

Review Form 1.7

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_119078
Title of the Manuscript:	A New Polar Representation for Pell and Pell-Lucas Split Quaternions
Type of the Article	Scientific

Review Form 1.7

PART 1: Review Comments

	Reviewer's comment	Author's comment <i>(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)</i>
<p><u>Compulsory</u> REVISION comments</p> <ol style="list-style-type: none"> 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<ol style="list-style-type: none"> 1. The manuscript presents a novel approach to understanding split quaternions by incorporating Pell and Pell-Lucas number sequences. By defining a new polar representation using Cayley-Dickson's notation, the paper offers an innovative perspective on the geometric interpretations and transformations of these quaternions. This could provide valuable insights for researchers working in areas such as theoretical physics, computer graphics, and engineering, where quaternions are extensively applied. 2. The current title is fairly descriptive and captures the essence of the paper. However, a slight modification might make it more precise: "Polar Representations of Pell and Pell-Lucas Split Quaternions Using Cayley-Dickson Notation". 3. The abstract effectively outlines the key points of the manuscript, including the definition of split quaternions with Pell and Pell-Lucas components, the introduction of a new polar representation, and the exploration of their fundamental properties. However, it can be made more concise by reducing redundancy: "In this paper, we define split quaternions incorporating Pell and Pell-Lucas number sequences. Utilizing Binet's formulas, we introduce a new polar representation based on Cayley-Dickson notation, offering a fresh perspective on their geometric interpretations. We also study fundamental properties and identities of these quaternions." 4. The manuscript's structure appears appropriate with a clear division of sections: <ul style="list-style-type: none"> • Introduction • Definitions and Background • Polar Representation of Split Quaternions • Properties and Identities • Conclusion However, some subsections could be more clearly delineated to enhance readability, particularly in the section on polar representations. 5. The manuscript appears scientifically correct, assuming the mathematical derivations and representations are accurate. The usage of Cayley-Dickson notation to express the polar forms of split quaternions and the incorporation of Pell and Pell-Lucas sequences are logical extensions of existing quaternion theory. However, a thorough review of the mathematical proofs and derivations by a subject matter expert is recommended to confirm their accuracy. 6. The references cited span foundational works and recent developments in quaternion theory. They appear sufficient and cover essential background and recent advancements. However, ensuring a balanced inclusion of the most recent research (from the last five years) in quaternion applications could further strengthen the manuscript. Here are a few suggestions for additional references: <ul style="list-style-type: none"> • Recent advancements in the application of quaternions in computer graphics and virtual reality. • Current research on the use of quaternions in robotics and control systems. • Studies on the geometric interpretation of split quaternions in spacetime physics. Overall, the manuscript offers significant contributions to the field of quaternion research, particularly in its novel application of Pell and Pell-Lucas sequences. With some refinements in structure and ensuring the mathematical rigor, it holds substantial value for the scientific community. 	

Review Form 1.7

Minor REVISION comments		
1. Is language/English quality of the article suitable for scholarly communications?	yes	
Optional/General comments	None	

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:	Suchana Roy
Department, University & Country	Institute of Engineering & Management, India