

Project information

Keywords

Sluttrapport 2016

Project title

Developing Modelling Tools to Understand the Role of Solar Radiation to Sea Ice Mass Balance in a Seasonally Ice Covered Arctic (SOLICE)

Year

2016

Project leader

Mats Granskog

Geographical localization of the research project in decimal degrees (max 5 per project, ex. 70,662°N and 23,707°E)

Arctic Ocean

Participants

Mats Granskog (NPI), project lead

Tore Hatterman (Akvaplan-niva)

Anthony Doulgeris (UiT)

Keguang Wang (MET.no)

Caixin Wang, Alexey Pavlov, Sebastian Gerland (NPI)

Ole Anders Nøst (Akvaplan-niva)

International partners/collaborators;

Donald K. Perovich (Donald.K.Perovich@erdc.drem.mil), at Cold Regions Research and Laboratory (CRREL), Hanover, USA

Engineering

Marcel Nicolaus (marcel.nicolaus@awi.de), at Alfred Wegener Institute (AWI), Germany

Jeremy Wilkinson, British Antarctic Survey (EU FP7 project ICE-ARC)

Flagship

Arctic Ocean

Funding Source

Fram Centre

Summary of Results

Paper (see below) was published on results from autonomous deployments (Task 1.1) in the high Arctic. This revealed that atmospheric conditions from summer to summer differ largely and has a high impact on the amount of melting in summer, and the strength of the ice-albedo feedback. Further support that the work in this project (Tasks 1.2. and 2), on ice-albedo parameterizations, are increasingly important to be physically based in models.

Master and PhD-students involved in the project

None

For the Management

None

Published Results/Planned Publications

Manuscript published ;

Wang, C., Granskog, M.A., Hudson, S.R., Gerland, S., Pavlov, A.K., Perovich, D.K., Nicolaus, M. 2016. Atmospheric conditions in the central Arctic Ocean through the melt seasons of 2012 and 2013: Impact on surface conditions and solar energy deposition into the ice-ocean system. *Journal of Geophysical Research Atmospheres*, 121, 1043-1058. [DOI:10.1002/2015JD023712](https://doi.org/10.1002/2015JD023712)

Communicated Results

None in 2016

Interdisciplinary Cooperation

Not applicable

Budget in accordance to results

Progress in 2016 has been stalled due to less person-months available and in problems in hiring qualified personnel. This has been reported to the flagship leadership. Measures to rectify this problem has been made, but progress in 2016 has not been as planned. Part of the budget in 2016 was re-allocated to the Flagship.

Could results from the project be subject for any commercial utilization

No

Conclusions

In 2016 new results were published based on analyses from observational data in the central Arctic. These showed the sea ice system to be very sensitive to the atmospheric conditions, and there is great variability from year-to-year. Timing of melt period, relative to seasonal solar cycle, is of great importance for the summer melt of sea ice.

Progress in 2016 has been stalled due to the fact that institute did not allow to hire a person to do the work. Measures to rectify this problem at the end of year has been taken, but the work has been postponed to 2017 when we hope to be able to hire a person at one of the partner institutes to complete the work according to the project plan.