

空间相关信道下STBC-QOTDM性能分析

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摘要 对准正交时分复用(QOTDM)后的样点序列采用空时分组编码(STBC)构造出STBC QOTDM方式的多输入多输出(MIMO)系统, 利用高斯Q函数的变形表示式、

信道衰落的概率密度函数及其特征函数三者之间的积分关系推导出该系统在空间相关Rayleigh信道下由样点错误导致的符号错误概率(SEP)的闭式解, 该闭式解可以用于评价STBC QOTDM系统的误符号性能。对STBC QOTDM系统进行了Monte Carlo仿真, 验证了STBC QOTDM系统SEP的准确性。

关键词 [通信技术](#), [空时分组编码](#), [准正交时分复用](#), [多输入多输出](#), [高斯Q函数](#)

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Performance analysis of STBC-QOTDM over spatially correlated channels

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Abstract An Space Time Block Code Quasi-orthogonal Time Division Multiplex (STBC-QOTDM) for multi-input multi-output (MIMO) system was proposed, in which the QOTDM sample sequences are STBC before transmission. Based on the integral relationship among the modified Gaussian Q function, the probability density function, and the characteristic function of the channel, a closed form solution for symbol error probability (SEP) of STBC-QOTDM due to the sample errors over spatially correlated fading channels was derived. This form can be used to evaluate the SEP performance of the STBC-QOTDM system. Finally, Monte Carlo simulations of the system demonstrate the correctness of the obtained closed form solution.

Key words [communication](#), [STBC](#), [QOTDM](#), [MIMO](#), [Gaussian Q function](#)

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