

Interactive comment on “Do small and large floods have the same drivers of change? A regional attribution analysis in Europe” by Miriam Bertola et al.

Miriam Bertola et al.

bertola@hydro.tuwien.ac.at

Received and published: 26 August 2020

We would like to thank Alban Kuriqi for his comment.

Alban Kuriqi is suggesting that there is a lack of representative data from the south of Europe. In this study we have analyzed the flood database presented in Blöschl et al. (2019). It consists of 2370 flood records from 33 European countries. In southern Europe, as defined in Bertola et al. (2020), we have a total of 458 stations. Stations affected by strong artificial alterations (such as large reservoirs in the proximity of the gauges) are not included in this database. Because of the large number of reservoirs in the south of Europe, particularly on the Iberian Peninsula, the density of stations

C1

is lower than in central Europe. The uneven distribution of stations in Europe will be acknowledged more explicitly in the revised paper.

The uneven distribution of stations across Europe is accounted for in the analysis by the credible bounds (represented by white circles) shown in Figures 4, 5 and 7. In data-scarce regions the credible bounds tend to be larger, i.e. the attribution results are shown with larger uncertainties. We will further emphasize this aspect in the manuscript.

Alban Kuriqi is also suggesting to move section 4.3 that discusses the influence of the model assumptions on the results to the methods section. While the model assumptions themselves are described in section 2, we consider the current position of section 4.3 appropriate. In order to enhance its clarity, we will change the heading of section 4.3 “Model assumption” into “Discussion of model assumptions”.

References:

Blöschl, G. et al. (2019) ‘Changing climate both increases and decreases European river floods’, *Nature*, 573(7772), pp. 108–111. doi: 10.1038/s41586-019-1495-6.

Bertola, M., Viglione, A., Lun, D., Hall, J., & Blöschl, G. (2020). Flood trends in Europe: are changes in small and big floods different?. *Hydrology & Earth System Sciences*, 24(4).

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2020-396>, 2020.

C2