

论文

基于空时分组编码的协同通信系统性能的研究

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摘要

该文提出了一种基于空时分组编码的协同通信方案(WCC-STBC), 通过理论分析得到了系统的误码率传输特性, 并给出了Monte Carlo仿真结果。理论分析和仿真结果表明: WCC-STBC方案通过临近用户之间的空时协同发送可获得分集增益, 增益的大小与协同信道及各用户信道的传输特性有关。在误比特率为 10^{-3} , 两用户间协同信道的传输特性优于各用户(假设各用户传输特性相同) 5dB时可获得约3dB的分集增益; 一个用户信道的传输特性(假设其与两用户间协同信道传输特性相同) 优于另一用户5dB时, 信道传输特性较差的用户可获得约5dB的性能提升, 且较好信道用户的性能损失并不大, 仅约0.5dB。

关键词 [协同通信](#) [空时分组编码](#) [分集](#)

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Studies on Space-Time Block Coded Cooperative Communication System

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Abstract

A communication system With Cooperative Communication based on Space-Time Block Coding (WCC-STBC) is proposed in this paper. A closed-form expression of bit error ratio for WCC-STBC system is also derived. The results through computer Monte Carlo simulation show that the diversity gain, which is dependent on the characteristics of the user's individual channel and the cooperative channel between them, can be gotten in the WCC-STBC system. When BER is 10^{-3} , and if the cooperative channel between them is 5dB better than their individual's, about 3dB gain could be gotten in WCC-STBC system; and if one user's channel is 5dB better than his partner's, 5dB gain for the performance of the worse user could be improved while that of the better one is less loss, only about 0.5dB or so.

Key words [Cooperative communication](#) [Space-Time Block Codes\(STBC\)](#) [Diversity](#)

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