

Electricity market: Analysis and prediction of volatility

Abstract

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The last two decades can be characterized by restructuring of energy industry and the creation of new, competitive energy markets, where accurate forecasts of electricity prices and price volatility are valuable both to consumers and producers. The aim of this work is to analyse several models for prediction of the price volatility of electricity on the Czech Electricity Day-ahead market on price data provided by OTE, a.s. for years 2009-2014. This work compares 144 different models' configurations for three distinct classes of models — autoregressive models, GARCH models, and artificial neural network models. This work provides comparison based on five different criteria, each describing the model in different way.

Keywords: price prediction, volatility prediction, GARCH, neural networks, LSTM