

Interactive comment on “Simulations of the Mid-Pliocene Warm Period using the NASA/GISS ModelE2-R Earth System Model” by M. A. Chandler et al.

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Comment from the coordinator of the PlioMIP special issue in GMD (Alan Haywood).

As is evident from the reviewer comments on the Chandler et al. paper in GMDD, there has been some confusion on that status and specifics of the runs that GISS has provided as part of PlioMIP. The situation has been discussed within the PlioMIP advisory group. A summary of the discussions and their outcomes is provided below.

The GISS Pliocene and control simulation currently presented in the Chandler et al GMDD paper is, as the reviewers correctly point out, not the simulation originally submitted to the PlioMIP archive and used within the Dowsett et al. (2012) and Haywood

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et al. (2012) publications. The results presented in the Chandler et al. paper are from a completely different simulation using a version of the GISS model which includes an improvement to the ocean mixing code in the ocean model.

At the time of the reviewers writing their comments, the new GISS simulations (Pliocene and control) had not been uploaded to the PlioMIP archive. They have been uploaded now and are available to the entire group. This explains the reviewer's confusion and concerns.

The new GISS simulation presented in the Chandler et al. GMDD paper is a valid contribution to PlioMIP.

Since the original simulation submitted to the PlioMIP archive used the CMIP5 version of the GISS model, and has also been used in other PMIP3 as well as PlioMIP comparisons and publications, we have agreed within the advisory group that it is important for the original GISS PlioMIP simulation to be documented in the revised version of the Chandler et al. paper. It will be documented, compared to the new simulation, with details provided on why the two simulations differ (i.e. specifics of the changes made to the ocean mixing scheme).

This provides the best of both worlds since it maintains a link to the other GISS simulations submitted as part of CMIP5 and PMIP3, as well as providing best practice in the context of PlioMIP.

The revised version of the Haywood et al. PlioMIP paper in *Climate of the Past* will include the new as well as old GISS simulations.

From then on we recommend that all groups use the new GISS simulations in any further analyses or publications.

This case has demonstrated the value of this PlioMIP special issue in requiring each group to document the specifics of their simulations submitted as part of PlioMIP. It has prevented the propagation of an inconsistency, and clears up what would have

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been obvious disconnection between existing PlioMIP publications and those currently in production.

References: Dowsett, H.J., Robinson, M.M., Haywood, A.M., Hill, D.J., Dolan, A.M., Stoll, D.K., Chan, W.-L., Abe-Ouchi, A., Chandler, M.A., Rosenbloom, N.A., Otto-Bliesner, B.L., Bragg, F.J., Lunt, D.J., Foley, K.M., and Riesselman, C.R., 2012, Assessing confidence in Pliocene sea surface temperatures to evaluate predictive models: *Nature Climate Change*, v. 2, p. 365-371.

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