

论文

基于周期波动及其影响分析的电力市场中长期电价预测

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摘要:

电力市场中的中长期电价受众多不确定因素影响, 很难用传统的经验统计方法建模预测。现有的预测方法一般从系统模拟角度出发进行预测, 需要较多的系统信息资料, 难度很大。本文采用经验模式分解将电价分解成多个相对独立的分量, 详细分析不同的因素对于这些分量的影响, 从不同的时间尺度分析电价的影响因素。根据分量的特点有针对性地选择时间序列和支持向量机建模预测。实例研究表明该方法适合于分析和预测复杂的中长期电价。

关键词: 经验模式分解 影响分析 中长期电价预测

Medium and Long Term Electricity Price Forecasting in Electricity Market Based on Periodic Fluctuation and Its Influence Analysis

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Abstract:

Under the influences of many uncertain factors, medium and long term electricity price is hard to forecast by traditional statistics method. Most of previous studies are based on the simulation of market system, which has difficulty due to the fact that much system information required is beyond available. Empirical mode decomposition was applied to decompose price into several intrinsic components intuitively. The influence of different factors on these components was discussed in detail, and then the influence on price was discussed in different time scales. At last time series and support vector machine were adopted for modeling according to the characters of the components. A case study shows that the proposed method is suitable for forecasting complicated medium and long term electricity price.

Keywords: empirical mode decomposition influence analysis medium and long term electricity price forecasting

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