

Master Thesis

Remote sensing of lake ice from microwave observations

The IUP is producing daily sea ice maps based on data of the passive microwave radiometers AMSR-E and AMSR2 since 2002, see www.seaice.uni-bremen.de.

With 5 km resolution, these maps belong to the highest resolving sea ice maps available daily and globally.

Preliminary studies have revealed that at this scale, also the ice cover of freshwater lakes can be observed. In this project, you will produce the first global inventory of the ice cover of large lakes and analyze climatic trends. Initially, the performance of the procedure has to be assessed with a data base of in situ observations of lake ice.

What you need

Microwave radiometry basics and some computer programming experience will be helpful; best Python, Matlab, or IDL under Linux.

What you will learn

You will learn to establish, validate, and analyze datasets of global earth observations from satellites. Both spatial maps and time series will be analyzed. The work group offers an open discussion atmosphere and worldwide contacts to the leading institutions in the field.

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