



Q&A Webinar Metocean Study HKW

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Questions: from the audience

Answers given by: Maziar Golestani (DHI A/S), Miriam van Endt (Blix Consultancy), Marco Westra (Metocean Consult)

In the answers we refer to the report and database for the Metocean Desk Study. The report is published on <https://offshorewind.rvo.nl/windwaterw>

Question: The wind direction comparison at 100+m is good at some sites and not good at others. Why does this difference in the quality of the comparison occur?

Answer: The results are relatively high quality at all stations (for wind speeds at 100m), but there are more differences at stations close to the shore. This is due to CFSR resolution close the shore (~25 km). At offshore stations, such as HKW, results of the model wind speed are in good agreement with the measurements. They have also been aligned with the wind resource assessment.

Question: Have you also checked ERA5 wind and the new generation of ECMWF wind data which is extensively calibrated in the North Sea?

Answer: ERA5 & KNMI's wind atlas (KNW) has been extensively analyzed and reported in the MDS HKN report <https://offshorewind.rvo.nl/file/view/55040304/Report+-Metocean+Study%2C+version+October+2019+-+DHI>.

The conclusion was that ERA5 would not result into as good wave results as CFSR would. Especially for the extreme winds. ERA5 shows lower accuracy for extreme scenarios which is critical for design. It was found out that ERA5 is very good for normal conditions which was also the case for CFSR.

Question: Is it correct in slide 30 that the model missed the maximum wave over the area (close to the sand bank)? What was your solution to cover this maximum wave in the EVA analysis?

Answer: It is not correct that the model missed the maximum wave over the area. The slide 30 shows an example of wave convergence during a storm measured in 2019 (~2.5m Hm0). The model performs well overall considering all sea state conditions which is shown against EPL, K13 and other stations. During that example, the model is not reproducing the measurements, but that is just one case. There are other cases in which the model over-estimates or under-estimates. Overall, the model shows very good performance.

Question: Would it be possible to have access to the raw wave buoy data collected by FUGRO as part of the validation in the metocean measuring campaign?

Answer: Yes, the raw data will become available soon together with the 12 months report of the metocean measuring campaign.

Question: The bathymetry improved the model results with just 0.02 m (RMSE, slide 31), what are your recommendations regarding the EMODnet bathymetry?

Answer: The improvement is due to using EMODnet version 2018 and very small improvements (in the model quality compared to the measurements) were achieved compared to EMODnet version 2016. The main improvements of this study (compared to previous HKN study) is having longer data (and local bathymetry) and new J-EVA analyses. EMODnet version 2016 contained some errors, especially in the western part of Dutch coast and Belgian Waters. That's the reason why the update was made to EMODnet version 2018.