

Draft Workshop Programme

26 October, 13:00 - 30 October, 13:00

Monday 26 October

Time	Session /talk	Author/ presenter
13:00-13:30	Arrival, registration, and coffee	
13:30-13:45	Welcome and practical information	
13:45-14:15	Keynote: The need for ocean observations and data assimilation for coupled predictions and why we care about coupling when doing predictions	Kristian Mogensen, ECMWF
	Operational prediction systems 1 (4 talks) Chair: Sergey Frolov, NOAA Rapporteur: Ann Kristin Sperrevik, Met Norway	
14:15-14:35	UK Met Office operational ocean-atmosphere coupled numerical weather prediction system: current status and future outlook	Jonah Robert-Jones, Met Office
14:35-14:55	Development of the NOAA Unified Forecast System and Its Application to Subseasonal and Seasonal Predictions	Phillip Pegion, NOAA
14:55-15:15	Coupled Atmosphere-Ice-Ocean Prediction Systems at Environment Canada	Greg Smith, ECCO (for Jean-Philippe Paquin, ECCO)
15:15-15:45	Coffee break	
15:45-16:05	Recent upgrades to the coupled ocean - sea ice prediction system at ECMWF Prediction System	Sarah Keeley, ECMWF
16:05-16:25	Discussion 1: Operational prediction systems Chair: Ann Kristin Sperrevik, Met Norway Rapporteur: Sergey Frolov, NOAA	
16:25-17:00	Poster introductions	Various authors
17:00-19:00	Icebreaker and poster session with drinks	

Tuesday 27 October

Time	Session	Author/Presenter
	Operational prediction systems 3 (4 talks) Chair: Kristian Mogensen, ECMWF Rapporteur: Anna Teruzzi, OGS	
09:00-09:20	The role of the oceans for subseasonal prediction: insights from eddy-permitting and eddy-rich coupled forecast systems	Chris Roberts, ECMWF
09:20-09:40	A North-Atlantic-focused ocean prediction system for operations and research: results and ongoing developments at CMRE	Andrea Storto, CMRE
09:40-10:00	Ocean dynamic persistence provides significant predictability for sea surface temperature variation associated with El Nino and El Nina	Tong Lee, NASA/JPL
10:00-10:20	Norwegian Climate Prediction Model Version 2: New Developments and their impact	Francois Counillon, NERSC
10:20-10:40	Discussion 2: Operational Prediction systems Chair: Anna Teruzzi, OGS Rapporteur: Kristian Mogensen, ECMWF	
10:40-11:10	Coffee break	
	Coupled processes and air-sea interactions (5 talks) Chair: Santha Akella, NOAA Rapporteur: Phil Browne, ECMWF	
11:10-11:30	Air-Sea Coupling at the Ocean Mesoscale: Some Reflections on the Challenges for Coupled DA	Andrew Moore, UCSC
11:30-11:50	Temporal variability of air-sea fluxes and ocean surface variables under extreme events	Santha Akella, NOAA
11:50-12:10	Prolonged Westerlies in the Equatorial Indian Ocean: Atmospheric Drivers and Upper-Ocean Responses	Prasad Thoppil, NRL
12:10-12:30	Development of Wave-Sea Ice Interactions in the ECMWF Earth System Model	Joshua Kousal, ECMWF
12:30-12:50	Effects of Atmospheric Forcing Frequencies on Ocean Data Assimilation and Coupled Forecasts on NWP Time Scales	Kristian Mogensen, ECMWF
13:00-14:00	Lunch	
14:00-14:20	Discussion: Coupled processes and air sea interactions Chair: Phil Browne, ECMWF Rapporteur: Santha Akella, NOAA	

