

Review Form 3

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_129729
Title of the Manuscript:	Solution of Inhomogeneous and Homogeneous Heun's Differential Equations in Nonstandard Analysis
Type of the Article	Original Research Article

PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	This manuscript holds significant importance for the scientific community as it extends the application of nonstandard analysis methods to the solutions of both inhomogeneous and homogeneous Heun's differential equations, which are fundamental in mathematical physics and applied mathematics. By providing explicit solutions in three formats, it enriches the existing literature and offers a systematic approach to tackle inhomogeneous terms in complex differential equations. Furthermore, the complementary solutions derived align with previously established results, ensuring consistency and reliability, while opening new pathways for advanced research in differential equations and their applications. This work also builds on and generalizes earlier findings on Kummer's and hypergeometric equations, further advancing the field.	
Is the title of the article suitable? (If not please suggest an alternative title)	Yes, the title is appropriate to the article.	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	The abstract provides a focused overview of the manuscript by discussing the context of the problem, the application of nonstandard analysis, and the extension to Heun's differential equations. However, it could be made more comprehensive and engaging with a few improvements. <ul style="list-style-type: none"> • Explicitly state the goal of the paper, such as deriving solutions in specific formats or demonstrating the utility of the method. • Emphasize the significance of applying the method to Heun's equations, particularly in extending previous work. • Briefly summarize the key findings, such as the three formats of solutions and how they compare them to existing solutions. • Mention potential applications of these solutions in mathematical or physical problems. 	
Is the manuscript scientifically, correct? Please write here.	Yes, the manuscript appears to be scientifically correct, as it systematically applies established mathematical methods, including nonstandard analysis and Green's function, to derive solutions for Heun's differential equations and aligns the results with prior research findings.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references list contains many foundational and classical works, which are essential for providing context and background. However, only 38% of the references are from the past 10 years, which might not meet the suggested standard of having 70% of references within this timeframe. To improve the manuscript, consider including more recent studies (from 2015 onward) relevant to Heun's differential equations, nonstandard analysis, and their applications.	

Review Form 3

Is the language/English quality of the article suitable for scholarly communications?	The language quality of the article is generally acceptable; however, there are minor grammatical errors that should be addressed. For instance, in the first sentence of the abstract, it would be more appropriate to say, "Green's function" instead of "the Green's function." Additionally, in the second sentence of the same paragraph, using "based on" would be preferable to "on the basis of." I recommend that the authors thoroughly review the article for these and any other potential adjustments.	
Optional/General comments	Overall, the manuscript is well-written and scientifically sound. It is acceptable for publication after addressing a few minor revisions, such as improving the abstract's comprehensiveness, updating the references to include more recent studies, and aligning with the 70% recency requirement for citations.	

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>	

Reviewer Details:

Name:	Chathuri Weeragunaratna Sahabandu
Department, University & Country	The Open University of Sri Lanka, Sri Lanka