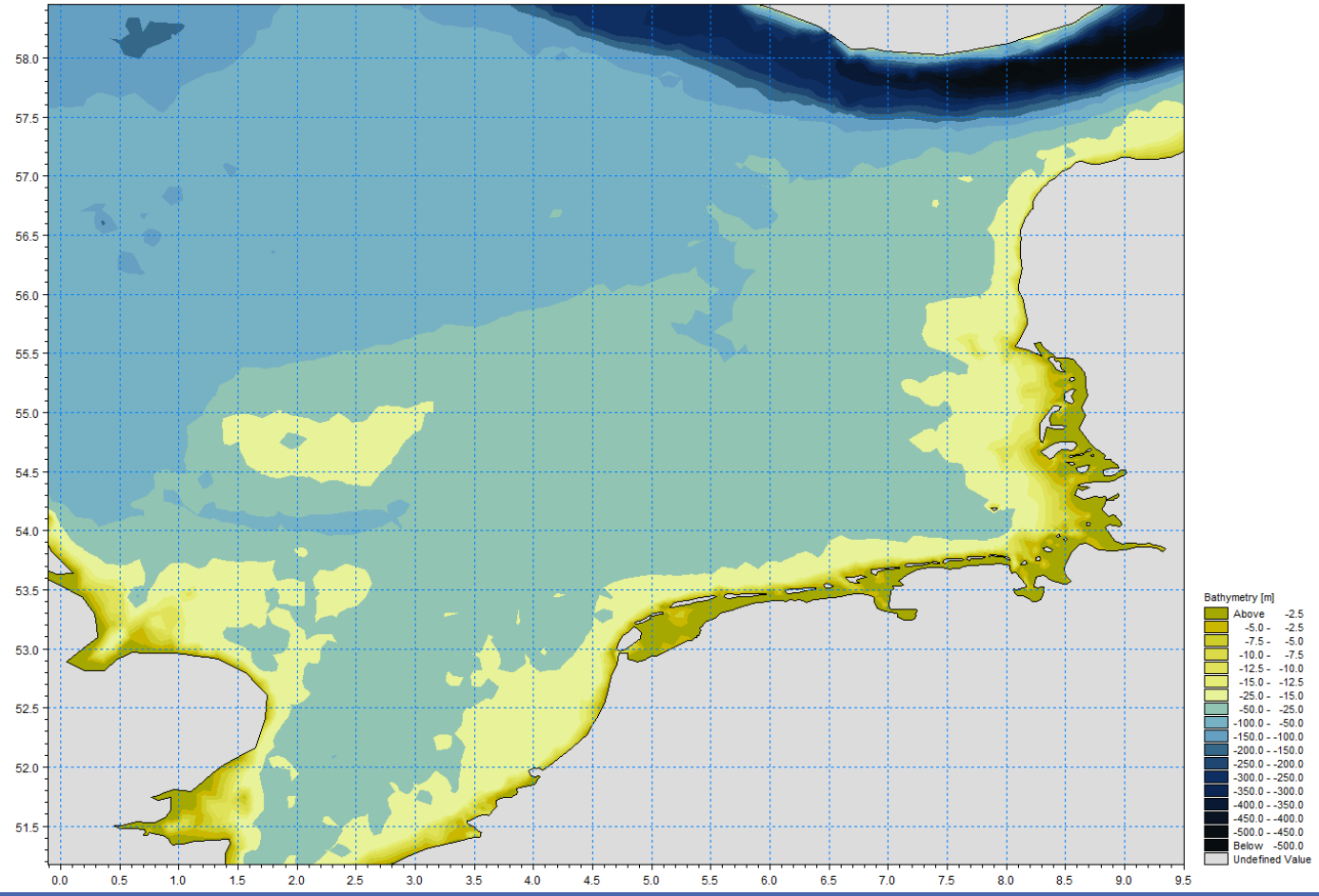
MetOcean Consult
Metocean and Hydraulic Concultancy

