

Title: Wang Xiaofei Wind Power Generation

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Is wavelet transform a novel wind power prediction model based on learning?

Conclusion A novel wind power prediction model based on learning approach was proposed in this study, which combined wavelet transform with Transformer to address the challenge of large prediction errors in extreme scenarios.

Can wavelet transform improve wind power prediction accuracy?

A novel wind power prediction model is proposed which integrates wavelet transform with the self-attention mechanism. It effectively captures multi-scale features in wind power time series, improving prediction accuracy.

Why is accurate wind power prediction important?

Wind power generation is subjected to complex and variable meteorological conditions, resulting in intermittent and volatile power generation. Accurate wind power prediction plays a crucial role in enabling the power grid dispatching departments to rationally plan power transmission and energy storage operations.

Does wind direction affect power generation?

As can be seen from Table 1, Pearson correlation coefficient shows a positive correlation between meteorological data and wind power at the height of 10 and 100 m. In these data, the correlation between wind direction and power is weak, indicating that wind direction has little effect on power generation.

The utilization of aggregated demand-side flexibility via demand response (DR) has become a promising pathway for the integration of renewable energy resources in power systems.

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Review activity for Sustainable energy, grids and networks. (10)

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Xiaofei Wang's 3 research works with 11 reads, including: Research on Voltage Stability and Control of DFIG Based on Power Limit Trajectory

Xiao-Fei Wang received the B.E. degree in electrical engineering and automation from North China Electric Power University, Baoding, China, in 2014. He is now a graduate for M.E. degree in the ...

With the increasing penetration of wind power, the transient synchronization stability of doubly fed induction generator (DFIG)-based wind turbines during grid faults has become a critical issue. While ...

The proposed hierarchical control framework is numerically validated on a synthetic distribution feeder in San Francisco, demonstrating the ability of the framework to provide privacy-preserving virtual power ...

Despite these benefits, accurate wind power prediction especially in extreme scenarios remains a significant challenge. To address this issue, a novel wind power prediction model based ...

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