OFDM PAPR Reduction using Proposed Selective Level Mapping and π/4-Shifted-DQPSK Modulation

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Abstract
Recently π/4 shifted differential quadrature phase shift keying (π/4-DQPSK) modulation has attracted much attention since it is used for high-capacity code division multiple access (CDMA) based digital cellular systems. One of the major reasons behind the provision for differential detection which allows the production of low complexity mobile units. A selective-mapping type turbo coded OFDM scheme is proposed in which the interleaver of turbo encoder is varied to reduce the associated PAPR (peak to average power ratio). In the proposed model the analytical expressions for bit error rate (BER) of π/4-DQPSK modulation with fading channels is perturbed by additive white Gaussian noise (AWGN) which is described subsequently. Combination of DQPSK with SLM not only reduces the complexity at receiver but also it reduces PAPR of OFDM signal. The turbo encoder & decoder is designed in presence of AWGN channel. The simulink model is used at turbo encoder and decoder to receive the bits with minimum error at the decoder by varying number of iterations with the application of APP decoder.

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Index Terms

Computer Science Wireless

Key words

Turbo code OFDM
π/4-DQPSK modulation

selective level mapping for PAPR reduction