MetOcean Consult Southern North Sea Models

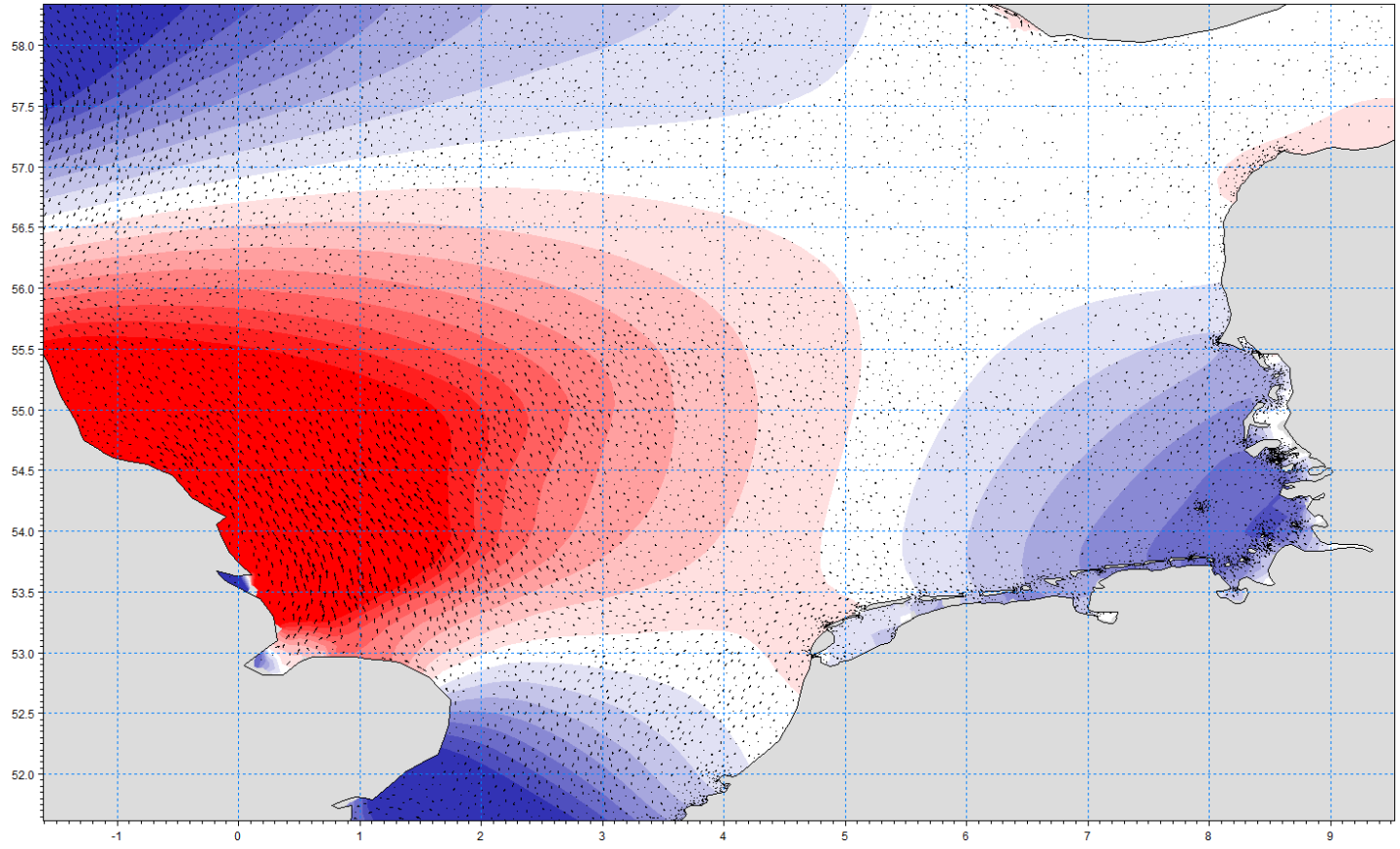
Southern North Sea Hydrodynamic model

- Iteration-0 model
- MIKE21-FM and DFLOW-FM grids
- Depth averaged
- High resolution bottom topography
- Stable and accurate overall behavior
- Project specific local model refinements to compute accurate current conditions
- Sub-grid features (turbines)



