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ForWind

## **Current research topics in the EHF group Wind Energy Meteorology**

Current wind energy research activities of EHF are strongly focused on meteorological aspects of wind power. The aim is to describe the spatio-temporal characteristics of the wind field on different scales.

This is used to assess and predict wind conditions at onshore and offshore sites.

One main focus in our group is the simulation of atmospheric boundary layer wind fields for wind turbine and wind farm applications. With our main tools, the large-eddy simulation model PALM and the meso-scale weather and research model WRF we investigate topics such as: wind resources for different meteorological conditions, wind turbines wakes and their interaction with the atmospheric boundary layer, wind-farm flows offshore, onshore and in complex terrain and of course the validation with various types of measurements.

Another main focus in our group is energy weather forecasting and analysis. Current research topics include wind power forecasting, ensemble calibration & verification, spatial and temporal balancing of wind and solar power, storage and transmission modelling and characterisation of meso-scale wind and wind power fluctuations.

In my presentation I will give a general introduction to our group's work and then present various research topics in more detail.

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