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Relativistic Mass of Zero Ground Mass in Heraclitean Dynamics

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Abstract: *The relativistic mass of zero ground mass in Heraclitean dynamics has been discussed.*

Keywords: *Heraclitean dynamics, zero ground mass, relativistic mass, slowdown energy*

1. Introduction

The relativistic mass of zero ground mass in Heraclitean dynamics - expressed as F = dp/dt + d(k/p)/dt - is the subject of interest of this paper.

2. Heraclitean Dynamics

The relativistic mass and ground mass are implicitly related as follows [1]:

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

Where k is the dynamics constant, c is the speed of light and $a = v/c$ is the relative speed of a particle which possesses the ground mass m_{ground} and according to its speed and inverse speed manifests the relativistic mass $m_{relativistic}$.

3. The Zero Ground Mass

At zero ground mass the relativistic equation takes the next form:

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

The relativistic mass of zero ground mass depends only on the speed $v = ac$. At the ground circumstances the relativistic mass equals the ground mass, so we have:

$$m_{ground}^2 c^2 a^2 = e^{\frac{-k(1-lnk) + m_{ground}^2 c^2 (a^2-1)}{k}}. \quad (3)$$

And [1]:

$$m_{ground}^2 c^2 a^2 = m_{ground}^2 v^2 = k. \quad (4)$$

What means that the formation of relativistic mass out of zero ground mass ($m_{ground} = 0$) should start with infinite speed ($v = \infty$) to satisfy the equation (4):

$$o.\infty = \sqrt{k}. \quad (5)$$

Honestly, the formation of relativistic mass of zero ground mass proceeds with the help of slowdown energy needed to slow down the infinite speed. At this procedure we are limitless. Except at reaching the zero speed (infinite inverse speed) where – with the input of infinite slowdown energy – the relativistic mass should become infinite. So, in Heraclitean dynamics the rest state is – because of unavailable infinite energy –unreachable even for zero ground mass:

$$m_{relativistic}(v = 0) = \infty. \quad (6)$$

4. The Zero Ground Mass at Luminal Speed

At luminal speed $v = c$ zero ground mass possesses the next relativistic mass (3):

$$m_{relativistic}^2 c^2 = e^{\frac{-k(1-lnk)}{k}}. \quad (7a)$$

Or

$$m_{relativistic} = \frac{e^{\frac{-1+lnk}{2}}}{c}. \quad (7b)$$

And for $k = hc$ where $h = Planck\ constant$ the next formula is given for the relativistic mass of zero ground mass at the speed of light c:

$$m_{relativistic} = \frac{e^{\frac{-1+lnhc}{2}}}{c}. \quad (7c)$$

Yielding

$$m_{relativistic} = 9{,}017173422304\,.10^{-22}\text{kg} = 989851085{,}00\ (m_{electron} + Ry/c^2). \quad (7d)$$

The last mentioned number is interesting as it seems to belong to the set of natural numbers, although the probability of its occurrence is only 1% (See appendix). And the number five times smaller of it is a prime number, although the probability of its occurrence is only 5% (See appendix). We have to do with the overall outcome, even though the probability of its occurrence is only 1% x 5% = 0,05%.

5. Conclusion

Plato says that our universe originates from infinity. Religion teaches us that the universe came into being through enlightenment. Science calls for intelligence.

Dedication

To the first day of school and intelligence

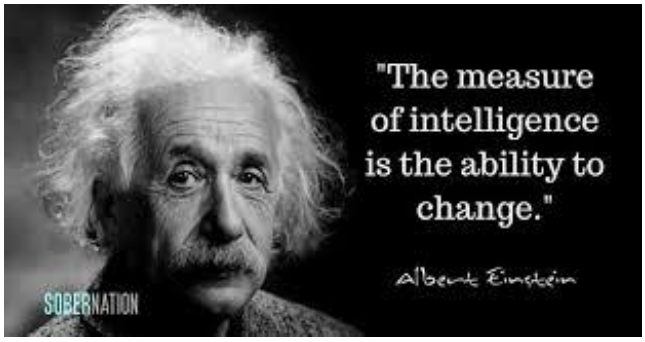

Figure1. *Intelligence [2]*

References

[1] Janez Špringer (2022) "Speed at Zero Kinetic Energy in Heraclitean Dynamics" International Journal of Advanced Research in Physical Science (IJARPS) 9(8), pp.1-3, 2022.

[2] https://sobernation.com/10-quotes-about-open-mindedness-from-really-smart-people/

Appendix

[1] The chance that two zeros appear together immediately after the decimal point is $\frac{1}{100} = 0{,}01 = 1\%$

[2] The chance that $\frac{989851085}{5} = 197970217$ is a prime number is $\frac{1}{\ln 197970217} = 0{,}05 = 5\%$.

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