

Meso Scale Data



Introduction

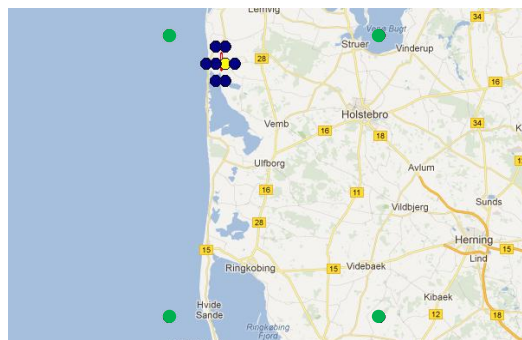
WindPRO 2.9 introduces a high resolution Meso scale data set covering Europe. The data are modelled in-house in collaboration between EMD and ConWx (<http://www.conwx.com>) who are experts in Meso scale modelling.

EMD-ConWx Meso Data, EUROPE

The Meso scale model is run at a high spatial resolution of $0.03^{\circ} \times 0.03^{\circ}$, approximately 3x3 km with hourly temporal resolution. ERA Interim data from ECMWF (<http://www.ecmwf.int>) is the global boundary data set.

Our new data set covers Europe including larger parts of Turkey and Ukraine, excluding the northern extreme of Scandinavia (see domain below). Timespan is at least 10 years back, extended to cover minimum 20 years during 2013. Data are updated monthly with app. 3 months delay defined by ERA Interims availability.

Data access is via WindPRO's user friendly interface to on-line data and payment of an annual subscription fee.



Blue/yellow dots illustrate nearest EMD-ConWx Meso scale grid points, green dots are nearest MERRA grid points for comparison.

Required modules/licenses

To access the EMD-ConWx Meso scale data the following licenses/modules are required:

- Basis
- MCP
- EMD-ConWx Meso Data, Europe

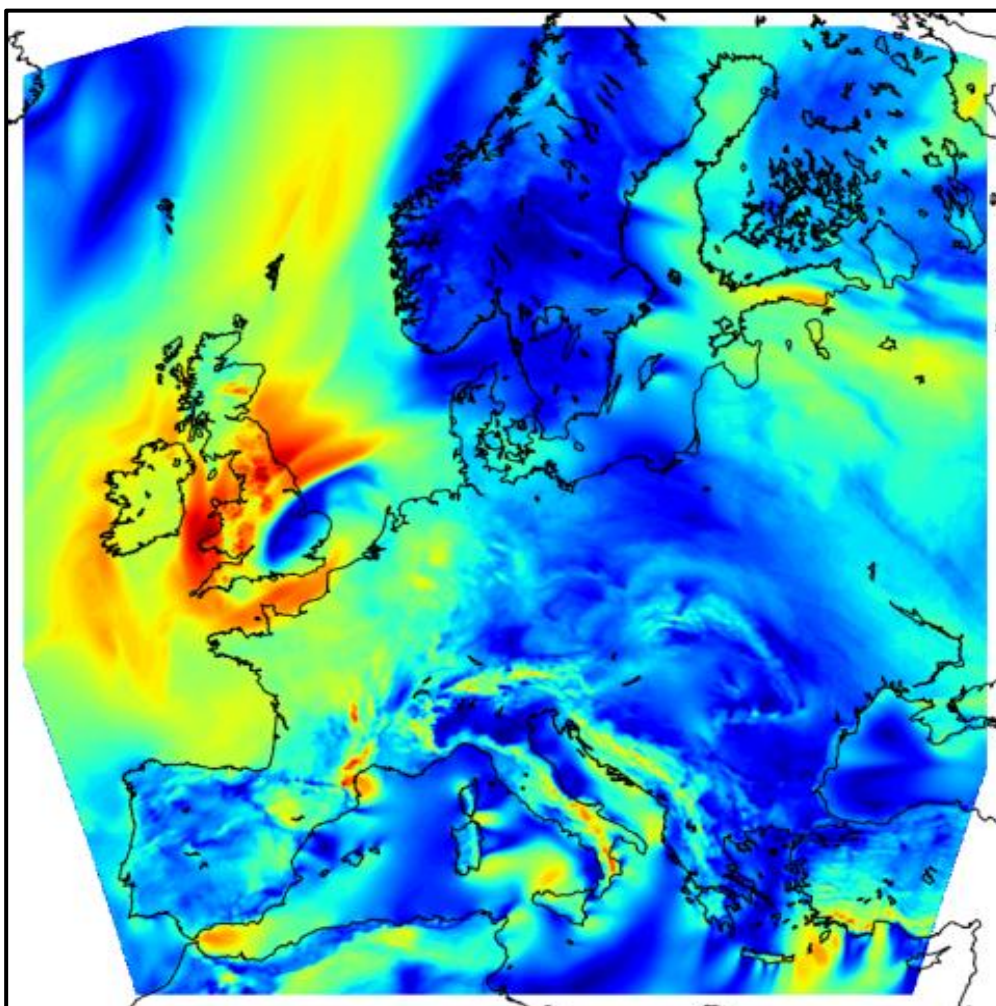


Illustration of the data coverage of the EMD-ConWx Meso Scale Data. Colors illustrate a snapshot of wind speed variations across Europe for one of the modeled hourly intervals.

Meso Scale Data



Comparison of EMD-ConWx Meso scale data at 100m (red) and wind speed measurements at 116m (green) from a site on the Danish west coast. First plot shows 10 days of raw data, second plot is monthly variation, third plot is diurnal variation, and the bottom plot shows distribution/Weibull fits and wind roses. Notice the well resolved and clear diurnal variation in stability (third plot) shown for all available heights (10, 25, 50, 75, 100, 150, and 200m).

Additional parameters included in the new Meso scale data set are: temperature (2 and 100m), pressure (surface and sea level), solar radiation, heat flux, relative humidity, cloud cover and several more.

