

动力经济

迭代竞价机制下发电商的贝叶斯学习模型

谭忠富 李莉 王成文

华北电力大学电力经济研究所 华北电力大学电力经济研究所 华北电力大学电力经济研究所

摘要：采用迭代思想设计电力市场的竞价机制可以促进发电商之间的竞争，促使其调整成本，降低报价，提高电能交易效率，但其应用可能由于迭代时间太长而受到限制。为此，研究了如何利用动态市场信息来缩短迭代时间，建立了发电商在迭代竞价机制下的贝叶斯学习报价模型。以系统边际出清价格的分布区间为学习对象，发电商在每轮报价结束后，根据所获取的新交易信息修改其对系统边际出清价格分布区间的先验认识，不断缩小学习范围，以更精确的预期修改报价，从而减少不必要的时间浪费。结合算例证明，发电商运用贝叶斯学习结果进行报价可以有效减少迭代次数，缩短迭代时间，提高竞价效率。

关键词：迭代竞价 贝叶斯公式 先验概率 条件概率 后验概率

Generators' Bayesian Learning Model Under Iterative Bidding Mechanism

TAN Zhong-fu LI Li WANG Cheng-wen

Abstract: The iterative bidding mechanism can prick up the competition among generators in electricity market, and force them to adjust costs so as to bid in lower, with the exchange market efficiency's promotion. However, its application might be blocked for the long iterative time. So how to reduce the last time according to the dynamic market information was researched. A generators' Bayesian learning bidding model was established, it regarded the market clearing price's distribution interval as the learning objective, and the generators revised their prio-awareness for it according to the captured market information after every bid ended, so the learning scope is narrowed, and they can bid more precisely and reduce the unnecessary time wasted. The given example proves that the learning model could reduce the time of iteration and improve the generator's bidding efficiency.

Keywords: iterative bidding mechanism Bayesian formula priori probability conditional probability posterior probability

收稿日期 2006-12-04 修回日期 1900-01-01 网络版发布日期

DOI:

基金项目:

通讯作者: 李莉

作者简介:

作者Email: sunnylili2006@yahoo.com.cn; lilinw2001@126.com

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