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Interactive comment on "Frequency analysis of extreme floods in a highly developed river basin" *by* T. Tanaka et al.

Anonymous Referee #1

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The manuscript describes an application of flood frequency analysis in a large river basin. Two methodologies are compared: the RFFM model based on rainfall data, and the standard FFA approach based on discharge values (or better on simulated data).

Although the topic is interesting, there are several drawbacks in the manuscript that do not allow me to suggest its publication.

The main issue is that it is not clear the innovative contribution, indeed the RFFM model refers to a previous publication of the authors (Tanaka et al. 2015a) so, apparently, the present manuscript provides only a well developed case study.

From the methodological point of view, I am skeptical on the adoption of RFFM model. Which is the added value of this procedure compared to the FFA applied on runoff simulations? In my opinion a continuous rainfall-runoff modelling can provide more useful

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and complete information (indeed it would give also the entire design hydrograph).

Minor comments

page 1 line 22: Not only with AMF in general with extreme value sampling procedures.

page 2 line 6. The added value in considering rainfall data is mainly because these data are largely available compared to runoff data.

page line 17. Literature is very large about this topic, there are many other options not mentioned in the literature review.

page 6 line 9. Poisson instead of Poison

page 7 line 15. Nelsen not Nelson (this typo is present also in other part of the text)

page 7 line 15. It is not clear why the Normal copula was adopted.

In the Introduction authors say that they will compare RFFM approach to observed data, however at the end they use simulated data. I would be consistent and already in the introduction I would say exactly what will be compared at the end.