

## **Variability of the Helheim Outlet Glaciers in the Sermilik Fjord on the East Coast of Greenland**

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The Helheim outlet glacier is one of the largest one on the Greenland coast. We have produced a Landsat/Spot -Envisat time series from 1972 to 2009 where the calving front varied with 9 km with a minimum in 2005 and a maximum in 1993. We are studying this variability in relation to regional meteorological variables and to oceanographic condition in the Sermilik fjord. It has been hypothesized that melting from subsurface layer in the Greenland fjords potentially can be important for the variability of the calving of the glaciers in the fjords. We show that observations of the temperature at subsurface layer in the Sermilik fjord can be as high as 60 C but also that large inter annual variability exist. The effect of these subsurface fjord temperature variabilities on the Helheim outlet glacier is at present under study.