

## ***Interactive comment on “A consistent set of trans-basin floods in Germany between 1952–2002” by S. Uhlemann et al.***

### **Anonymous Referee #2**

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This manuscript provides a new approach to determine a consistent set of trans-basin floods in Germany for the period 1952–2002. The method is very well described and a sensitivity analysis has been done. This is an important study in an actual field of research. The paper is well structured and in the focus of HESS.

### Major comments

The authors show in their sensitivity analysis that the number of summer versus winter floods considered in the data set depend on the parameters selected. The reason for this is that winter floods are of larger spatial extend but less extreme, while summer floods have higher discharges but smaller spatial extend. For risk assessment and other hydrological problems both are equally important. Therefore, one approach to capture both equally well might be to determine them separately, using two sets of

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parameters. This might be justified by the fact that winter and summer floods are of very different meteorological origin and different hydrological processes occur. Why did you not determine them separately?

Figure 11 shows that the class 1 and 2 events can be identified even if 90 stations are removed from the analysis. This might offer the possibility to extend the analysis further back in time. How far back in time would it be possible to extend your analysis by still getting a consistent set of class 1 and or class 2 events for Germany?

This paper is a good methodology paper. This is probably the reason why the hydrological results are not fully discussed. A very important chapter in this aspect is chapter 4.3 “A note on stationarity”. As implied by the title the chapter is rather short. I think the problem of stationarity or rather missing stationarity is very important in hydrology and risk assessment. The authors link their findings on stationarity to studies which have detected shifts in winter precipitation and circulation patterns. This is another very important field of research. It might be promising to determine the responsible atmospheric circulation patterns for the 80 trans-basin floods. Even more so, if such an analysis could be extended further back in time. I realise that such an extended analysis of the hydrological results cannot be expected in the framework of this paper. However, I would like the authors to include a paragraph in their discussion section which gives some ideas how their flood data could be used in hydrological research and risk assessment and also for which type of analysis their data might be less well suited.

Minor comments

P1487, line 18 1) What

Figure 8 please explain blue box, red and black lines and red cross

Figure 11 please explain POT, M, E in Figure text

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