Minutes

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Meeting date	Meeting
9 March 2021	NOOS Working Group Water levels and Waves

Present
Annette Zijderveld, Thorger Bruening, Katrijn Baetens, Jacob Nielsen, Johan Soderkvist, Carsten Hansen, Pieter Gurdebeke, Kai Herklotz, Mayuni Wilms, Stephan Dick, Sebastien Legrand, Kieran Lyons, Jochen Horstmann, Susanne Tamm, Marc Philippart, Caroline Gautier

NOOS Meeting Working Group on Water levels and Waves (WGWW)

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1 ad 1) AGENDA & GOAL MEETING

Marc Philippart is the chair for today. This MS-Teams meeting has been organised by Marc, Jacob and Caroline. The goal of the meeting is:
• to combine working groups on tides and waves
• to re-define needs and contributions
• to revive actions and ownership
• to define subtasks
• to help each other

2 ad 2) INTRODUCTION

Everybody gives a brief introduction of him/her self. Some keywords can be found in App A.

3 ad 3) SO FAR

• Jacob about water level data exchange
Jacob explains how the NOOS data exchange by DMI started with sea level forecasts around the year 2001 and later observations were added. The data exchange is running stable during almost two decades with 7-9 institutes joining. The data exchange for waves is done by the Dutch Rijkswaterstaat (RWS). Note that the real time data is not quality controlled. There is no regular validation, but Jacob validates every now and then, rather for scientists than for the public. Could we think of a public friendly single number to judge the model quality? For

instance, the “Wellington hit rate” (how often is the error in sea level prediction more than a rubber boot (20 cm) off?). Jacob suggests making some kind of annual NOOS product about the quality of the forecasts. The sea level forecast archive has data since 2002.
Links to model intercomparison studies: Sea level 2008-2012:
http://ocean.dmi.dk/validations/surges/noos_5year_stat/index.html
Surges 2010-2014:
http://ocean.dmi.dk/validations/surges/2013/compare_noos.uk.php
Wave height Ecmwf/LC-WFV (2018-)
https://confluence.ecmwf.int/display/WLW/WMO+Lead+Centre+for+Wave+Forecast+Verification+LC-WFV

• Caroline about wave data exchange
Caroline explains that the wave data exchange has been extended with wave forecasts since 2018, with some eight institutes involved now. For a number of locations with both observations and model results from various institutes the Bayesian Model Average (BMA) is assessed for wave height and swell wave height (see Noos.matroos.rws.nl/viewer). Ideas for improvements are: Indicate the various sources; Indicate the number of sources; Explain the various lines; Automatically include observations; Explain algorithm rules; Include more locations; Include more wave parameters.

• Marc about the BMA
Marc shows some BMA examples for water levels (27 locations) and waves (5 locations H1/3 3 locations swell) and some RMSE results.

4 ad 4) WHICH ISSUES TO PICK UP

Marc gives five suggestions that came from the preparation group.
- Data exchange, additional locations, parameters, etc
- Reference levels. The various countries have different Ordinance Levels, MSL and LAT. The difference between UK and the Netherlands O.D. is about 0.23 m. How to deal with this in for instance presenting and distributing the BMA results?
- BMA: optimal forecast based on member model output
- Evaluation, quality control
- Visualization

The group adds:
- Wind (Annette), especially off shore adds Jacob.
- Offshore wave observation locations (Jacob)
- Connection and relation to other EU data projects/portals

Some discussion points:
• Marc means to include data from additional existing stations, not to set up new measuring stations. Kai suggests indicating the additional value of new measuring locations, there are methods to find out (Martin Verlaan did so). For water level forecasts at the Dutch coast the observations near the UK coast are relevant, more than in the centre of the North Sea. For waves it is probably more useful to have data in the middle of the North Sea.

• Annette asks if we can include wind observations. They can be very valuable for forecasts during storms. Wind information from wind farms is not always suitable (influenced by the wind farm itself). The wind data is not always public and therefore probably less easy to share. Sebastien has doubts about the quality of satellite images near wind farms.

• Sebastien suggest finding out what the connections could be with other European data portals like CMEMS, SEADATANET, EMODNET and whether NOOS should be linked. Stephan asks for what purpose? For him the purpose is not to collect all that is available but to get the best for our own national services. Or has that changed now? Annette: It also depends on what is available now, observations and models have changed. Marc says that we need a kind of scouting team to see what is available and useful.

• Kai mentions that originally no wind farmer was interested to share its data with BSH. But the new sea state portal by Muyami helped in showing that BSH has something to offer in return, making some windfarm owners willing to share (https://serviceportal.bsh.de).

