

A CONJECTURE IN QUANTUM GRAVITY

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Abstract :

In this work the author proposes a conjecture for the unification of gravity with other three forces of nature.

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Let the combined forces of electromagnetic force e and weak interaction force w attract a mass of $k+n$ from point A to B.

$$\text{i.e } e+w = k+n \quad - \quad (1)$$

Let the combined forces of electromagnetic force e and gravitational force g attract a mass of $k+o$ from point A to B.

$$\text{i.e } e+g = k+o \quad - \quad (2)$$

And let the combined forces of strong interaction force s and gravitational force g attract a mass of $k+r$ from point A to B.

$$\text{i.e } s+g = k+r \quad - \quad (3)$$

$$(1) - (3) \text{ gives } e+w+r = n+s+g \quad - \quad (4)$$

$$\text{Squaring (4), } e^2+w^2+r^2+2ew+2er+2wr = n^2+s^2+g^2+2ns+2ng+2sg \quad - \quad (5)$$

$$\text{i.e., } (e-g)(e+g)+(w-n)(w+n)+(r-s)(r+s)+2ew+2er+2wr = 2ns+2ng+2sg$$

$$\text{From (1) we get } w-n = k-e \quad - \quad (1a)$$

$$\text{From (3) We have } r-s = g-k \quad - \quad (3a)$$

Applying (2), (1a) and (3a) in the first, second and third factors respectively in (5),

$$(e-g)(k+o)+(k-e)(w+n) + (g-k)(r+s)+2ew+2er+2wr = 2ns+2ng+2sg$$

$$k[e-g+w+n-r-s] + o(e-g) - e(w+n) + g(r+s)+2ew+2er+2wr = 2n(s+g)+2sg$$

Replacing $s+g$ by $k+r$ and $e+w$ by $k+n$ [See eqns (3) and (1)]

$$K [k+n - k-r + n-r] +o (e-g) - e (w+n) +g (r+s) + 2ew + 2r (k+n) = 2n (k+r)+2sg$$

Simplifying $2k (n-r)+o(e-g)+e(w-n)+gr+2rk = 2nk+sg$

$$\text{i.e. } o(e-g)+e(w-n)+g(r-s) = 0 \quad - \quad (6)$$

$$\text{From (1)} \quad w-n = k-e \quad - \quad (1b)$$

$$\text{From (3)} \quad r-s = g-k \quad - \quad (3b)$$

Assuming (1b) and (3b) in (6)

$$o(e-g)+e(k-e)+g(g-k) = 0$$

$$\text{i.e. } e(k+o)- e^2+g^2-g(k+o) = 0 \quad - \quad (7)$$

Eqn (7)is quadratic in g.

$$\therefore g = \frac{k + o \pm [(k + o)^2 + 4e^2 - 4e(k + o)]^{1/2}}{2}$$

Putting e+g for k+o [See eqn (2)]

$$g = \frac{e + g \pm [(e + g)^2 + 4e(e - e - g)]^{1/2}}{2}$$

$$\text{i.e. } g = \frac{e + g \pm (e - g)^2}{2}$$

$$\text{i.e. } g = \frac{e + g \pm (e - g)}{2}$$

We are totally and purely free from the fetters of the laws of quadratic eqn's. to assume positive value in (8)

$$\text{So, } g = \frac{e + g + e - g}{2}$$

$$\text{i.e. } g = e \quad - \quad (9)$$

From (9) we get that the properties of gravitational and electromagnetic forces are same. Similarly one can show that $s = g$. Consequently we obtain that $e = g = w = s$.

This is only an elementary approach.The author is aware that this is incomplete.the author believes that this method may help the scientific community for further developments

References

In google search, click : (1) Unified Theory (2). Quantum Gravity.