

Dear Editor, dear production Team,

Thank you very much for the acceptance of the manuscript.

Here final remarks to introduced manuscript changes, partly in response to the final Editor's comments, are provided:

1. All changes in the manuscript from the previous revision round have been accepted.
2. Meanwhile all papers previously cited as “in review” are published and have been now referenced in the manuscript as published papers. All citations and bibliography have been updated.
3. Bibliography has been updated using Journal Title Abbreviations by Caltech Library.
4. I declare that Figure 3 and 9-12 and all Figures in the Appendix are entirely created by the authors. Figure 3 uses Digital Elevation Model (DEM) provided by the German Federal Agency for Geodesy and Cartography (BKG) and by the Federal State Rhineland-Palatinate. This is acknowledged in the Acknowledgements section. Further, all mentioned Figures use background map, river network and building footprints from OpenStreetMap. I introduced now acknowledgement of OSM contributors in the Acknowledgements section: “Figures 1, 3, 9-12, A1-A4 use background topographic map, river network and building footprints from OpenStreetMap (© OpenStreetMap contributors).”. In Figure 12, the statement “Source of background image: QSM contributors.” has been removed.
5. A reference to the dataset produced in this study is now added the Data and code availability section: “Spatial counterfactual precipitation and simulation results from mHM and RIM2D for 25 counterfactuals and the reference scenario are freely available from Vorogushyn et al. (2025).” The dataset is stored in the open-access repository.

Vorogushyn, S., Han, L., Apel, H., Nguyen, V. D., Guse, B., Guan, X., Rakovec, O., Najafi, H., Samaniego, L., Merz, B.: Spatial counterfactuals of the July 2021 flood in the Ahr valley, Germany. GFZ Data Services. <https://doi.org/10.5880/GFZ.RDOQ.2025.002>, 2025.

For further questions, I stay at your disposal.

With kind regards,  
Sergiy Vorogushyn on behalf of all co-authors.