Abstract

In this paper, we deal with the challenges regarding the provision of Inter Carrier interference (ICI) and Peak-to-Average Power Ratio (PAPR) for the performance evaluation of Multiple-Input and Multiple-Output Orthogonal Frequency Division Multiplexing (MIMO-OFDM). We propose a Non-linear Companding Technique (NCT) based on the inverse hyperbolic cosine function for PAPR reduction in OFDM symbol. Orthogonality among subcarriers is maintained and PAPR performance is achieved simultaneously by combing NCT and ICI cancellation techniques. Carrier to interference ratio (CIR) remains unchanged and extra Side Information (SI) is not required to recover the original signal as in the case of PTS and SLM techniques. Simulation results support BER improvement over existing methods in Additive White Gaussian Noise channel.

References

- M Sandell, J Coon, Near-optimal training sequences for MIMO OFDM systems with
- Physical Layer Aspects for Evolved UTRA, Std. TR 25. 814, Rev. 7. 1. 0, Sep. 2006.
- Shiann-Shiun Jeng, Member, IEEE, and Jia-Ming Chen, Student Member, IEEE," Efficient PAPR Reduction in OFDM Systems Based on a Companding Technique with Trapezium istribution"; IEEE TRANSACTIONS ON BROADCASTING, VOL. 57, NO. 2, JUNE 2011.
- Yong Wang, Jianhua Ge, Lihua Wang, Jing Li, "Reduction of PAPR of OFDM Signals Using Nonlinear Companding Transform"; Springer Science+Business Media, LLC. 2012

**Index Terms**

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Multiple-Input and Multiple-Output Orthogonal Frequency Division Multiplexing (MIMO-OFDM) Inter Carrier interference (ICI) Peak-to-Average power ratio (PAPR) and Non linear Companding Transform (NCT). Carrier to Interference ratio (CIR)

Bit Error Rate (BER).