

This study presents the development of the GIRAFE v1 precipitation product, which provides daily accumulations and monthly means at a 1-degree resolution from 2002 to 2022. The product leverages a variety of passive microwave (PMW) radiometers aboard low-Earth-orbit satellites, along with their associated retrieval algorithms, and frequent, high-resolution infrared (IR) observations from geostationary satellites covering all longitudes. The research highlights the importance of GIRAFE v1's homogeneity and stability, as well as its robust capability to quantify sampling uncertainty due to its high temporal resolution at a daily scale. These attributes are significant for climate monitoring and the analysis of climate extremes. However, the manuscript lacks cohesive demonstrations and sufficient rationales throughout its context. Additionally, it would benefit from including more detailed information or figures to enhance comprehensiveness and understanding. Based on the concerns outlined below, I recommend a major revision to address the following comments:

1. **Line 90:** Inconsistent naming between Table 1 and Figure 2 (e.g., MTSAT-1R vs. MTSAT-01R). These should be standardized across all references to ensure consistency and avoid confusion for readers.
2. **Line 95-100:** The phrase "Except for.... counts to Tbs" is vague and lacks a clear, explicit explanation. Please provide a more specific elaboration, such as the reason for excluding certain satellites like the Meteosat First Generation.
3. **Line 115-120:** "below 0.3 mm/h are set to zero due to their low signal-to-noise ratio"? Why was 0.3 mm/h selected as the threshold? Is there supporting evidence from a study or reference that validates this choice? A brief explanation of the signal-to-noise ratio in this context would enhance credibility.
4. **Line 215:** "but no automatic detection of such situations has been implemented", This statement suggests manual checking might be used, which is impractical given the vast amount of orbital data. If manual verification is indeed the method, there is a high risk of missing contaminated data periods. Please clarify how data quality is verified or guaranteed under these circumstances. Are there specific quality control measures, such as statistical methods or cross-validation, to minimize errors?
5. **Line 225:** Why PMW observations in the $3^{\circ} \times 3^{\circ} \times 3$ days?
6. **Line 315:** "Where the exponential fit procedures for retrieving the decorrelation scales fail, climatological values of 20 km for spatial and 1.5 h for temporal decorrelation are chosen and respective 1DD grid cells are flagged as relying on these default values rather than on the actual variograms." Why? What is the rationale?
7. **Line 360:** "For the detection scores, the occurrence of precipitation in a 1DD grid cell is determined at the 1 mm/d threshold." Again, why?

8. **Section 5.1.1:** Validating GIRAFE, a global product, using only one rain gauge network limits the ability to demonstrate its diversity and performance across different regions. Consider including validation data from additional regions or discussing the limitations of this approach
9. **Section 5.12:** For EURADCLIM, adding figures to depict region-wise performance of various products would make the results more intuitive and easier to understand.
10. **Line 575:** Typographical error: “The scaling is 5.57 ± 0.91 %/K for GPCP v3.2 3.2”
11. **Comment:** It is important to provide a clear rationale or objective at the beginning of each section before presenting results, rather than starting with phrases like “Here, ...” in Section 5.6 as an example.
12. **Section 5.6:** The description is insufficiently detailed and lacks a strong conclusion. Please elaborate further by providing a deeper analysis of the results.