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

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International partners/collaborators;

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

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Flagship
Arctic Ocean
Funding Source

Fram Centre, new NFR project (SPARSE, 2016-) and in-kind from partner 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 supports the fact that the work in this project (Tasks 1.2. and 2), on ice-albedo parameterizations in cliamte models are increasingly important to be physically realistic. Progress in tasks 2 & 3, to develop new parameterization, was limited due tolimited person-months allocated for the work, and not according to the project plan (see below).The coupled CICE-ROMS model was set-up and initital tests were made. The results from a free-run case for year 1993-2010 in being analyzed. A more thorough comparison model and observations is done in 2017.

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

None in 2016

Interdisciplinary Cooperation

n/a

Budget in accordance to results

Task 1 has been completed. Progress was limited in 2016 in Tasks 2 & 3 and the initial coupling if CICE-ROMS was done and initial model runs were initiated.

Could results from the project be subject for any commercial utilization

No

Conclusions

Task 1 has been completed and amnuscript published. Task 2 & 3 work has been initiated and will be completed in 2017.