**Combined Beamforming with Orthogonal Space Time Block Code for MIMO-OFDM with Simple Feedback**

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***Abstract***

*In this paper, we introduce a proposed scheme to enhance the performance of orthogonal space time block code (OSTBC) with four time slots and two antennas by combing OSTBC with random beamforming to can use it in the downlink transmission for a mobile system. Multiple-input multiple-output orthogonal frequency-division multiplexing (MIMO-OFDM) system has been recognized as one of the most promising techniques to achieve a good service and increase data rate in the next generation (4&5G) broadband wireless communications. So, we apply Space time block code (STBC) for MIMO-OFDM system with linear decoding. Also, we perform STBC with beamforming for MIMO-OFDM system to improve the performance of a system. Simulation results show that the beamforming improves bit error rate (BER) performance of OSTBC and STBC-OFDM for different types of modulation and diversity.*

***Keywords****: space time code, MIMO-OFDM, beamforming, maximum likelihood detection.*

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