

论文

基于DSTBC-MC-CDMA的无线网络协同发射分集系统

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摘要

协同分集(cooperative diversity)技术通过使网络中各单天线用户共享彼此天线,形成虚拟的多天线阵列来实现发射或接收分集,可以有效地提高系统性能。该文提出无线网络中频率选择性衰落信道环境下的一种基于分布式空时分组码(Distributed Space Time Block Code, DSTBC)和MC-CDMA的协同发射分集方案,并给出了系统实现。建立了误码模型,探讨了协同用户间的信道状态信息(CSI)对系统误码性能的影响,分析了误码性能的上限,并给出了仿真结果。结果表明,DSTBC-MC-CDMA系统相对于未协同的MC-CDMA系统,获得了明显的性能增益。

关键词 [协同分集](#) [分布式空时分组码](#) [多载波CDMA](#) [频率选择性衰落信道](#)

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A Cooperative Transmit Diversity System Based on DSTBC-MC-CDMA in Wireless Networks

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Abstract

A novel system based on cooperative Distributed Space-Time Block Code and Multi-Carrier Code Division Multiple Access (DSTBC-MC-CDMA) is presented which works well in multi-user wireless networks with single-antenna user in frequency selective fading channel. And an analytical model for describing the symbol decoding error between the interusers is established to analyze the qualitative influence to the bit error rate (BER) performance of the system. Then the simulation is complimented to versify the analytic result above, and the diagrams also show that the BER performance of DSTBC-MC-CDMA outgoes MC-CDMA with distinctive gains.

Key words [Cooperative diversity](#) [Distributed Space-Time Block Coding](#) [MC-CDMA](#) [Frequency selective fading channel](#)

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