Meso-scale Wind Variability. Final Report - DTU Orbit (08/12/2018)

Meso-scale Wind Variability. Final Report
The project has aimed to characterize mesoscale meteorological phenomenon for the North Sea and the Inner Danish waters, and additionally aimed on improving the predictability and quality of the power production from offshore windfarms. The meso-scale meteorology has been characterized with respect to the physical processes, climatology, spectral characteristics and correlation properties based on measurements from wind farms, satellite data (SAR) and mesoscale numerical modeling (WRF). The abilities of the WRF model to characterize and predict relevant mesoscale phenomenon has been proven. Additionally application of statistical forecasting, using a Markov switching approach that can be related to the meteorological conditions, to analyze and short term predict the power production from an offshore wind farms have been documented. Two PhD studies have been conducted in connection with the project. The project has been a cooperative project between Risø DTU, IMM DTU, DONG Energy, Vattenfall and VESTAS. It is registered as Energinet.dk, project no. 2007-1-7141.

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