ArcticROOS
EuroGOOS Arctic Regional
Ocean Observing System

Ocean Prediction
UN DECADE COLLABORATIVE CENTRE

ONLINE WORKSHOP

Co-organised by EuroGOOS' Arctic ROOS and the Arctic Regional Team of the OceanPrediction DCC

AI: Showcases for Ocean and Sea Ice Applications in the Arctic

This workshop will showcase examples of ocean and sea ice applications of artificial intelligence in the Arctic. Presentations will highlight concrete use cases, sharing both successful and less effective examples. The session will demonstrate the capabilities and limitations of AI in observing, modeling, and analysing the Arctic environment, as well as explore potential opportunities for future applications. Time will be allocated after each presentation for questions and discussion with the audience. Register **here**.

AGENDA

TIME (CET)	Title	Speaker
13:00 - 13:10	Welcome and introduction	Anna Nikolopoulos, EuroGOOS Arctic ROOS / NPI, Norway Heather Regan, OceanPrediction DCC Arctic Regional Team / NERSC, Norway
13:10 - 13:30	**Keynote:** Accelerating and Enhancing Arctic Sea Ice and Ocean Forecasts with AI	Julien Brajard, NERSC, Norway
Part 1 (Moderator: Vidar Lien, IMR, Norway)		
13:30 - 13:45	Deep learning-based retrieval of Arctic sea ice information from SAR and Passive Microwave	Tore Wulf, DMI, Denmark
13:45 - 14:00	Short-term sea ice forecast evaluation for maritime users in the European Arctic	Penelope Wagner, Met.No, Norway
14:00 - 14:15	ML-derived synthetic BGC profiles in the Nordic Seas and its operational applications	Tsuyoshi Wakamatsu, NERSC, Norway
14:15 - 14:30	Use of AI in quality control of CTD profile data	Asuka Yamakawa, IMR, Norway
BREAK (15 min)		
Part 2 (Moderator: Till Rasmussen, DMI, Denmark)		
14:45 - 15:00	Reconstruction of Arctic sea ice thickness (1992-2010) based on a hybrid machine learning and data assimilation approach	Léo Edel, NERSC, Norway
15:00 - 15:15	Multi-sensor sea ice data for efficient navigation and climate-relevant data collection along icebreaker transects in the polar regions	Polona Itkin, NPI, Norway
15:15 - 15:30	Four-dimensional variational data assimilation with a sea-ice thickness emulator	Charlotte Durand, ENPC, France
15:30 - 15:45	Short-term, high-resolution sea ice forecasting with diffusion model ensembles	Andrew McDonald, BAS, UK
15:45 - 16:00	Towards an Artificial Intelligence Earth System Model at ECMWF	Lorenzo Zampieri, ECMWF
16:00 - 16:30	Discussion	Moderator: Manuel Bensi, OGS, Italy
16:30 - 17:00	Wrap up and look ahead	Anna Nikolopoulos, EuroGOOS Arctic ROOS / NPI, Norway

EuroGOOS
European Global Ocean Observing System