PROJECT SUMMARY REPORT - 2016 NUUK CAMPAIGN

Subproject: Iceberg project in Godthåbsfjord

Actual field dates: 4 – 8 August 2016
Field site: Nuuk
Number of man-days in the field: 25

Figure 1

Summary:
A recent campaign in Godthåbsfjord, near Nuuk, targeted smaller icebergs and bergy bits in the fjord to study their trajectories and their impacts on hydrographic conditions in the fjord and contributions to mixing. 7 icebergs were tagged with GPS trackers in the inner fjord a few km from the calving front of Kangiata Nunaata Sermia (KNS). The iceberg trajectories reveal recirculations with very gradual out-fjord motion. The small work-boat Erisaalik was equipped with a weather station that measured air temperature, relative humidity, barometric pressure, short-wave radiation, sea surface temperature (SST), sea surface salinity (SSS), and an underway ADCP. The CTD profiles reveal uplift of isopycnals in the vicinity of the icebergs and SST and SSS also show dense anomalies in the iceberg plumes that correspond to upwelling due to meltwater and subsequent entrainment of denser deep water. Microstructure profiles were collected in different conditions to quantify the contributions of surface fluxes and icebergs to mixing in the upper water column. Nitrate profiles were also collected to determine if the upwelled water could enhance primary productivity at the surface.

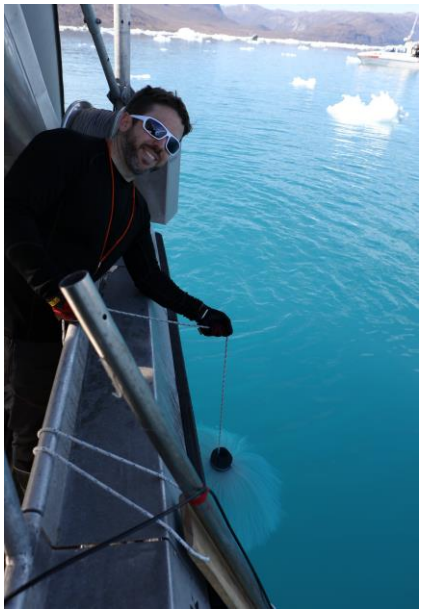

Figure 2

Photos:
Fig. 1: "Avataq" at a small iceberg in Godthåbsfjord. Credit: Dan Carlson
Fig. 2: Dan Carlson prepares for a turbulence profile. Credit: Søren Rysgaard
Fig. 3: Søren Rysgaard inspects the underway instruments near a grounded iceberg. Credit: Dan Carlson

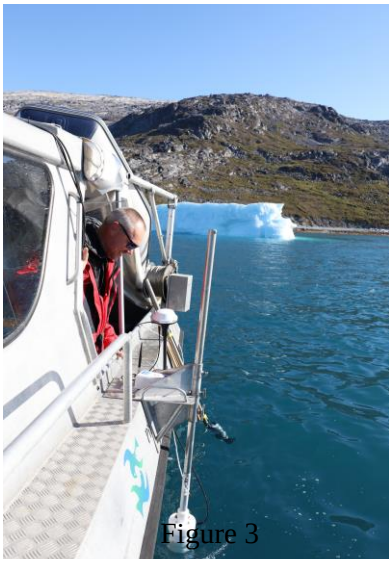

Figure 3

Participants:
AU: Dan Carlson, Søren Rysgaard
UoM: Wieter Boone, Masayo Ogi
GINR: Lorenz Meire

Acknowledgements: