

论文

基于自适应调制的改进型V—BLAST检测算法研究

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摘要

根据检测顺序不同, 贝尔实验室垂直分层空时(V-BLAST)检测算法分为正序和逆序检测。本文针对自适应调制的特点首次将两种检测算法结合, 提出一种新的混合检测顺序。首先检测调制尺寸已达最大的饱和信道, 然后检测信噪比不能满足最低门限的无效信道, 最后按检测后信噪比距离门限值最近者优先的原则检测剩余信道。仿真结果表明, 在平均信噪比较高或较低时, 混合检测的频谱效率分别趋于正序或逆序检测, 当信噪比适中时, 新算法的频谱效率优于其它两种算法。

关键词 [贝尔实验室垂直分层空时](#) [自适应调制](#) [检测算法](#) [频谱效率](#)

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Study of Improved V-BLAST Detection Algorithm Based on Adaptive Modulation

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Abstract

Vertical-Bell Labs Layered Space-Time (V-BLAST) detection algorithm comprises forward and reverse ones according to different detection orders. Combining both algorithms, a novel detection algorithm is presented in this paper in view of the characters of adaptive modulation. New algorithm first detects the saturated channel with maximum modulation size, then detects the invalid channel which does not meet the minimum SNR threshold, finally detects the remaining channel as the criteria minimizing distance between post-detection SNR and threshold set. Simulation results show that the spectral efficiencies of proposed algorithm tend to forward or reverse order at high or low SNR respectively, and outperform the both at middle SNR.

Key words [BLAST \(Bell Labs Layered Space-Time\)](#) [Adaptive modulation](#) [Detection algorithm](#) [Spectral efficiency](#)

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