论文

MIMO-OFDM系统中一种基于自适应滤波的信道估计方法

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摘要
该文提出了一种适用于MIMO-OFDM系统的基于自适应滤波器的信道估计方法，此方法在不需要任何信道统计信息的前提下，通过自适应滤波的方法对时变信道状态参数进行即时跟踪与估计。仿真结果表明该文提出的基于自适应滤波的信道估计方法，相比于不考虑噪声的基于LS算法的信道估计方法，MSE和BER性能均有很大的提高。其中基于LMS滤波器的信道估计方法具有计算复杂度小的特点；而基于RLS的信道估计方法具有收敛速度快，MSE和BER性能均优于基于LMS方法的特点。

关键词　 MIMO-OFDM　信道估计　 RLS　LMS　LS

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A Method of Channel Estimation Based on Adaptive Filtering in MIMO-OFDM Systems

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Abstract
This paper proposes a method of channel estimation based on adaptive filters in wireless MIMO-OFDM systems. Though this method does not require any prior knowledge of channel statistics, it can track and estimate time-varying channel instantaneously with the help of adaptive filters. Simulation results have proved this method based on adaptive filters has better MSE and BER performances than another method based on the LS (Least Square) algorithm. The method based on LMS (Least Mean Square) filter has low computational complexity. Moreover, the method based on RLS (Recursive Least Square) filter has better performance and faster convergence than the one based on LMS filter.

Key words　 MIMO-OFDM　Channel estimation　 RLS　LMS　LS

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