Exploiting ldpc codes for improving the performance of clipped-ofdm system

Filbert H. Juwono, author

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Abstrak

Orthogonal Frequency Division Multiplexing (OFDM) is a multicarrier transmission technique that becomes the best choice in wireless high-data-rate transmission. The drawbacks of OFDM are high Peak-to-Average Power Ratio (PAPR) and sensitivity to frequency offset. High PAPR decreases the amplifier's efficiency. The simplest PAPR reduction method is clipping, but it gives in-band and out-of-band distortion that degrades the performance of the system. There are various types of clipping, such as classical clipping, deep clipping, and smooth clipping. This paper analyses the use of low-density parity-check (LDPC) codes as an error correction coding (ECC) for those various types of clipping. The simulation results show that classical clipping gives the best performance in PAPR reduction and error probability.