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论文

V-BLAST系统中一种基于噪声分析的简化最大似然检测算法

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摘要
该文基于对贝尔实验室垂直分层空时系统中的噪声分析，提出了一种简化的最大似然检测算法。该算法选取多维空间中参考直线附近的若干信号点构成候选子集，并利用最大似然准则在该子集中选取合适的向量作为对发射信号的最终估计。性能分析和仿真表明，该算法在保证接近最优误码性能的前提下，具有更低的计算复杂度，并且解决了噪声增强问题。

关键词 贝尔实验室垂直分层空时 最大似然 噪声增强

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A Simplified Maximum Likelihood Detection Algorithm Based on Noise Analysis in V-BLAST System

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Abstract
A novel simplified Maximum Likelihood (ML) detection algorithm based on noise analysis is proposed for Vertical-Bell Labs Layered Space-Time (V-BLAST) system. This algorithm chooses the signal points near the reference line in a multi-dimension space to form the signal subset，finally selects the proper signal vector in the subset as final estimation of the transmitted signals based on ML algorithm. Theoretical analysis and simulation shows that the proposed algorithm not only guarantees the near optimum error rate performance, but also has lower computational complexity, and solves the noise enhancement problem.

Key words Vertical-Bell Labs Layered Space-Time (V-BLAST) Maximum Likelihood(ML) Noise enhancement

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