

## ***Interactive comment on “PMIP4-CMIP6: the contribution of the Paleoclimate Modelling Intercomparison Project to CMIP6” by Masa Kageyama et al.***

**J. C. Hargreaves (Editor)**

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I think most things have been covered by the reviewers and the CMIP panel's comment, so please enjoy responding to their comments.

In common with one of the reviewers, I'm not enchanted by the history lesson. I understand that you want to draw people into considering paleoclimate, but I think the resulting length of the paper is more likely to turn people away.

However, the real problem for publication of this paper in GMD is the possibly incomplete protocols.

From Section 3: "The modified forcings and boundary conditions for each PMIP4-C1

CMIP6 palaeoclimate simulation are summarised in Table 2. The complete details of the experimental protocols are given in a series of companion papers: Otto-Bliesner et al for the midHolocene and lig127ka experiments, Kageyama et al for the lgm, Jung-claus et al for the past1000 and Haywood et al (2016) for the midPliocene-eoi400 experiment. These papers also explain how the boundary conditions for each period have been built and constitute key references for the experimental protocol for each of the PMIP4-CMIP6 simulations."

The problem, as highlighted by the CMIP panel, is that most of these papers are not published. I can't control what is going to be in those other papers - all I can do is make sure that this paper meets the peer review requirements. Therefore, for all experiments please include in this paper, "the complete details of the experimental protocols" for the PMIP4-CMIP6 experiments. You can leave the details on "how the boundary conditions for each period have been built" to the still to be submitted papers. You can also leave all alternate experiments that are within PMIP4 but outside CMIP6 to those other papers. Please make sure that Table 2 is edited so that it does not appear that essential details required for setting up the experiments are included in these unpublished papers. Basically, a modeller should be able to set up the PMIP4-CMIP6 runs using the information contained in this paper.

The alternative is that we put this paper hold until the other papers have passed through peer review. This could be workable as I understand that you intend to submit the other papers also to GMD. Even in that case, I would like to see the complete protocols for PMIP4-CMIP6 detailed here (citing the other papers as required), as trying to extract the CMIP6 protocols from the much more elaborate single-interval papers is likely to be a trying process.

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