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# *Interactive comment on* "Pliocene Model Intercomparison Project: implementation strategy and mid-Pliocene Global climatology using GENESIS v3.0 GCM" *by* S. J. Koenig et al.

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This paper describes the implementation and results of PlioMIP Experiment 1 in the GENESIS AGCM. The authors present their model results well and have done a good job of documenting the implementation of the prescribed boundary conditions in their model. The information contained in this paper will significantly assist in the analysis of the model intercomparison. There are a few things that would improve the paper, although they are all relatively minor.

(1) It is not clear from the paper where the increased discrepancy (compared to modern topography differences) between the GENESIS Pliocene topography and PlioMIP to-



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pographic reconstruction comes from. Is this due to interpolation to the GENESIS grid? Whatever the source it should be made clear in the text where the authors discuss this.

(2) It would be good to have a figure showing the spin-up of the model. I know this won't be much of an issue with an atmosphere only experiment, but I think it will be a significant issue within PlioMIP as a whole, so it would help to show it. As a minimum, a figure showing a time series of global near-surface (2m) air temperature for the full 50 years of the simulation should be included, but if the model produces a better diagnostic include that as well.

(3) It would be useful for it to be made clear that this paper only includes PlioMIP Experiment 1. It would make it easier for the reader if this was made plain from the outset, as it will be going into a special issue with a number of papers that describe both Experiment 1 and Experiment 2 with different GCMs. The simplest and best way to do this would be to change the title, perhaps to "Pliocene Model Intercomparison Project Experiment 1: implementation strategy and mid-Pliocene global climatology using GENESIS v3.0 GCM".

(4) Pg 2582 – line 26: The beginning of this paragraph reads slightly wrong. It is unclear what part of the vegetation techniques outlined are 'according to Haywood et al. (2010)'. I presume that the authors are referring to the need, as outlined in Haywood et al. (2010), to ensure that the Pliocene vegetation is comparable to the vegetation used in the pre-industrial experiment, but this needs to be clarified.

(5) Pg 2586 – line 16: I presume you mean Southern Ocean rather than Southern Sea.

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Interactive comment on Geosci. Model Dev. Discuss., 4, 2577, 2011.