

***Interactive comment on “Derived flood frequency analysis using different model calibration strategies based on various types of rainfall–runoff data – a comparison” by U. Haberlandt and I. Radtke***

**Anonymous Referee #2**

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The manuscript describes a comparison among different strategies for calibrating several model configurations. In particular it is underlined the opportunity to calibrate continuous models referring to the observed flood frequency distribution.

The manuscript is interesting and pleasant to read and, in my opinion, useful for the hydrological community.

I have just few suggestions listed in the following:

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1) The title could be more appealing focusing more on the main result of the paper that is to introduce and support the idea to calibrate a continuous model starting from the observed flood frequency.

2) The introduction should better specify the added value of the proposed strategy. At page 10381 line 6 I would not be so optimist ....indeed long flow observations are scarce in general and, totally absent in small watersheds, while there is a possibility to have extreme value observations. In the following paragraphs it should be underlined the importance of the volume information, otherwise the benefit of the approach is missing (if I have already the observed peaks why I should apply a continuous model for design purposes?). Indeed it is clear and proofed (in the references cited by the authors) that using classical event-based approaches the design hydrograph volume is underestimated (since everything is referred to the critical rainfall). Since the hydrograph volume is pivotal in several hydrological application (i.e. flood mapping), continuous modelling are crucial to have a more realistic design hydrograph. Furthermore, since the peak of discharge are, often, the driving variable in the hydrological studies it is appealing to calibrate the entire continuous model on the flood frequency distribution.

3)minor: Grimaldi et al., 2011....is 2012.

4)Section 2.2.2 the calibrated parameters could be better described.

5)Minor: Maybe Figure 1, 2, and 3 could be removed...they are well known models and the paper is not focusing on the model structure....but it is just a suggestion.

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