Gravity, the greatest microscopic fundamental force

SirousMirshekari*

Abstract

One may reach the Theory of Everything by obtaining unity among the four known forces of nature: gravity, weak interaction, strong interaction, and electromagnetic force. This requires obtaining equations that represent the universal gravitational constant G in most physical formulas. The only way of reaching this goal is through understanding the Creative Particles of Higgs (CPH). In this paper, the power of gravity in the quantum scale will be realized by providing mathematical proof for the mass of these particles M_{CPH} *(dark matter) and their energy* E_{CPH} *(dark energy). In fact this article is proceeding to expanded gravitational newton law (GEM)(1). The difference is that CPH particles also contribute in it and interaction of these particles in the presence of higgs field, that governs all over the cosmos(2), not only leads to gain mass but also increases the mass of the elementary particles than their speed.*

Keywords: True radius of fundamental particles (r_0 *), classical radius of fundamental particles (* r' *), Schwarzschild radius of fundamental particles (r)*

Introduction

The consideration of gravity as a weak force compared to the other three fundamental forces (electromagnetic force, strong interaction, and weak interaction) stems from a lack of understanding of CPHs. In other words, by identifying CPHs, not only is it possible to describe the power of the effect of gravitational force in the quantum scale but also one may consider gravitational force as the main factor behind the creation of fundamental forces and subatomic particles. The coordination between the electromagnetic force of CPHs and the gravitational force on the quantum scale plays a significant role in the structure of the universe.

By paying attention to the formula of the Schwarzschild radius ($r = \frac{2m_0G}{c^2}$) and the Planck constants (Planck length) ($Lp = \sqrt{\frac{\hbar G}{c^3}}$), Planck time ($tp = \sqrt{\frac{\hbar G}{c^5}}$), Planck energy ($Ep = \sqrt{\frac{\hbar c^5}{G}}$), and Planck mass ($mp = \sqrt{\frac{\hbar c}{G}}$)، and considering the fact that these constants inherently include the universal gravitational constant (G), it is possible to reach the Final Theory or the Theory of Everything with a new phenomenon. Through the interpretation of a special phenomenon, one can demonstrate the universal gravitational constant (G) in most physical formulas. For instance, calculating the true radius, classical radius, and Schwarzschild radius of fundamental particles (proved later on) are performed via the following formulas.

$$r_0 = \frac{\alpha}{c}\sqrt{\frac{hGm_0}{M_{CPH} \cdot c}}$$ (1) True radius of fundamental particles

$$r' = \sqrt{\frac{Lp \cdot m_0}{M_{CPH}}\sqrt{\frac{2\pi hG}{c^3}}}$$ (2) Classical radius of fundamental particles

$$r = \frac{2r_0}{\alpha}\sqrt{\frac{M_{CPH} \cdot m_0 G}{hc}}$$ (3) Schwarzschild radius of fundamental particles

Where m_0 is the rest mass of fundamental particles, α is the Somerfield's fine-structure constant, Lp is the Planck length, and $M_{CPH} = 1/883 \times 10^{-70}$ kg is the moving mass of CPHs moving at speeds larger than the speed of light and in which creation is floating like fish in the water. These particles belong to the class of electromagnetic waves with very long wavelengths. If m_0 in Eq. (1) is replaced with the rest mass of an electron or a proton, the following is obtained.

$r_{0_p} = 8.811 \times 10^{-16} m$ True radius of proton

$r_{0_e} = 2.056 \times 10^{-17} m$ True radius of electron

After observing this phenomenon, it is seen that Einstein's special relativity will require a novel perspective by explaining which one will reach “unified relativity”. Combining “unified relativity” with quantum theory, which interprets the structure of the photon and the reason for the invariance of the speed of sound, will assist in the formulation of the equations based on these two theories and finally realize the power of quantum mechanics.

CPHs are moving with respect to an inertial frame of reference and themselves have rotational inertia. Moreover, their mass and velocity relative to the inertial frame of reference do not change under any condition, and merely a part of their translational velocity changes to rotational velocity and vice versa such that V_{CPH} undergoes no change. This means that the magnitude of the translational motion changes to rotational motion and vice versa, and the sum of their translational and rotational energies are constant.

