Peer Review Report

Review Report on Morphological model for erosion prediction of India's largest braided river using MIKE 21C model

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EVALUATION

Q 1   **Please summarize the main findings of the study.**

The study focuses on utilizing the MIKE 21C to develop a morphological model for predicting erosion in a section of India's largest braided river. The topic is relevant and addresses a critical issue in river management and environmental preservation. The utilization of MIKE 21C model is a notable approach, as it has proven to be effective in similar studies. The paper presents an interesting and valuable contribution to the field of river dynamics and erosion.

Q 2   **Please highlight the limitations and strengths.**

Strengths:
The study addresses a significant concern in river management, especially in braided rivers, where erosion can lead to substantial environmental and infrastructural impacts. The findings of this research could have practical implications for policymakers and environmental managers.

Limitations:
The paper would benefit from a more extensive discussion of the results. Interpretation of the erosion prediction outcomes in the context of the river's characteristics and relevant environmental factors would enrich the conclusions

Q 3   **Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.**

The paper demonstrates a comprehensive approach to data collection and analysis. The integration of field data with the model enhances the reliability of the erosion predictions.

Q 4   **Check List**

Is the English language of sufficient quality?
   No.

Is the quality of the figures and tables satisfactory?
   Yes.

Does the reference list cover the relevant literature adequately and in an unbiased manner?
   No.

Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)
   Not Applicable.

If relevant, are the methods sufficiently documented to allow replication studies?
   Yes.

Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

Yes.

Does the study adhere to ethical standards including ethics committee approval and consent procedure?

Yes.

If relevant, have standard biosecurity and institutional safety procedures been adhered to?

Not Applicable.

Q 5 **Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List):**

I have completed the initial review of the work "Morphological Model for Erosion Prediction of a Section of India's Largest Braided River using MIKE 21C Software". The study focuses on utilizing the MIKE 21C to develop a morphological model for predicting erosion in a section of India's largest braided river. The topic is relevant and addresses a critical issue in river management and environmental preservation. The utilization of MIKE 21C model is a notable approach, as it has proven to be effective in similar studies. However, there are certain areas that require further clarification and improvement to enhance the quality and impact of the paper.
The literature English language needs considerable improvement throughout the manuscript.
1.I suggest changing the word "MIKE 21C software" to "MIKE 21C model"
2.Various recent works related Brahmaputra, numerical modelling and river sediments can be found in literatures as shown below.
1.Mapping agricultural activities and their temporal variations in the riverine ecosystem of the Brahmaputra River using geospatial techniques.
2.Sediment analysis and modelling based approach for optimal allocation of riverine sandbar for socio economic benefits
3.Integrating optimization and damage estimation to increase economic benefit and ensure food security under seasonal land variability
4.Assessment of land use change in riverine ecosystem and utilizing it for socioeconomic benefit
Please cite them in your paper for better understanding for the readers interested in Brahmaputra River.
5.Line 8: Remove 'it' after River
6.Please mention the time duration for Short term and medium term
7.Line 14: Replace programme with model
8.Line 19: Please use abbreviations in their first use. Eg. Acoustic Doppler Current Profiler (ADCP). Please check for others in the entire manuscript
9.Line 39: Add 'River' after Brahmaputra. Check throughout the manuscript and apply the changes.
10.Line 40: 'braided' not 'braid'
11.Line 54: 'Remotely" not 'Remote'
12.Line 93: 'Neutral' or 'neural'. Please clarify and change accordingly.
13.Line 95: Please consider writing lines 95 to 97
14.Line 102: Please specify what primary and secondary datasets were used in the study. Please consider referring to paper Sediment analysis and modelling based approach for optimal allocation of riverine sandbar for socio economic benefits
15.Line 122: Please check the spelling mistakes "bathometry" in the entire manuscript and correct accordingly.
16.Line 124: Briefly explain about TRMM and GPM for reader's understanding.
17.Table 2: I suggest providing Table 2, 3, 4, 5 as a supporting document.
18.Figure 2: Please provide the source of information
19.Line 377: It would be informative for the readers if the grain size distribution-curve on the collected samples could be shown as Figures.
20.Figure 7: please replace "speed" with "velocity"

I suggest the authors to look into the comments and address me back with the updated version of the manuscript.

QUALITY ASSESSMENT

Q 6	Originality	■■■■□
Q 7	Rigor	■■■□□
Q 8	Significance to the field	■■■■□
Q 9	Interest to a general audience	■■■■□
Q 10	Quality of the writing	■■■□□
Q 11	Overall quality of the study	■■■■□