

Interactive comment on “The PMIP4 contribution to CMIP6 – Part 4: Scientific objectives and experimental design of the PMIP4-CMIP6 Last Glacial Maximum experiments and PMIP4 sensitivity experiments” by Masa Kageyama et al.

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Muglia and Schmittner (2016; doi:10.1002/2015GL064583) have shown recently that the PMIP3 models all simulate a stronger and deeper AMOC in the LGM experiments compared to piControl, which is inconsistent with reconstructions. They have also shown that changes in wind stress over the North Atlantic due to the additional LGM ice sheets causes stronger wind driven circulation, salt transport and AMOC. I suggest to cite this paper.

Another effect that has been documented recently by Schmittner et al. (2016; doi:

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10.1002/2015GL063561) is changes in tidal energy dissipation, which also have the potential to increase the AMOC. I wonder why this effect is not part of the experimental design. Sensitivity experiments could be done with and without changes in tidal energy dissipation in those models that include a tidal mixing scheme. I think discussion of this issue is warranted even if it is decided not to include sensitivity experiments.

Page 9 lines 9, 11: perhaps include “albedo” with “extent and height” if this is intended

Section 4.3 Step 3: it would be good to document what was done with Bering Strait in both piControl and LGM experiments

Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2017-18, 2017.

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