

Interactive comment on “East Asian monsoon climate simulated in the PlioMIP” by R. Zhang et al.

Anonymous Referee #2

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This manuscript investigates the East Asian monsoon climate during the mid-Pliocene with the simulations from PlioMIP, accompanied by the intercomparison between models and reconstructions. The results show that the models reasonably simulated weakened East Asian winter winds in northern China, intensified East Asian summer winds, and warmer and wetter climate conditions over China during the mid-Pliocene. Their work provides useful information for deeply understanding the East Asian monsoon climate during the mid-Pliocene and the ability of the models in simulating the climate of this warm period. Overall, their results are of broad interest to the palaeoclimate community. My recommendation is that the paper should be published after the following revisions.

(1) In the evaluation of models, the authors use the modern observation to evaluate the simulated pre-industrial (PI) climate. As is well known, climate conditions are different between the modern and PI. Such an evaluation may introduce biases. The authors

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should mention this point in the revised manuscript.

(2) The authors argue that The PlioMIP models have good skills in simulating East Asian winter winds in the pre-industrial experiments but show obvious discrepancies in simulating the mid-Pliocene changes in the East Asian winter winds. By contrast, these models have relatively low skill in simulating East Asian summer winds in the control experiments, but show almost consistent intensification of the mid-Pliocene East Asian summer winds. This result is very interesting. Does it mean that the monsoon changes in different models are less related to the model abilities in PI and more related to the boundary condition changes between two periods? More discussions on this would be welcomed.

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