Abstract:

In this paper, we present a theoretical analysis for obtaining the minimum Euclidean distance between two nonlinearly distorted OFDM signals (Orthogonal Frequency Division Multiplexing). This analysis takes advantage of the Gaussian-like behavior of OFDM signals with a large number of subcarriers and can be employed to provide the asymptotic gain of the optimum receiver. This approach is then employed with several different nonlinear characteristics, showing that in general the optimum performance of nonlinear OFDM is better than linear OFDM.

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