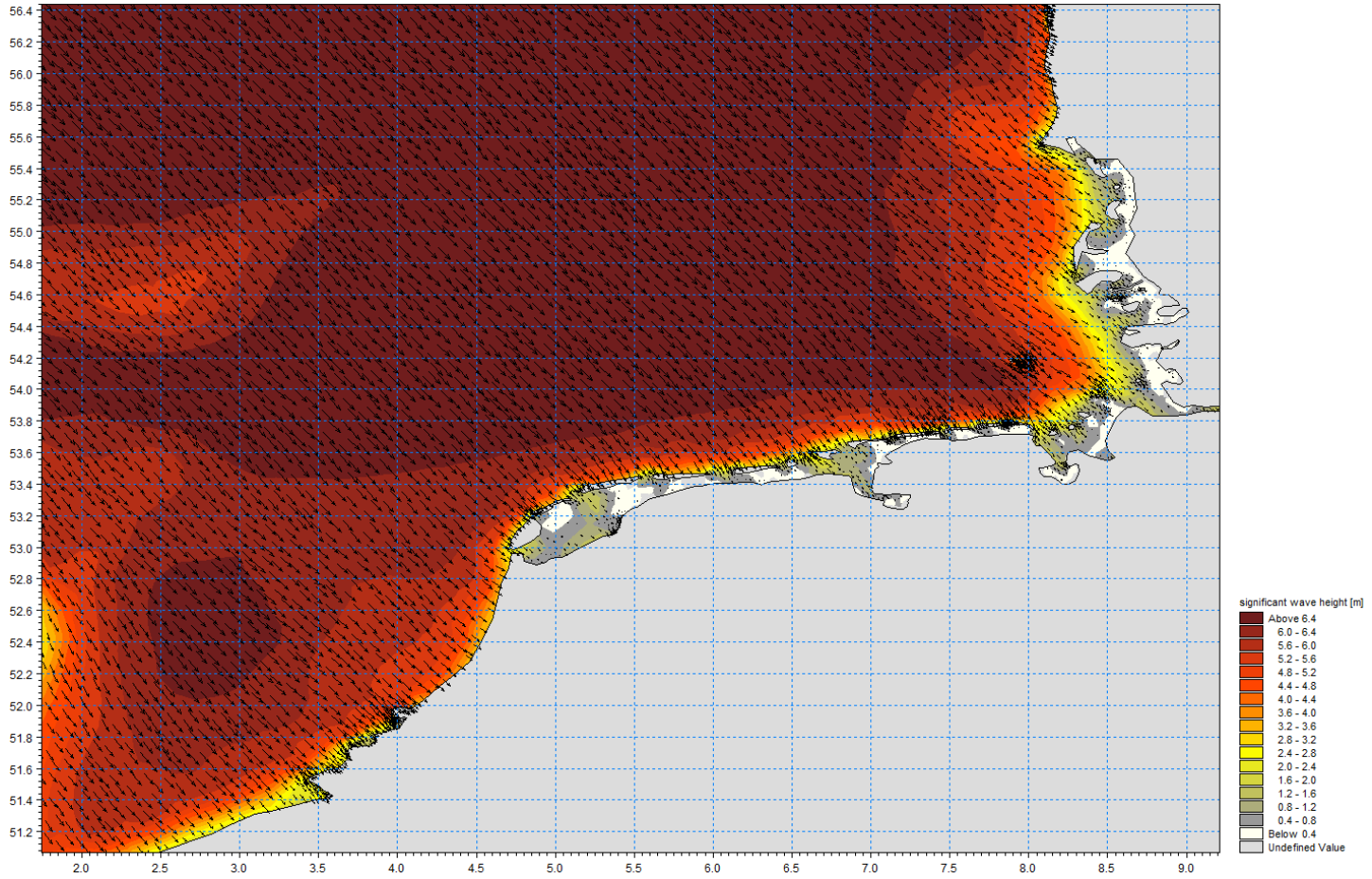
Southern North Sea Hydrodynamic model

- Local calibration needed based on project
- Tidal forcing with the most accurate available information (longterm satellite based inverse modeling)
- Historical winds fields
- Scenario evaluation (e.g. 100 yr. conditions)
- Forecasts (under development)



