

**General comments:**

This study compared different gridded precipitation data and downscaled precipitation results with ground-based station data. It can be seen that the study area is characterized by data scarcity and complex mountainous terrain, and this research has positive implications for hydrological studies in data-deficient regions. Precipitation observation and simulation in mountainous areas have always been challenging, and cloud and fog deposition are also major sources of precipitation in such regions, yet this component is often difficult to observe. I have several questions regarding this paper and would like the authors to address them:

**Specific comments:**

1. The main content of this paper is to compare different downscaling method-optimized remote sensing precipitation products with station data based on various indicators. The results show that the best product is Rain4PE. Why did the authors not first evaluate the different products before performing downscaling? I think that the overall logic of the paper is not sufficiently clear.
2. I am somewhat confused about the structure of this paper. Do the authors intend only to compare different products in mountainous areas, or do authors aim to highlight a precipitation product suitable for mountain regions? Based on the Introduction, I think the authors are more inclined toward obtaining a high-spatial-resolution precipitation dataset. If the goal is to indicate which high-resolution product is more suitable for mountainous areas, should not all products be downscaled before comparison?
3. In Section 3.3, the authors mention that a threshold of  $2.5 \text{ mm d}^{-1}$  was set to distinguish precipitation events in order to reduce sensor noise. However, in Section 3.4, the threshold for Dry Days given in the ETCCDI indicator table differs from that used in the paper. When calculating the Dry Days indicator, did the authors use the  $2.5 \text{ mm d}^{-1}$  threshold or follow the standard threshold specified for that indicator?
4. Currently, the accuracy of precipitation at high altitudes remains problematic (Miao et al., 2024). Therefore, improving precipitation accuracy in high-altitude regions is an ongoing challenge, and it is unclear whether this issue also exists in the authors' study area. The authors have mentioned some correlations between the products and observational data. I suggest that including relevant discussion on this aspect would make the paper more rigorous.

**Minor comments:**

1. In line 40, there appears to be a missing space in 'agrid', please correct it to 'a grid'.
2. In line 154, there appears to be a missing space in 'tothe', please correct it to 'to the'.
3. The font size used in the figures appears somewhat smaller than that of the main text; it would be advisable to increase it appropriately for better readability.

**Reference:**

Miao, C., Immerzeel, W. W., Xu, B., Yang, K., Duan, Q., & Li, X. (2024). Understanding the Asian water tower requires a redesigned precipitation observation strategy. *Proceedings of the National Academy of Sciences*, *121*(23), e2403557121.