



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_31114
Title of the Manuscript:	The Galilean limit of Quantum Gravity: Corrections to the Newton's Law
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments	It could be interesting if the author could give an idea of which type of experiment could be useful to validate this theory and in which context (astrophysics, particle physics etc..) has to be carry out. Also, It could be interesting to compare/comment his results with respect to deviations from the Newtonian potential that appear in modified theory of gravity such as $f(R)$ or MOG in form of a Yukawa-like term.	The quantum corrections to the Newton gravity are the direct consequences of the presence in quantum gravity equation of a term (i.e., the cosmological term given by equation (2)) that justifies the cosmic evidences about the motion of galaxies. Thence, we can find a confirmation of such astronomical observations that anyway are indirect physical data (out of the Galilean method) by laboratory experiments (that validate the quantum correction to newton law)). An appendix has been added where it is shown how the gravity equation couples to the Klein-Gordon equation and how the energy-momentum tensor depends by the standard quantum wave function. This is possible since there is a bi-unique relation between the hydrodynamic and the Schrödinger approach to quantum mechanics (see Chiarelli P.(2016) Quantum decoherence induced by fluctuations. Open Access Library Journal, 3: e2466 http://dx.doi.org/oalib.1102466). However, the quantum field approach does not contradicts the Schrödinger. Both define a field that becomes quantized by external imposed conditions (i.e., quantization). In the field approach the quantization condition are introduced in a more clear and standardized way. The same happens for the quantum hydrodynamic approach. The equations define a field (that contains also non-quantum solutions). The restriction to the quantum ones is obtained by the quantization conditions. (see again Chiarelli P.(2016)



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		Quantum decoherence induced by fluctuations. Open Access Library Journal, 3: e2466 Please see the attached file). The analysis how the quantization is introduced in the quantum hydrodynamic approach (and how it couples to the gravity) is matter of underway work: (https://www.researchgate.net/project/The-interplay-between-the-minimum-action-principle-and-the-quantum-gravity?_esc=profileProjectCards&_sg=lhpuH88lk5yBvmtbekTuQQyKF9ihhHi2NT-vPCDIhwV9GQiv76Eh_icGsSDTa_qWgNcX5-tzJfxijwYTE3iqsQ.Yfo-H9YOTQG2WgOyAp4E3LCs7nQW2I9kJNV8sCROpHX2XSgQ1fFWbe_ctiAywRQT.YOU1g08aFC9KDJusittALIWpyelkPel1yEsQIz6gbpnQYd1fSDYXq8HwgufMYL_2&_viewlds%5B0%5D=mp0eUXgZzXCNgcrFJtu7gPYs&_viewlds%5B1%5D=9mSvoLOxNnb92Xf9TxGm5Tlv). Once this is made clear , The comparison with the outputs in modified quantum field approach can be succesfully carried out. A comment about this is introduced into the paper.
<u>Optional/General</u> comments	The English needs cleaning up.	