

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1
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Comment on hess-2021-417

Anonymous Referee #1

Referee comment on "Exploring the possible role of satellite-based rainfall data in estimating inter- and intra-annual global rainfall erosivity" by Nejc Bezak et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-417-RC1>, 2021

The paper investigated the possible role of satellite-based rainfall data to estimate rainfall erosivity at global, continental and local scales. Besides, the application of a simple-linear function for CMORPH data correction was also conducted in this paper. The paper is interesting and is well organized. The layout of the manuscript conveys a clear presentation of the topic. However, I do have few questions regarding the content and results of this paper. Some major queries should be clarified before acceptance.

General comments:

- Both the abstract and conclusion should be improved. The authors should emphasize the contribution of this paper.
- As the authors mentioned in the manuscript that many studies have conducted the satellite-based precipitation products for rainfall erosivity estimations. I wonder what's the difference between this paper and previous studies. Is there any significant improvement or contribution obtained in this paper?
- Parts of the description are not in accord with Figures and Tables in the manuscript. For example, Fig. 1 (lines 159-160) and Table 3 (lines 213-215). Please check throughout the manuscript.
- Table 1. The mean values calculated by CMORPH and ED indicated a significant different trend for Africa and Asia. Please provide possible reason.
- Results obtained from CMORPH reveal a serious underestimation problem for annual scale, whereas results obtained for monthly scale overestimate the rainfall erosivity for six months. I wonder if this is reasonable.
- I am curious what is the CMORPH correction procedure? How do you get the equation (5)? It doesn't make sense to me that the correction equation did not adopt the information of CMORPH.

Other comments:

- Line 187. What's R approach?
- Line 189. Replace Oceania with North America (see Table 1).
- Parts of the values displayed in Table 3 are incorrect. -40%, +11% and -56% (remove the %).