



A Comparative Study of the WRF and Observation on Ramp event in South-western Coastal Region over the Korean Peninsula

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The accurate wind forecast information is important factor to manage future wind energy and recently the numerical weather predict (NWP) model has been applied to forecast wind for raising the wind energy capacity. The goal of this study is to evaluate WRF model performance on the prediction of wind ramp event that is suddenly increase or decrease of wind speed within 1 ~ 2 hours at turbine height. Model simulation with three domains (24.3, 8.1, and 2.7 km) has been carried out for April 2013 in south-western coastal region of the Korean Peninsula. The observed wind speed at 80 m height near the coastal area has been used was for model verification. Here, the ramp event is defined by the energy generated suddenly increase (ramp-up) or decrease (ramp-down) rapidly in response to change in wind velocity. The observed and simulated mean wind speeds are 5.45 and 5.51 ms⁻¹, respectively. The simulated and observed ramp-up events has counted 13 and 15 times. The ramp-up events are mainly occurred during daytime. The observed and simulated maximum wind speeds are 17.8 and 16.27 ms⁻¹ at this time. The number of observed and simulated ramp-down has shown 34 and 36 times. The ramp down events has been appeared during daytime and evening. The minimum wind speeds of observation and simulation during this phenomenon are 0.05 and 0.6 ms⁻¹. More detailed results that compared WRF with observation on ramp event will be present in poster session.