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# Balanced Complex Ground Mass in Modified Heraclitean Dynamics

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**Abstract:** *Balanced complex ground mass in modified Heraclitean dynamics has been discussed.*

**Keywords:** *modified Heraclitean dynamics, balanced complex ground mass*

## 1. Introduction

In the previous paper [1] it was mentioned that the balanced complex ground mass being at rest in the fairy world can lose its imaginary mass and become solely real at superluminal speed $a^{balanced}_{maximum(\mathbb{R})} = 1.123\,581\,020\,c$. In this article we will try to justify why the balanced complex ground mass should remain in fairy world.

## 2. The Complex Ground Mass

The complex ground mass $m_{ground(\mathbb{C})}$ consists of a real part $m_{ground(\mathbb{RC})}$ as well as of an imaginary part $m_{ground(i\mathbb{RC})}$:

$$m_{ground(\mathbb{C})} = m_{ground(\mathbb{RC})} + i m_{ground(i\mathbb{RC})}. \tag{1}$$

Both parts of concerned mass without kinetic energy are related to the maximal speed which the ground mass can achieve in the complex world of subluminal speeds [1]:

$$0 < a_{maximum(\mathbb{C})} = \frac{v_{maximum(\mathbb{C})}}{c} < 1. \tag{2}$$

As follows:

$$m_{ground(\mathbb{RC})} = \sqrt{\frac{h}{c}}\sqrt{\frac{\sqrt{\left(ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)\right)^2+\pi^2}+ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)}{2}}. \tag{3}$$

And

$$m_{ground(i\mathbb{RC})} = \sqrt{\frac{h}{c}}\sqrt{\frac{\sqrt{\left(ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)\right)^2+\pi^2}-ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)}{2}}. \tag{4}$$

Here *h* and *c* are Planck constant and speed of light, respectively.

## 3. The Balanced Complex Ground Mass

Both parts of the balanced complex ground mass are nominally equal, i.e. $m_{ground(\mathbb{RC})} = m_{ground(i\mathbb{RC})}$. So, applying (3) and (4) zero maximum speed of the balanced complex ground mass can be calculated:

$$\sqrt{\frac{h}{c}}\sqrt{\frac{\sqrt{\left(ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)\right)^2+\pi^2}+ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)}{2}} = \sqrt{\frac{h}{c}}\sqrt{\frac{\sqrt{\left(ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)\right)^2+\pi^2}-ln\left(\frac{1}{1-a^2_{maximum(\mathbb{C})}}\right)}{2}}$$

And

$$a_{maximum(\mathbb{C})}^{balanced} = 0. \tag{5}$$

Inserting zero maximum speed (5) in the equation (3) and (4) the balanced complex ground mass is given:

$$m_{ground(\mathbb{C})}^{balanced} = m_{ground(\mathbb{RC})}^{balanced} + m_{ground(i\mathbb{RC})}^{balanced} = \sqrt{\frac{\pi}{2}}\sqrt{\frac{h}{c}} + i\sqrt{\frac{\pi}{2}}\sqrt{\frac{h}{c}}. \tag{6}$$

Using relations between maximum, ground and minimum speed [2] it can be stated that the balanced complex ground mass is inert, since its ground speed is zero, too:

$$a_{ground(\mathbb{C})}^{balanced} = \sqrt{\frac{1}{ln\left(\frac{1}{\left(a_{maximum(\mathbb{C})}^{balanced}\right)^2 - 1} + 1\right)}} = \sqrt{\frac{1}{ln\left(\frac{1}{0-1} + 1\right)}} = 0. \tag{7}$$

But its minimum speed is negatively infinite:

$$a_{minimum(\mathbb{C})}^{balanced} = a_{maximum(\mathbb{C})}^{balanced} - \frac{1}{a_{maximum(\mathbb{C})}^{balanced}} = 0 - \frac{1}{0} = -\infty. \tag{8}$$

Indicating that the balanced complex ground mass could be a carrier of zero time which encompasses the past indicating that in the zero time of complex world the past is preserved. And that the future emerges from that preservation.

## 4. Conclusion

Without the past there is no present or future.

## Dedication

To happy life [3]



## References

[1] Janez Špringer (2023) "Imaginary Background of Universe Expansion (A Fairy Tale)" International Journal of Advanced Research in Physical Science (IJARPS) 10(5), pp.17-26, 2023.

[2] 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.

[3] https://theyogainstitute.org/checklist-for-a-happy-life/

[4] Sorokowski, Randy. (2021). A Derivation of the Higgs Field and the Mass of the Higgs Boson. 10.13140/RG.2.2.30119.37282. Sorokowski, Randy. (2021).

## APPENDIX

Let us in the field of ideas introduce the interesting ratio of balanced complex ground mass to mass of W boson in MS system of physical units [4]. Thus:

$$\frac{m_{ground(\mathbb{RC})}^{balanced}}{m_{W\ boson}} = \frac{\sqrt{\frac{\pi}{2}}\sqrt{\frac{h}{c}}}{1.433\ 217\ 602\ .\ 10^{-25}kg} = \frac{\sqrt{\frac{\pi\ .\ 6{,}626\ 070\ 04\ .\ 10^{-34}}{2\ .\ 2{,}997\ 924\ 58\ .\ 10^{8}}}}{1.433\ 217\ 602\ .\ 10^{-25}} = 13\ 000.662 \approx 13\ 000 + \frac{2}{3}. \qquad (a)$$

Be polite. It is just a pudding of unknown taste.

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