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.

The Manuscript aims to evaluate the accuracy of TRMM V7 product in mapping Xinjiang's (China) annual precipitation distribution. Several interpolation techniques are investigated. Another objective is to explore the trends in rainfall in the same region. The research has no novelty in terms of methods and results. Furthermore, some of the assumptions of the used methods were not checked and incorrect statistical significance was probably deduced. The following points highlights the main shortcomings of the Manuscript that led to a rejection decision:

- The manuscript was not properly reviewed as all figures have Chinese legend. Furthermore, equations are poorly presented. In general, the Manuscript presentation is very poor with small figures that are illegible.
- The main conclusions of the Manuscript are doubtful:
    - Better interpolation using IDW; however, it is not clear how this was verified as no split sampling technique was used to validate this.
    - An interpolation method that takes elevation into account should have been investigated as well.
    - It is not clear how trend analysis was performed. Was it done on individual stations first? On TRMM? Was bias correction performed? How the spatial and serial correlations affected the statistical significance? None of these was investigated.
    - If the trend analysis was performed on the interpolated data, then a spatial trend analysis must be performed to detect spatially regional trends. The limit after which a trend is statistically significant is not the same as of individual stations. A spatio-temporal technique should have been used. Spatial significance should have been checked.
    - Figure 7 mentions a “sudden change”. This is contradictory to a monotonic trend as could be detected by a Mann Kendall test.
- No discussion section is provided and hence no added value of the analysis to the global scientific community.
- Assumptions of the 4 interpolation techniques should be presented and verified before implementation.
- Assumptions of Mann Kendall and Theil-Sen slope include no serial or spatial correlation. This should also be verified before implementing the methods.
- Although the Manuscript states that the validation was done on the annual time scale, it would have been beneficial to explore the monthly time step. It would have been more interesting as well to explore in which regions or areas, the

TRMM fail to be close to the ground station data.

- The English language requires a thorough review by a native English speaker.