

Reviewer 1

I think the authors have done a very good job in responding to the comments and that the current version is a solid standalone paper that will be of interest to the community. I only have 2 small minor (perhaps technical) comments that I think can be handled at the editorial board level:

Thank you for this positive feedback on our work.

Line 199: I would remove "Comparison not shown in this paper". I understand the rationale behind it, but the sentence sounds like the original KGE was used to compare to other studies but that the authors are not showing these comparisons. It is best to simply state the reason.

Thank you for this suggestion. The sentence was revised to remove "Comparison not shown in this paper" and now simply states the rationale for using the 2009 version of the KGE:

We used the 2009 version of the KGE in order to allow comparison of model performance and parameters with other similar studies conducted on sub-samples of European catchments.

From the previous round of reviews, there was this comment (page 4 of the response to reviewers document):

"General comment: It would be good to have a series of simulations for which only the ones that obtained KGE in calibration/validation above a certain quality threshold are preserved. Ex KGE > 0.7 for NOAA/NOAA and ERA/ERA (not really useful to do ERA5+MESWEP/NOAA(ERA). This would ensure results are not negatively affected by poorly modelled basins/models, as we have some that have quite low KGE values that contribute to the detailed variability results, and are perhaps not as trustworthy."

The authors responded this:

"Following the reviewer's suggestion, a complementary analysis was performed by retaining only the catchments with calibration/validation KGE values above 0.7 for the NOAA/NOAA and ERA/ERA simulations. The figures corresponding to this subset (equivalent to Figures 6 to 8 in the manuscript) show very similar spatial patterns and variability ranges to those already presented. Therefore, to avoid overloading the article, these additional figures were not included in the revised version. However, this sensitivity test confirms that the conclusions drawn are not significantly influenced by poorly modelled catchments."

I think that this should at least be stated somewhere in the text, that the test was done. I fear that other readers might have the same questions and if there is no text to answer it, it will remain a question mark on the papers' methodology.

Thank you for this suggestion. A sentence has been added in Section 5.3 of the Discussion ("Consistency of multi-decadal hydrological variability") to indicate that a complementary analysis was performed by retaining only catchments with calibration and validation KGE values above 0.7. As mentioned in the text, this analysis yielded very similar results to those already presented, confirming that the conclusions are not significantly affected by poorly modelled catchments.

In addition, a complementary analysis was performed by retaining only catchments with calibration and validation KGE values above 0.7. The results were very similar to those presented in Figures 6 to 8, confirming that the conclusions are not significantly affected by poorly modelled catchments.

Otherwise, the paper seems solid to me and ready to be published.

Thank you for this positive feedback on our work.