AI-TT workshop agenda overview

09:15   Arrival and registration
09:40   Welcome, Gregory Smith and Rachel Furner

Block 1 talks: Ocean Emulators
Chair: Rachel Furner, Rapporteur: tbc
09:50   Toward Scalable and Probabilistic Neural Ocean Forecasting, **Simon Van Gennip** *(Mercator Ocean International)*
10:10   Application of Deep learning (DL) in the Gulf of St. Lawrence and Estuary, **Francois Roy** *(ECCC)*
10:30   AI-driven Nanming Model for Three-dimension Ocean Variable Forecasting, **Xiaoyan Li** *(Southern Marine Science and Engineering Guangdong Laboratory, Zhuhai)*
10:50   Prediction of sea surface currents around the Korean peninsula using artificial neural networks, **Jae-Hun Park** *(Department of Ocean Sciences, Inha University)*

11:15   Coffee

11:45   **Discussion session 1: Expectations and requirements for AI in Ocean prediction, and how can the task team best support this**
        Chair: Gregory Smith, Rapporteur: Rachel Furner

12:45   Lunch - self pay at local restaurants

Posters
14:00   Poster flash talks: 2 mins from each author to introduce their poster.
14:15   Poster viewing and coffee
Chair: tbc
Filling the Ocean's Gaps: a Self-Supervised Neural Network for Argo Profiles Data Augmentation, **Teresa Tonelli,** *(OGS, University of Trieste)*
Assimilation of sea surface temperature in the Mediterranean Sea using ML-based operators, **Daniele Bigoni** *(CMCC Foundation, Italy)*
Detection and Discrimination of Marine Oil Spills and Look-alike Phenomena in Synthetic Aperture Radar Imagery, **Xudong Huang** *(Department of Oceanography, Dalhousie University)*
Machine Learning Forecast Correction for Geophysical Fields, **Jacopo Dall'Aglio** *(University of Bologna)*
Bridging Scales in Mediterranean Biogeochemical Prediction: A High-Order Ensemble Assimilation Coupled with AI-Driven Downscaling, **Simone Spada** *(OGS)*
Data-driven ocean modelling at ECMWF, **Rachel Furner** *(ECMWF)*

Block 2 talks: Observations and Data Assimilation
Chair: tbc, Rapporteur: tbc
15:15   Training end-to-end neural mapping schemes from simulation data for the reconstruction of global-scale sea surface fields, **Daniel Zhu** *(IMT Atlantique)*
15:35   Short-term neural forecasts of ocean dynamics from sparse satellite observations, **Daria Botvynko** *(IMT Atlantique)*
15:55   Two-Phase CNN for Model Data Fusion: Predicting 3D Chlorophyll-a in the Mediterranean Sea, **Teresa Tonelli** *(OGS, University of Trieste)*
16:15   A Deep-Learning Observation Operator for Subsurface Thermohaline Reconstruction from Satellite Surface Observations, **Geon Min Lee** *(Pukyong National University, Republic of Korea)*
16:35   AI perform on high resolution three-dimensional ocean forecasting: remote sensing data driven becomes a new possibility, **Liying Wan** *(National Marine Environmental Forecasting Center)*

17:00 Optional pub trip
18:30 Optional (self pay) dinner at Trois Brasseurs on St. Denis

Block 3 talks: Emulators
Chair: tbc, Rapporteur: tbc
09:00   Linear Stochastic Emulators of the Ocean Circulation - A Lesson, perhaps, for Machine Learning, **Andrew Moore** *(University of California Santa Cruz)*
09:20   A data driven limited area storm surge model, **Mateusz Matuszak** *(Norwegian Meteorological Institute)*
09:40   A Physics Informed Emulator for Ocean Oxygen, **Annalisa Bracco** *(CMCC)* *(remote)*
10:00   Application and Verification of the Global Wave Intelligent Forecast Model, **Fang Hou** *(National Marine Environmental Forecasting Center)*
10:20   Development of machine-learning emulators for harbour-scale ocean prediction, **Michael Dunphy** *(Institute of Ocean Sciences, Fisheries and Oceans Canada)*

10:45   Coffee

Keynote
Chair: Fraser Davidson, Rapporteur: Kristian Mogensen
11:15   OceanBench: A Benchmark for Data-Driven Global Ocean Forecasting systems, *Anass El Aouni (Mercator Ocean International)*

12:15   Lunch - self pay at local restaurants

Block 4 talks: Downscalling, and other ML applications
Chair: Frederic Dupont, Rapporteur: tbc
13:30   Intelligent forecasting of marine environmental elements in the South China Sea, **Xueming Zhu** *(Southern Marine Science and Engineering Guangdong Laboratory, Zhuhai)*
13:50   From Coarse Models to Coastal Detail: A Deep Learning Approach to AI based Statistical Downscaling in the Adriatic Sea, **Alessandro De Lorenzis** *(CMCC Foundation - Euro-Mediterranean Center on Climate Change)* *(remote)*
14:10   Integrated AI_Physics Approaches for Coastal Prediction Across the Open-to-Coastal Ocean Continuum, **Joanna Staneva** *(Helmholtz Zentrum HEREON)*
14:30   Fix the double penalty in data-driven forecasting by modifying the loss function, **Christopher Subich** *(Environment & Climate Change Canada)*
14:50   Variational autoencoder-based clustering for geophysical fluid circulations with small sample size, **Kunihiro Aoki** *(Meteorological Research Institute, Japan Meteorological Agency)*

15:15   Coffee

15:50   **Discussion session 2: Benchmarking, assessment and validation of ML models**
            Chair: Rachel Furner, Rapporteur: Simon Van Gennip

16:50   Workshop wrap up

17:00   Close