

Energy and Mass Bends Spacetime and Creates Gravity at Quantum Level

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Abstract: *Pure Energy bends the spacetime and created week gravity, so it has a property of Gravity. All elementary Particles like quarks, Lepton, gluon, bosons, etc are transformed from energy by cooling of hotness after big bank. This is an expanded version of gravity is the property of energy paper published by Keerthivasan Chandrasekaran previously.*

Keywords: Newtonian limit, Week force, Strong Force, Electromagnetic Force, Pure Energy, Gravity, Quantum Gravity, Big Bank, Elementary Particles, Quarks, Lepton, General relativity

Newtonian lime of general reality states the Gravitational field of an object formula as below.

1. Introduction

$4\pi G_p$ will become $4\pi GM$ for special

$$4\pi GM = g(4\pi r^2) = GM/R^2$$

GM/R^2

The Einstein Formula states the energy and mass are another Dimension as below.

$$E=MC^2$$

By being both formulae, we can know the Gravity of energy.

Below topics of Gravity is important for this theory.

Theory:

- 1) Property of Energy and Elementary and subatomic Partials
Formula:
- 2) Gravity of 1KG Mass Formula
- 3) Gravity of Pure Energy Formula

1) Theory:

- a) Property of Energy and Elementary and subatomic

Partials

- Property of Energy: Gravity Pure Energy has a property called Gravity.

Pure energies are scattered in the universal with space among them. The Pure energy attracts each other by the property named Gravity.

After the energies are attracted by Gravity, it forms elementary Particles like Quarks, leptons, Gluon,

Bosons, etc.,

- Property of Gluon: Strong Force
Quarks are attracted by strong force from gluon and Quarks forms neutrons and protons. Neutrons and protons are bound in nuclear by strong force of gluon. The strong force is the property of Gluon.
Property of Proton and Electron: Electromagnetic Force
Proton and electron attract each other by positive and

negative electromagnetic forces. Both has a property of electromagnetic force.

- Property of W and Z Boson: Weak Force. W and Z bosons in nuclear can cause atomic change by decay. W and Z bosons have weak force as a property.
- Property of Energy: Gravity
Elementary particles also bend the spacetime and creates gravity so equivalence principles is compatible with quantum level.
Atom or isotopes are formed by three forces and the gravity of energy.
Atoms form objects by molecular. The molecular are bound by electromagnetic force.
Energy of an object is the reason for it' gravity. Mass has Gravity then the energy has gravity because Energy is another dimension of mass.

2) Formula:

a) Gravity of 1KG Mass Formula

Gravitational Field= GM/r^2 , As per Newtonian limit.

Gravity of a kg Mass is inversely proportional to square of radius of distance from canter of mass and directly proportional to G (Gravity Constant) $E=MC^2$ is the formula of Einstein.

If a kg mass is converted to Photon, then the speed is c so the kinetic energy is converting 0 speed to C speed or speed of light, so it requires Kinetic energy of C^2 . Velocity increased by C then Kinetic energy is doubled.

We can re - write:

We can put Einstein formula to Gravitational field to identify the gravity of energy for a KG Mass. $M=E/C^2$
 $g=GE/(C^2) * (r^2)$

The Gravitational Field of energy of 1KG Mass = $GE/(C^2) * (r^2)$

b) Gravity of Pure Energy Formula

There is no mass so we can say it pure energy. Pure energy is measured in joule.

$M=E$ for pure energy. Pure energy does not have mass, so Mass is replaced by energy therefore Mass = Energy. $g = GM/r^2$ $M=E$

$G = GE/r^2$. r is very minimal. We must measure microscopic level for pure energy. We can make it as 1 or below to it.

c) Up Quarks creation by Pure energy formula.

Pure Energy's Gravity:

GE/r^2

Up Quarks= 4.117×10^{-30} Kg

Energy= 4.117×10^{-30} Kg $\cdot C^2$ Gravitational Field of UP Quarks.

$G \cdot (4.117 \times 10^{-30} \text{ Kg}) \cdot C^2/r^2$

Gravitational Field of Pure Energy in UP Quarks: GE/r^2 , r is very minimal and its microscopic level. Even we can make it as 1 or below to it.

$E=M$ for pure energy

$E = 117 \times 10^{-30} \text{ Kg} \cdot C^2$ for UP QUARKS. $117 \times 10^{-30} \text{ Kg} \cdot C^2$ times of Pure Energy is bound by

Gravitational fields.

2. Conclusion

The Energy is bending spacetime and generate weak gravity so reason for gravity is pure energy. The energy transformation into elementary particles by cooling the universe after big bang hot. Once energy transforms to atomic particles to start, plants, etc., gravity acts at large scale level as per general relativity. Energy is bending the spacetime at quantum level, so it is the source of Quantum Gravity.

References

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