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Relativistic Constants of Variant Ordinary Matter

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Abstract: *Relativistic constants of the ordinary matter are proposed to equal the closest set of the relativistic constants of the photons of light in Heracletean dynamics. For the mass and distance the concerned relativistic constant of the ordinary matter yields the product of Planck's constant and the speed of light. For time it equals the ratio of Planck's constant and the speed of light.*

Keywords: *variant set of the relativistic constants of the invariant light, unique set of the relativistic constants of the variant ordinary matter, Planck's constant, speed of light*

1. Introduction

In Heracletean dynamics the invariant light differs from the variant ordinary matter by the specific set of the relativistic constants belonging to each photon of light according to its invariant mass or corresponding wavelength [1]. The relativistic constant for mass of the photon of light k_m is given by:

$$k_m = m^2c^2. \tag{1}$$

The relativistic constant for time of the photon of light k_t is given by:

$$k_t = \frac{h^2}{m^2c^2}. \tag{2}$$

And he relativistic constant for distance of the photon of light k_s is given by:

$$k_s = \frac{h^2}{m^2}. \tag{3}$$

Here h and c denotes Planck's constant and the speed of light, respectively.

Contrarily, the ordinary matter should possess the unique set of the relativistic constants independent of the variant mass of the matter. If the above statement holds true one can expect that the mentioned unique set of the relativistic constants of the ordinary matter should be the most impartial in the case of being at the same time the closest set of the relativistic constants of the photons of light.

2. The Closest Set of the Relativistic Constants of the Photons of Light

The closest set of the relativistic constants is the derivation of the sum of the relativistic constants as follows:

$$(k_m + k_t + k_s)' = 0. \tag{4a}$$

Applying the equations $(1), (2)$ and (3) we have:

$$\left(m^2c^2 + \frac{h^2}{m^2c^2} + \frac{h^2}{m^2}\right)' = 0. \tag{4b}$$

Simplifying by the substitution $m^2 = x$ we can write:

$$\left(xc^2 + \frac{h^2}{xc^2} + \frac{h^2}{x}\right)' = 0. \tag{4c}$$

The derivative of the function gives:

$$c^2 - \frac{h^2}{x^2c^2} - \frac{h^2}{x^2} = 0. \tag{4d}$$

Rearranging the formula, the explicit result is given:

$$x^2 = \frac{h^2}{c^2c^2} + \frac{h^2}{c^2}. \tag{4e}$$

Or

$$m^4 = \frac{h^2}{c^2c^2} + \frac{h^2}{c^2}. \tag{4f}$$

And finally

$$m^2 = \sqrt{\frac{h^2}{c^2c^2} + \frac{h^2}{c^2}} \approx \frac{h}{c}. \tag{4g}$$

3. The Expected Unique Relativistic Constant for Mass of the Ordinary Matter

According to the equations (1) and (4g) the unique relativistic constant for mass of the ordinary matter k_m yields the product of Planck's constant and the speed of light:

$$k_m = m^2c^2 = \frac{h}{c}c^2 = hc. \tag{5}$$

4. The Expected Unique Relativistic Constant for Time of the Ordinary Matter

According to the equations (2) and (4g) the unique relativistic constant for time of the ordinary matter k_t yields the ratio of Planck's constant and the speed of light:

$$k_t = \frac{h^2}{m^2c^2} = \frac{h^2}{hc} = \frac{h}{c}. \tag{6}$$

5. The Expected Unique Relativistic Constant for Distance of the Ordinary Matter

According to the equations (3) and (4g) the unique relativistic constant for distance of the ordinary matter k_s yields the product of Planck's constant h and the speed of light:

$$k_s = \frac{h^2}{m^2} = \frac{h^2}{\frac{h}{c}} = hc. \tag{7}$$

6. The Three Relativistic Equations of the Ordinary Matter

Respecting the expectations expressed in the equations (5),(6) and (7) the three relativistic equations of the ordinary matter consequently take the next form. For the relativistic mass of the ordinary matter:

$$m_{relativistic}^2 c^2 a^2 = e^{\frac{m_{ground}^2 c^2 - hc(1 - \ln hc) + m_{relativistic}^2 c^2 (a^2 - 1)}{hc}}. \tag{8}$$

For the relativistic time of the ordinary matter:

$$t_{relativistic}^2 c^2 a^2 = e^{\frac{t_{ground}^2 c^2 - \frac{h}{c}\left(1 - \ln\frac{h}{c}\right) + t_{relativistic}^2 c^2 (a^2 - 1)}{\frac{h}{c}}}. \tag{9}$$

For the relativistic distance of the ordinary matter:

$$s_{ground}^2 c^2 a^2 = e^{\frac{s_{relativistic}^2 c^2 - hc(1 - \ln hc) + s_{ground}^2 c^2 (a^2 - 1)}{hc}}. \tag{10}$$

7. The Ground Speed of the Elementary Particles

Such a great relativistic constant for the mass of the ordinary matter k_m determines a very high ground speed a of the elementary particles. Since[2]:

$$k_m = m_{ground}^2 c^2 a^2 = hc. \tag{11}$$

And

$$a^2 = \frac{hc}{m_{ground}^2 c^2} = \frac{h}{m_{ground}^2 c}. \tag{12a}$$

Or

$$a = \frac{\sqrt{\frac{h}{c}}}{m_{ground}}. \qquad (12b)$$

For the electron and proton, for instance, the ground speed is consequently superluminal, i.e. of about $10^9 c$ and $10^6\ c$, respectively.

8. Conclusion

The superluminal ground speed of the elementary particles as a consequence of the proposed relatively high relativistic constant for the mass of the ordinary matter is hardly to digest. But so is the fact that the elementary particles cannot stay still but rather spin.

Dedication

This fragment was written on Martin's and is dedicated to St. Martin.

References

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