $\frac{C^4}{K}$=G, gravitations constant

K is elasticity constant of space fluid (dark matter)

For calculating electrostatic force we do following assumptions.

Space fluid has negative elasticity index i.e. –K. As short range force are field forces and potential involved individual contribution of potential energy is difficult to determine. As potential is respect to other. So contribution of each charge to field will be considering R tine of charge. R is constant. Short range force like electrostatic, we know coulomb constant is dependent of material, dielectric constant etc. So we can presume energy contribution to field R × Q. When R is constant. Now let us consider case.

q2<<<q1 shown in **(FIG. 2)** Now, q_1 is charge. By our presumption energy contribution of each charge to field=Rq_1

Now energy Rq_1 will lead to increase in inertia by

$\Delta R\, \Delta q_1=\Delta mc^2$

Now increase in inertia will led to stretching of space fluid by Δx.

By applying Hooks law

$\Delta R\, \Delta q_1= \Delta m_1c^2 = ½\, K\, \Delta\, x^2=E$ Hooks Law ---------- (1)

Now rate of stretching we differentiate

$\Delta E=\frac{d}{dx} \frac{1}{2} K\, \Delta\, x^2$

$\Delta E=K\, \Delta x$ ----------(II)

Now $\Delta E = \Delta m_1c^2 = K\Delta x$ ---------- (III)

Increase in inertia due to q_1

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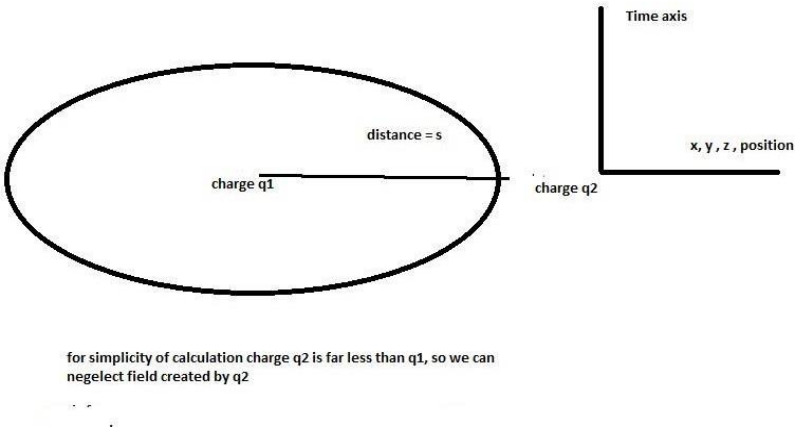

FIG. 2. Charge of Q1 and Q2.

$\Delta m_1 c^2 = \Delta R\, \Delta q_1$

So $\Delta m_1 = \frac{\Delta R\, \Delta q1}{C^2}$ ------ (IIII)

Now from (II) and (III)

$\Delta m_1 c^2 = k\Delta x$

So $\Delta x = \frac{\Delta M1 C^2}{K}$

Replacing $\Delta m_1 = \frac{\Delta R \Delta q_1}{C^2}$

$\Delta X = \frac{\Delta M_1 C^2}{k} = \frac{\Delta R\, \Delta q_1}{K C^2}\ c^2$

$\Delta X = \frac{\Delta R\, \Delta q_1}{K}$

Now $\sum \frac{\Delta x}{\Delta T} == \sum \frac{\Delta R\, \Delta q_1}{\Delta T K}$ that is velocity

So, $V = \frac{Rq1}{TK}$

V=U +AT

For U=0

V=AT

$A = \frac{V}{T}$

So, $A = \frac{Rq1}{KT^2}$ ------ (IV)

Now for second charge q_2

$\Delta R\, \Delta q_2 = \Delta m_2 c^2$

$$\sum \Delta R\, \Delta q_2 = \sum \Delta m_2 c^2$$

$Rq_2 = m_2 c^2$

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So increase in inertial mass will be

$M_2=\frac{Rq_2}{C^2}$ ------ (V)

Now , F=MA

Force between q_1 and q_2

$F_{q_1 q_2} = \frac{Rq_2}{KC^2} \quad \frac{Rq_1}{T^2}$ ----- (VI)

Now, $T=\frac{S}{V}$

$F_{q_1 q_2} = \frac{R^2 q_1}{KC^2} \quad \frac{q_2 v^2}{S^2}$

Now we know gravity stretch travels at velocity of light

$F_{q_1 q_2} = \frac{R^2}{KC^2} \quad \frac{q_1 q_2}{S^2}$ c^2

$K = \frac{2}{} \frac{q_1 q_2}{S^2}$

Now we know $\frac{R^2}{K}$ =Coulomb constant

Now for short distance K is presume to be –ve

So electrostatic force becomes

$F=\frac{-R^2}{K}\frac{q_1 q_2}{S^2}$

Now if q_1 +ve, q2 is –ve

then $F=\frac{-R^2}{K} \quad \frac{-q_1 X + q_2}{S^2}$

$F=\frac{R^2}{K} \quad \frac{q_1 q_2}{s^2}$

- Attraction

for q_1 and q_2 both same polarity i.e. positive or negative.

