

FINAL EVALUATION FORM 1.1

PART 1:

Book Name:	Current Research Progress in Physical Science
Manuscript Number:	Ms_BPR_4113
Title of the Manuscript:	The principle of commensurability of conserved quantities as a basis for solving quantum mechanics problems using integer theory
Type of Article :	Book chapter

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
<p>The manuscript titled "<i>The principle of commensurability of conserved quantities as a basis for solving quantum mechanics problems using integer theory</i>" presents a novel perspective on the foundations of quantum mechanics. The author proposes a "principle of commensurability of conserved quantities," asserting that conserved quantities in physical interactions must have a common measure, expressible as integers. The author attempts to apply this principle to the classic problem of hydrogen-like atom radiation.</p> <ul style="list-style-type: none"> • <u>Lack of Theoretical Justification:</u> The proposed principle lacks sufficient theoretical justification and connection to established physical theories. The author fails to adequately explain why commensurability is a necessary condition for physical interactions and doesn't engage with the established mathematical formalism of quantum mechanics, making it difficult to assess the validity and implications of the proposed principle. • <u>Ad Hoc Assumptions and Selective Interpretation:</u> The application of the principle to the hydrogen atom problem involves a series of ad hoc assumptions and a selective interpretation of mathematical results. For example, the author arbitrarily selects specific rational numbers to fit the observed spectral series without providing a clear physical justification. This approach appears to be a post-hoc rationalization of known results rather than a predictive theoretical framework. • <u>Lack of Clarity and Rigor:</u> The manuscript suffers from a lack of clarity and rigor in its presentation. Mathematical derivations are often incomplete and difficult to follow. The author's use of terminology is inconsistent and confusing. <p><u>Grammar and Writing Skill Issues:</u></p>	

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<ul style="list-style-type: none"> • <i>Sentence Structure:</i> Some sentences are overly long and complex, hindering readability. Consider shortening sentences and using clear, concise language. For instance, in the abstract, the sentence "The application of this apparatus becomes possible after the introduction of the principle of commensurability of conserved quantities into physics, which states that at the interaction of physical objects, only such exchanges of conserved quantities (energies, impulses, etc.) are possible so that these quantities have a common measure before and after the interaction of objects" is quite lengthy. Breaking it down into shorter sentences would improve clarity. • <i>Terminology:</i> The author uses terms inconsistently, causing confusion. For example, the term "virtual value" is used in a non-standard way in equations (1) and (3). Ensure consistent and standard terminology usage throughout the manuscript. • Formal Language: The manuscript lacks the formal language and style expected in scholarly communication. Improve the language by avoiding informal expressions and colloquialisms. <p><u>Recommendations:</u></p> <ul style="list-style-type: none"> • <i>Thorough Revision of Theoretical Foundation:</i> Substantially revise the manuscript to provide a robust theoretical justification for the "principle of commensurability," connecting it to established physical theories and demonstrating its necessity within the framework of quantum mechanics. • <i>Rigorous Application and Justification:</i> Re-evaluate the application of the principle to the hydrogen atom problem, ensuring a rigorous and logically sound approach. Avoid ad hoc assumptions and provide clear physical justifications for all mathematical choices and interpretations. • <i>Improved Clarity and Presentation:</i> Significantly revise the manuscript to enhance clarity and rigor. Ensure complete and easy-to-follow mathematical derivations, consistent and standard terminology usage, and a formal and scholarly writing style. 	
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Reviewer Details:

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