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Modelling the Antarctic Ice Sheet

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The Antarctic ice sheet is a major player in the Earth's climate system and is by far the largest depository of fresh water on the planet. Ice stored in the Antarctic ice sheet (AIS) contains enough water to raise sea level by about 58 m, and ice loss from Antarctica contributed significantly to sea level high stands during past interglacial periods.

A number of AIS models have been developed and applied to try to understand the workings of the AIS and to form a robust basis for future projections of the AIS contribution to sea level change. The recent DCESS (Danish Center for Earth System Science) Antarctic Ice Sheet (DAIS) model (Shaffer 2014) is forced by reconstructed time series of Antarctic temperature, global sea level and ocean subsurface temperature over the last two glacial cycles.

In this talk a modelling work of the Antarctic ice sheet over most of the Cenozoic era using the DAIS model will be presented.

G. Shaffer (2014) Formulation, calibration and validation of the DAIS model (version 1), a simple Antarctic ice sheet model sensitive to variations of sea level and ocean subsurface temperature, *Geosci. Model Dev*., 7, 1803-1818