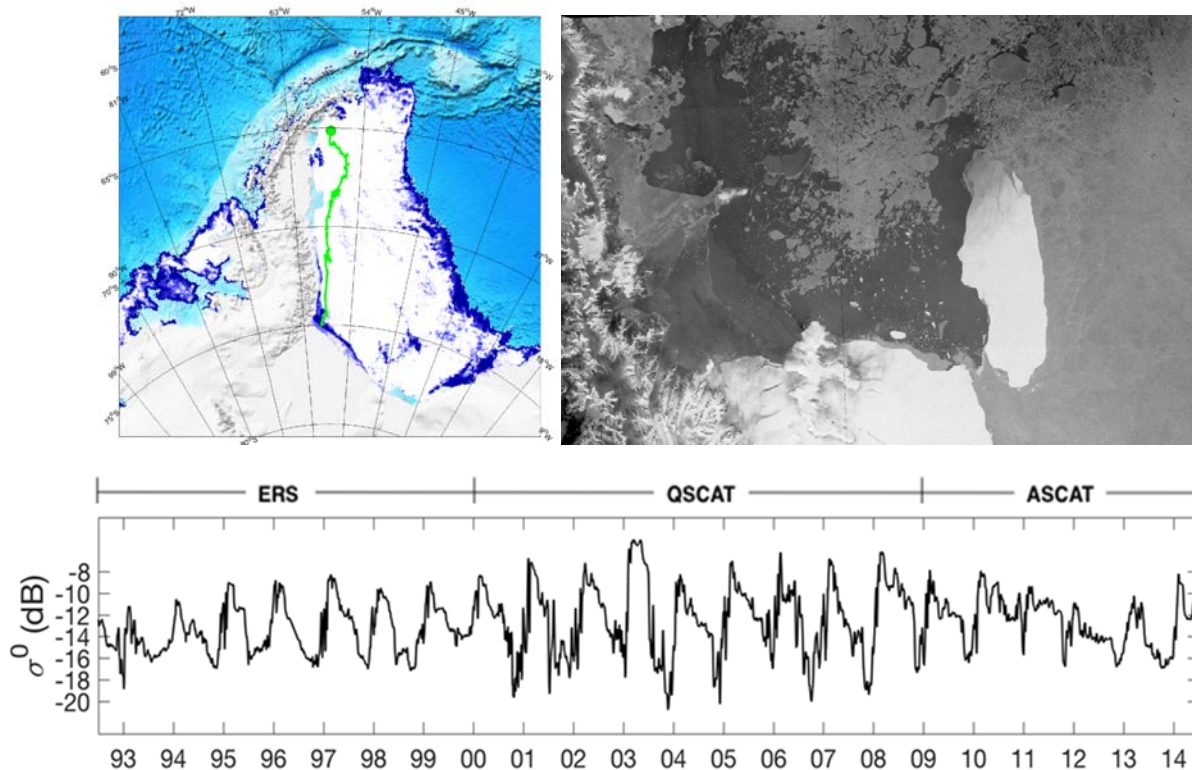


Master Thesis

Radar remote sensing of snow on Antarctic sea ice

Snow on Antarctic sea ice undergoes characteristic seasonal metamorphism that changes its microwave properties, in particular its radar backscatter. We operate autonomous, drifting buoys that measure the seasonal changes of snow on sea ice in-situ. The aim of this thesis is to quantitatively compare snow properties (temperature, thickness) with time series of radar backscatter along the drift track of the buoys, in order to better understand the impact of snow properties and snow melt on radar backscatter. The thesis will use buoys from the Weddell Sea as well as large numbers of satellite SAR images and scatterometer data, all available to our working group. In addition, atmospheric data from reanalysis products as well as results of a snow model can be used in close collaboration with other snow researchers at AWI.



What you need

Excellent marks in the PEP program; Strong numerical and programming skills; Additional knowledge of radar remote sensing and/or snow is of advantage.

What you will learn

You will learn to understand seasonal changes of snow properties in dependence of atmospheric boundary conditions; ice drift in the Weddell Sea, and the surface energy balance of snow and sea ice. You will learn about processing and interpretation of large amounts of satellite SAR and scatterometer data.

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