

Interactive comment on “Evolution of the large-scale atmospheric circulation in response to changing ice sheets over the last glacial cycle” by M. Löfverström et al.

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Many thanks for the review. We will provide answers to all comments when the open discussion phase of the review process is concluded.

The authors agree with the referee that there is model dependence, perhaps especially for the LGM where the PMIP models have shown somewhat diverging results. However, the main focus of this paper is on the pre-LGM period and the lack of strong response to the smaller ice sheets is likely fairly robust as it results from the northwesterly winds over North America due to the Rockies. This is a real feature in the present day atmosphere that is also captured by all GCMs.

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We kindly ask the reviewer to clarify the following question:

“Page 1389 - lines 1-5: given the strong difference in Kleman et al reconstruction with that of ICE-5G for LGM, what is the difference between MIS5b and MIS4? Can you demonstrate that those difference in topography do not alter your results?”

The ice sheet distribution and response in the low-level winds are shown in Fig 2 in the manuscript.

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