Abstract

This research introduces a physical layer technique to enhance the capability of MIMO wavelet systems by using successive interference cancellation which enables the receiver to decode simultaneous data packets. The received power of the data packet was introduced to further optimize the receiver’s decision capability. Results show that a Discrete Wavelet Transform-based MIMO system with interference cancellation provides a performance gain as compared to a theoretical 2x2 MIMO channel in terms of BER vs. SNR performance. The performances of two different techniques have been evaluated in this work using interference cancellation both with and without consideration of received signal power.

References


**Index Terms**

Computer Science  Wireless

**Keywords**

OFDM, Wavelets, DWT, WPT, Zero-Forcing, Minimum Mean Squared Error.