电力系统

电力市场运行状态的识别方法研究

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摘要
电力市场运行状态识别对防范市场风险具有重要意义。该文在借鉴Dyliacco关于电力系统状态划分成果基础上，简析了电力市场运行状态划分方法，提出判断市场状态的关键性特征指标。由于指标的大量性和复杂性，采用决策树方法进行市场状态识别。通过实例集的学习训练，采用基于信息熵的算法，形成可学习和判断未知市场状态的决策树模型。对2000年美国加州进行分析计算，结果符合实际情况，验证了该方法对市场状态识别和预警的有效性。

关键词　　电力市场　运行状态　决策树　状态识别

分类号　TM73

Research on Identification of Operation State in Electricity Market

Abstract
Identification of power market operation state is of importance to hedging market risk. Based on Dr. Dyliacco's research, the paper presents a new series of key index to identify the operation state of power market by a brief survey of the determining method of power market state. The decision tree method is applied in order to deal with the large quantity and complexity of index. Furthermore, the algorithm based on the information entropy is used to learn from a set of typical examples and thus to form the decision tree to identify the unknown state. The numeric analysis is carried out based on the data of California electricity market of 2000. The results show that the proposed methods can provide with the reasonable results in accord with reality and prove the effectiveness of the methods in market state identification and pre-warning.

Key words　　power market　operation state　decision tree　state identification

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