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Hydrology and Earth System Sciences
Discussions

Interactive comment on "A two parameter design storm for Mediterranean convective rainfall" *by* Rafael García-Bartual and Ignacio Andrés-Doménech

Anonymous Referee #2

Received and published: 16 January 2017

The authors manage rain gauge data of 22 years of the city of Valencia in Spain to obtain a number of convective storm events that are analyzed in order to define parameters to establish time patterns. They present a novel methodology to define time pattern based in a Gamma-type function. First they divide the events into three families using the relationship between maximum intensity in 10 min with volume. Then they use Principal Component Analysis find a single parameter that have information about volume and intensity of the storms. A frequency analysis of that parameter serves to relating it to the return period.

In general I widely agree with the comments of Anonymous Referee #1 and I consider his/her concerns should be attended carefully by the authors.

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Discussion paper

I only would add one more issue related to the number of block used in the comparison of the time pattern of the gamma function with that computed with the alternating blocks method (Section 5). I wonder how would change the comparison of Table 5 when at least 10 blocks are used. That analysis would be justified by the fact that one never will use time increments of 10 min with storms of 20 min or 30 min of duration and the maximum intensity can increase significantly by decreasing the duration. I think that this analysis will help the reader to appreciate better the differences/similarities between both methods in a more realistic case.

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