Abstract

Increased data rates and reliability are the two key factors required to support emerging multimedia applications and new communications technologies. The two techniques used in high data rate transmission are orthogonal frequency division multiplexing (OFDM) and multiple-input multiple-output (MIMO) scheme. The OFDM is used to mitigate the problem of inter symbol interference (ISI) and provides good protection against co-channel interference and noise. MIMO system helps to reduce fading and can be used for decreasing bit error rate that is spatial diversity or to increase the data rate that is spatial multiplexing. The combination of MIMO and OFDM is MIMO OFDM system. MIMO-OFDM system converts frequency selective MIMO channel into multiple parallel flat fading channels. One of the major drawbacks of in MIMO-OFDM systems is that the transmitted signal exhibits a high PAPR when the input sequences are correlated. In this paper, AMS and PTS schemes have been used to reduce peak to average power ratio (PAPR) in multiple input multiple output orthogonal frequency division multiplexing (MIMO OFDM) system with Alamouti’s space time block coding (STBC). The AMS scheme reduces the computational complexity and when AMS scheme is used with quadrature amplitude modulation (QAM). Simulation and results show that the AMS scheme reduces PAPR more efficiently than the PTS scheme.
PAPR Reduction in STBC MIMO OFDM System using AMS and PTS Schemes

References


Index Terms

Computer Science
Signal Processing
Keywords

Alternate Multisequence (AMS)  Multiple Input Multiple output (MIMO)  Orthogonal Frequency Division Multiplexing (OFDM)

Space Time Block Codes (STBC)

Partial Transmit Sequence (PTS)

Quadrature Amplitude Modulation (QAM)