Abstract

In today’s wireless communication, the efficient utilization of resources is the main concentration of engineers and spectrum is one of the most significant resources. So the aim is to exploit the bandwidth in a competent manner. From the repost of FCC it is known that the 70% of spectrum occupied by several mobile operators is not fully utilized that leaded me to the motivation for the development of spectrum efficient communication technologies. Therefore, in this paper SISO, MISO and MIMO OFDM and wavelet based OFDM systems are proposed, implemented with BPSK, 4QAM, 16QAM, 64QAM, their performances are investigated in terms of BER Vs. SNR and PAPR in Multipath Rayleigh fading channel. It is also proved that WOFDM is better than OFDM with 25% bandwidth efficiency. In addition, Orthonormal-wavelets (Haar, Daubechies, Coiflet and biorthogonal) are used instead of the conventional Fourier-based carriers.
- Anibal Luis Intini, "Orthogonal Frequency Division Multiplexing for Wireless Networks", Standard IEEE 802.11a, Electrical and Computer Engineering Department, University of California, pp. 6-7.

Index Terms

Computer Science
Keywords
Wavelet Based OFDM  Bandwidth Efficiency  PAPR  Orthonormal Wavelets
Multipath Rayleigh Fading Channel

BER

Multiple-Input Multiple-Output communications (MIMO)