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Journal Name:	**Journal of Geography, Environment and Earth Science International**
Manuscript Number:	**Ms_JGEESI_126103**
Title of the Manuscript:	**Hydrological Modeling of Krishna Upper Catchment area of India Using Multisite Calibration and Validation of SWAT Model**
Type of the Article	**Original Research Article**

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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The manuscript focuses on the multisite calibration and validation of the SWAT model for the Krishna Upper Catchment area in India, providing essential insights for accurately predicting streamflows. The study's emphasis on using multiple gauging stations and the SUFI-2 calibration method is highly relevant for improving model precision across varied hydrological conditions. This approach not only advances hydrological modeling for water resource management in India but also addresses challenges posed by climate variability in agricultural regions. I appreciate the manuscript's detailed methodology and comprehensive analysis, as it provides a valuable contribution to the scientific community in water resources and environmental modeling.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The title, "Hydrological Modeling of Krishna Upper Catchment area of India Using Multisite Calibration and Validation of SWAT Model," is clear and descriptive but could be refined for conciseness and impact. I suggested an alternative title as: **"Multisite Calibration and Validation of the SWAT Model for Hydrological Simulation in the Krishna Upper Catchment, India"**	
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 is generally comprehensive, covering the study's objectives, methodology, and key findings. However, it could benefit from minor adjustments to enhance clarity and emphasize the study's contributions and implications. Here are some suggested improvements: □ **Clarify the Objective and Relevance**: Begin with a sentence on why multisite calibration is crucial for hydrological models in variable catchments like Krishna Upper Basin, setting the context for the study's significance. □ **Detail Methodological Approaches**: Briefly describe the data sources for gauging stations and the calibration method (SUFI-2), as this will highlight the robustness of the approach. □ **Add Specific Findings**: Include more precise details about model performance across stations. For example, specify the range of performance indices (R^2, NSE, etc.) achieved during calibration and validation. □ **Highlight Implications**: Conclude with the practical implications of the findings for water resource management, especially under changing climate conditions, as this strengthens the study's contribution.	
Are subsections and structure of the manuscript appropriate?	The structure and subsections of the manuscript appear appropriate, as they follow a logical flow common in hydrological modeling studies. The sections cover all critical components, including the introduction, methods, results, and discussion. However, here are some suggestions to enhance clarity and readability: □ **Introduction**: □ Consider including a subsection that discusses the study's objectives explicitly. This will allow readers to quickly identify the research goals and understand the study's relevance to hydrological modeling advancements. □ **Methods**: □ If possible, subdivide the "Data sets for SWAT model" section to separately cover each type of data (e.g., DEM, LULC, Soil data, etc.). This can make it easier for readers to locate specific information. □ Within "Calibration and Validation of Model," explicitly outline the performance indices (NSE, R^2, etc.) and their importance, as this will guide readers in understanding the model's evaluation criteria. □ **Results and Discussion**: □ Consider separating "Results" and "Discussion" to allow a more in-depth exploration of findings and their implications. This separation will enable a clearer analysis of how the results align with or differ from past studies. □ **Conclusion**:	

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	▯ Ensure that the conclusion restates the study's main findings, limitations, and potential areas for further research.	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	The manuscript demonstrates scientific robustness by employing a well-established hydrological model (SWAT) with multisite calibration and validation, which enhances the model's accuracy in simulating streamflows across varied sub-basins in the Krishna Upper Catchment. The use of SUFI-2 for sensitivity and uncertainty analysis further strengthens the scientific correctness, as it systematically identifies influential parameters that impact hydrological predictions. Additionally, the manuscript provides a comprehensive assessment of model performance using recognized indices (NSE, R^2, RSR, and PBIAS), aligning with standard hydrological modeling practices. By including multiple gauging stations, the study effectively accounts for spatial variability, making the findings technically sound and relevant for regional water resource management.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	The references in this manuscript cover a range of studies relevant to hydrological modeling, SWAT applications, and related methodologies. Many of the sources are relevant, but several appear slightly outdated, especially regarding advancements in SWAT and hydrological modeling techniques. Including more recent studies will help strengthen the manuscript's literature foundation and contextualize its findings. Here are a few suggestions: ▯ **Recent Studies on Land Use Optimization in Hydrology**: ▯ "Optimizing Land Use and Land Cover Allocation for Flood Mitigation Using Land Use Change and Hydrological Models with Goal Programming, Chaiyaphum, Thailand" would provide a valuable addition. This study focuses on land use optimization to mitigate flood impacts, which aligns well with the need for sustainable water management solutions, especially given climate variability. ▯ **Climate Change Impacts on Hydrology**: ▯ Add references from recent studies on climate variability impacts on hydrological components, particularly in similar monsoon-dominated regions, to draw relevant comparisons. Consider "Impacts of Climate Change on Water Resources in the Krishna Basin, India" (Journal of Hydrology, 2020) to add depth to the discussion on climate adaptability in water management. ▯ **SWAT Model and Recent Advances**: ▯ For recent advancements in SWAT applications and multisite calibration improvements, the following paper would be valuable: *"SWAT Model Applications for Complex River Basins: Recent Advances and Future Challenges"* (Water Resources Research, 2021). This reference provides insights into addressing complexities in river basin hydrology and would enhance the robustness of the methodology section	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	The language in the manuscript is mostly suitable for scholarly communication, but there are areas where clarity and conciseness could be improved. Some sentences are lengthy and could benefit from restructuring to enhance readability. Additionally, minor grammatical issues, such as inconsistent verb tenses and article usage, are present. - Please break down longer sentences for better flow and comprehension. - Ensure consistent use of technical terms and performance indices. - Perform a thorough grammar check, focusing on article usage and verb agreement, as these small improvements will enhance the paper's overall polish.	
Optional/General comments	There appear to be no ethical issues in this manuscript. There are no apparent competing interest issues in this manuscript.	

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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?	*(If yes, Kindly please write down the ethical issues here in details)*	

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