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论文

# 新的V-BLAST系统次优天线选择

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摘要
该文提出新的基于ZF SIC检测的V-BLAST系统次优天线选择准则：最小化信道矩阵伪逆的最大行范数。基于贪婪选择思想，发射天线选择采用使得该范数增加最小的递增选择策略，接收天线选择采用使得该范数减少最大的递减选择策略。仿真表明所提出的新准则明显优于已有的最大第1检测层后处理信噪比准则，且相应的快速选择算法可以获得最优的基于最大最小准则的全搜索选择的大部分分集增益，而复杂度很低。

关键词 无线通信 天线选择 贝尔实验室垂直分层空时 干扰抵消 贪婪算法

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# New Sub-optimal Antenna Selection for V-BLAST Systems

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Abstract
A new antenna selection criterion for Vertical Bell Labs layered Space-Time (V-BLAST) systems based on Zero Forcing (ZF) Successive Interference Cancellation (SIC) detection, which is named minimizing the maximum row norm of the channel matrix, is proposed. Based on the greedy algorithm, incremental selection approach is used to minimize the increment of the norm step by step for transmit antenna selection, and decremental selection approach is used to maximize the decrement of the norm step by step for receive antenna selection. Simulations show the new criterion outperforms the existing so-called max-first layer criterion obviously, and the corresponding fast selection algorithm can obtain the most of the diversity benefit of the optimal exhaustive selection system based on the max-min criterion with a low complexity.

Key words Wireless communication Antenna selection Vertical Bell Labs layered Space-Time (V-BLAST) Successive Interference Cancellation (SIC) Greedy algorithm

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