**Geoscientific
Model Development
Discussions**

Interactive comment on "Simulating the mid-Pliocene Warm Period with the CCSM4 model" *by* N. A. Rosenbloom et al.

Anonymous Referee #2

This paper documents the NCAR CCSM4 contribution to PlioMIP and is of a high quality. My comments are only very minor, as the paper is already of publishable quality. However, there are a few things that could improve it slightly.

1. The pre-industrial experiment could be better documented. Although, it probably doesn't need a thorough description it would be usefule to have the sources of some of the boundary conditions referenced. Particularly topography, land-sea mask, ice sheets, vegetation, aerosols and the initial conditions for sea surface temperatures and sea ice.

2. In section 3.4 [Vegetation], the authors reference a paper that relates biome to the plant functional types used with CCSM4. However, these biomes are categorized slightly differently to those in the BIOME4 model used in Salzmann et al., 2008. The

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paper needs to document how these two are combined. Are the BIOME4 biomes clumped together into Lawrence and Chase [2010] categories or is some attempt at differentiation between BIOME4 types implemented? It sounds like you may have developed a new translation from BIOME4 to CLM4/PFTs, if so then a table documenting this should be included.

3. In the first paragraph of section 4.4 [Sea surface temperature and salinity] the CCSM4 simulation is compared to proxy temperature reconstructions. I presume that the sites mentioned by their locality are PRISM3 sites as in Fig. 5, but this needs to be made explicit in the text.

Overall an excellent paper and highly recommended for publication.