



## **Reducing the uncertainty of near-shore wind estimations using wind lidars and mesoscale models**

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Many countries plan to meet renewable energy targets by installing near-shore wind farms, because of the high offshore wind speeds and good grid connectivity. Because of the strong relation between mean wind speed and the annual energy production, there is an interest in reducing uncertainty of the estimation of the wind speed in these coastal areas. Mesoscale models can provide a detailed spatial and temporal picture of the wind speed, but are known to have difficulties predicting the complex microscale processes. The RUNE project aims to provide recommendations on the use of lidar systems and mesoscale models results to find the most effective (cost vs. accuracy) solution of estimating near-shore wind resources.

Here we show first results of an intercomparison between the long-range WindScanner system, a multi-lidar instrumentation, that will be deployed during the experimental campaign in autumn 2015: wind speeds obtained from the simultaneous operation of three scanning lidars in a sector-scanning and dual-Doppler modes will be compared with measurements from a meteorological mast. We use the Weather Research and Forecasting (WRF) model to model wind speeds near the coast. Problems of a mesoscale model to model the wind speed for a smooth-to-rough and rough-to-smooth transition in a coastal area will be discussed.