

Interactive comment on “Assessing the sources of uncertainty associated with the calculation of rainfall kinetic energy and the erosivity \vec{R} factor. Application to the Upper Llobregat Basin, NE Spain” by G. Catari et al.

Anonymous Referee #2

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The authors have studied the different sources of uncertainty contributing to the erosivity R factor, a long-term estimator for soil erosion (p3455, line 9). This is, in itself, a valuable piece of information, among others for the modeling community where information on the uncertainty of model parameters is always needed.

However, I do have two problems with the publication as is. Firstly: the presented paper

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contains an uncertainty analyses of results that were already published by the authors (Catari & Gallart, Pirineos, 2010). According to the abstract of that publication, an uncertainty analyses is also included in it. As the authors point out in their introduction: “This papers follow on from an article (Catari and Gallart, 2010) in which the uncertainty associated with the erosivity R factor was assessed by a simplified approach.” In my opinion, the new uncertainty analyses should have been published together with the original article. Alternatively, I would suggest to submit the new uncertainty analyses as an erratum or add-on to the previous article, in the same journal. This allows readers to judge the results presented in that article correctly. Secondly, the method of integrating uncertainties from different sources is not novel.

Because the results of the case study itself have already been published and the method of integrating uncertainties is not novel, I believe that this article does not fit within the scope of HESS. I would suggest the authors to submit their analyses as an add-on to their existing article in Pirineos.

Having said that, I found the analyses to be thorough and the article in general to be readable, although sometimes hard for the non-initiated in the field of erosivity analyses. I have a few specific points I would like to address:

- The authors introduce the USLE and RUSLE without explaining the abbreviation. Please briefly explain their meaning and use too readers or use a citation.
- Was the station that provided the sub-hourly precipitation data chosen because of availability? Please specify. (page 3457, line 20)
- Equation 2 does not seem to be correct (mentioned by other reviewer as well). I suggest to use “proper” fractions in publications, in stead of the “/” notation.
- Please use indexing in a logic way to show a difference between the entities in equations 6 and 7. For example use a subscript to indicate the season.
- I suggest plotting the graphs in figure 5 on a log scale to be able to see the structure

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(if any) in the data that is now clouded in the lower left part of the graphs.

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