In other words, only the translational energy converts to rotational energy and vice versa. (3)

Methods

In the computations performed for the electron, using negative signs has been avoided.
The following formula calculates the increase in the mass of fundamental particles at speed V.

$$m = \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}}$$

The extra increase in the mass of fundamental particles at speed v is computed as follows:

$$(4) m' = \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}} - m_0$$

In other words, m' is the increased value of the mass at speed v .This phenomenon provides a novel definition for the increase in the mass of a moving particle (e.g. electron). As such, only Newton’s laws govern a particle in motion where only the kinetic energy of the particle increases via Formula ($E = \frac{1}{2} m_0 v^2$), and the increase in mass does not depend on the structure of fundamental particle itself but is caused by the gravity between the electron and the CPHs. The CPHs form an independent mass on the surface of the fundamental particle at a distance equal to the classical radius with respect to the speed of the electron. One may write an equation indicating the role of CPHs in determining the kinetic energy of the electron.

$$(5) \frac{E_e}{\lambda_{CPH}} = G \frac{m_{0_e} \cdot m'_e}{r'^2}$$

Where E_e is the kinetic energy of the electron.
Given Formula (2), the classical radius of the electron equals the following:
$r' = 2.8177 \times 10^{-15} m$
There is no doubt in the validity of the value of the kinetic energy computed from the following formula:

(6) $(E_e = \frac{m_{0e}c^2}{\sqrt{1-\frac{v^2}{c^2}}} - m_{0e}c^2)$

The manner of defining and the perspective toward the calculation of the kinetic energy of fundamental particles is of considerable significance. Considering CPHs, the kinetic energy of a moving electron is defined as follows:

$(E = \frac{1}{2} m_0 v^2 + E')$

E' is the extra increase in electron energy, and CPHs play a role in this increase.

One can calculate the mass of the CPH by computing the kinetic energy of the electron using Formula (6).

Example: For an electron moving with a speed of $v = 1\times 10^8 \, m/s$

$E = 4.9739\times 10^{-15} J$ Kinetic energy of the electron

$r' = 2.8177\times 10^{-15} m$ Classical radius of the electron

$m' = 5.534\times 10^{-32} Kg$ Extra increase in the mass of the electron

By substituting these values into Eq. (5), the following results:

$\lambda_{CPH} = 1.173\times 10^{28} m$

$$\lambda_{CPH} = \frac{h}{M_{CPH}\cdot c} \Rightarrow M_{CPH} = 1.883\times 10^{-70} Kg$$

Unified relativity explains that if a person measures the speed of light from outside the cosmos, the measured speed will be greater than the speed of light since the light in our galaxy moves in a material medium composed of CPHs and loses speed. However, this decrease in speed is negligible compared to the decrease in the speed of light in material media (e.g. Water) due to the minute mass of CPHs. As such, if the speed of light outside the cosmos is denoted c', one obtains the following:

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

c' Is slightly larger than c such that when V=C, its value becomes:

$$s = \sqrt{1-\frac{c^2}{c'^2}} = 6.47\times 10^{-12}$$

In quantum mechanics, the constant $s = 6.47\times 10^{-12}$ equals the following:

$$s = \frac{1}{\sqrt{\sqrt[3]{\frac{1}{M_{CPH}\alpha^2}\sqrt{\frac{2\pi hc}{G}}}}}$$

The electron's kinetic energy at the speed of light equals to:

$$m_{0_e}c^2\sqrt{\sqrt[3]{\frac{1}{M_{CPH}\alpha^2}\sqrt{\frac{2\pi hc}{G}}}} = 0.012654J \Rightarrow \frac{E_e{}^2}{m_{0_e}c^2} = \frac{0.012654^2}{m_{0_e}c^2} = Ep$$

Planck energy

Of course, proving all the equations is not possible in this paper and we will mention the proof of one of them, but regarding this phenomenon, the following equations are achieved in quantum mechanics.

$R = \frac{2\pi^2 m_{0_e}{}^4 G}{h^2 M_{CPH}} \simeq 1.0973\times 10^7 m^{-1}$ Rydberg constant

$\alpha = \sqrt{\frac{4\pi^2 m_{0_e}{}^3 G}{M_{CPH} hc}} = 0.00729735$ Fine structure constant

$\frac{\alpha^2}{2R} = \frac{h}{m_0 c} = \lambda_C$ Campton wavelength

$\varepsilon_0 = \frac{e^2 \alpha M_{CPH}}{8\pi^2 m_{0_e}{}^3 G} = 8.854\times 10^{-12} \, c^2/Nm^2$ Permittivity constant of vacuum

The mass ratio of any fundamental particle to electron is equal to:

$$\frac{m_0 G}{Lpc^2 s^2}$$

Where LP is Planck length.

