

Unified Absolute Relativity Theory N1

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Abstract – The unification between relativity and quantum mechanics is possible if we make a little modification to the first.

Theoric basis

Lorentz's equations:

$$\begin{cases} x = \frac{x_0 + vt_0}{\sqrt{1 - v^2/c^2}} \\ t = \frac{t_0 + vx_0/c^2}{\sqrt{1 - v^2/c^2}} \end{cases} \Leftrightarrow c^2 t^2 - x^2 = c^2 t_0^2 - x_0^2$$

For n relative systems:

$$c^2 t_1^2 - x_1^2 = c^2 t_2^2 - x_2^2 = \dots = c^2 t_n^2 - x_n^2$$

So: $c^2 t_n^2 - x_n^2 = k$ (constant)

If the speed of an electromagnetic wave is:

$$w = x/t \quad \text{and} \quad t = 1/f \quad (f = \text{frequency})$$

$$\Leftrightarrow w = \sqrt{c^2 - kf^2}$$

This is the general formula of the speed of an electromagnetic wave, which is not constant but varies with the frequency if k is different from zero.

Calculation of k

Almost no one knows but the proton has two values of mass.

-- Experimental energy value:

$$\underline{E_p = 938.272013 \text{ MeV} = 1.50327736 \times 10^{-10} \text{ J}}$$

According to Einstein: $E = mc^2 \Leftrightarrow$

$$\Leftrightarrow m = 1.67262164 \times 10^{-27} \text{ kg}$$

-- Experimental value by direct measurement of the hydrogen mass:

$$m_H = 1.00794u \quad \text{and} \quad u = 1.660538782 \times 10^{-27} \text{ kg}$$

This is the actual measured value. Not 1.007825 that with an also chosen abundance deuterium value had been calculated to fix the proton mass problem. For example, the experimental abundance value varies from 0.0026% to 0.0184% and not the fixed value 0.0115%.

$$m_H = 1.67372346 \times 10^{-27} \text{ kg}$$

Subtracting the electron mass:

$$\underline{m_p = 1.67281253 \times 10^{-27} \text{ kg}}$$

According to our theory:

$$E = mw^2 = m(c^2 - kf^2) \quad \text{and} \quad E = hf \quad \Leftrightarrow$$

$$\Leftrightarrow k = h^2 \frac{m_p c^2 - E_p}{m_p E_p^2}$$

(c = light speed ; h = Planck's constant)

$$\Leftrightarrow \underline{k = 1.9925698 \times 10^{-34} \text{ m}^2}$$

The existence of a k with a very low value agrees with all known experimental data and allows the unification of the relativity with the quantum mechanics.