**Climate
of the Past
Discussions**

Interactive
Comment

Interactive comment on "Internal and external variability in regional simulations of the Iberian Peninsula climate over the last millennium" *by* J. J. Gómez-Navarro et al.

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Unfortunately we have little time to clearly state our points. Here we briefly discuss some of the most important ones before the open discussion is closed.

The authors disagree with most of the points expressed by the reviewer.

His/her main concern seems to be the lack of a validation of the model against an observational data base. However, we believe that point is out of the scope of present paper. We agree that the validation of the model skill is an important part in climate simulations, but it was clearly stated in a 22-page paper, already published, which is not mentioned by the reviewer (indeed it is included in the especial issue in which

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this paper is intended to be included). We clearly reference that study in the present manuscript.

The authors acknowledge that there exist former studies performed with regional models in a paleoclimatic context. As the other two reviewers have pointed out (and we agree with them) the introduction can be improved in this aspect. However, we believe that it is fair to state that the 2000 years long high-resolution simulations for the last millennium we present here have few precedents in the RCM literature. In particular, the reference proportioned by the reviewer is hardly comparable with the present study (different period, forcings, driving boundaries, length of the simulation, etc.). We believe the discussion can be improved, but we do not think that this concern is strong enough to invalidate the whole work. As we stated in our reply to the other two reviewers, a larger discussion of the available literature will be included in the next version.

The concern regarding the methods has already been addressed in our reply to referee #2. The methodology employed to assess the significance of the correlation does take into account the artificial autocorrelation introduced by the time filtering, as it is clearly indicated in the reference we include in the manuscript. However, in order to reinforce our findings, different filters have been tested and nearly the same result is obtained (it was not included in the present version of the paper, but it will be further discussed in the new version). We believe that the spatial coherence of the correlation patterns, plus its stability (the same patterns are obtained if the period is subdivided in smaller parts), plus the statistical significance, plus the capability to interpret them physically, underpin our claim that our method can indeed identify the forced patterns of variability.

Interactive comment on Clim. Past Discuss., 7, 2579, 2011.

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