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Relativistic Time and Distance in Heracletean Dynamics

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Abstract: *Respecting Einsteinian dynamics the relativistic time and distance in Hearcletean dynamics is proposed.*

Keywords: *Einsteinian and Heracletean dynamics, the relativistic time and distance*

1. Introduction

The relativistic time and distance in Heracletean dynamics as a hypernym of Einsteinian dynamics is the subject of interest of this paper.

In Heracletean dynamics the relativistic and ground mass are related as follows [1]:

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

Where the dynamics constant is denoted k, the mass-energy constant being equal the approximate speed of light is denoted c, and some speed expressed in the approximate speed of light is denoted a. Applying the relation $e^x \approx 1 + x$ the above equation (1) takes more polite form:

$$m_{relativistic}^2 c^2 \approx \frac{m_{ground}^2 c^2 + k\ln k}{a^2 k + 1 - a^2}. \tag{2}$$

At the zero dynamics constant, *k=0,* Einsteinian dynamics as a hyponym of Heracletean dynamics is recognized:

$$\frac{m_{relativistic}}{m_{rest}} = \sqrt{\frac{1}{1-a^2}}. \tag{3}$$

Here the ground mass at the zero speed is called the rest mass.

In Einsteinian dynamics the factor $\sqrt{\frac{1}{1-a^2}}$ characterizes the relativistic time and distance, too:

$$\frac{m_{relativistic}}{m_{rest}} = \sqrt{\frac{1}{1-a^2}} = \frac{t}{t_0} = \frac{s_0}{s}. \tag{4}$$

So taking into account the given analogy (4) one can propose the next relations for the relativistic time and distance in Heracletean dynamics:

$$t^2 c^2 a^2 = e^{\frac{t_0^2 c^2 - k(1-\ln k) + t^2 c^2 (a^2-1)}{k}}, \tag{5}$$

$$t^2 c^2 \approx \frac{t_0^2 c^2 + k\ln k}{a^2 k + 1 - a^2}. \tag{6}$$

And

$$s_0^2 c^2 a^2 = e^{\frac{s^2 c^2 - k(1-\ln k) + s_0^2 c^2 (a^2-1)}{k}}. \tag{7}$$

$$s_0^2 c^2 \approx \frac{s^2 c^2 + k\ln k}{a^2 k + 1 - a^2}. \tag{8}$$

Where t_o and s_0 is time and distance in the ground state frame, respectively.

2. Conclusion

In Einsteinian as well as Heracletean dynamics the relativistic physical quantities – mass, time and distance – should be unambiguously of relativistic energy dependent.

Logic

Definitions are not disputable. And axioms are taken as to be true.

References

[1] Janez Špringer, (2019). Neutrino Relativistic Energy in Heracletean World (Second Side of Fragment). International Journal of Advanced Research in Physical Science (IJARPS) 6(5), pp.1-3, 2019.

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