

# Short-term prediction of wind power based on TCN and the informer model

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## Abstract

In this study, a new short-term wind power prediction model based on a temporal convolutional network (TCN) and the Informer model is proposed to solve the problem of low prediction accuracy caused by large wind speed fluctuations in short-term prediction. First, an input feature selection method based on the maximum information coefficient is proposed after considering the problem of information interference caused by excessively large input features. A dynamic time planning method is used to select the optimal input step of historical power. Then, the combined forecasting model composed of TCN and the Informer is constructed in accordance with the numerical weather forecast and historical power data. Lastly, the pinball loss function is used to expand the prediction model into a quantile regression model, measure the effect of volatility, quantify the volatility range of prediction, and finally, obtain a deterministic prediction result. The actual measured data of wind farms in the Bohai Sea area are selected for analysis and calculation. Results show that the prediction model proposed in this study achieves better accuracy in deterministic prediction and interval prediction than the traditional model.

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