

Stockholm University and Swedish Polar Research Secretariat

Michael Tjernström
michaelt@misu.su.se

Shipborne Arctic Atmospheric Observatory on icebreaker Oden

The objective is to develop an atmospheric “super-site” observatory, operated either unattended or with minimum staff to provide extensive atmospheric observations at a much higher frequency than previously. The observatory is developed for the Swedish icebreaker Oden, but can also be adapted for other vessels operating in the Arctic

The observatory started to be developed in 2018 and provides now

- surface fluxes of energy and trace gases, in-situ weather information including visibility, vertical profiling of winds and atmospheric thermodynamics, cloud vertical distribution and cloud properties.
- surface energy budgets, Cloud-Net retrieval of cloud properties and radio-soundings
- The data are primarily for research use
- Some data are transmitted on the GTS and for weather forecasting and reanalysis.

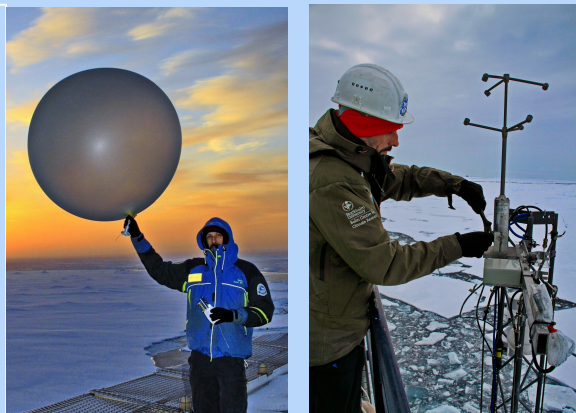


Figure 1: Examples of observing systems onboard icebreaker Oden

The observatory is intended to improve the situation with lack of data in the central Arctic. The data are needed to understand atmospheric processes and develop realistic models of the central Arctic atmosphere. Users are primarily the atmospheric research community.

The data follow standards for atmospheric parameters including MODF-files. All data will be directly open after a QC. Data are stored at the Bolin Centre for Climate Research database at University of Stockholm:

<http://www.bolin.su.se/data>



Figure 2: The observing systems are mounted in different places onboard icebreaker Oden