



Last Glacial Maximum Climate with ICE-6G Surface Boundary Conditions in the CCSM3 and CESM1 Coupled Climate Models

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Reconstructions of Last Glacial Maximum quasi-equilibrium climate in the interval 26-21 ka have most often been performed using relatively low resolution coupled atmosphere-ocean models. In spite of the low spatial resolution of such analyses it has often been a question as to whether the simulations have been continued over a sufficiently long period to ensure that a new quasi-equilibrium state has actually been reached. We will describe a recently completed series of analyses using the CCSM3 model at T85 resolution that have been designed to investigate the dependence of the LGM equilibrium climate on the details of the surface boundary conditions for which we will employ either ICE-5G, ICE-6G or PMIP3 data sets. An interesting aspect of these simulations is that the LGM runs of both CCSM3 and CESM1 are initialized with the ocean in a state of no motion and so long runs of several millennia have been required to reach the LGM equilibrium. The characteristics of this equilibrium will be discussed in as much detail as time will allow, focusing upon the dependence upon the model glacial boundary conditions employed, both for land ice cover and palaeo-bathymetry. These quasi-equilibria are to serve as initial conditions for full coupled analyses of the glacial-interglacial transition.