



**SDI Review Form 1.**

**PART 1:**

Journal Name:	<a href="#">Physical Review &amp; Research International</a>
Manuscript Number:	<b>MS: 2013_PRRI_3363</b>
Title of the Manuscript:	<b>Quantum Gravity and the Holographic Mass.</b>

**General guideline for Peer Review process is available in this link:**

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

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



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### **PART 2:** 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)
<b><u>Compulsory</u></b> REVISION comments		
<b><u>Minor</u></b> REVISION comments		
<b><u>Optional/General</u></b> comments	<p><b>This manuscript contains trivial mathematics and algebraic manipulations expressed as more important than they are.</b></p> <p><b>The manuscript is filled with nonsensical sentences without proper definitions etc.</b></p> <p><b>If there is an explanation, why the product of proton charge and Schwarzschild radii is about equal to the square of Planck length, it not given in this manuscript, where is explained nothing.</b></p> <p><b>This text should not be published.</b> One should not publish this kind texts as science.</p>	<p>1) We are sorry the reviewer feels this way about our manuscript. While relatively simple mathematical derivations using algebraic and geometric relationships between the bodies were studied, these relationships have been shown to produce extremely accurate results for a wide variety of physical properties. Similarly, the Hawking-Bekenstein entropy, while being a simple algebraic relationship that defines a quarter of the surface of a horizon to be equivalent to the thermodynamics a black hole, has profound physical meaning. In our case, we are able to generate an exact value equivalent to the Schwarzschild solution to Einstein's field equation simply by the use of Planck "pixelation" in a generalized holographic approach which yields a discrete structure of spacetime or a quantized gravitation. Using this approach we are able to generate the rest mass of the proton with a high level of accuracy and predict it's charge radius. This prediction was just confirmed by the most accurate measurement to</p>



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		<p>date at the Paul Scherrer accelerator in Switzerland which found it to be <math>0.84087(39) \times 10^{-13} \text{cm}</math>, a difference of <math>0.000366 \times 10^{-13} \text{cm}</math> from the predicted value in our paper (Antognini, et. al., "Proton Structure from the Measurement of 2S-2P Transition Frequencies of Muonic Hydrogen", <i>Science</i>, vol. 339, 25 January 2013). Therefore our value is within a standard deviation or within the margin of error of the experiment. Considering that the new measurement significantly disagrees with the standard model and that ours outputs an extremely accurate value and taking for account that the same geometric relationship in our approach generates the <i>exact</i> value for the gravitational coupling constant to the strong force, it's interaction time and a very close fit to the Yukawa potential range; we would suggest that our computations are non-trivial and produce significant results that should be explored and published.</p> <p>2) It is not clear which sentences were found by the reviewer to be nonsensical, so no specific comments can be made to this reviewer or alterations to the manuscript. However, the paper was reviewed by many other physicists as we reported on our results and reached out to the scientific community and until now, none of them found it to be written in nonsensical statements. In fact, many comments stated that the paper was well written, including comments of another reviewer from this journal.</p> <p>3) It is not clear what relationship the reviewer</p>
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		<p>is referring to as it is not contained within the manuscript. The comment does not indicate which Schwarzschild radius is used in this formula, however if the proton radius is the one the reviewer was intending, the product of the Schwarzschild radius of a proton mass and the charge radius does not equal the square of a Planck's length. It is nearly an order of magnitude off and no where in our manuscript is there a calculation with that level of approximation. In equation (34), the product of the <i>mass</i> of the proton and the Schwarzschild <i>mass</i> is equivalent to two times the square of the Planck <i>mass</i>, a similar relationship with the <i>masses</i> rather than the lengths. If this is the equation that the reviewer is referring to, this expression is a direct consequence of the geometric equation (25) and of it's algebraic derivation of equation (29). The significance of the result of equation (34) is detailed in the discussion below the equation, but in general, it clearly demonstrates that the Planck mass, the rest mass of the proton, and the Schwarzschild mass of the proton are directly related which has nontrivial implications to our understanding of physics in general and topics such as confinement and the hierarchy problem for instance.</p> <p>We hope that these comments adequately address the concerns of the reviewer.</p>
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