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RESEARCH ARTICLE

Performance of Pre-Coded Spatially Multiplexed MIMO OFDM System

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Abstract— *Wireless communication systems suffer from fading and signal attenuation due to the mobility factor associated with it. OFDM (Orthogonal Frequency Division Multiplexing) is a multicarrier technique that offers high spectral efficiency. MIMO (Multiple Input Multiple Output) configuration provides enhanced capacity with the same transmit power. OFDM combined with MIMO offers increased diversity gain and system capacity in time variant and frequency variant channels. MIMO- OFDM configuration is found to perform better against multi-path fading and the varying channel conditions, than the conventional technologies. Precoding is a new technique that can be applied which helps to improve the performance of a MIMO OFDM system. In this paper, the BER performance of a MIMO-OFDM system using precoding is simulated for BPSK, QPSK, 16 PSK and 16 QAM modulation formats. A precoding matrix is computed at the receiver, and then fed back to the transmitter and BER performance was simulated. It was seen that the system performance improved significantly by using the precoding techniques.*

Keywords— *Precoding; Closed; Open-Loop MIMO-OFDM system; CSI - Channel State Information*

Full Text: <http://www.ijcsmc.com/docs/papers/ICMIC13/ICMIC13R3.pdf>