Interactive comment on “Mid-Holocene climate change in Europe: a data-model comparison” by S. Brewer et al.

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We thank the reviewers and editor for their constructive and helpful comments on the manuscript. Three major criticisms were made of the text:

1) The issue of dealing with information at different scales (site-based proxies vs the large model grid-boxes)

2) That interpretation of the spatial patterns was obstructed by the noisy distribution of the data points

3) The presentation, specifically of the methods, needed to be clarified and improved

We have altered the analysis to take the first two points into account. To reduce the differences of scale, we have used an interpolated set of proxy data, and compared each model using values of changes in climatic parameters that are relative to the
overall changes simulated by that model. This is intended to provide a method of comparing the sign of climate change, without this being obscured by differences in the magnitude of change. The differences in magnitude of change are now included as a separate comparison between data and model.

To improve the interpretation of spatial patterns, we have included the coordinates of the data gridpoints in the cluster analysis. This forces the clusters into coherent spatial regions. We have included a separate test (the Geographical Distance) which measures how closely a simulated pattern of climate change is to the observed pattern.

Finally, we have rewritten much of the text, and have added text to the methods section to explain why these methods were used. We hope that the changes made will provide an adequate response to the comments made.

Replies to the comments of the individual reviewers are given separately.

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