Geosci. Model Dev. Discuss.,
https://doi.org/10.5194/gmd-2020-208-RC1, 2020

Geoscientific Model Development Discussions

Interactive comment on "Simulating the mid-Holocene, Last Interglacial and mid-Pliocene climate with EC-Earth3-LR" *by* Qiong Zhang et al.

Anonymous Referee #1

Received and published: 7 October 2020

In the paper, Zhang et al document the PMIP4 experiments run with EC-Earth3-LR, and further illustrate the simulated global and regional climate responses. The paper is well written. I have one suggestion for improving the paper. More information about the model, EC-Earth3, and its ability in simulating PI climate should be added in the revised version.

Line 84. Since the authors choose GMD to publish their PMIP experiments, I suggest that the authors add more information to introduce their model, rather than a simple sentence. "A detailed description of the ECEarth3 and its contribution to CMIP6 is documented in Döscher et al. (2020)."

Line 85-93, the resolution of other EC-Earth3 CMIP6 versions should be introduced here.

In the section 3.4, I suggest that some figures from Fig S1 (for PI simulations) should be included in the main texts, since these figures are important and helpful to show the modelling ability of EC-Earth3-LR.

Line 242, does the 0.5 W m-2 energy leak appear in PI control experiments run with other EC-Earth3 versions? How long is the spin-up of EC-Earth3-LR PI control run? This important information should be introduced here.

I suggest the authors reorganizing the section 3.4, and providing more information about their PI control experiment, together with some comparisons to other EC-Earth3 versions.

Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2020-208, 2020.