



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_50463
Title of the Manuscript:	Advantages of the Mathematical Structure of a Dirac Fermion
Type of the 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>)

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	Standardize the references. For example, some are with titles in italics while others are not.	My experience shows that the Journal's utilities automatically do that. Am I right?
Minor REVISION comments	<div>1) In Eq. (1), $\psi(x)$ and $\psi(x)_{,\mu}$ represent what?</div> <div>2) In the second paragraph, in the conceptual definition of Noether's theorem, what does the theorem establish so that lagrangean density produces motion equations that satisfy the conservations of energy, momentum and angular momentum? In addition, are there any other quantities besides those that can be conserved?</div> <div>3) In Eq. (04), it is a transformation of local gauge or gauge transformation of the second type, where α is a real variable. α is a function of what?</div> <div>4) In Eq. (10) $\bar{\psi}$ and ψ are independent dynamic fields?</div> <div>5) After Eq. (14), the Dirac matrices satisfy which algebra and relation?</div> <div>6) In Eq. (18), the fields ϕ^\dagger and ϕ are defined in terms of what?</div> <div>7) From Eq. (18) to Eq. (19) was some gauge transformation used?</div> <div>8) After Eq. (21), what does a square term of A_μ mean and what does that term violate in theory?</div> <div>9) In Eq. (23), who is $F^{\mu\nu}$?</div> <div>10) In Eq. (25), the tensor $V^{\mu\nu}$ is associated with what?</div> <div>11) In conclusion, there is the comment: "This work proves that the SM suffers</div>	<div>The remarks below refer to the corresponding remarks of the reviewer.</div> <div>1. Done.</div> <div>2. The Noether theorem is discussed in many textbooks. References added. An interested reader may go there and study/refresh his knowledge.</div> <div>3. The paper says that "α is a real variable". It means that it is not a function but a real number argument of (4).</div> <div>4. Yes. An appropriate quotation from a textbook is added.</div> <div>5. This issue is a standard knowledge that is discussed in textbook and I think that the reference is enough. One word is added.</div> <div>6. An added statement clarifies this issue.</div> <div>7. Not explicitly. Here I use an expression that is taken from textbooks. Thus, the paper skips the gauge transformation used by the textbooks.</div> <div>8. A brief explanation and two references are added.</div> <div>9. Issue explained.</div> <div>10. A clarifying statement added.</div> <div>11. A paragraph is added at the bottom of section 5.</div>



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	<p>fundamental problems." It would be interesting for the authors to cite other problems and discrepancies between theoretical and experimental/observational results of SM. Based not only on the problems dealt with here, but on other SM problems, the authors could emphasize the importance of SM extensions and cite proposals for MS extensions, such as the breakdown of Lorentz symmetry and non-commutativity theories, for example.</p> <p>12) The quotation marks must be typed in their correct form throughout the text.</p> <p>13) A finishing point is required:</p> <p>a) at the end of the second paragraph;</p> <p>b) in Eq. (5).</p>	
Optional/General comments	<p>The paper deals with a review in classical field theory, with emphasis on the spin fields 0, 1 and 1/2. This review is based on several principles and concepts of non-relativistic and relativistic quantum mechanics and quantum field theory, where the authors draw attention to problems and contractions related to the foundations of the Standard Model with respect to theories describing the fields of Dirac and theories that describe bosonic fields of spin 0 and 1. The points raised in the present work are quite interesting and make it suitable for publication in the Physical Science International Journal. However, I recommend publication once the authors have revised their manuscript in accordance with the comments above.</p> <p>After the response of this questions in revision by taking into account the comments given above I expect that the paper will be acceptable for publication in PSIJ.</p> <p>Here are some refs. that can help. A. Songaila, L. L. Cowie, Nature 398, 667 (1999); A. Songaila, L. L. Cowie, Nature 428, 132 (2004); Jonathan L. Feng et al., Phys. Rev. Lett. 117, 071803 (2016); Y. Fukuda, et al., Phys. Rev. Lett., 81, 8 (1998); R. Pohl et al., Science 353, 669 (2016); P. W. Gorham, et al., Phys. Rev. Lett., 121, 161102 (2018); Derek B. Fox, et al., arXiv:1809.09615[astro-ph.HE].</p>	

PART 2:

	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)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	