



The influence of Greenland freshwater on the ocean

Sophie Stolzenberger (1), Claudia Wekerle (2), Roelof Rietbroek (1), Bernd Uebbing (1), and Jürgen Kusche (1)

(1) Institute of Geodesy and Geoinformation, University of Bonn, Bonn, Germany (sostolz@uni-bonn.de), (2) Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Climate Dynamics, Bremerhaven, Germany

The German collaborative research programme GROCE (Greenland ice sheet Ocean interaction) studies the changing dynamics of Greenland ice sheet and its interaction with the warming surrounding ocean. The key area analyzed within this project is the region around the 79N glacier and the NEGIS (North East Greenland Ice Stream) in the north-eastern part of Greenland.

One aim of our group is to study the effects of Greenland freshwater flux on the ocean. Therefore, we compare a set of different model simulations performed with the global ocean model FESOM (Finite-Element Sea ice-Ocean Model) including Greenland freshwater fluxes from different melting rates. Moreover, we study the influence of the model resolution by looking at two different mesh configurations. The simulation results in terms of sea surface height and ocean bottom pressure signals are compared with data from radar altimetry and GRACE (Gravity Recovery And Climate Experiment).