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**Geoscientific
Model Development
Discussions**

Interactive comment on "Simulating the mid-Pliocene climate with the MIROC general circulation model: experimental design and initial results" *by* W.-L. Chan et al.

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My co-authors and I would like to thank the referee for his useful and constructive comments. Our responses to each comment are listed below.

»1) Climatological means were specified at 30 years by PlioMIP. It may be worthwhile stating that there are no significant differences seen between a 100 and 30 year averaging period.

Will do. Thank you for the reminder.

»2) Small m in mPWP; also simplify age range to âĹij3.3 to 3 Ma BP.

Will do.

»3) Could cite some other more recent papers that have documented Pliocene CO2 levels (e.g. Pagani et al 2010 and Seki et al. 2010).

We will refer to these newer papers in the introduction.

»4) State TOA energy imbalance explicitly for all runs

Will do. The values will be added to table 4.

»5) Could include some models plots of surface albedo changes and changes to the total precipitation rate.

We will include a plot for the surface albedo changes.

»6) Same for salinity and AMOC for EXP2.

In order to keep the paper short, concise and with an emphasis on experimental design, we have decided to leave out further figures, but we will include these suggested model plots in a more detailed paper planned for the near future.

It has also come to my attention that the values given in table 4 for rainfall are incorrect. These values should instead refer to the total precipitation. The correct values for rainfall should then be the difference between precipitation and snowfall. This does not affect the results in the paper. However, the ratio between the precipitation increase in the AOGCM and that in the AGCM is slightly smaller than before. I will make a minor correction at the end of the first paragraph in section 4.1.

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