

# Global Warming and Glaciers

- The CEI commercial claims glaciers are growing
  - The paper cited refers only to interior Greenland

## Recent Ice-Sheet Growth in the Interior of Greenland

Ola M. Johannessen,<sup>1,2\*</sup> Kirill Khvorostovsky,<sup>3</sup> Martin W. Miles,<sup>4,5</sup>  
Leonid P. Bobylev<sup>3</sup>

A continuous data set of Greenland Ice Sheet altimeter height from European Remote Sensing satellites (ERS-1 and ERS-2), 1992 to 2003, has been analyzed. An increase of  $6.4 \pm 0.2$  centimeters per year (cm/year) is found in the vast interior areas above 1500 meters, in contrast to previous reports of high-elevation balance. Below 1500 meters, the elevation-change rate is  $-2.0 \pm 0.9$  cm/year, in qualitative agreement with reported thinning in the ice-sheet margins. Averaged over the study area, the increase is  $5.4 \pm 0.2$  cm/year, or  $\sim 60$  cm over 11 years, or  $\sim 54$  cm when corrected for isostatic uplift. Winter elevation changes are shown to be linked to the North Atlantic Oscillation.

- Interior Greenland and Antarctica are accumulating more snow in the high interior where it is always well below freezing. This is expected as the earth warms: higher temperature  $\rightarrow$  more water vapor  $\rightarrow$  more snow
- These ice sheets are losing mass on the edges, where ice is flowing faster into the oceans, likely due to sea level rise.

- In the net, Antarctic is presently gaining mass.

Outdated. GRACE data indicates it is losing mass now