

What is wind-photovoltaic combined power generation forecasting model based on multi-task learning?

Conclusion This paper introduces a wind-photovoltaic combined power generation forecasting model based on multi-task learning. The proposed model takes into account the spatio-temporal correlation between wind and photovoltaic power. The MIC method is firstly used to analyze the correlation between wind and photovoltaic power.

How can wind energy forecasting be a hotspot for development?

For the difficulties encountered in wind energy forecasting, we can start with big data, integrate the characteristics of the wind speed generation process, and combine rich time series forecasting methods to conduct more in-depth research on wind energy forecasting. This may also be a hotspot for development in wind energy in the future. 4.2.

Can wind power plant data be used to predict wind speed?

However, as wind power plant technology becomes more sophisticated, an increasing amount of unstructured data, such as motor temperature data, and satellite image data becomes available. Currently, there is little research on such data, but such data have great potential application value for effective and timely forecasting of wind speed.

What is the future of wind energy forecasting?

Based on the research results of big data and AI, we look forward to the future development of wind energy forecasting from two aspects: data and artificial intelligence forecasting technologies. Existing research on big data mainly focuses on exploring structured data, such as wind speed.

Why do we need a forecast for wind and photovoltaic power generation?

The ability to forecast wind and photovoltaic power generation in advance provides valuable insights for grid operators, energy traders, and renewable energy system planners. Accurate forecasts enable efficient load balancing and support decision-making processes related to energy storage and backup generation.

How many wind power stations are in the regional wind power cluster?

The regional wind power cluster contains three wind power stations. In addition to the annual power generation data of each wind power station, the historical dataset also encompasses five meteorological features for each station. These features include wind speed (WS), wind direction (WD), temperature (T), pressure (P), and humidity (H).

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