

基于加权的FBMC系统信道估计新算法

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摘要: 具有高频谱效率和低带外衰减的滤波器组多载波传输/偏移正交幅度调制(FBMC/OQAM)系统由于仅满足实数域正交条件, 在实际应用中固有干扰严重影响信道估计(CE)性能. 基于干扰消除的算法可以通过设计合理的导频结构消除导频周围固有干扰的影响, 该类方法简单, 但是信道估计的性能容易受到噪声的影响. 块状导频结构的子载波之间具有比较强的相关性, 导致信道估计结果中存在冗余信息. 为了利用这些冗余信息, 提出一种估计值加权的新算法, 以提高信道估计的性能. 仿真结果表明, 新算法的误码率性能明显优于传统算法.

关键词: FBMC; 信道估计; 固有干扰; 干扰消除算法

New channel estimation method for FBMC system based on weighed

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Abstract: Filter bank multicarrier transmission with offset QAM (FBMC/OQAM) with high spectral efficiency and low out-of-band attenuation only satisfies real domain orthogonal conditions, and the intrinsic interference may seriously deteriorate the performance of channel estimation (CE) in practice. The interference cancellation method can eliminate the inherent interference around the pilot by designing a reasonable pilot structure. This type of method is simple, but the performance of channel estimation is susceptible to noise. There is a strong correlation between the subcarriers of the block pilot structure, resulting in redundant information in the channel estimation result. In order to utilize the redundant information, a new algorithm of estimation weighting is proposed to improve the performance of channel estimation. The simulation results show that the error rate performance of the new algorithm is better than the traditional algorithm.

Key words: FBMC; channel estimation; intrinsic interference; interference cancellation method
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