

一种新的OFDM符号定时和频率同步方案

孙献璞, 金华峰, 王悦

西安电子科技大学 通信工程学院, 陕西 西安 710071

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摘要 提出了一种新的基于单个训练符号的OFDM系统的时频同步算法. 该算法在基于单个训练符号同步算法的基础上, 通过对训练符号的重新设计, 以一种新的方式引入了伪随机序列加权因子, 极大地提高了OFDM的同步性能. 仿真结果表明, 该算法可实现极高的符号定时性能, 同时保证了即使在多径信道下算法还具有很高的频偏估计精度.

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A new timing and frequency synchronization method for OFDM systems

SUN Xian-pu, JIN Hua-feng, WANG Yue

School of Telecommunications Engineering, Xidian Univ., Xi'an 710071, China

Abstract

A novel timing and frequency synchronization algorithm is proposed for orthogonal frequency division multiplexing (OFDM) systems requiring only one training symbol. Based on the analysis of the conventional methods, the proposed algorithm redesigns a modified training symbol which is weighted by the pseudo-noise (PN) sequence in a new manner. This algorithm can improve the synchronization performance greatly. Simulation results show that the proposed algorithm not only possesses better timing synchronization performance than the conventional method, but also ensures a higher accuracy of frequency synchronization estimation even in the multipath fading channel.

Key words [OFDM](#) [timing synchronization](#) [frequency synchronization](#) [multipath fading channel](#)

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