	Advances in machine learning 1 (5 talks) Chair: Sergey Frolov, NOAA Rapporteur: Rachel Furner, ECMWF	
14:20-14:40	Ocean and Coupled Earth System Emulator Development	Sergey Frolov, NOAA
14:40-15:00	ML-based ocean emulator as a surrogate for ocean forecasting and reanalysis systems	Jungwon Lee, IMT
15:00-15:30	Coffee break	
15:30-15:50	Combining machine learning with data assimilation to improve the quality of phytoplankton forecasting in a shelf sea environment	Josef Skakala, PML
15:50-16:10	Machine-learning bias correction of passive-microwave sea-ice concentration using SAR improves Arctic analyses and forecasts	Davi Mignac, Met Office
16:10-16:20	Offshore Operations and Maintenance: A GNN-LSTM Wave Forecasting Framework for safe Marine Logistics Operations in the German Bight	Supreeth Hanumappa, LUFI
16:20-16:40	Discussion 1: Advances in machine learning Chair: Rachel Furner, ECMWF Rapporteur: Sergey Frolov, NOAA	
16:40	Close of day 2	

Wednesday 28 October

Time	Session	Author/ Presenter
	Advances in machine learning 2 (2 talks) Chair: Rachel Furner, ECMWF Rapporteur: Sergey Frolov, NOAA	
09:00-09:20	Stochastic ensemble coupled modeling of pre-industrial control and 1% increasing CO2 scenarios with physically conservative machine learning emulators	James Duncan, ALLENAI
09:20-09:40	Chlorophyll-Conditioned Bias Correction in a Machine-Learned Seasonal Biogeochemical Forecast	Gabriela Martinez Balbontin, Mercator
09:40-09:55	Discussion 2: Advances in machine learning Chair: Sergey Frolov, NOAA Rapporteur: Rachel Furner, ECMWF	
	Coupled DA 1 (5 talks) Chair: Matt Martin, Met Office Rapporteur: Hao Zuo, ECMWF	
09:55-10:15	Improvement of SST analysis and near sea-surface atmospheric predictions in the coupled atmosphere-ocean data assimilation system in JMA/MRI	Yosuke Fujii, JMA/MRI
10:15-10:35	Towards strongly coupled ocean-sea ice-atmosphere data assimilation for the Global Forecasting System	Anna Shlyueva, UCAR/NOAA
10:35-11:05	Coffee break	
11:05-11:25	Coupled ocean-atmosphere DA in operations at ECMWF	Philip Browne, ECMWF
11:25-11:45	A General Nonlinear and Non-Gaussian Strongly Coupled Ensemble Data Assimilation Capability	Jeffrey Anderson, NSF-NCAR
11:45-12:05	Coupled and nonlinear data assimilation into a regional ocean-biogeochemical model	Lars Nerger, AWI
12:05-12:25	Discussion: Coupled DA Chair: Hao Zuo, ECMWF Rapporteur: Matt Martin, Met Office	
	Data assimilation systems and methodology 1 (6 talks) Chair: Anthony Weaver, CERFACS Rapporteur: Marcin Chrast, ECMWF	
12:25-12:45	Advancing ocean data assimilation towards a JEDI-based framework at the UK Met Office Session 3: Methods, tools, and workflows	Sophia Moreton, Met Office
13:00-14:00	Lunch	

14:00-14:20	PDAF - Recent Developments for Open-Source Community Data Assimilation	Lars Nerger, AWI
14:20-14:40	Development of an Ensemble-Based Ocean Data Assimilation System at ECCC	Greg Smith, ECCC <i>(for Sergey Skachko, ECCC)</i>
14:40-15:00	Implementation of OceanVar2.0 in the Black and Mediterranean Seas analysis and forecasting systems	Daniele Bigoni, CMCC <i>(for Ali Aydogdu, CMCC)</i>
15:00-15:30	Coffee break	
15:30-16:10	Recent Developments in ROMS Data Assimilation and Applications	Hernan G. Arango, Rutgers
16:10-16:30	Multivariate data assimilation across ocean and sea-ice interface	Andrea Cipollone, CMCC
16:30-16:50	Discussion 1: Data assimilation systems and methodology Chair: Marcin Chrust, ECMWF Rapporteur: Anthony Weaver, CERFACS	
From 19:00	Optional self-paid dinner in Reading town centre	

