



Transient climate simulations of the deglaciation 21-9 thousand years before present; PMIP4 Core experiment design and boundary conditions

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The last deglaciation, which marked the transition between the last glacial and present interglacial periods, was punctuated by a series of rapid (centennial and decadal) climate changes. Numerical climate models are useful for investigating mechanisms that underpin the events, especially now that some of the complex models can be run for multiple millennia. We have set up a Paleoclimate Modelling Intercomparison Project (PMIP) working group to coordinate efforts to run transient simulations of the last deglaciation, and to facilitate the dissemination of expertise between modellers and those engaged with reconstructing the climate of the last 21 thousand years. Here, we present the design of a coordinated Core simulation over the period 21-9 thousand years before present (ka) with time varying orbital forcing, greenhouse gases, ice sheets, and other geographical changes. A choice of two ice sheet reconstructions is given. Additional focussed simulations will also be coordinated on an ad-hoc basis by the working group, for example to investigate the effect of ice sheet and iceberg meltwater, and the uncertainty in other forcings. Some of these focussed simulations will concentrate on shorter durations around specific events to allow the more computationally expensive models to take part.

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