

We are grateful for the evaluation of our paper and all the useful comments and suggestions. We have considered all of them and revised the manuscript accordingly. Please find below our responses, the revised manuscript is submitted as a supplement to a separate author comment.

The analysis is quite shallow and it is unclear how the new method is adding value to pre-existing studies. Also references to important earlier studies (e.g. Deque et al., 2012) are missing and the relation of the present study to these works is missing. I think it would make the paper much more relevant if the proposed comparison/evaluation with observations (see chapter 6) would be included into the current study.

The comparison with the observations is out of the scope of our study. We concentrate on simulated time series 130 years long, the observations cover only 45 years of it. We chose to show results only for two European regions, as they were interesting and illustrative. But for model skill it would probably be interesting to show different regions, and the study would get disaggregated. Moreover, we pay attention mainly to the structure of the multi-model ensemble and overall uncertainty, independently of model skill, even though, as mentioned in the paper, it can be expected that the better the models, the closer to each other.

Therefore we have not added the comparison with observations to present study, mainly because we think that the study would become disaggregated and would lose clarity.

We have added citations of Déqué et al. (2007, 2012) in the Introduction and to the last section of the paper.

Chapter 3.1: How much do the results depend on the chosen smoothing method and especially on the functional smoothing (e.g., instead of the smoothing one could also use the 30 year running mean - which is already smoothed - and temporal correlation)?

The results do not strongly depend on the smoothing. The dependence is slightly stronger for d1, but even for that the structure of the distances is quite stable for the whole ensemble. We added a comment on this to the end of the Sections 3.1: *"The mutual distances of the curves do not strongly depend on the smoothing parameter, as shown in Fig. S2.1 and S2.2 (see Supplement 2)."* The Fig. S2.1 and S2.2 show the results for an arbitrarily chosen example.

Chapter 5: The results of the case studies are very similar to earlier findings (e.g. Deque et al., 2012). Where does the proposed method add value to the earlier findings?

The aim of our study is not to really reveal new findings regarding the uncertainty of RCM outputs. Rather, we show a new methodology framework and illustrate its usage on a case study. The advantages of the new methodology based on modern statistical approach are discussed in the paper. Regarding the comparison to Déqué et al. (2012), we added a paragraph to the last section: *„Previously, in PRUDENCE and ENSEMBLES projects (predecessors of Euro-CORDEX), the studies of uncertainty and GCM-RCM interactions (mainly Déqué et al., 2007 and Déqué et al, 2012) relied on the analysis of variance of the multi-model ensemble. Quite straightforward and clearly interpretable results suffered from additional uncertainty connected to the necessity to fill in values for missing RCM-GCM pairs with some statistical approach. The methodology proposed in present paper overcomes this issue and uses only the outputs of dynamical models that are available. Further, as already mentioned above, the FDA similarities evaluate the whole simulated time series and are not limited to a reference or future time period. “*

Technical corrections: REMO is missing in Table 1.

We have corrected the Table 1.

In Figures 4, 5 and 6 I would suggest to leave out the diagonal (bottom left to top right) and results above or underneath the diagonal because the information is trivial/redundant.

We have changed the Fig. 4 and 5 as suggested. Fig. 6 includes the dendrogram structure, and the R function used for its creation does not allow leaving out the redundant part. Therefore we could not change the Fig. 6.