Geoscientific
Model Development
Discussions

Interactive comment on "Similarities within a multi-model ensemble: functional data analysis framework" *by* Eva Holtanová et al.

Anonymous Referee #1

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General comments: In the paper "Similarities within a multi-model ensemble: functional data analysis framework" a new method to analyse multi-model ensembles is presented. The analysis is based on the EURO-CORDEX ensemble and focuses the relationship within the ensemble and their driving global climate models. The paper touches a very interesting and relevant topic. However, from my point of view it seems unfinished. 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. Therefore, I suggest "major revisions" for this paper.

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Specific comments: 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)? 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?

Technical corrections: REMO is missing in 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.

References: Deque et al. (2012): The spread amongst ENSEMBLES regional scenarios: regional climate models, driving general circulation models and interannual variability Climate Dynamics, 2012, 38, 951-964

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