Thursday 29 October

Time	Session	Author/Presenter
	Data assimilation systems and methodology 2 (4 talks) Chair: Marcin Chrust, ECMWF Rapporteur: Anthony Weaver, CERFACS	
09:00-09:20	Data assimilation in the Met Office's 1.5km model of the North-West European shelf	James While, Met Office
09:20-09:40	Scale-dependent background-error covariance modelling, with application to ECMWF's ocean reanalysis system	Anthony Weaver, CERFACS
09:40-10:00	Modelling wide-swath altimeter observation error correlations with a regularised diffusion operator	Olivier Goux, CERFACS
10:00-10:20	A Multi-Tracer Data Assimilation Framework for Constraining Global Ocean Transport and Mixing	Nabir Mamnun, Imperial
10:20-10:40	Discussion 2: Data assimilation systems and methodology Chair: Anthony Weaver, CERFACS Rapporteur: Marcin Chrust, ECMWF	
10:40-11:10	Coffee break	
	Data assimilation systems and methodology 3 (4 talks) Chair: Andy Moore, UCSC Rapporteur: Santha Akella, NOAA	
11:10-11:30	Salinity improvements in the NOAA's US West Coast Ocean Forecast System (WCOFS)	Parisa Heidary, NOAA
11:30-11:50	From surface optics to subsurface ecosystem structure: how reflectance assimilation propagates beyond biogeochemistry	Polina Verezhenskaya, University of Liege
11:50-12:10	Assessing the new Met Office high resolution global ocean ensemble hybrid-3DEnVar system	Daniel Lea, Met Office
12:10-12:30	Updated Sea Ice Initialization in JEDI SOCA for the Global Forecast System	Dmitry Dukhovskoy, NOAA
12:30-12:50	Discussion 3: Data assimilation systems and methodology Chair: Santha Akella, NOAA Rapporteur: Andy Moore, UCSC	
13:00-14:00	Lunch	
	Reanalysis activities (3 talks) Chair: Hao Zuo, ECMWF Rapporteur: Sergey Frolov, NOAA	

14:00-14:20	Evaluation of a Coupled Regional Reanalysis for the Mediterranean Region Covering the period 1993-2024	Chunxue Yang, CNR-ISMAR
14:20-14:40	An Evaluation of the impact of ocean observations on a weakly coupled data assimilative Earth System Model. Developing NOAAs next reanalysis.	Joao Marcos Azevedo Correia de Souza, CIRES/NOAA
14:40-15:00	A post-process smoother for improving the past reanalyses with sparse observations	Yumeng Chen, Reading University
15:00-15:15	Discussion: Reanalysis activities Chair: Sergey Frolov, NOAA Rapporteur: Hao Zuo, ECMWF	
15:15-15:45	Coffee break	
	Impact of observations 1 (2 talks) Chair: Ann Kristin Sperrevik, Met Norway Rapporteur: Kristian Mogensen, ECMWF	
15:45-16:05	Impact of assimilating biogeochemical data from multiplatform observing systems on ecosystem indicators	Anna Teruzz, OGS
16:05-16:25	Assessing the Role of Soil Moisture and Land Memory in Northern European Extremes Using a Coupled Large-Ensemble Prediction System	Francois Counillon, NERSC
16:25-16:40	Discussion 1: Impact of observation Chair: Kristian Mogensen, ECMWF Rapporteur: Ann Kristin Sperrevik, Met Norway	
From 19:00	Optional pub trip in Reading town centre	

Friday 30 October

Time	Session	Author/ Presenter
	Impact of observations 2 (5 talks) Chair: Anna Teruzzi, OGS Rapporteur: Santha Akella, NOAA	
09:00-09:20	Dynamical Influences on Observation Impacts for Ocean Data Assimilation	Andrew Moore, UCSC
09:20-09:40	Assessing ocean observation impacts through the SynObs multi-system observing system experiments.	Jennifer Waters, Met Office
09:40-10:00	Impact of ocean observations on climate signals in ECMWF global ocean reanalysis system	Eric de Boisseson, ECMWF
10:00-10:30	Coffee break	
10:30-10:50	Impact of Ocean Observations on the ECMWF Ocean DA System and Medium-range Weather Forecasts	Hao Zuo, ECMWF
10:50-11:10	ECMWF OSES for long time scales: reanalysis and seasonal forecast	Magdalena Alonso Balmaseda, ECMWF
11:10-11:30	Discussion 2: Impact of observation Chair: Santha Akella, NOAA Rapporteur: Anna Teruzzi, OGS	
11:30-12:00	Workshop summary and closing remarks	TBD
12:00-13:00	Departures or optionally lunch	