

ML-Based Blind Frequency Offset Estimation Schemes for OFDM Systems in Non-Gaussian Noise Environments

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Abstract : This paper proposes frequency offset (FO) estimation schemes robust to the non-Gaussian noise for orthogonal frequency division multiplexing (OFDM) systems. A maximum-likelihood (ML) scheme and a low-complexity estimation scheme are proposed by applying the probability density function of the cyclic prefix of OFDM symbols to the ML criterion. From simulation results, it is confirmed that the proposed schemes offer a significant FO estimation performance improvement over the conventional estimation scheme in non-Gaussian noise environments.

Keywords : frequency offset, cyclic prefix, maximum-likelihood, non-Gaussian noise, OFDM

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