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Climate of the Past Discussions

Interactive comment on "Sensitivity of atmospheric forcing on Northern Hemisphere ice sheets during the last glacial-interglacial cycle using output from PMIP3" *by* Lu Niu et al.

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I believe that the authors need to discuss their ice sheet model performance in High Asia at the Last Glacial Maximum (LGM) in a greater detail. Given very low LGM summer temperatures simulated by FGOALS-g2, GISS-E2-R, IPSL-CM5A-LR and MIROC-ESM and the use of standard parameters in the PDD scheme, I am surprised to see such limited ice masses in their simulations in this region (Figure 8). I would also expect that at least some parts of the mountain ranges in Asia should get ice covered when using CNRM-CM5, MPI-ESM-P and CCSM4. Among the latter three climate datasets, the one obtained from CCSM4 seems to show the warmest summer condi-

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tions. As opposed to the results presented in this manuscript, our ice sheet simulations forced by the CCSM4 fields and using similar PDD parameters yield significant glacier expansions in High Asia (regionally to the size of rather voluminous ice caps or even small ice sheets). This discrepancy becomes especially surprising, when looking at the rest of the simulated ice masses in the Northern Hemisphere shown in Figure 8 (for CCSM4), which have extents very similar to our simulated glaciations. Could the authors comment on this inconsistent result?

If the authors wish to compare their model setup and resulting ice extents with ours, we will be happy to share this information upon request.

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