

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2022-351

Anonymous Referee #2

Referee comment on "The most extreme rainfall erosivity event ever recorded in China up to 2022: the 7.20 storm in Henan Province" by Yuanyuan Xiao et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2022-351-RC2>, 2022

General comments

The authors studied and characterize a record extreme rainfall observed in China, in July 2020 in terms of its erosivity. The authors did a great job regarding the conciseness of the article, and it is within the scope of the HESS journal. I have some concerns that need to be addressed before the paper is considered for publication, mainly regarding the frequency analysis.

Specific comments:

There are many instances of grammatical and incomplete sentences (some examples are given below). I, therefore, recommend a full language review.

The authors used GEV for the frequency analysis, but a lot of information is missing. For instance, the estimated parameters (most importantly the shape parameter) are presented and the uncertainty i.e confidence intervals are missing in the plots (Figure 6). The plot is also so condensed below the 100-year level to make any comments regarding the quality of the fit. The return period of the largest value is given as a point value, at least the lower and upper bounds should be given knowing that a lot of uncertainty is expected given that only around 70 years of data is used to infer a 100,000-year return period.

Technical corrections

L 101-102 : "Hourly rainfall data from 1951 to 2020 were as historical data" > the sentence is not complete

The caption of figure 2 seems too short

Figure 6: The caption : "Observed daily (a) and event (b) rainfall erosivity as a function of the empirical and return period" > this seems incomplete. Empirical what??

The relevance of Figures 7 and 8 should be made more clear, also different colors could be used to distinguish the two curves

L 265: "Post the "7.20" rainstorm, the " > This is not clear