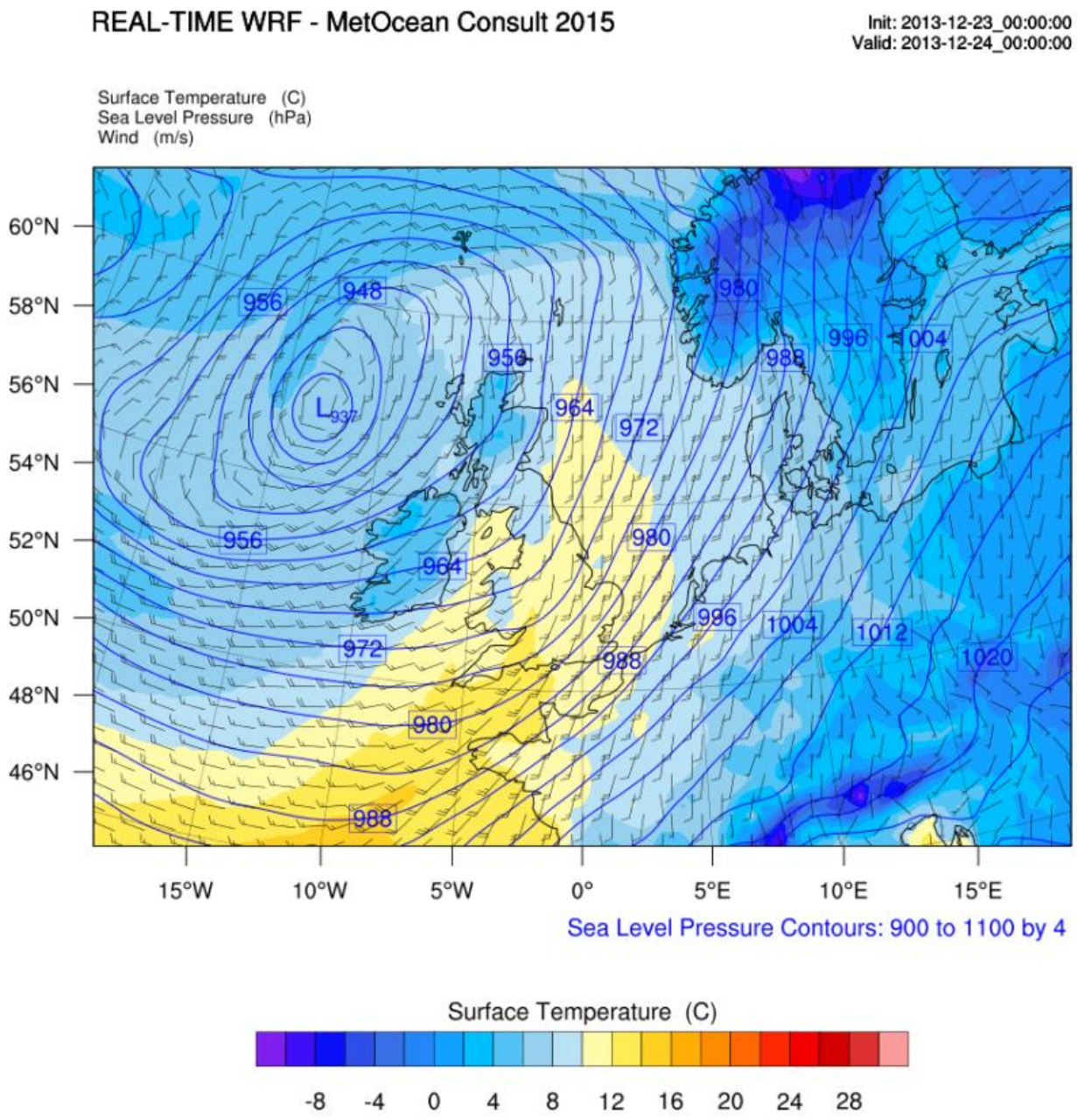
Southern North Sea (Spectral) Wave model

- WAVEWATCH-III, SWAN and MIKE21-SW grids
- Coupling with hydrodynamic module
- Subgrid features (turbines)
- Historical windfields
- Scenario evaluation (e.g. 100 yr. conditions)
- Forecast (under development)



North Sea Atmospheric model

- WRF high resolution atmospheric model (e.g. 27, 9, 3, .. km res)
- Forcing by NCEP/NOAA
- Full range of atmospheric parameters available (e.g. wind, pressure, rainfall, …)



