Geophysical Research Abstracts,
Vol. 10, EGU2008-A-09910, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-09910
EGU General Assembly 2008

Reconstructing the contribution of the Weddell Sea sector, Antarctica, to sea level rise since the last glacial maximum, using numerical modelling constrained by field evidence.

A.M. Le Brocq (1), M.J. Bentley (1) and A. Hubbard (2)

(1) Department of Geography, University of Durham, UK., (2) Institute of Geography and Earth Sciences, Aberystwyth University, UK.

Eustatic sea level during the Last Glacial Maximum (LGM) is estimated to have been 120-130 m lower than present day. At present, the best estimates for the sea level contributions from the North American, European and Antarctic ice sheets cannot account for all of this total. The contribution of West Antarctica, and particularly the Weddell Sea sector, to sea level change since the LGM is not well constrained. It has been postulated from recent analysis of far-field sea level observations, that the Weddell Sea sector provided ˜ 9 m of sea level rise to meltwater pulse 1A (˜ 14 kyr BP). Field observations do not support such a high volume of ice discharge however. This work uses a numerical ice flow model to extrapolate the field observations in order to produce an estimate for the contribution of the sector to sea level rise since the LGM. The ice flow model is applied at 10 km resolution and is able to recreate the present day surface morphology successfully.