• Sebastien asks if the observations should be validated or not. Marc suggests re-uploading them after validation, but Jacob mentions that that is very difficult in practise due to very inhomogeneous validation periods.

• Caroline asks if there should be a link with the working group on validation, but Sebastien thinks this is not so useful.

5 ad 5) ORGANIZE AND PARTICIPATE

The idea is to form a number of smaller subgroups. Marc asks everyone for their interests for participation, leading to the following table.

item	coordinator	support
Data exchange	Jacob/Caroline	Caroline (waves), Jacob, Sebastien, Annette, Kai, Mayumi, Thorger, Kieran, Jochen, Marc
Reference levels	Katrijn	Carsten, Martin Verlaan, Katrijn, Stephan, Pieter
BMA (also export)	Marc	Caroline (waves), Johan, Sebastien, Thorger, Marc
Evaluation, quality control*	Mayumi	Johan, Jacob, Sebastien, katrijn, Kai, Mayumi, Susanne, Kieran, Jochen
Visualization	Marc	Theo van Dam (confirmed), Marc (later on)
Wind	Annette	Caroline, Carsten, Annette, Pieter
Relation eu data projects	Susanne	Susanne, Vibeke (confirmed)
Just member	all	

*) Evaluation is about model results, quality control mainly about observations

• Marc asks if google analytics could be added to the NOOS website. Susanne says no but the website will be moved to Eurogoos in the future. Marc thinks that it is more important to make a nice annual product than a fancy website since he expects only few website visitors.

• Stephan: The output of the BMA should not just be numbers on the website. Could we have access to that data? for instance on the ftp box? Marc: Good idea. Sebastien: I fully support that.

• Jacob: Do we have anyone from the UK involved? The UK colleagues might also want to join a subgroup. Let's check and mention in these notes!
John Siddorn left UKMO, he has moved to NOC, Southampton.

• For each team a coordinator is chosen, to organize the next meeting with the sub group (and not necessarily to be the chair). It is up to the sub groups to organize further actions.

A Appendix A: list of participants and brief introduction

- Thorger Bruening (BSH) Implemented some scripts to get waves from DWD to NOOS
- Katrijn Baetens (RBINS) Member of coastal WG. support Sebastien. no contributions so far, relatively new
- Jacob Nielsen (DMI) WAM, Copernicus, marine ecology. NOOS: exchange sea level forecasts, a bit the validation. Also, observation data exchange
- Johan Söderkvist (GeoMETOC, Danish defence). Operational models, forecasts to NOOS
- Annette Zijderveld (RWS) Rejoining NOOS. storm surge forecasting, coasts and lakes. No concrete contribution, but a lot of questions. Platforms are being dismantled so less observations. wind farms are popping up, with observations? We need observations, also for the forecasts. That is one topic I would like to contribute. And forecast verification statistics.
- Carsten Hansen (GeoMETOC, Danish defence). Expert in waves and sea ice. surface drift, oil spill seatrack web and oil spill track.
- Pieter Gurdebeke (Flamish Hydrography). Recently started, 3 months ago. contributions: not yet, eager to learn.
- Kai Herklotz (BSH) responsible for marine environmental network. operational use of sea state measurements. these are combined now. NOOS contains many stations, offering a good test site for model validation. increasing measurements due to wind farms.
- Mayumi Wilms (BSH) (colleague of Kai). In situ sea state (no modelling). data quality control. data analysis. Sea state portal since a few months at BSH. ‘interested listener’
- Stephan Dick (BSH). Head of forecasting services department.
- Sebastien Legrand (RBINS). NOOS chair and provides wave forecasts
- Kyran Lyons (IMI). Operational model, surge and rescue, marine agriculture. provision of data, tide gauge and wave data. wants to learn what the WG is doing.
- Jochen Horstmann (HZG) Head radar department coastal regions. research on the effect of offshore wind farms. coastal changes due to waves, erosion. waves are included in semi-operational mode from the HF radar (Marc says that HF radar network in Rotterdam is dismantled)
- Susanne Tamm (BSH) Head of the data centre at BSH, in situ data, Copernicus. especially interested in sea level data, for Copernicus. waves is already a product. here as “observer”
- Marc Philippart (RWS) Responsible for the Dutch Operational forecasting systems, NOOS member for 25 years, RWS hosts the NOOS-Matroos, data availability guard and BMA.
- Caroline Gautier (Deltares), used to be in the working group on waves. working on the exchange of wave observations and forecasts.