



INTERNATIONAL ICE CHARTING WORKING GROUP (IICWG)

Task Team 1

ROSE-L

Most Recent Update: 5. May 2020

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Summary of Original Task:

- This task aims at investigating the advantages of using combinations of C- and L-band images for operational ice charting in support of the advisory group for ESA's HPCM ROSE-L (Radar Observing System for Europe at L-band). For this purpose, ALOS-2 PALSAR-2 L-band images are used and compared to Sentinel-1 and Radarsat-2 C-band data acquired over the same area with the shortest possible time difference. Different ice centers and ice analysts will utilize C- and L- images for producing examples of ice charts.

Status: Continue with following revision:

- Add a stronger focus on the Southern Hemisphere with additional test sites and potential SAOCOM L-Band data. This may extend the task beyond September 2020.
- The PALSAR-2 image access point at ESA is established, and passwords for access are distributed.
- ESA has made available the airborne F-SAR X-, C-, and L-band images that were acquired by DLR over Davis Strait in April 2019. However, it is necessary to write a proposal. Wolfgang carried out a first comparison between the different radar bands and photographs that were taken during the flights, considering also weather reports and ice charts provided by CIS. *The report will soon be accessible for the members of IICWG.*
- *ESA supports the ROSE-L task team by granting a funding for investigations of the benefit of combining L- and C-band for sea ice charting and ice parameter retrieval. The financial volume is 200 kEUR, the project duration 18 months. The project will start on June 1st 2020 and will be supervised by University in Tromsø. See also next steps.*



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- *JAXA has acquired a large number of ALOS-2 PALSAR-2 over our Arctic test sites (Baffin Bay, Belgica Bank, Fram Strait, Labrador Sea, South Greenland), and additionally we obtain scenes from North Greenland sea ice regions. Between 25/04/2019 and 10/01/2020, 382 scenes were acquired in total over the test sites. A detailed list can be obtained from John or Wolfgang.*

Next Steps (if any):

- Produce final report for the Northern Hemisphere and make public
At present this report can be accessed only by IICWG members. Since parts of it may be used for a publication, we should keep it within the group.
- Initiate extension to Southern Hemisphere.
Not yet started. Has to be done soon.
- *A science and administrative plan for the study on ROSE-L benefits for sea ice mapping was approved by ESA at the end of April 2020. Operational ice mapping and iceberg detection is one major part of the project. The ice services involved are Met.Norge, DMI, CIS, and IIP. CIS and IIP offered to contribute in-kind. Chalmers and UiT/AWI are partners for developing methods of ice drift compensation between two images acquired with a time gap, and UiT for carrying out automated sea ice classification and parameter retrieval.*
- *Carry on investigations of the F-SAR data set (which will also be part of the ESA study).*

Estimated Percent Complete: 30%

- The draft of the first report is out to the contributing team members and to ESA.
Feedback from CIS and ESA (ESA is very positive)

Interaction with Other Task Teams:

The ROSE-L team benefits from the iceberg task group and from the study on end-users' needs. Means for direct interaction, however, are not set up.

What is working well?

The topic is focused on a well-defined objective, the team members are directly involved in the project because they are interested in achieving results from which they will benefit in the future. Collaboration of IICWG with ESA and CIRFA/UiT.

Are there barriers hindering progress?

The time required to work on the task is limited, which is slowing down progress. Bureaucracy and administration...