

一种OFDM系统中的同频干扰消除算法

赵婷婷* 赵玉萍*

北京大学信息科学技术学院电子学系 北京 100871

A Co-channel Interference Suppression Scheme in OFDM Systems

Zhao Ting-ting Zhao Yu-ping*

School of Electronics Engineering and Computer Science, Peking University, Beijing 100871, China

摘要

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摘要 该文研究正交频分复用(OFDM)系统中的同频干扰(CCI)问题。基于正弦信号模型, 该文提出一种基于最小均方误差(MMSE)准则的干扰时域估计与消除算法, 并进行仿真验证。仿真结果表明: 与现有算法相比, 该文提出的方法可以更为有效地抑制单频模型的CCI。同时, 该文提出的方法对干扰进行时域估计与消除, 减小了时频变换后的干扰能量泄漏, 并具有不依赖于信道估计, 避免直接清零造成的有用信息损失等优点。

关键词: 正交频分复用 同频干扰 最小均方误差 幅度/相位估计

Abstract: The issue of Co-Channel Interference (CCI) in the Orthogonal Frequency Division Multiplexing (OFDM) systems is studied in this paper. A time-domain estimation and elimination scheme of sinusoidal-modeled CCI is proposed based on the Minimum Mean Square Error (MMSE) criterion. It is proved by simulation that the proposed algorithm can suppress the CCI effectively. Compared with the existing scheme, the proposed time-domain method can avoid the interference leakage because of the time-to-frequency transformation, the dependence on channel estimation and the loss of useful data caused by directly erasing.

Keywords: Orthogonal Frequency Division Multiplexing (OFDM) Co-Channel Interference (CCI) Minimum Mean Square Error (MMSE) Amplitude/phase estimation

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通讯作者: 赵婷婷 Email: tingtingzhaopku@gmail.com

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