

Abstract:

Multiple input multiple output (MIMO) schemes combined with orthogonal frequency division multiplexing (OFDM) modulations are widely employed in broadband wireless systems. However, the transmitted signals are prone to nonlinear distortion effects due to their high envelope fluctuations. In this paper, we present a simple analytical method for studying nonlinear effects in MIMO-OFDM systems. Our method allows accurate results for the power spectral density (PSD) of the transmitted signals, as well as the signal- to- interference (SIR) levels at the detection level. It is shown that the robustness to nonlinear distortion effects increases with the number of transmit antennas (for a fixed number of independent data streams).

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