Comment on essd-2021-443
Anonymous Referee #1

Referee comment on "New gridded dataset of rainfall erosivity (1950–2020) on the
Tibetan Plateau" by Yueli Chen et al., Earth Syst. Sci. Data Discuss.,
https://doi.org/10.5194/essd-2021-443-RC1, 2022

The Tibetan Plateau (TP) is a hotspot for studying soil erosion under climate change. Rainfall erosivity (or the R factor) is the most widely used parameter regarding to climate in soil erosion study. Thus, an accurate R map and related dataset is benefit to quantify soil erosion on the TP. Generally, this is a good MS and provide valuable data on TP. I recommend a moderate revision. Please find bellow my suggestions for updating & reinforcing the current paper.
1. Abstract: I suggest the authors add more information about the dataset.
2. Introduction: The ERA5 should be introduce in this part. For example, I notice that this product has been used to calculate rainfall of the China’s mainland.
3. Line 112, Please check the spatial resolution of the ERA5 data, is 25 km or 0.25°?
4. Figure 4 and 5: Add the unit of rainfall erosivity, which is MJ·mm·ha−1·h−1·yr−1.
5. Part 4.2 (Line 243) Why the authors use multiplier factors to calculate new R map. Are there any references? Or the observed and ERA5-based annual rainfall erosivity show multiple relationship? Also in figure 8, why this is an optimal model with intercept of 0?
6. I suggest an additional part as Uncertainties in the results parts. Uncertainties either from the ERAS or from the multiplier factors should be discussed.
7. Conclusions: I suggest this part focuses on summary of the dataset including its applications.