

Interactive comment on “Arctic sea ice in the mid-Holocene Paleoclimate Modelling Intercomparison Project 2 simulations” by M. Berger et al.

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This paper reports on a study of Arctic sea-ice in the mid-Holocene PMIP2 simulations, comparing results from those simulations with CMIP3. It describes the importance of sea-ice modelling, the models, the PMIP experimental design, the analysis method used and lists some results.

A fundamental problem with this work is that it is a report, not a journal paper: It describes what the authors did and what they found; but what it needs to do is to present only new methods and corresponding new results. As a result the paper is both too long and too short. It is too long because much of the background and methods

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section spells out detail which is already well known and has been published before. And it is too short because the results are limited and predictable.

I think, for example, that the introduction could be cut to a couple of paragraphs "Arctic sea-ice is currently declining rapidly ... both an indicator of, and a feedback on, climate change, ... models don't simulate current changes well, ... so we test models in another climate with different sea-ice - the mid-Holocene". Also, much of section 3 is repetition of Thorndike (1992) and Blitz and Roe (2003) and must be cut.

The results, while valid, are not very informative. I did not know, for example, that all the PMIP2 MH runs 'experience an increase in 2m temperature north of 60N in September', or that the simulated MH Arctic changes are less than in a 2*CO2 run, but I could have predicted both results with high confidence. We need more than this to justify a paper in CP.

Unfortunately, I don't think this paper can be improved enough to publish. The presentation could be improved greatly by cutting, but this would leave a very short paper with little content. There simply aren't enough results here. Abandon this one, and incorporate the results into another, more detailed analysis.

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