

Title: Conversion of power generation during wind shear

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This study aims at investigating the influence of wind shear and turbulence intensity in a North American Wind Farm through wind data analysis that was collected using LiDAR and SCADA data.

We assess three models for power production that account for wind speed and direction shear. Two are based on actuator disc representations, and the third is a blade element representation. We also ...

This study investigates the effects of wind shear and tower shadow on power output in terms of power fluctuation and power loss to estimate the capacity and quality of the power generated by a wind ...

Abstract Wind speed and direction variations across the rotor affect power production. As utility-scale turbines extend higher into the atmospheric boundary layer (ABL) with larger rotor diameters and hub ...

While wind shear and wind veer clearly affect power production, the variability in these effects suggests that interactions between the exact shape of the shear and veer profiles and the operating regime of ...

Understanding wind shear and its impact on turbine performance is crucial for optimizing wind energy generation. This phenomenon can significantly influence the efficiency and output of ...

This paper assesses wind shear and its effects on annual energy production from wind speed data on Phangan island, collected from December 2011 to November 2012 at locations 65 and ...

Using observed winds and power production over 6 months at a site in the high plains of North America, we quantify the sensitivity of a wind turbine's power production to wind speed shear and directional ...

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