

Review Form 3

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_120245
Title of the Manuscript:	Effect of water depth and swell parameters on wave propagation in the coastal zone of Benin
Type of the Article	

Review Form 3

PART 1: Review Comments

Compulsory REVISION 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 few sentences regarding the importance this manuscript for scientific community. Why do you like (or dislike) this manuscript? Minimum 3-4 sentences may be required for this part.		
Is the title of the article suitable? (If not please suggest an alternative title)		
Is the abstract of the article comprehensive? Do you suggest addition (or deletion) of some points in this section? Please write your suggestions here.		
Are subsections and structure of the manuscript appropriate?		
Please write few sentences regarding the scientific correctness of this manuscript. Why do think that this manuscript is scientifically robust and technically sound? Minimum 3-4 sentences may be required for this part.		
Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. =		

Review Form 3

<p>Minor REVISION comments</p> <p>Is language/English quality of the article suitable for scholarly communications?</p>		
<p><u>Optional/General</u> comments</p>	<p>Introduction</p> <p>The paper "Influence of Swells on Sediment Dynamics in the Coastal Zone of Benin" by N. B. Tokpohozin addresses the critical impact of wave dynamics on coastal erosion and sediment transport in the Gulf of Guinea, specifically around Cotonou, Benin. The study leverages the modified Boussinesq theory to model wave behaviors, providing insights into the energy dynamics and their implications for coastal erosion.</p> <p>Summary</p> <p>The study begins with an analysis of the regular swells in the Gulf of Guinea, noting their constant average height of $H_o=0.8\text{ m}$ and an average period of $T=11\text{ s}$. It then explores how these swells amplify in height as they approach the shore, reaching between 1.7 m and 2.5 m at the breaking point. The research highlights the bathymetric surge occurring at water depths ranging from 1.6 m to 4.5 m, depending on the seabed slope.</p> <p>Key findings include the significant role of wave energy spectra in characterizing wave behaviors and the influence of wave period on orbital velocities at different depths. The study also underscores the dispersive nature of wave propagation and the complex interactions leading to coastal erosion.</p> <p>Strengths</p> <ol style="list-style-type: none">Comprehensive Data Analysis: The paper provides a thorough analysis of wave dynamics, supported by empirical data. The use of the modified Boussinesq theory adds robustness to the modeling approach.Relevance to Coastal Management: The findings are highly relevant for coastal management, offering insights into the mechanisms of coastal erosion and sediment transport. This can inform mitigation strategies for affected areas in the Gulf of Guinea.Detailed Description of Wave Characteristics: The study meticulously describes various wave characteristics, such as energy spectra, orbital motion, and the impact of wave period on orbital velocities. This enhances the understanding of wave behaviors in coastal zones. <p>Weaknesses</p> <ol style="list-style-type: none">Limited Geographical Scope: The study focuses on a specific region in the Gulf of Guinea. While this provides detailed local insights, the findings may not be universally applicable to other coastal regions with different wave and sediment dynamics.Assumptions in Modeling: The modified Boussinesq theory, while robust, involves certain assumptions that may limit the accuracy of the model under specific conditions. The paper could benefit from a discussion on the limitations and potential inaccuracies of the modeling approach.Future Research Directions: While the paper provides significant findings, it lacks a detailed discussion on future research directions. Identifying areas for further investigation would enhance the contribution to the broader scientific community.	

Review Form 3

	<p>Conclusion</p> <p>N. B. Tokpohozin's study on the influence of swells on sediment dynamics in the coastal zone of Benin offers valuable insights into wave behaviors and their implications for coastal erosion. The research is well-grounded in empirical data and provides a comprehensive analysis of wave characteristics using the modified Boussinesq theory.</p> <p>However, the study's geographical scope and assumptions in the modeling approach present some limitations. Addressing these weaknesses in future research could further enhance the understanding of coastal dynamics and inform effective coastal management strategies.</p> <p>Overall, the paper is a significant contribution to the field of coastal engineering and sediment dynamics, providing a foundation for future studies in similar coastal environments.</p>	
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PART 2:

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

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