

Review of: "Quantized Newton and General Relativity Theory"

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Potential competing interests: No potential competing interests to declare.

This paper is well-written, globally easy to follow, and the target audience is very broad. No very technical knowledge is mandatory (at least, before the section on general relativity).

Motivations are well explained and the connection with historic scientific research is interesting.

The underlying idea is also interesting, and the idea of rewriting equations this way is new, as far as I know. This can be reused in various quantum gravity studies (such as loop quantum gravity, or even string theory).

Nevertheless, I have several remarks.

- Some equations are expanded with details, I guess this is for pedagogical reasons, but I personally found that this renders them difficult to read. I propose to simplify as much as possible the equation by factorizing and simplifying terms, e.g., in (3), (13), (14), (21). This is basic maths, and I'm convinced that the paper will be easier to follow with simplified equations.
- It seems quite trivial that $\frac{2GM}{Rc^3}$ can be rewritten using $\frac{l_p}{\lambda}$. This is a unitless quantity, and it can be rewritten with any unit system as soon as the ratio is conserved. Since the origin of the reduced Compton frequency per Planck time is well developed in the previous section, I suggest reducing this part of the paper to the minimum.
- The use of the term "quantization" or "quantized" is not well adapted. There is almost nothing about quantum theory in this paper. Mathematically, the only thing we have is a change of variable. This is the starting point of a quantum theory, but, a mathematical framework must be provided to describe the quantum theory itself. I do not say that the paper must provide a full and consistent quantum theory of gravitation, but I do not think that introducing a Compton wave length in gravitational equations is enough to say that gravity is quantized. The minimum I would expect with the word "quantization" is a discussion on a potential effect of energy levels in the equations (e.g., relates Compton wave length to the spectrum of an oscillator, and show how quanta would arise in the theory). In its present shape, the paper is rather "a step toward quantization of gravity using Compton wave length". I strongly suggest replacing the words "quantization" or "quantized" and/or to rephrase some sentences (e.g. "We have demonstrated a straightforward way to connect Newton's theory and general relativity to the Planck scale and how this approach leads to the quantization of gravity through the reduced Compton frequency per Planck time in the gravitational mass. ") into something more accurate.

To conclude, the idea of the paper is interesting, it deserves to be published, but it must be partially rewritten to reflect more accurately the results. For the moment, I give 3 stars, but it would deserve 4 or 5 stars after modifications.