

**Recent Ice-Sheet Decay in the Interior of Greenland**

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Johannessen, Ola M.<sup>1</sup>; Johannessen, Ola M.<sup>1</sup>; Khovorostovsky, Kirill<sup>1</sup>; Chen, Linling<sup>2</sup>

<sup>1</sup>Nansen Environmental and Remote Sensing Center; <sup>2</sup>Nansen Scientific Society

The Greenland Ice Sheet is a "wildcard" in the global climate system because of its potential impact on the sea level and fresh water discharge to the ocean. Previously Johannessen et al (Science vol 310, 11 November 2005) by analyzing altimeter data from ERS-1 and ERS-2 established that during the period 1992-2003 the Ice-Sheet above 1500 m was growing with  $6,4 \pm 0,2$  cm per year. Below 1500 m the elevation – change rate was  $-2,0 \pm 0,9$  cm per year.

Our altimeter study has now been expanded by adding the Envisat altimeter data and we have produced a continuous 16 years merged time series from 1992 to November 2008. Our new analysis established that as before we had a growth of the huge interior of the Ice-Sheet from 1992 to 2003, which during the remaining period of up to November 2008 the interior of the Ice-Sheet was decreasing with  $1,9 \pm 0,3$  cm per year.

In order to investigate the winter elevation change of the Ice-Sheet with dominant weather pattern it was found that both the North Pacific oscillation and the North Atlantic oscillation the two major teleconnection patterns of the surface atmospheric pressure fields in the Northern Hemisphere influenced the Greenland Ice-Sheet winter elevation change.