

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

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We sincerely thank the reviewer for the constructive comments. We will take all of them into account in the revised version. Here, we reply the major comments. Detailed replies will be submitted in the final response.

In this paper, we paid more attentions to summarize the PlioMIP simulations of East Asian monsoon. Moreover, we presented the mechanism (Fig 6) behind the different responses of East Asian monsoon simulated with these PlioMIP models.

Changes in East Asian monsoon are essentially controlled by variations in land-sea thermal contrast. The surface air temperature contrast, as shown in Fig 6, is often used to illustrate changes in land-sea thermal contrast. For example, in boreal winter, the six-model ensemble mean shows surface air temperature increases greater over China than over ocean, indicating the decreased land-sea thermal contrast, which causes the

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weakened East Asian winter winds. On the contrary, other nine models do not simulate such largely decreased land-sea thermal contrast in boreal winter, thus do not produce the weakened winter winds.

However, the mechanism behind the different responses of land-sea thermal contrast, in particular for winter season, is complicated, and beyond the scope of this study. Such different responses are highly likely caused by independent physical processes and parameterizations in these PlioMIP models.

Therefore, we put the explanation of above mechanism in the discussion section, from page 1146 line 9 to page 1147 line 23 in the paper.

In the revised version, we will make this explanation easier to be understood.

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