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电力市场

基于残差周期修正的灰色电价预测模型

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摘要

电力市场中的电价曲线具有多周期、跳跃等特性，而呈指数增长的灰色GM(1,1)模型预测误差较大，为此，文章提出了基于残差周期修正的灰色电价预测模型。该模型不仅利用了灰色模型的优点，而且通过原始数据的平滑处理、初值条件的改进以及残差周期修正使预测曲线波动起来，使拟合曲线更加接近原始数据，大大提高了模型的预测精度。算例结果验证了该方法的可行性。

关键词 电力市场；电价预测；残差周期修正；灰色模型

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A Grey Model of Electricity Price Forecasting Based on Period Residual Modification

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Abstract

The electricity price curve in electricity market possesses the features of multicycle and strong fluctuation, whereas there is evident error in the prediction by grey GM(1,1) model with exponential growth, for this reason the authors propose a period residual modification based grey price forecasting model, which not only inherits the advantages of grey model but also makes the forecasting curve fluctuated by means of smooth processing of original data, improvement of initial condition and period residual modification. Thus the fitting curve is more close to original data and the prediction accuracy is greatly improved. Simulation results validate the feasibility of the proposed method.

Key words electricity market；electricity price forecasting；period residual modification；grey model

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