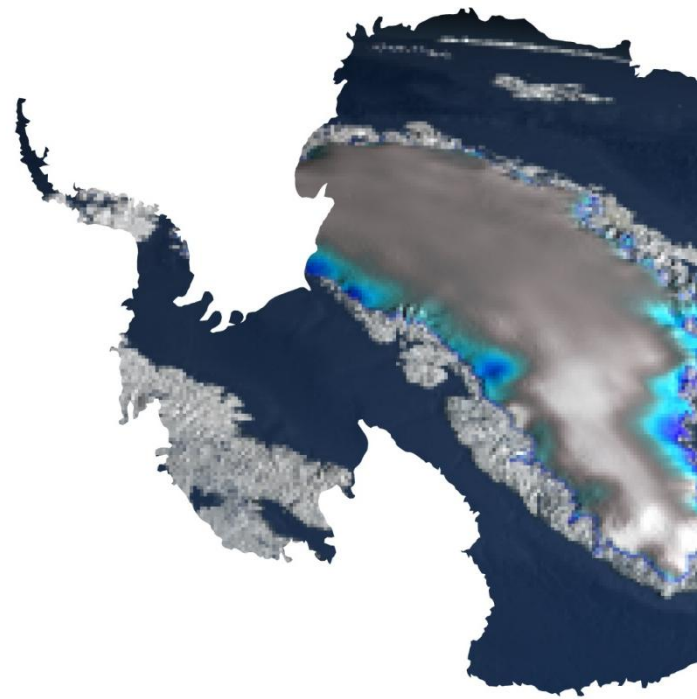


Simulating the Antarctic and Greenland ice sheets in the mid-Pliocene warm period - An ice sheet model intercomparison project



Project Outline

The aim of this project is to test and compare the performance of existing numerical ice sheet models (ISM) under prescribed climatic forcing derived from PlioMIP experiments 1 and 2 results. Climatologies obtained from the Global Circulation Model (GCM) experiments will be used to force the ISMs over Greenland and Antarctica. This will quantify the uncertainties introduced in existing Pliocene ice sheet reconstructions, due to both the use of a single GCM and a single ISM. Not only will this project provide new benchmarks in the simulation of ice sheets in a past warm period, but the analysis of the impact of various model uncertainties could directly inform future predictions of ice sheet and sea-level.

Proposed Experiment 1

Each ISM group would be supplied with inputs from the HadAM3 Pliocene climatology. We would specify that the ISM simulations need to be done on a 20km grid if possible (as EISMINT). They would be given EISMINT Greenland and EAIS bedrocks (and asked to rebound the bed in their standard model way 'preferred' or we would supply them with a rebounded bed 'alternate'). The initial condition would be no ice on isostatically rebounded bedrock. ISM simulations would be run to equilibrium.

Proposed Experiment 1 will give us an idea of the range of ice sheet predictions for standard set-ups. This is intended to be the basis for a series of ice sheet modelling experiments using the PlioMIP climatologies.

If you are interested in taking part in this project, please email :
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