



5th workshop on waves and wave-coupled processes

Programme

Wednesday Agenda

Agenda time displays according to the selected time zone.

The selected timezone is Europe/London

08:30 to 09:15	Opening	
08:30 to 09:00	Registration	
09:00 to 09:05	Welcome	Andy Brown (ECMWF)
09:05 to 09:15	Introduction Presentation slides Video recording	Jean Bidlot (ECMWF)
09:15 to 11:05	Session 1: Dynamics of ocean waves Chair: Hendrik Tolman	
09:15 to 09:55	Wave coupling effects in regional and global atmosphere-ocean modeling Presentation slides Video recording	Nobuhito Mori (Kyoto University)
09:55 to 10:15	Wave Breaking Probability in Highly Directional Seas Presentation slides Video recording	James Steer (University of Oxford)
10:15 to 10:35	Wave kinetics with the account for finite non-Gaussianity effects Presentation slides Video recording	Sergei Annenkov (Keele University)
10:35 to 11:05	Coffee break	
11:05 to 13:40	Session 2: Interactions between wind and waves Chair: Shuyi Chen	
11:05 to 11:45	Operational wave forecasting and two-way interaction of wind and waves Presentation slides Video recording	Peter Janssen (ECMWF)

11:45 to 12:05	Effects of atmosphere-surface ocean waves two-way coupling on the simulated climatology of the North Atlantic Presentation slides Video recording	Thomas Toniazzo (NORCE and Bjerknes Centre)
12:05 to 12:25	Updates on Wave Coupling for the next Global Forecast System GFSv17 Presentation slides Video recording	Jessica Meixner (NOAA/NWS/NCEP/EMC)
12:25 to 12:45	Adding wave model coupling to the Met Office GC5 global coupled modelling system Presentation slides Video recording	Nikesh Narayan (UK Met Office)
12:45 to 13:40	Lunch break	
13:40 to 15:40	Session 3 (Part 1): Wave-coupled effects in gas transfer and aerosol production and other processes where ocean waves are relevant Chair: Øyvind Breivik	
13:40 to 14:20	From wave breaking to air-sea fluxes of mass, heat, and momentum via bubbles and sea spray Presentation slides Video recording	Sophia Brumer (Laboratoire d'Aérodynamique)
14:20 to 14:40	Breaking Wave Whitecaps: Applying laboratory-derived results to field observations Presentation slides Video recording	Adrian Callaghan (Imperial College London)
14:40 to 15:00	Wind waves as a source of noise in the Earth system: opportunities for monitoring the stratosphere Presentation slides Video recording	Fabrice Ardhuin (LOPS)
15:00 to 15:40	Coffee break	
15:40 to 16:40	Session 3 (Part 2): Wave-coupled effects in gas transfer and aerosol production and other processes where ocean waves are relevant Chair: Erick Rogers	

15:40 to 16:00	Using High-Wind Observations to Constrain a Seastate-Dependent Air-Sea Heat Flux Parameterization with Spray for Use in Coupled Atmosphere-Wave-Ocean Models Presentation slides Video recording	Benjamin Barr (Woods Hole Oceanographic Institution)
16:00 to 16:20	Wave-Coupled Effects in the CO₂ Exchange and Spray Production near the Ocean Interface Presentation slides Video recording	Alexander Babanin (University of Melbourne)
16:20 to 16:40	Parameterisation challenge: Lake Titicaca Presentation slides Video recording	Jean Bidlot (ECMWF)
16:40 to 16:50	Comfort break	
16:50 to 18:00	Day 1 wrap-up Rapporteurs: Josh Kousal and Øyvind Breivik	
16:50 to 18:00	Discussion, retirement presentations and poster introductions Video recording	
17:50 to 20:30	Posters	
18:00 to 20:30	Ice breaker and posters	

Thursday Agenda

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09:00 to 11:00	Session 4: Wave influences in the upper ocean Chair: Peter Janssen	
09:00 to 09:40	The wave-mediated ocean-atmosphere system Presentation slides Video recording	Øyvind Breivik (MET Norway)
09:40 to 10:00	REMOTE PRESENTATION: FIO-ESM: the earth system model coupled with ocean surface waves Presentation slides Video recording	Zhenya Song (First Institute of Oceanography, MNR)
10:00 to 10:15	On the impact of wave directionality in the ocean/wave coupling : Thanks to CFOSAT wave spectra Presentation slides Video recording	Lotfi Aouf (Meteo France, DIROP-CNRM)
10:15 to 10:30	Miniaturized, Multi-Purpose Drifter for Sea Surface State Monitoring Presentation slides Video recording	Alexey Mironov (eOdyn)
10:30 to 11:00	Coffee break	
11:00 to 13:40	Session 5: Wave-sea-ice interactions Chair: Nobuhito Mori	
11:00 to 11:40	Ocean waves in sea ice: dependence of dissipation on ice thickness for coupled wave modeling Presentation slides Video recording	Erick Rogers (U.S. Naval Research Laboratory)
11:40 to 12:00	Short-term wave and ice forecast for navigation assistance in the Arctic Ocean Presentation slides Video recording	Takuji Waseda (University of Tokyo)

