

Review of: "Spatio-Temporal Analysis of Precipitation Patterns in Xinjiang Using TRMM Data and Spatial Interpolation Methods: A Comparative Study"

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Potential competing interests: No potential competing interests to declare.

I have reviewed the paper titled "Spatio-Temporal Analysis of Precipitation Patterns in Xinjiang Using TRMM Data and Spatial Interpolation Methods: A Comparative Study." Here are some possible comments, areas of improvement, and considerations for acceptance:

Clarity and Structure: The paper is generally well-structured with clear sections. However, some parts could benefit from more detailed explanations to enhance clarity, especially in the methodology and results sections. Also, the kind of work that has been done in the paper does not have any novelty and creativity, so the authors should mention what and how their work is going to add value in the field and clarify the research question more extensively.

Methodology: The paper uses TRMM data and four different spatial interpolation methods. It is crucial to justify the choice of these methods and discuss any limitations they might have.

Data Sources and Processing: The paper utilizes TRMM 3B43 V7 data and ground-based observations. A more in-depth discussion of the data pre-processing steps and their impact on the final results would strengthen the research. On the other hand, a new version of the utilized dataset has been released. In addition, there are many other precipitation products with higher performance in detecting the rainfall patterns utilized in other articles, thus the authors should clarify their reason to choose the TRMM.

Results and Analysis: The paper presents a comprehensive analysis of precipitation patterns. However, a deeper statistical analysis could provide more insights. For instance, the significance of the trends observed could be further evaluated using additional statistical tests.

Comparative Study of Interpolation Methods: The paper compares four interpolation methods. It would be beneficial to discuss why these particular methods were chosen over others and how each method contributes uniquely to the findings.

Regional Implications and Generalizability: While the study focuses on Xinjiang, it's important to discuss the extent to which these findings can be generalized to other regions or are specific to the geographical and climatic conditions of Xinjiang.

Figures and Tables: Ensuring that all figures and tables are clearly labeled and referenced in the text is important. Any

graphical representations should be easy to understand and interpret. Therefore, if the paper is in the English language, all the labels should be written in English.

Conclusion and Future Work: The conclusion summarizes key findings effectively. Suggestions for future research directions, particularly in improving spatial interpolation methods or applying this research to other climatic conditions, would be a valuable addition.

Overall Originality and Contribution: The paper should clearly articulate its original contribution to the field and how it advances existing knowledge about precipitation patterns and spatial interpolation methods.