



The Challenger Society of Marine Science

Surface Waves Special Interest Group

Online meeting 7th September 2020

Themes

The meeting will be groups by three themes. Though not mutually exclusive, we ask that you will chose to 'align' yourself with one of the three options below, for the purpose of structuring the meeting **NB if you have *not* chosen to be aligned with a theme in advance, you will be assigned one on the day**

Theme 1: Innovative technology

Be it satellite, radar, in situ field work / ship-based observations, or numerical techniques

- instrument development and the use of observations
- new developments in numerical wave models
- use of data assimilation
- innovations in laboratory work

Theme 2: Risk & Resource

Predicting and projecting wave risk, and getting the best out of wave energy. This includes

- wave energy resource and the impacts of waves on the environment.
- wave overtopping, vulnerability, and coastal flood risk
- future wave climate and sea-state forecasting
- risks to infrastructure and contribution to coastal erosion

Theme 3: Interactions

Improved understanding interactions between waves and the wider world, including

- air-sea fluxes and hydrodynamic interactions
- seabed disturbance and sediment transport
- model coupling
- wave energy device interactions
- non-linear wave physics and wave-wave interactions

Meeting Agenda

9:00 Zoom meeting opens, speaker lounge available

9:20 welcome / introduction

Session 1 9:30 -11:00

Round table introductions – Innovative Technology

Talk 1: **Ben Timmermans**: "Sea state variability and coastal extremes from the recent ESA CCI Sea State products"

Talk 2: **Dave McCann**: "Use of radar for nearshore wave mapping"

Talk 3: **Jian-Guo Li**: "Spherical Multiple-Cell grid and applications"

Talk 4: **Emma Ross** "Spatial dependence of extreme seas in the North East Atlantic from satellite altimeter Measurements"

Round table introductions – Risk and Resource

11am Coffee break

11:30 - 12:45 Session 2

Round table introductions – Interactions

Talk: **Matt Lewis** "coupled wave-tide ocean modelling with COAWST"

Talk: **Jean Bidlot** "Ocean wave effects in NEMO4"

Talk: **Fay Luxford**: 'Improving wave forecasting in Vietnam'

Talk: Iain Fairley: 'Classifying the global wave climate for the purposes of wave energy extraction'

Round table introductions – Miscellaneous

12:45 Lunch break

Afternoon discussions, including Invited panel:

Jean Bidlot, ECMWF

Andy Saulter, Met Office,

Lee Swift, Environment Agency

Peter Tromans, Ocean Wave Engineering Ltd

Judith Wolf, National Oceanography Centre

13:30 - 14:30 Discussion session 1: Future of wave science, Synthesis and Applications

Q1 What is the biggest limitation to wave model predictions (wind forcing, numerics, source terms, resolution, coupling, spectral vs. phase resolving, bathymetry)

Q2 Are in-situ, satellite observations and models really self-consistent enough (i.e. no biases) to allow users to simply 'plug and play' with datasets?

Q3 How does the quality of observations/models vary across the parameter space and range of conditions that users are interested in?

15:30 Tea Break

16:00 - 17:00 Discussion session 2: Knowledge transfer, Collaborations & Funding

Q4 Are the latest scientific developments making their way to industry and policy? What are the routes for this translation / knowledge transfer?

Q5: There is a great group of people here today from a range of backgrounds. From this we have gathered a 'directory' of wave expertise. How can we use this information and use this network?

Q6: How can we better collaborate between institutes represented here Where should we be looking to build partnerships and fund wave science?

17:00 closing remarks

17:15 close

Format

In 'round table' introductions session, be prepared to give a short (1-2 minute) introduction, including your name and institute, interests and experience working on surface waves.

Talks will be 15 minutes *including* questions. The 'chat' function will be active throughout the meeting for people to submit questions. These will then be asked by the session chair. At the of each talk there will also be an opportunity to us the 'hands up' function, to ask questions directly to the speaker.

Meeting etiquette

We will use the waiting room feature, to ensure only registered meeting participants will be admitted to the meeting. Please set you Zoom name to your real name to be permitted access

Upon entering the meeting all participants will be on mute. Please leave your microphones on mute whilst the speakers are in session to avoid any unnecessary background interference during the meeting. The host will unmute all participants with their hands up during the Q&A sessions.