

## ***Interactive comment on “Estimation of rainfall erosivity based on WRF-derived raindrop size distributions” by Qiang Dai et al.***

### **Anonymous Referee #1**

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This study presents a novel approach to estimate the rainfall erosivity based on WRF products, which provides a new insight in describing the rainfall erosivity in a large scale. The approach is the first attempt and it is understandable that further exploration is required. However, here are some points that needed to be illustrated for this manuscript. - Statement of the third key point is not very clear. After reading the manuscript, I know the main point is the west coastal area, but the statement is not emphasizing this. - For interpolation of rainfall in section 4.1, CEH also published 1km gridded rainfall datasets for the whole UK, have you compared your interpolation rainfall with theirs? The reason I'm asking it is because rainfall interpolation is important in the following analysis of erosion, it's worthy to ensure that the interpolation is reliable. - The empirical equation in table 1 and figure 1 did not perform very well with R2 not over

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0.50, how well is the relationship in other studies? Is this acceptable based on previous studies? - The two disdrometers are located in the same region, but the relationship is significantly different. Is it common in previous studies or any explanation about it? - In figure 7, can you change the x axis tick to the real month, e.g. Jan/2013, so that seasonable patterns can be observed and analyzed? - Discussion part is weak in the manuscript, more discussions can be added in the result section or a separate section by comparing with previous studies and discussing about the potential limitations and applications of this approach.

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