

## Prize essay on the reaction of the Greenland Ice Sheet to climate changes



The Greenland ice sheet contains 10% of the frozen water on Earth. If melted the global sea level would rise with 7 m. During the last 20 years it has become clear that the Greenland ice sheet is reacting on the warming climate. Measurements from the ice surface, from aircrafts and from satellites detect a reduction of the volume of the ice sheet. The time period of observation now has a sufficient length to access the changes as well as the trend. The Greenland ice sheet loss can be translated to a sea level change of 0.18 mm/yr in the period 1961-2006 accelerating to 0.31 mm/yr in the period 1996-2006. While these changes at the moment only represents 10% of the observed sea level changes it is clear that with the predicted future warming the Greenland Ice Sheet will become one of the most important contributors to sea level rise.

### Project.

The prize essay should contain a compilation of the reaction of the Greenland Ice Sheet to Climate Change during the last 50 years based on existing literature and other information. Climatic information in the period can be compiled from weather stations and ice cores and observations of the reaction of the ice sheet from surface, airborne and satellite observations.

Future scenarios of climate changes over Greenland based on the IPCC predictions should be used to evaluated coming reactions of the Greenland Ice Sheet. The project should compile existing model results. Knowledge gaps in the input to the model results can be addressed with a simple ice sheet model.

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The essay must be submitted before Thursday Jan 15, 2009, 12:00