then $F=\frac{-R^2}{k} \quad \frac{q_1 q_2}{s^2}$---------- repulsion

So we can say electrostatic forces are both attractive and repulsive. Why in quantum word space fluid medium has negative elasticity. In short range forces, electron, and proton orbits play important role. As when two charge Particles or magnetic poles comes together at force distance varies and bonds come in to play. Because of above mentioned reason, space fluid becomes discrete tubular structure. Hence medium becomes discrete and tubular. Because of discrete and tubular nature of medium, phenomenon likes similar to quantum surface tension and quantum capillary action take effect. Because of this medium has –ve elasticity. When any force interaction happens objective or tendency of space-time is not increase –K by value, or reverse back to +ve K. So any attractive interactions medium reverse back, to +ve K. and Δ –K is released energy In any repulsive interaction as not to increase –K excess of Δ –K is released as energy. As space fluied medium is discrete and tubular nature to achieve energy equilibrium principal, medium cannot emit energy in gravitational waves format. As such wave require homogeneous medium so matter achieves this by emitting particles, or radiations. These radiations are observed as per standard model shown in (FIG. 2).

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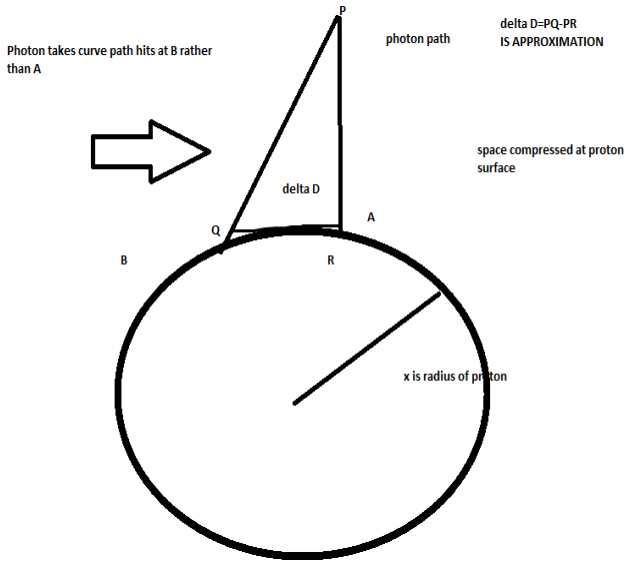

FIG. 3. Space Fluid compression leading to uncetainity principle.

Delta D=L(PQ)- L(PR) is approximation. Let us consider case photon hitting proton. Due to compressing space time at quantum level, (instead of hitting at) B, photon hits proton at A. Δ D is Difference of perimeter of proton. Now, let us calculate deference in momentum of photon.

P1=Momentum before collision

P2=Momentum after collision

X Is radius of proton C=is velocity of light

Δ D is distance deviation

$P_1=M_1C$ c is velocity of light

Though photon does not have rest mass, it has inertia as per energy mass equivalence

$E_1=M_1c^2$

M_1 is inertial mass of photon due to energy mass equivalence

$M_1=\frac{E_1}{C^2}$

Also we can calculate energy of photon as F is frequency

$E_1=hF_1$

F_1=Frequency before collision F_2=Frequency after Collision

$M_1=\frac{hF_1}{C^2}$ by energy mass equivalence, mass of photon

So, momentum before collision of photon

$P_1= M_1C$

$= \frac{hF1}{C^2} \times C$

$= \frac{hF_1}{C}$

Similarly momentum P_2 after collision.

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$P_2=\frac{hF_2}{C}$

$\Delta P= P_2 - P_1$

$= \frac{h}{C} (F_2 - F_1)$

$F_2 - F_1=\Delta F$

$\Delta P= \frac{h}{C} \Delta F$

Now $\Delta F= \frac{1}{\Delta T}$ (time difference) F=is frequency

$\Delta P=\frac{h}{C}\frac{1}{\Delta T}$

We know this time deference arising from facts proton perimeter difference.

