



INTAROS

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Platforms and technologies for Arctic Ocean Observing Systems

Workshop 29-30 April 2019
organized by the Nansen Center
as part of the INTAROS project

Start: 29 April 1300, adjourn: 30 April 1600

Venue: Grand Hotel Terminus,
Zander Kaaes gt. 6, 5015 Bergen

Introduction

The possibilities to build up in situ observing systems in the Arctic are expected to increase in the coming years as a result of more human activities in the region. Many countries, in particular the Arctic countries, the EU, and several Asian countries, plan to increase their research efforts and to participate in the exploitation of resources and development of transport systems, and thus play a role in the economic development in the region.

It is a logistical and technological challenge to obtain regular observations from the ocean under the sea ice cover. Observing technology and platforms developed for open ocean are not necessarily applicable in ice-covered areas e.g. floats and underwater vehicles. The installation costs are high in the Arctic, and it is a major challenge to establish funding mechanisms to secure sustainability of ocean observing systems in the Arctic.

A major objective of the INTAROS project is to develop and implement observation systems for atmosphere, ocean and seafloor, sea ice, marine ecosystem, glaciology, other terrestrial themes. In this workshop we invite Norwegian institutions working with development of platforms, sensors, data production and systems for the ocean observations, with focus on Arctic regions.

The workshop present opportunities and challenges related to: (1) sensors and platforms that are adapted to and can operate year-round in a harsh Arctic environment, (2) how to implement year-round data collection, and if possible including near real time (NRT) data transmission to data centres, and (3) integration and visualization of multidisciplinary data from distributed repositories.

Ocean Network Canada (ONC) has been invited to give a talk about cabled observatories for ocean observing systems. ONC is a large Canadian infrastructure for ocean observations (<http://www.oceannetworks.ca/about-us>). ONC operates large scale deep sea cabled systems as well as local scale cabled system in coastal areas including Cambridge Bay in the Arctic, (<http://www.oceannetworks.ca/installations/observatories/arctic/cambridge-bay>), which is ice-covered most of the year. To handle the massive amount of data coming in from these observatories, ONC has developed an advanced information system including data integration and visualization.

Agenda

Time slots for each presentation include 5 minutes for questions/comments

29 April 2019 13:00 – 18:00

1300 Session 1: Introduction and background

1300-1315: Stein Sandven, NERSC: Welcome and introduction

1315-1330: Marianne Kroglund, Norwegian Environment Agency / Arctic Monitoring and Assessment Programme: The need for coordinated observations in an era of rapid Arctic change

1330 Session 2: Fixed ocean observing systems

1330 - 1400: Scott McLean, Ocean Network of Canada. Invited talk: Cabled Ocean Observatories – Regional to Community Scale.

1400 - 1420: Mathilde Sørensen, University of Bergen, Department of Earth Science: Improving seismological monitoring capacity in the Arctic with Ocean Bottom Seismometers

1420 - 1440: Anders Hermansen, Equinor: LoVe ocean observatory

1440 - 1500: Steinar Bjørnstad, Tampnet AS: Introduction to Tampnet communication and monitoring activities

1500 - 1520: Bjørn Rønning: Borealis Submarine Cable System - Connecting Europe and Asia over the North Pole

1520 - 1550: Coffee break

1550 - 1610: Hanne Sagen, NERSC, Multipurpose acoustic networks in an integrated Arctic Ocean Observing System.

1610 - 1630: Paul Dodd, Norwegian Polar Institute: Oceanographic moorings in the Arctic

Session 3: Moving systems including sea ice platforms and drones

1630 - 1650: Lionel Camus, Akvaplan-NIVA: Surface and subsurface gliders off Lofoten.

1650 - 1710: Kai Sørensen, NIVA: Ocean monitoring along shipping routes using Ferrybox systems.

1710 - 1730: Rune Storvold, NORCE: Airborne surveillance of arctic sea-ice properties using drones.

1730 - 1800: Discussion on session 2 & 3 (Moderator: Stein Sandven)

30 April 2019 09:00 – 16:00

0900 - 0920: Jan Erik Stiansen, Institute of Marine Research: NOR ARGO – Ocean observing system using autonomous profiling floats

0920 - 0940: Atle Gran, Kongsberg Maritime: Hugin and Seaglider – Mobile platforms from Kongsberg Maritime Subsea

Session 4: Robust Sensor technology for sustained observations

0940 - 1000: Peter James Thomas, NORCE: Distributed Fiber Optic Sensing

1000 - 1020: Emilie Dorgeville, Aanderaa Data Instruments/Xylem: Cold water systems using multi-parameter platforms and smart-sensors from Aanderaa/Xylem

1020 - 1050: Coffee break

1050 - 1110: Gunnar Sagstad and Bård Sagstad, SAIV AS: Presentation of sensors and systems provided by SAIV AS

1110 - 1130: Truls Johannessen, University of Bergen, Geophysical Institute: Novel technology to monitor the biogeochemical cycles in an Arctic environment

Session 5: Emerging systems for data integration and visualization

1130 - 1150: Laurent Bertino, NERSC: Assimilation of various sources of data in the Copernicus Arctic Marine Forecasting Center.

1150 - 1210: Øivin Aarnes, DNV GL: Integrating observations in environmental risk assessments

1210 - 1230: Tor Langeland, NORCE: Visualization of Geohazard data.

1230 - 1330: Lunch

1330 - 1350: Scott McLean, Ocean Network of Canada. National Oceanographic Data Management

1350 - 1410: Helge Sagen, Institute of Marine Research: Applications of marine data from Norwegian Marine Data Centre – NMDC

1410 - 1430: Torill Hamre, NERSC: Service development using integrated Arctic Observation System (iAOS).

1430 - 1500 Coffee break

1500 - 1520: Øystein Godøy, Norwegian Meteorological Institute: Data management, SIOS and NorDataNet in the Global and Polar Data System Context

1520 - 1600: Discussion and recommendations for improved observing in the Arctic oceans. What should be included in the observing systems ? Who should the systems serve ?

1600: Adjourn

Participant list

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