

Interactive comment on “The extreme runoff index for flood early warning in Europe” by L. Alfieri et al.

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We thank the Reviewer for the positive and valuable comments on the discussion article. In the following we address the comments raised in the review process.

#1: In the revised version of the article the text has been improved following the reviewer's suggestion. Also, a reference was added in Sect. 2.2 to support the formula between basin lag time (tL) and time of concentration (tC) used by the the Natural Resources Conservation Service.

#2: Following the reviewer's suggestion the text in Sect. 4.1 and partly in Sect. 3.1 was expanded to give more details on the discussion on Figure 6. Indeed, the POD and FAR were not computed on an event basis (this was explicitly stated in the updated
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version of the article) as this would imply a substantially different approach, which is definitely applicable for a comparison of few stations, but much more demanding when applied to a spatial approach on a very large domain (i.e. the whole of Europe), where flood events occur at different time in each point. In addition dealing with ensemble forecasts means adding two dimensions to the entire analysis, meaning forecast lead time and probability threshold, which result in an even more complex approach.

The chosen approach is also more consistent with the analysis on the BSS shown in Fig. 3 to 5, which is performed on all time steps, rather than on specific events. The authors acknowledge that this evaluation approach penalizes the obtained forecast skills, though an example of the same performance at the event scale is shown at the end of Sect. 4.1, to stress that the actual skill in early warning are likely to be higher. Further analyses at the event scale will be performed in future works, particularly for selected stations where observed streamflow can be collected.

#3: Amended

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