Short-term Load Forecasting with Model Averaging

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Abstract

Accuracy of load forecasting plays an important role in electric power company. Overestimation of electricity load requirement will waste unnecessary energy. On the other hand, underestimation will cause the electric power off due to lack of power supply. In this work, we will investigate two forecasting methods, one works directly with the original data, the other works with daily total and corresponding proportions on each time period. We will also use model averaging method to combine the two forecasts. The forecasting results will be evaluated by the mean absolute percentage errors (MAPE), peak absolute percentage errors, offpeak absolute percentage errors for the three years $(2013 - 2015)$ on the load forecasts, where the forecasting day and the next seven days, based on three weeks training data before the forecasting day, are provided to demonstrate the effectiveness of the current short-term load forecasting methodology. As Loads are affected by the national holidays, we will discuss different ways to do the analysis.

Keyword: Mean absolute percentage errors, semi-parameter regression model.