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The role of the Greenland ice sheet in future sea level - 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 the results from the other deep ice cores from the Greenland Ice Sheet.

All the ice cores drilled though the Greenland ice sheets have been analyzed and the results show that all the ice cores contain ice from the previous warm Eemian period near the base. Is it thus clear that the Greenland Ice Sheet did exist for 120.000 years ago in the previous warm period where it was 5 deg C warmer over Greenland.

The difference between the Eemian and the Holocene stable oxygen isotope values have 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 1-2 m.