International Journal of Advanced Research in Physical Science (IJARPS)
Volume 3, Issue 5, 2016, PP 26-28
ISSN 2349-7874 (Print) & ISSN 2349-7882 (Online)
www.arcjournals.org

Electron Position Radius and Cycle Time

(Variation on a Theme)

Janez Špringer

Cankarjeva cesta 2, 9250 Gornja Radgona, Slovenia, EU
info@lekarna-springer.si

Abstract: *In this paper according to pseudo-Heracletean dynamics on double surface the electron position radius $r = 6.0\ x\ 10^{-12} m$ and cycle time $t = 2.0\ x\ 10^{-20} s$ is introduced.*

Keywords: *Pseudo-Heracletean dynamics on double surface,range of imaginary self-masses, imaginary self-mass attributed toreal mass, electron imaginary self-mass, minimal mass-radius product, imaginary self-mass to real mass relation, Compton wavelength, electron position radius, electron wave& co-wave amplitude, electron cycle time.*

1. PREFACE

The subject of interest in this paper is with the help of the minimal mass-radius product belonging to the most preferable inverse spin of imaginary self-masses[1] to find out some new characteristics of the electron as a physical entity possessing a real mass as well as imaginary self-mass[2].

2. THE RANGE OF IMAGINARY SELF-MASSES

In Heracletean world [1] the particle's imaginary self-mass$m_{maginary}$ isfound in the next by the dynamic constant k[3] and official speed of light c [4]determined range:

$$0 < m_{imaginary} < \frac{\sqrt{k}\sqrt{1 - lnk)}}{c} i. \tag{1}$$

3. THE RANGE OF REAL MASSES

According to dual aspect of gravity [2]the imaginary self-mass $m_{imaginary}$ can be attributed to the real mass m_{real} inside the range of masses determined by the dynamic constant k [3], official speed of light c[4] as well as base of natural logarithm e:

$$0 < m_{real} < \frac{\sqrt{e - k}}{c}. \tag{2}$$

4. THE IMAGINARY SELF-MASS TO REAL MASS RELATION

The mentioned imaginary self-masses (1) and realmasses (2) are related as follows[2]:

$$m_{imaginary} = i \frac{\sqrt{k}}{c} \sqrt{1 - ln(m_{real}^2 c^2 + k)}. \tag{3}$$

5. THE MINIMAL MASS-RADIUS PRODUCT

All imaginary self-masses$m_{imaginary}$ spinning around with the most preferable spin[1] possess the same minimal mass-radius product expressed in $\frac{hi}{c}$ units[1]as:

$$\left(\frac{m_{imaginary}\ x\ r_{position}}{hi} c\right)_{minimal} = 2.28454289711128 \ldots \tag{4}$$

6. THE POSITION RADIUS VERSUS IMAGINARY SELF-MASS

The position radius $r_{position}$ (4) is in inverse proportion to the imaginary self-mass $m_{imaginary}$ (4):

$$r_{position} = 2.28454289711128 \ldots x \frac{hi}{m_{imaginary}\ c}. \tag{5}$$

7. THE POSITION RADIUS VERSUS REAL MASS

Respecting the equation(3)the position radius $r_{position}$ (5)is also inversely proportional to the related real mass m_{real} :

$$r_{position} = 2.28454289711128\ldots x \frac{h}{\sqrt{k}\sqrt{1 - ln(m_{real}^2 c^2 + k)}}. \tag{6}$$

As already mentioned h, k and c is Planck constant [4], dynamic constant [5]and official speed of light [4], respectively.

8. THE RANGE OF POSITION RADII

Taking into account the ranges of imaginary self-masses (1) or real masses (2) the position radius is found in the next range:

$$\frac{2.28454289711128\ldots x\, h}{\sqrt{k}\sqrt{1 - lnk)}} = 5.896229833337\ x\ 10^{-12} m < r_{position} < \infty. \tag{7}$$

9. THE POSITION RADIUS OF AN ARBITRARY IMAGINARY SELF-MASS

Knowing the real mass and applying the equation (6) the position radius of an arbitrary imaginary self-mass (1) can be calculated in the next way:

$$m_{imaginary}\ x\ r_{position} = 5.04934024912789\ldots x\ 10^{-42} ikgm \tag{8}$$

10. THE ELECTRON POSITION RADIUS

The electron position radius is presented in the Table1.