12:00 to 12:15	Estimates of wave attenuation from ICESat-2 observations Presentation slides Video recording	Joey Voermans (University of Melbourne)
12:15 to 12:30	The evolution of wave directional properties in the marginal ice zone Presentation slides Video recording	Alberto Alberello (University of East Anglia)
12:30 to 12:50	Development of Wave-Sea Ice Interactions in the ECMWF Earth System Model Presentation slides Video recording	Josh Kousal (ECMWF)
12:50 to 13:40	Lunch break	
13:40 to 17:30	Session 6: Wave-current interactions Chair: Fabrice Ardhuin	
13:40 to 14:10	Wave-current interaction in operational wave forecasting Presentation slides Video recording	Trygve Halsne (Norwegian Meteorological Institute)
14:10 to 14:30	A Vortex-Force Formalization Implementation for Representing Wave Effects on Currents COMPAS -SWAN unstructured coupled modelling suite Presentation slides Video recording	Cagil Kirezci (CSIRO, Australia)
14:30 to 15:20	Group photo and coffee break	
15:20 to 17:10	Session 7: Wave-coupled processes in extreme conditions Chair: Sophia Brumer	
15:20 to 16:00	Atmosphere-Wave-Ocean Coupling in Extreme Conditions and High-Impact Weather Prediction Presentation slides Video recording	Shuyi Chen (University of Washington)
16:00 to 16:20	Redistribution of Air-Sea Momentum by Ocean Surface Gravity Waves and its affect on the simulation of cyclone Presentation slides Video recording	Lichuan Wu (Uppsala University)

16:20 to 16:40	Wave ensemble forecasting with a regional coupled system Presentation slides Video recording	Vivian-Angelina Fraser-Leonhardt (Met Office)
16:40 to 17:00	Wave model driven changes in ECMWF Earth System Model Presentation slides Video recording	Jean Bidlot (ECMWF)
17:00 to 17:10	Comfort break	
17:10 to 18:10	Day 2 wrap-up Rapporteurs: Josh Kousal and Øyvind Breivik	
17:10 to 18:10	Discussion Video recording	
18:30 to 20:30	Social / networking	
18:10 to 18:40	Pre-dinner drinks	
18:40 to 20:40	Dinner at ECMWF	

Friday Agenda

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09:00 to 10:45	Session 8: Wind, waves and turbulence Chair: Takuji Waseda	
09:00 to 09:15	Wind stress from the Ocean-Atmosphere Interaction Pilot Project in the Gulf of Mexico Presentation slides Video recording	Francesco Ocampo-Torres (CEMIE-Océano, México)
09:15 to 09:30	Misaligned Wind-Waves Behind Atmospheric Cold Fronts Presentation slides Video recording	César Sauvage (Woods Hole Oceanographic Institution)
09:30 to 09:45	Underestimate of ECMWF wind speeds in coastal areas Presentation slides Video recording	Luigi Cavaleri (Institute of marine Sciences, Italian National Research Council)
09:45 to 10:00	REMOTE PRESENTATION: Experiments on surface wave-turbulence interactions Presentation slides Video recording	Dejun Dai (First Institute of Oceanography)
10:00 to 10:15	On extreme events in random-phase NLS wavefields: onset of MI and the length of the domain Presentation slides Video recording	Agissilaos Athanassoulis (University of Dundee)
10:15 to 10:45	Coffee break	
10:45 to 13:10	Session 9: Coupling strategies Chair: Jessica Meixner	
10:45 to 11:25	Coupling strategies Presentation slides Video recording	Hendrik Tolman (NOAA / NWS)

11:25 to 11:45	A Particle-In-Cell Wave model for Efficient Sea State-Dependent Parametrization in Coupled Models Presentation slides Video recording	Momme Hell (Brown University / NCAR)
11:45 to 12:05	Towards energetically consistent coupling Presentation slides Video recording	Lars Czeschel (University of Hamburg)
12:05 to 12:20	Applications of SMC grid wave models in coupled systems Presentation slides Video recording	Jian-Guo Li (UK Met Office)
12:20 to 13:10	Lunch break	
13:10 to 15:00	Session 10: Data driven methods Chair: Trygve Halsne	
13:10 to 13:25	Do swells contribute to surface mixing? Results from machine learning models for SST diurnal warming and cool skin Presentation slides Video recording	Haoyu Jiang (China University of Geosciences)
13:25 to 13:40	The effect of atmospheric instability on wave growth Presentation slides Video recording	Fang Hou (National Marine Environmental Forecasting Center)
13:40 to 14:00	Application of machine learning in wave forecasting considering atmospheric instability Presentation slides Video recording	Xu Rui (National Marine Environment Forecasting Center)
14:00 to 14:30	ECMWF Machine Learning developments Presentation slides Video recording	Simon Lang (ECMWF)
14:30 to 15:00	Coffee break	
15:00 to 16:00	Day 3 wrap-up Rapporteurs: Josh Kousal and Øyvind Breivik	

15:00 to 16:00

Discussion and conclusions

[Presentation slides](#)

[Video recording](#)

End of the workshop
