

Review of: "The Compton Wavelength Is the True Matter Wavelength, Linked to the Photon Wavelength, While the de Broglie Wavelength Is Simply a Mathematical Derivative"

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Potential competing interests: No potential competing interests to declare.

Haug is one of a number of theorists outside the mainstream who are converging on the same theory of quantum gravity, as evidenced by the fact that the Proton radius puzzle has been solved outside the mainstream with formulas emerging from those theories. One theory converges on this calculation:

$$\alpha^2 / ((m_p/m_e)R_\infty) = \text{proton radius} = 8.41235641(34 \pm 26)e-16 \text{ m}$$

Haug's proton mass Compton wavelength (reduced):

$$2.103089103(4 \pm 6)e-16 \text{ m}$$

is *exactly* $\frac{1}{4}$ of the above formula's proton radius:

$$8.41235641(34 \pm 26)e-16 \text{ m}$$

The relative error to the current empirical proton radius is 0.0000 ± 0.0023

While I'm not prepared to make Haug's case for him that this is not mere "numerology," its *exact* correspondence to another quantum gravity theory's calculation (done well in advance of the recent correction of 4% in the empirical value) is an indication that the mainstream is being left behind by those outside the mainstream.

Moreover, if one takes seriously the cosmology that must accompany *any* quantum gravity theory, one must also not dismiss as "mere numerology" other Compton wavelength Dirac-esque "large number coincidences," such as the fact that the electron mass Compton wavelength (reduced) times $\alpha G(\text{proton})$ is the light age of the universe to a relative error of 0.0081 ± 0.0015 .

My only criticism of the paper (hence 4 rather than 5 stars) is that it buried the lead, which is Section 9's table; the significance of which should have been the subject of the paper, leaving the philosophical discourse regarding de Broglie vs. Compton as part of the motivation.

