V-BLAST OFDM 系统中一种新的检测算法

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摘要　　提出了频率选择性衰落信道下V-BLAST (Vertical Bell Labs Layered Space-Time) OFDM (Orthogonal Frequency-Division Multiplexing)系统中一种新的检测算法. 在发射端对每个发射天线分配不同的子载波，在接收端利用子载波之间的正交性进行干扰相消. 该算法只需要一根接收天线，克服了传统算法要求接收天线个数至少等于发射天线个数的缺点，降低了系统接收机设计的复杂度，而且该算法性能优于传统的ZF(Zero-Forcing)和SIC(Serial Interference Cancellation)算法.

关键词　　OFDM　V-BLAST　子载波分组　干扰消除

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A novel detection algorithm for V-BLAST OFDM systems

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Abstract

A novel detection algorithm is proposed for V-BLAST (Vertical Bell Labs Layered Space-Time) OFDM(Orthogonal Frequency-Division Multiple)systems. At the transmitter, different subcarriers are allocated to different layers, which makes subcarriers of different layers mutual orthogonal. At the receiver, the interference suppression based on orthogonal subcarriers is employed. Compared with the conventional serial interference cancellation algorithm which requires that the number of receive antennas be at least the same as that of transmit ones, the proposed algorithm needs only one receive antenna, so the complexity of the receiver decreases remarkably.

Key words　 OFDM　V-BLAST　subcarrier grouping　interference suppression and cancellation

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