

论文

一种无线Mesh网络中基于协同通信的多包接收方法

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收稿日期 2009-5-15 修回日期 2009-10-22 网络版发布日期 2010-4-26 接受日期

摘要

协同通信容许移动节点共享彼此的天线以构建虚拟多入多出系统, 可有效获得空间分集增益。为利用虚拟多入多出信道的分集增益, 该文提出了一种在无线Mesh网络上行链路中采用协同策略的多包接收方法。该方法中提出由发生冲突的Mesh终端及其协同节点构建虚拟多入多出信道, 且多天线Mesh路由器通过串行干扰消除算法来快速分离冲突包。理论分析和仿真结果表明该方法可充分利用空间资源, 相比NDMA和TDMA可有效提高系统的有效吞吐量并降低时延。

关键词 [无线Mesh网络](#) [协同通信](#) [虚拟多入多出](#) [多包接收](#) [包冲突解析](#)

分类号 [TN393](#)

A Multi-packet Reception Method Based on Cooperative Communication for Wireless Mesh Networks

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Abstract

Cooperative communication enables nodes to share their antennas to form a virtual multiple-input multiple-output system and achieve spatial diversity gain. Exploiting the diversity gain of V-MIMO channels, a multi-packet reception method is proposed to employ cooperative strategies in up links of wireless mesh networks. The method can support random amount of collided mesh clients by selecting cooperative nodes to form V-MIMO channels. Mesh routers with multiple antennas adopt the successive interference cancellation algorithm to receive separate the collided packets quickly. The theoretical analysis and simulation results show that the proposed method is capable of fully utilizing the spatial resources and outperforms the conventional NDMA and TDMA in terms of system throughput and transmission delay.

Key words [Wireless Mesh Network\(WMN\)](#) [Cooperative communication](#) [Virtual Multiple-Input Multiple-Output \(V-MIMO\)](#) [Multi-packet reception](#) [Packet collision resolution](#)

DOI: 10.3724/SP.J.1146.2009.00744

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