So, $\frac{1}{\Delta T} = \frac{C}{\Delta D}$

$\Delta P=\frac{h}{C} \times \frac{C}{\Delta D}$

$\Delta P = \frac{h}{\Delta D}$

Now, We know diameter D

$D=2\pi x$, $\Delta D=2\pi\Delta x$

X is radius of proton

$\Delta P=\frac{h}{2\pi\Delta x}$

So, $\Delta P\ \Delta X=\frac{h}{2\pi}$

$\Delta P\ \Delta X=\frac{h}{2\pi}$ Is antigravity field length

In calculating momentum and position , So we can now say uncertainty in measuring momentum and position, arise out of matter compressing space time at quantum level proton. In reality proton may not be circular, but oval. And path followed by photon may be curve, Hence, we can say $\Delta P\ \Delta X \geq \frac{h}{4\pi}$, Proton gravity field is not strong to create deviation. So we can say negative k at quantum level is reality. In fact negative k by value may be more than cosmic k. Hence short range forces are stronger than gravity [2].

Elasticity of Space Fluid (Dark Matter)

Objective: To find out elasticity of space fluid (dark matter) and other constants

Method used: General theory of relativity, special theory of relativity, Hooks law, space fluid concept (dark matter)

F electrostatic= $-\frac{GR^2}{c4} * \frac{Q1*Q2}{s^2}$, can be expressed in terms of gravity constant and R constant, R is constant of energy inertia convergence constant, K is space fluid elasticity constants

In first part I have shown how Hooks Law and principal of general theory and energy mass equivalence and space fluid with elasticity can lead to integration of gravity and electromagnetism.

I have calculated constants: c^4/k =G gravitational constant, so $k=c^4/G$

C is velocity of light

$C=3 \times 10^8$ m/sec

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$G=6.67 \times 10^{-11}$

Value of k, space fluid elasticity=12.143×10^{43} n/m

Now coulomb constant is C=R^2 / k

So R=$\sqrt{c * k}$

So R=10.39×10^{26} charge/kg

Electrostatic force equation becomes

F electrostatic= $-\frac{G*R^2}{c4^*}\frac{Q1*Q2}{s^2}$

s is distance between charges

Electro static force is related to gravitational force by space fluid elasticity constant k and R=10.39×10^{26} charge/kg and velocity of light.

As G = c^4/k

K=$\frac{c^4}{G}$

So electrostatic force is dependent on gravitational constant and constant R ,velocity of light, gravitational constant G, R is energy inertia convergence constant.

F electrostatic= $-\frac{G \times R^2}{c4} \times \frac{Q1 \times Q2}{s^2}$

By substituting R= 10.39×10^{26}, $G=6.67 \times 10^{-11}$,$c=3 \times 10^8$m/sec

Coulomb constant value comes out to be precisely 8.8893×10^9 $kg \cdot m^3 \cdot s^{-2} \cdot C^{-2}$which is near to actual value coloumb constant=8.988×10^9 $kg \cdot m^3 \cdot s^{-2} \cdot C^{-2}$ which is within accuracy. As space fluid (dark matter) elasticity is no where calculated till date, within accuracy limits this model shows electrostatic forces are connected to Gravitational constant, R energy inertia constant and velocity of light.

Results

Any energy field increases inertia of system by $E=MC^2$ and Curving of space time by matter in 4d will become stretching of space in 2 d by applying Hooks law and general relativity, energy mass equivalence electrostatic field can be derived from gravitational field. Laws of physics do not change by adding or removing dimensions. 2 d, 3 d, or 4 d, gravitational force equation remains same. Hence super string theory may not work as the Space is homogenous fluid at cosmic level with positive elasticity but at quantum level exhibits properties of fluid with properties like quantum surface tension and quantum capillary action and such space shows –k elasticity at quantum level with this –k space fluid uncertainty principal can be explained. Space fluid changes elasticity from –k to k for attractive forces and –k is maintained for repulsive forces. Each time difference is released as energy which is explained by standard model. Gravity is fundamental force ,which do not require particle exchange and integration of gravity with electro magnetic force will be empirical only if the Gravity do not require particle exchange, rest of the forces require because asymmetric nature of space time due to space fluid (dark matter). By this way you can integrate gravity and electrostatic forces and you can show how standard model comes in play and how uncertainty principal originates.

Conclusion

Any energy field increases inertia of space fluid by $E=MC^2$ and by applying Hooks law, energy mass equivalence electrostatic force can be derived from gravitational field. Elasticity of dark matter, gravitational constant , velocity of light, coulombs

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constant and energy inertia conversion constant are harmonic gravity do not require particle exchange, rest of the forces require because asymmetric nature of space time due to space fluid (dark matter). As gravity is attractive force but of short distance gravity will become repulsive i.e. antigravity or reverse gravity, distance less than $h/4\pi$.

REFERENCES

1. https://inference-review.com/article/the-standard-model .
2. https://en.wikipedia.org/wiki/General_relativity.

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