

黄博,方旭明,陈煜,黄高勇.基于负载均衡的中继选择和频谱转移联合优化策略[J].通信学报,2014,(6):132~138

## 基于负载均衡的中继选择和频谱转移联合优化策略

### Load balance based relay selection and spectrum transition joint scheme

投稿时间: 2013-04-10

DOI: 10.3969/j.issn.1000-436x.2014.6.017

中文关键词: [多跳中继](#) [负载均衡](#) [中继选择](#) [频谱转移](#)

英文关键词: [relay network](#) [load balance](#) [relay selection](#) [frequency transition](#)

基金项目:国家重点基础研究发展计划(“973”计划)基金资助项目(2012CB316100);国家自然科学基金资助项目(61071108);中央高校基本科研业务费专项资金青年教师百人计划基金资助项目(SWJTU2011BR065EM)

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中文摘要:

针对负载均衡或热点覆盖无线中继网络,提出一种基于负载均衡的自适应中继选择和频谱转移联合优化策略。定义了一种衡量一个站点对周围同频站点干扰程度的干扰容量,为某站点对其他站点的干扰提供了量化分析指标。当用户申请接入时,首先根据各条链路的信道状况选择首选接入站点和备选接入站点,当首选接入站点负载过重而无足够资源使其接入时,对接入备选站点和与首选站点同扇区内的其他站点向首选站点进行频谱转移的性能进行比较,选择一种维持系统性能较好的方式接入。仿真结果表明,所提算法在中心小区的频谱效率和阻塞率都优于单一的基于负载均衡的中继选择策略和单一的基于负载均衡的频谱转移策略,并且平均干扰容量也最低,对周围小区的系统性能影响较小。

英文摘要:

For load imbalance or hotspot coverage wireless relay network, an adaptive load balance relay selection and spectrum transition joint scheme was proposed. An interference capacity of the stations was also proposed, which reflects the interference to the surrounding co-channel stations. The interference capacity provides a quantitative interference metric to the surrounding stations on the capacity of the system. When a user requires to access the system, the system chooses a preferred access station and an alternative access station for the user according to the channel quality. If the preferred access station is overloaded and does not have enough resources for the user, the performance between accessing to the alternative station and accessing to the preferred station with spectrum transition from other stations in the same sector were compared, and a better way was chosen to maintain the good system performance. The simulation results show that the spectrum efficiency and blocking probability of the proposed scheme in the center cell are superior to that of the independent relay selection scheme and the independent load balance based spectrum transition scheme, and the average interference capacity of the proposed scheme is the lowest, which has less impact on the performance of the surrounding stations.

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