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论文

基于子空间分解的OFDM信道盲辨识

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摘要
该文提出一种基于子空间分解的正交频分复用(OFDM)信道的盲辨识算法,将OFDM信号等效为单输入多输出的过采样信号,采用过采样信号的循环稳态特性和子空间分解方法估计信道参数,算法不需要任何训练序列和周期性的引导信号,实现了OFDM信道的盲辨识。对于宽带OFDM移动通信系统,通常子信道数较大,信道响应持续时间短于OFDM符号周期,因此,可以将整个系统分为若干个子系统,各子系统分别进行信道辨识,能有效地降低信道估算的复杂性。

关键词 正交频分复用 信道估计 盲辨识 子空间分解

分类号 TN929.5

Blind channel identification for OFDM based on subspace decomposition

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Abstract
In this paper, a blind identification algorithm based on subspace decomposition for OFDM channels is proposed. Taking the received OFDM signal as an equivalent Single Input-Multiple Output (SIMO) oversampled signal, the channel’s parameters are estimated by subspace method.Without any training sequences and periodic pilot signals, blind channel identification for OFDM system is realized. The broadband OFDM mobile communication system usually has a number of subchannels and its channels’ response period is less than the OFDM symbol’s period, so it is better to divide the whole system into several subsystems, then each of them can be estimated separately with less complication.

Key words OFDM Channel estimation Blind identification Subspace decomposition

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