## **Performance Evaluation of MIMO-OFDM Communication Systems**

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**Abstract :** This paper evaluates the bit error rate (BER) performance of MIMO-OFDM communication system. MIMO system uses multiple transmitting and receiving antennas with different coding techniques to either enhance the transmission diversity or spatial multiplexing gain. Utilizing alamouti algorithm were the same information transmitted over multiple antennas at different time intervals and then collected again at the receivers to minimize the probability of error, combat fading and thus improve the received signal to noise ratio. While utilizing V-BLAST algorithm, the transmitted signals are divided into different transmitting channels and transferred over the channel to be received by different receiving antennas to increase the transmitted data rate and achieve higher throughput. The paper provides a study of different diversity gain coding schemes and spatial multiplexing coding for MIMO systems. A comparison of various channels' estimation and equalization techniques are given. The simulation is implemented using MATLAB, and the results had shown the performance of transmission models under different channel environments.

Keywords : MIMO communication, BER, space codes, channels, alamouti, V-BLAST

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