

Subproject: Fully-polarimetric C-band remote sensing of thermodynamic changes in snow-covered first-year sea ice

Actual field dates: May 1 – May 31, 2014

Field site: Cambridge Bay, Nunavut, Canada

Number of man-days in the field: 62

Summary:

We collected time series C-band fully-polarimetric scatterometer measurements from snow covered first-year landfast sea ice for the period of time from May 20 to May 28. Detailed physical sampling of snow and ice was conducted during this time period. During the experiment, one LiDAR scan of the experimental site was performed to characterize the surface roughness. Before starting the experiment the platform for the scatterometer has been specifically built. After the time-series experiment we conducted calibration of the scatterometer.

The collected field data along with supplemental RADARSAT-2 imagery will be used to study how C-band radar backscatter is sensitive to the thermodynamic evolution of snow-covered sea ice during the spring transition period. The possibility of retrieving physical properties of snow and ice from radar measurements will be explored as well.

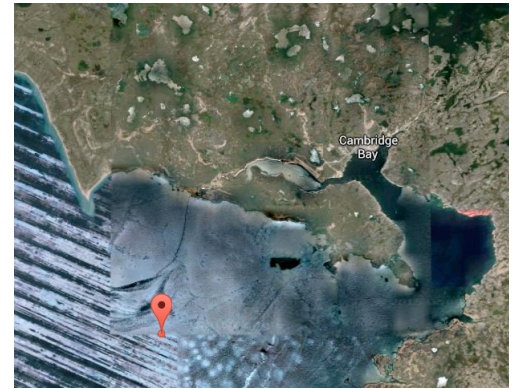


Figure 1

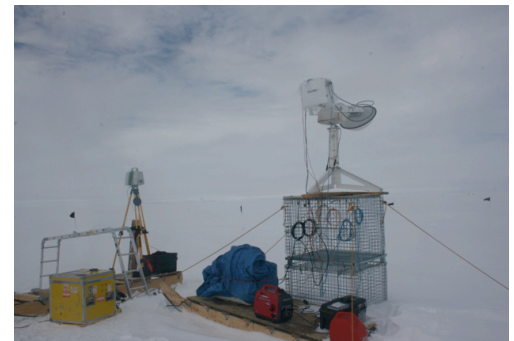


Figure 2



Figure 3

Photos:

Fig.1: Experimental Site near Cambridge Bay, Nunavut

Credit: Alexander Komarov

Fig. 2: C-band scatterometer (on the platform) and LiDAR (on the yellow tripod). Credit: Alexander Komarov

Fig. 3: Calibration of the scatterometer using a corner reflector (on the tripod). Credit: Alexander Komarov

Participants:

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