

论文

V-BLAST系统中一种近似最佳列表检测算法

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摘要:

针对V-BLAST系统, 提出一种近似最佳列表检测算法。该列表检测算法通过调节列表维数参数在检测性能和计算复杂度之间实现了较好的折衷。此外, 给出了一种不同于OSIC算法的检测排序方法, 进一步提高了检测性能。仿真和复杂度比较结果表明, 在不相关和空间相关性较强的信道下, 该列表检测算法均显著优于OSIC算法, 甚至接近ML算法的性能, 实现了性能和复杂度较好的折衷, 是一种实用的选择。

关键词: V-BLAST系统 排序连续干扰抵消(OSIC)算法 QRD-M算法 列表检测算法

A Near Optimal List Detection Algorithm in VBLAST Systems

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Abstract:

A near optimal list detection algorithm is proposed for V-BLAST systems. The trade-off between performance and complexity of the proposed list algorithm can be adjusted through setting the parameter P, which is the list dimension of the tree searching. Furthermore, a different detection ordering method from OSIC algorithm is proposed, which can greatly improve detection validity. Simulation results and complexity analysis show that list detection algorithm evidently outperforms OSIC algorithm and is even close to ML detection performance under both uncorrelated and highly correlated channels and achieves a good trade-off between performance and complexity. It is a preferable practicable choice.

Keywords: V-BLAST system ordered successive interference cancellation (OSIC) algorithm QR decomposition and M algorithm list detection algorithm

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