The mass ratio of proton to electron, with m_0 as the rest mass of proton, would be:

$$\frac{m_{0_p} G}{Lpc^2 s^2} \simeq 1836$$

As this phenomenon shows, the cosmetic constant must be searched through the black holes. Considering the Schwarzschild radius of all particles, their equation $\frac{8\pi G}{c^4}$ equals to:

$$\frac{8\pi G}{c^4} = \frac{2\pi}{G\frac{m_0 m_0}{r^2}} = 2.0766474\times10^{-43}\, s^2/kgm$$

The yielding energy from CPH which are close to each other with Planck length, is equal to:

$$\frac{E_{CPH}}{\lambda_{CPH}} = G\frac{M_{CPH}M_{CPH}}{Lp^2} \Rightarrow E_{CPH} = 1.062\times10^{-52}J$$

This energy divided by Compton wavelength of particles provides the following equation:

$$F = \frac{E_{CPH}}{2\pi^3\lambda_C}$$

This force applies a pressure on the cross section of fundamental particle, $A = \pi r_0^{\ 2}$, which its product by $\frac{8\pi G}{c^4}$ equation causes

$$(\Lambda = \frac{\frac{E_{CPH}}{2\pi^3\lambda_C}}{\pi r_0^{\ 2}}\times\frac{8\pi G}{c^4} = 1.105\times10^{-52}m^{-2})$$

By S constant also can prove Λ as follows

$$\Lambda = \left[\frac{m_{0e}^{\ 2}s^6\alpha^4}{4\pi^2\lambda_{CPH}M_{CPH}^{\ 2}}\right]^2$$

We conclude that by replacing $s^6 = \frac{1}{M_{CPH}\alpha^2}\sqrt{\frac{2\pi hc}{G}}$, the following number is obtained

$$\Lambda = \frac{m_{0e}^{\ 4}\alpha^{12}G}{32\pi^5\lambda_{CPH}^{\ 2}M_{CPH}^{\ 2}hc} = 1.105\times10^{-52}m^{-2}$$

Proof of the Schwarzschild radius is as:

$$r = \frac{M_{CPH}r_0\sqrt{\frac{m_0G}{Lpc^2s^2}\times\frac{m_0G}{Lpc^2s^2}}}{m_0\pi} \Rightarrow r^2 = \frac{M_{CPH}^{\ 2}r_0^{\ 2}m_0G^3}{\pi^2Lp^3c^6s^6}$$

By substituting S^6 and Lp equation, we conclude that:

$$S^6 = \frac{1}{\frac{1}{M_{CPH}\alpha^2}\sqrt{\frac{2\pi hc}{G}}}$$

$$Lp = \sqrt{\frac{\hbar G}{c^3}}$$

$$r = \frac{2r_0}{\alpha}\sqrt{\frac{M_{CPH}m_0G}{hc}}$$

Conclusion

Most formulas that have been recorded by physics scientists, as well as the numbers and statistics obtained for fundamental constants indicate the great ingenuity of those scientists, because the result of the works and the obtained statistics are fully consistent with their results and achievements, by adding the mass of CPHs and the universal Gravitational constant to formulas. In this paper, the presence of the mass of CPH particles and the universal gravitational constant (G) in formulas has made possible proving all the formulas and fundamental constants and solving the problem of (wave-particle) duality in physics. However, the intelligent life introduced by this phenomenon should be mentioned in this regard, which gives meaning to quantum mechanics. Further, the Wheeler quote may become a reality that the intelligent life should not only emerge, but must also be spread across all parts of the universe in order to collect all information about the universe.

References

[1] O. Heaviside (1893). "A gravitational and electromagnetic analogy"

[2] "Peter Higgs: a truly British scientist"

[3] Javadi, Hossein & FOROUZBAKHSH, Farshid & Daei Kasmaei, Hamed. (2016). What is CPH Theory? General Science Journal.