

Review of: "On n -Dimensional Maxwell and Dirac Equations in Curved Space-Time and Its Applications in $SO(P,Q)$ Group Theoretic Image Processing"

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Potential competing interests: No potential competing interests to declare.

Strengths:

1. **Comprehensive Scope:** The paper covers a wide range of topics, including Maxwell and Dirac equations in (p, q) -dimensions, Green's functions, $SO(p, q)$ invariance, and the Einstein-Maxwell equations. This breadth shows a deep engagement with theoretical physics.
2. **Mathematical Rigor:** The use of Clifford algebra and differential geometric approaches demonstrates a high level of mathematical sophistication.
3. **Interdisciplinary Application:** The discussion on group theoretic image processing problems highlights the potential interdisciplinary applications of the theoretical framework.
4. **Detailed Explanations:** The introduction provides a clear roadmap of the paper, making it easier for readers to follow the progression of ideas.

Weaknesses:

1. **Clarity and Readability:** The abstract and introduction are dense and packed with technical jargon, which might be difficult for readers to digest. Simplifying the language and breaking down complex sentences could improve readability.
2. **Specificity in Applications:** While the theoretical framework is robust, specific examples or case studies demonstrating practical applications could strengthen the paper.
3. **Length and Redundancy:** Some sections, especially in the introduction, appear repetitive. Streamlining the content to avoid redundancy would make the paper more concise.
4. **Lack of Visual Aids:** The paper would benefit from the inclusion of diagrams, figures, or tables to illustrate key concepts, especially for complex mathematical constructs.
5. **Further Elaboration on Green's Function:** The discussion on the Green's function in (p, q) -dimensional space-time could be expanded to include more detailed examples or applications.
6. **Additional References:** More references to recent works in the field could provide a better context and show the relevance of the research in the current scientific landscape.

Suggestions for Improvement:

1. **Simplify Language:** Rephrase complex sentences and reduce the use of jargon where possible to make the paper more accessible.

2. Add Visuals: Incorporate visual aids to illustrate theoretical concepts and mathematical formulations.
3. Case Studies: Include specific examples or case studies that apply the theoretical framework to practical problems.
4. Streamline Content: Reduce redundancy in the introduction and other sections to make the paper more concise.
5. Expand on Green's Function: Provide more detailed explanations and applications of the Green's function in (p, q) -dimensional space-time.
6. Update References: Include recent and relevant references to situate the research within the current scientific dialogue.

Overall, the paper presents a thorough and ambitious exploration of Maxwell and Dirac equations in (p, q) -dimensions, but it would benefit from improvements in clarity, conciseness, and the inclusion of practical examples.