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
Ma

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

Participants

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 Engineering Laboratory (CRREL), Hanover, USA

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

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

Flagship
Ocean Acidification

Funding Source

Fram Centre, NFR and in-kind from institutes.

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 and that they should be physically based.

Limited progress was made on the other tasks (2&3) and had to be postponed into 2017.

Master and PhD-students involved in the project

n/a

For the Management

n/a

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

Communicated Results

n/a in 2016

Interdisciplinary Cooperation

n/a

Budget in accordance to results

Progress was much less than what planned. A no-hire was imposed by NPI; and no full-time employee was hired according to plan. Thus the central tasks 2&3 in the project progressed much slower than anticipated, and have to be postponed into 2017. Thus the project failed to meet its goals in 2016.

Could results from the project be subject for any commercial utilization

No

Conclusions

A study was published showing the sensitivity of the sea ice system and the melting of sea ice in summer to the onset of ice melt and synoptic weather events in shaping the sea ice summer melt. Otherwise progress was hampered by not having full-time personell, as planned, to work on the remaining tasks on albedo parameterization and modeling work.