



Satellite observations of ice cap mass trends

A. Shepherd (1), A. Muir (2), G. Marshall (3), D. Wingham (2), S. Baker (2), T. Benham (4), T. Strozzi (5)

(1) University of Edinburgh (2) University College London (3) British Antarctic Survey (4) University of Cambridge (5) Gamma Remote Sensing

Satellite radar altimeter data show that the 1,900 km³ Austfonna ice cap, Svalbard, decreased in volume by 1.5 +/- 0.5 km³/yr between 2002 and 2006. An inspection of contemporaneous meteorological data shows that all of this change is explained as a natural fluctuation in snow accumulation. Moreover, the perceived anomalous growth of the ice cap during the preceding six years (Bamber et al., 2004) is similarly explained. The long term mean snow accumulation rate is about 12 km³ yr⁻¹ and, when compared to this value, in recent times the Austfonna ice cap has neither gained nor lost a significant quantity of mass.