

This paper presents a comprehensive review of machine learning techniques applied to wind power prediction, emphasizing their advantages over traditional physical and statistical models.

AI-based models in the field of wind power prediction have become a cutting-edge research subject. This paper comprehensively reviews the AI-based models for wind power ...

To harness wind energy and ensure a secure and stable power grid after wind power integration, precise predictions of wind power generation are imperative. Here, we apply one-year ...

As the world moves toward NetZero goals, ERSO looks to the latest insights from the GWEC Global Wind Report 2025 to better understand current trends and the future of renewable energy. In this ...

Abstract: Based on 20 wind power datasets from different regions, this article uses a series of feature engineering, data normalization, construction of training and validation sets, and five models ...

Accelerating population growth and ongoing technological progress have markedly intensified the global demand for electrical energy. This increase has caused a shift towards ...

With the development of artificial intelligence technologies, especially deep learning, increasing numbers of deep learning-based models are being considered for WS/WP forecasting due ...

In order to mitigate this uncertainty, it is crucial to improve the accuracy of generation forecasting methods for wind energy. This review explores various wind power forecasting methods, ...

By directly addressing the forecasting challenges of wind energy, this study supports improved resource management, grid reliability, and operational planning.

Research in wind power forecasting has developed a wide range of methods (Giebel and Kariniotakis, 2017; Tawn and Browell, 2022), including statistical (Riahy and Abedi, 2008), physical ...

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