



## **Changes in extreme wave conditions of North West Europe, in response to high-end climate scenarios.**

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What will happen to the wave climate of North West Europe under a changing climate? This talk will focus on coastal changes in extreme sea levels, storminess and waves. We will consider the changes in mean annual maximum, which has a rather different signal to the changing mean wave climate.

Projections of coastal wave impacts under high-end climate change (RCP4.5 and RCP8.5) scenarios have been made, using CMIP5 climate model forcing to drive the WaveWatchIII wave model at global and regional scales. We have used Euro-CORDEX downscaled wind forcing at  $\sim 11$ km resolution as well as EC-Earth global winds for the present day to 2100 period.

We have explored the change in storm climate in the North Atlantic over this period and derived the changes in the coastal wave climate in order to estimate impacts of climate change on a European and local scale.

There are still uncertainties in the North Atlantic storms generated in the latest climate models and we examine the downscaled forcing data in order to estimate how well extreme winds are reproduced. We will discuss if and where the dynamical downscaling has added value to predictions of extreme waves at the coast.

The downscaled wave forecasts from this single model, will then be put into context of 8 global wave models, to investigate any robustness of future change signals in a multi-model ensemble.