

通信与网络

认知无线网络空闲频谱共享的竞争与合作定价

汤海冰, 胡志刚

中南大学信息科学与工程学院, 湖南 长沙 410083

摘要:

在频谱贸易中, 价格是一个关键问题。针对认知无线网络中多个主用户的空闲频谱最优定价问题, 在竞争模型下, 基于非合作博弈论提出了竞争价格模型求解算法, 并证明了该算法收敛到唯一的纳什均衡; 在合作模型下, 通过求解原问题的对偶问题, 提出了合作价格模型求解算法, 并证明了该算法在步长足够小时收敛到全局最优解。仿真结果表明, 同已有的几个算法相比, 所提的两个算法速度更快, 取得的总收益相对更好, 且均能较快地靠近最优解。

关键词: 频谱贸易 空闲频谱 竞争 合作 定价

Competitive and cooperative pricing for idle spectrum sharing in cognitive radio networks

TANG Hai-bing, HU Zhi-gang

School of Information Science and Engineering, Central South University, Changsha 410083, China

Abstract:

In spectrum trading, pricing is a key issue. Aiming at pricing for idle spectrums in a cognitive radio network with multiple primary users, a competitive pricing solution algorithm based on the non cooperative game theory in the competitive pricing is proposed, and the algorithm converges to a unique Nash equilibrium is proved. In the cooperative pricing, a cooperative pricing solution algorithm by solving the dual problem of the original problem is proposed and the algorithm converge to the global optimal solution is proved if the step length is small enough. Simulation results show that the two proposed algorithms show better time efficiency and can obtain relatively better total revenues, and moreover the revenue values are very close to the optimal solution.

Keywords: spectrum trading idle spectrum competition cooperation pricing

收稿日期 修回日期 网络版发布日期

DOI: 10.3969/j.issn.1001-506X.2013.01.29

基金项目:

通讯作者:

作者简介:

作者Email:

参考文献:

本刊中的类似文章

1. 熊伟, 邢凤勇, 潘旭东, 彭应宁. 基于合作目标的动平台传感器偏差估计方法[J]. 系统工程与电子技术, 2011,33(3): 544-547

Copyright by 系统工程与电子技术

扩展功能

本文信息

▶ Supporting info

▶ PDF(1551KB)

▶ [HTML全文]

▶ 参考文献[PDF]

▶ 参考文献

服务与反馈

▶ 把本文推荐给朋友

▶ 加入我的书架

▶ 加入引用管理器

▶ 引用本文

▶ Email Alert

▶ 文章反馈

▶ 浏览反馈信息

本文关键词相关文章

▶ 频谱贸易

▶ 空闲频谱

▶ 竞争

▶ 合作

▶ 定价

本文作者相关文章

PubMed