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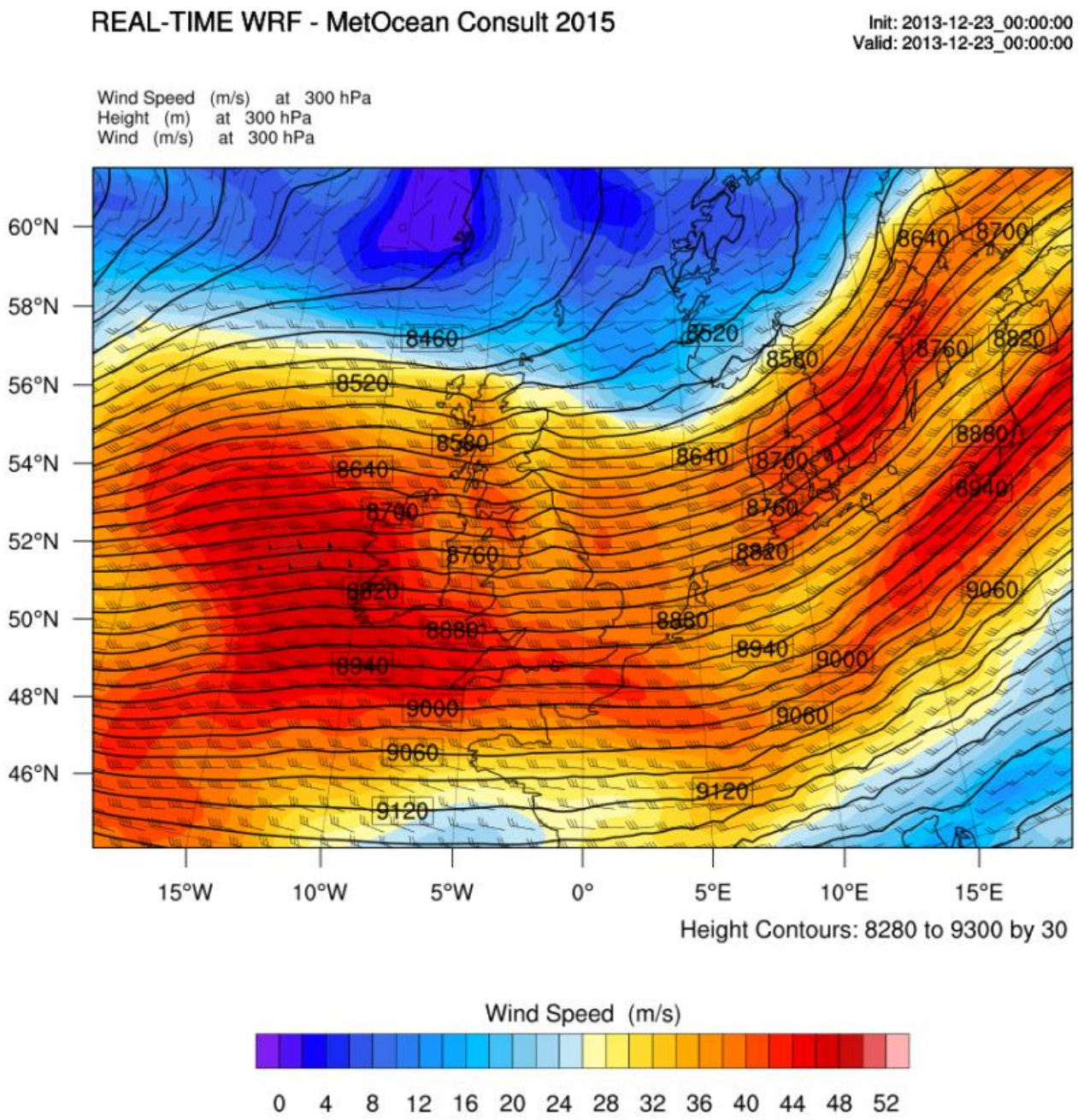
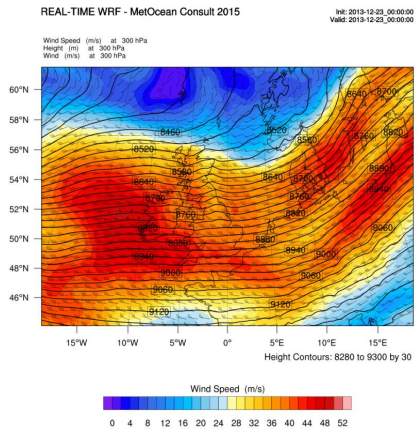
North Sea Atmospheric model

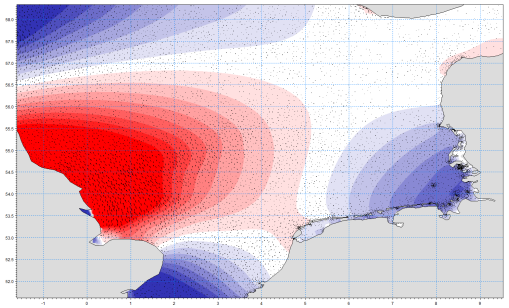
Applications (under development)

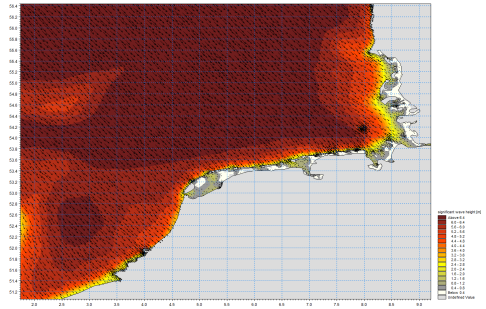
- Longterm climatology
- Forecasts
- Data assimilation (in-situ and satellite)
- Compute effects of sub-grid structures (e.g. wind farms) on local wind field climatology
- Large eddy simulation (~100m)



Developments







Coupling between atmosphere, hydrodynamic and wave models

All model output validated with observational data

- Longterm climatology
- Forecasting service
- Derived products