

Review Form 1.7

Journal Name:	Asian Research Journal of Mathematics
Manuscript Number:	Ms_ARJOM_105972
Title of the Manuscript:	Orthogonal Polynomials and Operator Convergence in Hilbert Spaces: Norm-Attainability, Uniform Boundedness, and Compactness
Type of the Article	Review Article

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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>	<p>The paper titled "Orthogonal Polynomials and Operator Convergence in Hilbert Spaces: Norm Attainability, Uniform Boundedness, and Compactness" presents a thorough investigation into the convergence properties of orthogonal polynomials within the framework of Hilbert spaces. The authors analyze norm-attainability, uniform boundedness, and compactness of orthogonal operators associated with these polynomials. The paper contributes to the understanding of functional analysis and its applications in polynomial theory. Overall, the work demonstrates a high level of mathematical rigor and presents valuable insights into the field.</p> <p>The paper is well-organized and effectively structured. The authors provide clear definitions, propositions, and theorems, making it easy for readers to follow the logical flow of the arguments.</p> <p>The authors demonstrate a strong command of the subject matter and exhibit a deep understanding of the relevant mathematical concepts. The proofs are well-developed, and the mathematical reasoning is sound.</p> <p>As originality, the paper's investigation into the convergence properties of orthogonal polynomials in the context of Hilbert spaces is a novel contribution. It builds upon existing literature while introducing new insights into the behavior of these polynomials.</p> <p>The authors explore norm-attainability, uniform boundedness, and compactness systematically. This comprehensive approach provides a well-rounded understanding of the behavior of orthogonal operators and their relationships with these properties.</p> <p style="text-align: center;">Suggestions for Improvement / Minor Revision</p> <p>While the notation used is generally clear, there are a few instances where multiple subscripts and superscripts might lead to confusion. It would be beneficial to recheck the notation for consistency and clarity.</p> <p>Including more concrete examples or applications could enhance the paper's accessibility for a wider audience. Demonstrating the practical implications of the theoretical results would make the paper more engaging.</p> <p>Addressing potential limitations or areas where the current analysis might not apply could add depth to the paper. This would also guide future research directions for readers interested in extending this work.</p> <p>References and Citations:</p> <p>The authors have appropriately cited relevant literature to support their claims. However, in</p>	

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	<p>some instances, the citation format should be reviewed for consistency and accuracy. Please add following references to the paper:</p> <p>1. Özen ÖZER , Saleh OMRAN, 2016. "Common Fixed Point Theorems in C*- Algebra Valued b-Metric Spaces" AIP Conference Proceedings 1773, 050005 (2016); doi: 10.1063/1.4964975.</p> <p>2. Carlos Frasser, Özen ÖZER, 20 August 2020, First Order Ordinary Differential Equations and Applications, Lambert Academic Publishing. https://www.amazon.com/First-order-Ordinary-Differential-Equations- Applications/dp/6202798416 ISBN-13:978-620-2-79841-9, ISBN 10:6202798416 (LAP is an imprint of VDM</p> <p>The paper is generally well-written, but there are a few instances where the language and grammar could be improved. I recommend a thorough proofreading to address any typographical errors or awkward phrasing.</p> <p>Conclusion</p> <p>The paper "Orthogonal Polynomials and Operator Convergence in Hilbert Spaces: Norm Attainability, Uniform Boundedness, and Compactness" offers a significant contribution to the field of functional analysis, specifically in relation to orthogonal polynomials in Hilbert spaces. The authors' rigorous approach and comprehensive investigation of norm-attainability, uniform boundedness, and compactness enhance our understanding of these concepts. Addressing the suggested improvements would further enhance the paper's clarity and accessibility. Overall, I recommend this paper for publication, as it enriches the literature and advances the state of knowledge in this area.</p>	
<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>		
<p>Optional/General comments</p>		

PART 2:

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

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