

The role of the Greenland Ice Sheet in future sea levels - Based on palaeorecords from ice cores and present observations

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A new Greenland ice core has been drilled. The first results from the NEEM ice core are presented and then combined with results from other deep ice cores from the Greenland Ice Sheet.

All of the ice cores drilled through the Greenland Ice Sheets have been analyzed, and the results show that all contain ice from the previous warm Eemian period near the base. Is it thus clear that the Greenland Ice Sheet has existed for over 120,000 years, going back to the previous warm period, when it was 5 deg C warmer over Greenland?

The difference between Eemian and Holocene stable oxygen isotope values has been combined with an ice sheet flow model constrained by the ice core results and internal radio echo sounding layers, to estimate the volume of the Greenland Ice Sheet 120,000 years ago.

The results show that South Greenland has not been ice-free during the Eemian period, and that the sea level contribution from the Greenland Ice Sheet has been 1 to 2 meters.

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