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Hydrology and Earth System Sciences Discussions

Interactive comment on "Identifying erosive periods by using RUSLE factors in mountain fields of the Central Spanish Pyrenees" *by* M. López-Vicente et al.

Anonymous Referee #1

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The aim of this paper is to identify erosive periods using temporal variability of erosivity, erodibility and crop factor of RUSLE. The analysis is developed for an agricultural Spanish area.

The analysis does not develop any relevant hydrological question and only presents a method which should be useful to "promote sustainable strategies for the preservation of the fragile Mediterranean agroecosystem".

The Authors do not indicate the possibility to apply their results beyond the area which they studied.

In particular:

1. The farmland area is 52.2 ha and a single recording raingauge is used to characterize the erosivity of this area. The Authors should give some information about spatial variability of the rainfall erosivity factor or the representativeness of their raingauge;

2. How many samples were used to establish the soil erodibility factor ? The Authors do not write if the use a single value for each soil type or if they studied the spatial variability of K factor. If they used a representative K value for each soil type they should explain how this representative value was estimated;

3. The Authors should comment and justify the importance of eq.(6) to correct the saturated hydraulic conductivity and should show the importance of this correction in the K estimation procedure;

4. Why the Authors only used the product RKC for establishing the temporal variation and to identify the erosive periods ? Why the correction due to the topographic factors was neglected ?

5. Many uncertainties are included in the procedure used. Uncertainty due to the use of a single raingauge. Uncertainty due to the estimate of K and its spatial variability. Uncertainty due the complex procedure used to estimate the C factor. The Authors should comment the influence of this uncertainties on the proposed method to establish three erosive period in the year.

I think that the paper does not solve any relevant question. The description of the methodology is not sufficiently complete and does not permit its reproduction by other scientists.

The paper should be deeply improved before a publication.

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