Geophysical Research Abstracts
Vol. 14, EGU2012-12520, 2012
EGU General Assembly 2012

PMIP-3 Last Glacial Maximum : sensitivity to ice-sheets boundary conditions in the iLOVECLIM climate model

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In the framework of the PMIP-3 intercomparison project, a number of new reconstructions for the ice-sheets of the Last Glacial Maximum (LGM) have been proposed. For the sake of simplicity, they have been blended into one set of boundary conditions, hereafter denoted the P3 reconstruction. Given the large differences in both altitude and extent of the ice-sheet that constitute the blended P3 product as well as the difference to the reconstruction used in the previous PMIP-2 experiments, it is worth investigating the impact of the individual reconstructions on the simulated LGM climate. We thus imposed the five different ice-sheets reconstructions in a low-resolution (T21) coupled climate model and run it to equilibrium.
From the results obtained, we investigate the response in the surface climate (in particular temperature, precipitation and humidity transport) and oceanic characteristics. In particular, we discuss the impact of altitude versus ice-sheet extent in the response obtained. Consequences for simulating the PMIP-3 LGM in coupled General Circulation Models are outlined.