

Reply to
2nd Reviewer

*Russo, E., Fallah, B., Ludwig, P., Karremann, M., and Raible, C.C.:
The long-standing dilemma of European summer temperatures at the
Mid-Holocene and other considerations on learning from the past for
the future using a regional climate model*

Dear referee,

thank you very much again for your time in reviewing our manuscript.

Below we go point by point through your technical corrections, presented in *italic*, detailing how we dealt with your concerns reported in **Bold**.

Sincerely,

Emmanuele Russo

- *P.3, line 4. The “spatial dipole structure” is still not explained. I suggest rephrasing the sentence or to explain what is meant by dipole in this context.*

We will correct this point in the next version of the manuscript.

- *Section 2.3. My previous comment: “The text mentions 31 experiments, but Table 3 shows. 30 different experiments.” It is still not clear that the 31st experiment is the reference run. I suggest adding this to the caption of Table 4.*

We will provide this information in the caption of Table 4 in the new version of the manuscript, as suggested by the referee.

- *Discussion: My previous comment: “I suggest comparing the obtained results here with reports from earlier modelling studies on the MH climate in Europe and to include a discussion of the impact of lateral*

boundary conditions on the results presented in this study.” I could really see where these two important points were discussed, so I propose to include this discussion in the manuscript.

We suppose that the reviewer wanted to say that he could not really see where these two important points are discussed. Here we have to acknowledge that we actually might not have completely incorporated the changes to the latest version of the manuscript as indicated in our answer to the previous referee’s comment. Below we try to motivate our choices, proposing at the same time possible corrections, following the referee’s comment.

Concerning the boundaries, we think that we effectively took care of their possible effects on the evinced results by conducting additional sensitivity experiments. Nonetheless, following the referee’s comment we realized that some additional information in the text about the relevance of the boundaries for a regional climate model should be provided. However, we believe that it would be more appropriate to provide this information in section 2.4, where the ”different boundaries” experiments are already described, instead than in the discussion part as proposed by the referee.

For the other point, we want to acknowledge that a comparison of the obtained results against previous reports from earlier modeling studies of the MH climate, as suggested by the referee, was already conducted in the results and discussion section of the latest version of the manuscript (see p. 8, l. 22-24). Even though such a comparison might be a bit generic, we do believe that it conveys exhaustive information to the reader, relevant for the objectives of the paper. Additionally, considering that several references to former modeling studies of the MH climate are extensively reported throughout different parts of the manuscript we personally decided not to further expand the discussion section on this subject.