



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_30140
Title of the Manuscript:	ON THE GRAVITATIONAL SHIELDING PHENOMENON
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.

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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)
Compulsory REVISION comments	<p>In this paper the author revisits Allais effect on the context of the gravitational shielding hypothesis. The paper provides a, relatively, up-to-date review of the problem but, in my opinion, the author fails to provide any explanation of his/her own.</p> <p>On paragraphs from line 61 to 82 and 98 to 113 a vague reference to a "Casimir effect" interpretation of gravity, developed in papers [9] and [10] of the bibliography, is given but I do not see how this interpretation could lead to an explanation of "Allais effect". I think the author should develop these ideas in greater detail (qualitatively and quantitatively) in order to this paper to be acceptable in this journal.</p>	<p>I extended the text to take into account the reviewer's comments, explained the essence of the Casimir effect and the gravitational shielding phenomenon (lines) on the basis of advanced concepts of gravity as the mutual attraction of two masses resulting from the overlapping of EM vacuum Casimir polarization fields generated by them and the attractive effect of all the mass of the Universe on these two masses (Mach's principle). Because I am presenting to the PSIJ an article about gravity as a consequence of the EM Vacuum Casimir polarization in the vicinity of any material object, then this article is written about it without details. I took into account the literature, which was recommended by the reviewer. I tried to more fully express my understanding of the Allais effect nature.</p>
Minor REVISION comments	<p>The author cites the experiment of Wang et al. as recent evidence on the reality of the effect. However, there have been other measurements: Kuusela et al. <i>Phys. Rev. D.</i> 74, 122004 (2006) in which no trace of the anomaly has been found. Adding to the contradictory evidence there is other paper in which a correlation of torsion balances during an eclipse is claimed: A. F. Pugach and D. Olenici, <i>Advances in Astronomy</i>, vol. 2012, Article ID 263818. I think the author should comment these papers too to broaden the context of the exposition.</p>	<p>I thank the reviewer for the advice to specify in the article on the work of Kuusela et al. and A. F. Pugach and D. Olenici. I have commented these papers in my paper.</p>



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<u>Optional/General</u> comments	<p>In my opinion the evidence on the Allais effect is very controversial and the possible conventional explanations (mainly the one by T. van Flandern and X. S. Yang, Phys. Rev. D 67, 022002 (2003)) have not been analyzed in sufficient detail. On the other hand the decrease of g_n in Wang's observation is so small (5-7 μgal) that it would suffice an increase of the solid tide around 3 cm (3 cm/Radius Earth = $5 \cdot 10^{-9}$) during the alignment of the Sun and the Moon, to explain away the phenomenon. (About solid tides see, for example: http://www.navipedia.net/index.php/Solid_Tides). A discussion about this in Section 3 would also be welcome.</p>	<p>I believe that the results of Kuusela and especially Pugach-Olenici are the strong arguments in favor of the conclusion that the solar eclipse was the cause of the correlated variations.</p> <p>Moreover, these results, especially the results of Pugach-Olenici, give grounds for doing hypotheses about the the initiation of local earth low tide and local earth tide (lines 147, 151, 173) during a solar eclipse.</p>