



**SPICES WORKSHOP**  
**SEA ICE EXTREMES AND OPERATIONS IN THE POLAR OCEANS**

**1 March 2017**  
**Finnish Meteorological Institute**  
**Erik Palménin aukio 1, Helsinki, Finland**

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13.00 – 13.15 Background and aim of the workshop,  
Jari Haapala, Head of Marine Research Unit / FMI

13.15 – 14.45 Panel 1: Users experiences and recommendations

Panellists:

Tommy Berg, Master of IB Fennica / Arctia: Ice management in the Chucki Sea

Sami Saarinen / Aker Arctic: Industrial needs of environmental data

Rob Hindle / Lloyds: Risk management in ice covered seas

Penny Wagner / METNO or Hurtigruten: Arctic Tourism

14.45 – 15.00 Break

15.00 – 16.30 Panel 2: Responses from scientists

Panellists:

Rasmus Tonboe / DMI: Arctic now

Eero Rinne / FMI: Detection of sea ice hazards from satellites

Steffen Tietsche / ECMWF: From nowcasting to seasonal forecasting

16.30 – 18.00 Discussion and networking with refreshments

Attendance to the SPICES workshop is free of charge.

Please announce your participation at latest on 22 Feb 2017 by email to [marko.makynen@fmi.fi](mailto:marko.makynen@fmi.fi)

The SPICES workshop is one day prior the Arctic Passion Seminar organized by Aker Arctic in Helsinki, Finland; see <http://akerarctic.fi/en/arctic-passion/arctic-passion-seminars>, allowing convenient participation to both events.

How to get to FMI: <http://en.ilmatieteenlaitos.fi/how-to-find-dynamicum>



## **Space-borne observations for detecting and forecasting sea ice cover extremes**

SPICES project has received funding from the European Union's Horizon 2020 Programme

**Project web-site: <https://www.h2020-spices.eu/>**

**Project summary:** Ongoing climate warming has manifested as shrinking and thinning of pack ice in the Arctic. This is a primary driver for the increasing shipping, oil and gas explorations and mining activities in the Arctic. However, severe sea ice conditions still exist and in consequence many locations are impossible for ship based operations. Moreover, year-to-year variability of sea ice is very large and hazardous multi-year ice floes sometimes appear also in typically seasonally ice free regions.

In order to response needs of increase polar activities, SPICES is focusing on detection of sea ice extremes. In particular, SPICES aims for:

- detection of heavily ridged ice regions from SAR,
- detection of MYI floes in an area composed mostly FYI from SAR,
- detection of most thickest ice from CryoSat-2 radar altimeter thickness profiles,
- detection of regionally anomalous thick or thin ice via SMOS radiometer data,
- detection of sea ice areas vulnerable for the wave action,
- detection of early/late melting season, and
- improving capabilities to forecast seasonal sea ice extremes.

The ultimate goal of SPICES is the exploitation of sea ice observations for the improvement of ensemble coupled prediction systems encompassing different time scales: from medium range to monthly, and seasonal. Improved sea ice observations are of high priority for the forecast initialization, model development and forecast evaluation.

The SPICES project team comprises 14 organisations that are European leaders and among the world leaders in the field of satellite remote sensing as applied to Polar sea ice monitoring and forecasting. Some partners are part of the EUMETSAT OSI SAF and EC Copernicus CMEMS activities producing sea ice information for marine activities and operational oceanography.