Report Outline

Fabian

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1 Introduction

A short introduction to the field of load forecasting and its relevance.
Description of the competition.

2 Review of related Work

Review previous work from Gefcom 2012. Distinguish between temperature and
load prediction.
Review papers with related approaches including but not limited to those that
can be found under the following link: http://blog.drhongtao.com/2014/08/recommended-papers-for-gefcom2014-contestants.html

3 Data

Description of the data made available for the competition

3.1 Temperature Data

3.2 Load Data

3.3 Basic exploration with Time Series Analysis Methods

Autocorrelation, include decompositions?

4 Feature 'Extraction'

Description of the features obtained from the data.

4.1 Calendar Features

hour, TOY vs. month

5 Models

Description of the Models (LM), GAM (more extensive), NN, RF

6 Analysis

What combination of features and models for temperature and load provide us with a good prediction accuracy with respect to Gefcom leaderboard?

6.1 Error Measures

Introduce error measures (RMSE, MAE, MAPE, PINBALL) and their differences here? Too late?

6.2 Temperature Modeling

6.2.1 Data Processing

average temperature vs. principal component

6.2.2 Effect on Load Prediction

Effect of temperature on load prediction evaluated using different methods: Mean over past years (yearly lag), LM, GAM, NN, RF vs. true temperature

6.3 Load Modeling

6.3.1 Performance of different Methods

GAM, NN, RF

6.3.2 Model Formulas

Evaluating the performance of different model formulas built with the features (GAM)

7 Conclusion

Draw conclusion based on the analysis done in the main part.