

Interactive comment on “Temporal and spatial scale and positional effects on rain erosivity derived from contiguous rain data” by F. K. Fischer et al.

Anonymous Referee #1

Received and published: 15 August 2018

Excellent paper on very interesting and actual topic. There is wide discussion about application of various rain data sources for determination of rain erosivity for application within USLE, but there are very few papers, dealing with this topic on relevant level. And even less information about possible corrections and expected errors and problems. What I appreciate a lot is data set size – number of stations, area included and duration of the study (number of events recorded and included). I have no comments or requests to change or add anything from scientific point of view – on this point I strongly recommend for publication.

I only have several minor comments to formal presentation of the paper – to be possibly

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more clear to the readers or/and easily understandable – as such statistic studies are always difficult to interpret to someone, who did not study the certain problem deeply. Introduction: potential recent data sources are well discussed – (gauging stations networks and meteo-radars) also including their accuracy. To be fair, I would appreciate also short discussion of accuracy and potential errors occurring on gauging stations. There are for sure errors in records, especially during extreme stormy events given by tipping bucket, by capacity of drainage pipe (if this type of gauging station is used), etc. It also depends a lot on type of device used. Also, there is modern recent method now for rainfall parameters estimation using commercial microwave links. I fully understand that these data are not analyzed within this paper, but they should at least be mentioned in Introduction part. Hypothesis formulation are relevant and clear. They are relatively trivial – and expectable – therefore I would appreciate possibly to more clearly state if those are research questions, which shall be answered in Conclusions and Discussion. Chapter 2 – to be clearer, I would recommend to characterize at least briefly goal and basic scheme of analyses planned (done) of the research in the beginning of the chapter. It is then described later – but reader is a bit confused by overview of methodology, but not knowing, which data will then be used and why actually. Chapter 2.2, section 15 – there is a bit confusing for me discrepancy between 16 years (duration of whole experiment = data record ?) and four years for 12 rainfall gauging stations within 1 km². Can be explained better ? Basic description of gauging stations (equipment) and analyzed data shall be performed to clarify number of rising associated questions – from both of gauging stations and from radars. Were rainfall data from gauging stations treated, corrected, filled gaps, . . . ? Time resolution and other data characteristics, . . . basic statistics of the data set should be performed (really all the stations measured all the time for whole 16 years ?). Is there consistency in equipment ? (=all the stations had same equipment during whole period ?) Figure 1 – relation between sections B and C is not really clearly described. Why Thiessen polygons were used and not some smooth interpolation polygons ?

Generally – all my recommendations are just minor in importance and formal to clarify

the analyses performed and I appreciate the paper as a whole a lot.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-305>, 2018.

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