Abstract

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A space wavelet block codes MIMO SC-WDMA systems

In this paper, a novel space-wavelet block codes single-carrier wavelet-division multiple access (SWBC SC-WDMA) multiple-input multiple-output (MIMO) transceiver is proposed. The proposed MIMO transceiver system improves both of the bit error rate (BER) performance and the peak-to-average power ratio (PAPR) performance. Bit error rate (BER) analysis of the proposed SWBC SC-WDMA system over a frequency Selective Rayleigh fading channel is presented for the case of zero-forcing (ZF) equalization and QPSK modulation. Comparisons of the BER and PAPR performances between the proposed SWBC SC-WDMA system and the conventional space-frequency block codes single-carrier frequency-division multiple access (SFBC SC-FDMA) system are illustrated. The simulation results show that the proposed SWBC SC-WDMA system has superior improvements in both PAPR and the BER performances.