Table1. *The electron position radius$r_{position}$ related to real mass m_{real} and imaginary self-mass$m_{imaginary}$*

Particle	m_{real} (kg)	$m_{imaginary}$ ($i\,kg$)	$r_{position}$ (m)	$r_{position}$ ($\lambda_{Compton}$)
Point	0	$8.563676097867\ldots x\ 10^{-31}$	$5.896229833337\ldots x\ 10^{-12}$	0
Electron	$9.10938356(11)\ x\ 10^{-31}$	$8.3663588674(10)\ldots x\ 10^{-31}$	$6.03529005764(72)\ x\ 10^{-12}$	2.48743543441(30)
Particle of $m_{real} = \frac{\sqrt{e-k}}{c}$	$5.49954218895\ldots x\ 10^{-9}$	0	∞	∞

In the above table the electron is ranked in the interval of particles possessing imaginary self-mass. Here the electron position radius $r_{position}$ is related to imaginary self-mass $m_{imaginary}$ and real mass m_{real}. Both masses are of the same level, i.e. $\approx 10^{-30}(i)kg$.Further, the point and electron position radius equal to the rounded first number, i.e. $6\ x\ 10^{-12} m$.And the electron position radius $r_{position}$ yields approximately five Compton half-wavelengths, i.e. $r_{position}^{electron} \approx 2.5\ \lambda_{Compton}$.

11. THE NON-STOCHASTIC FINDING OF ELECTRON

The finding of electron should be expected somewhere on its position radius of the next value expressed in meters($Table 1$):

$$r_{position}^{electron} = 6.03529005764(72)\ x\ 10^{-12} m. \tag{9}$$

And the next value expressed in Compton wavelengths of the electron($Table 1$):

$$r_{position}^{electron} = 2.48743543441(30)\ x\ \lambda_{Compton}^{electron}. \tag{10}$$

A stochastic event taking place on the position radius is not plausible. The particle being related to the non-stochastic wave cannot just jump to an arbitrary position. It should visit the adjacent position first.

12. THE ELECTRON WAVE AMPLITUDE

According to the relation (10)the wave cycle is approximately odd integer-multiple of the half-wavelength$\left(5\ x\ \frac{1}{2} = 2\frac{1}{2}\right)$ what means that the concerned electron wave almost annihilates at each even cycle and steps into existence at each odd cycle again. Of the cycle dependent amplitude of the sinusoidal waveA_{wave} is at the odd cycle given as:

$$A_{wave}^{odd} \approx sin(\varphi).$$

And at the even cycle as:

$$A_{wave}^{even} \approx 0. \tag{11}$$

13. The Electron Co-Wave Amplitude

Respecting the Conservation law the physical matter with no exception for the electron cannot be sunk into nothing. Instead, it takes another form. For instance the sinusoidal wave with the amplitude $A = sin(\varphi)$ can survive as a co-wave and vice versa as follows:

$$A_{wave} + A_{co-wave} = sin(\varphi). \tag{12}$$

So, contrarily to the electron wave, the concerned co-wave almost annihilates at each odd cycle and steps into existence at each even cycle again. Of the cycle dependent amplitude of the sinusoidal co-wave $A_{co-wave}$ is at the odd cycle given as:

$$A_{co-wave}^{odd} \approx sin(\varphi) - A_{wave}^{odd} \approx 0.$$

And at the even cycle as:

$$A_{co-wave}^{even} \approx sin(\varphi) - A_{wave}^{even} \approx sin(\varphi). \tag{13}$$

14. The Electron Cycle Time

The electron wave& co-wave cycle time lasts $\frac{r_{position}}{c}$ time units, i.e.:

$$t_{cycle} = 2.0301315606 \ldots x\ 10^{-20} s. \tag{14}$$

15. Conclusions

Observing the electron in the cycle time intervals (14)(or its integer-multiples) solely the wave or co-wave could be observed.

Acknowledgement and Dedication

This fragment is dedicated to the bright stars of my childhood: Vojko Gerželj–Rado, Alojz Hartman – Pubi, Franjo Krampl – Lank, Lojze Markač – F1, Maksimiljan Sternad–Milčand many others, for the beauty of true friendship.

References

[1] Špringer J.Radius of Point's Position and Cycle Time of Point's (Non)-Existence (FromPresocraticWell). International Journal of Advanced Research in Physical Science (IJARPS), Volume 3, Issue 4, May 2016, 1-3

[2] Špringer J. Gamma Ray Delay and Dual Aspect of Gravity in Heracletean World (Working Hypothesis).International Journal of Advanced Research in Physical Science (IJARPS), Volume 2, Issue 7, July 2015, 40-43

[3] Špringer J.Panta Rei Function and Light Diversity (Exercise on Seventy-Two Decimal Places). International Journal of Advanced Research in Chemical Science (IJARCS), Volume 2, Issue 4, April 2015, 6-12

[4] CODATA values of the Fundamental Constants. http://physics.nist.gov/cuu/Constants/. Retrieved July 2016

[5] Špringer J. Discrete Communication in Heracletean World (From Pure Imagination to Precise Reality). International Journal of Advanced Research in Physical Science (IJARPS), Volume 2, Issue 10, October 2015, 1-6

Author's Biography

Janez Špringer, is an independent scientist spent his childhood in the village of Selnica ob Dravi, Slovenia.