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Ber Analysis For Q-OFDMA Using OSTBC

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Abstract - Literature reported that a Quadrature OFDM (Q- OFDMA)system has been recently proposed in the single- input single-output environment to reduce the high peak -to-average power ratio (PAPR), high complexity in user terminal and sensitivity to carrier frequency off set (CFO) problems in current orthogonal frequency division multiple access (OFDMA) systems. Based on the relationship between frequency -domain signal and intermediate domain, we propose an OOSTBC encoded in the intermediate domain for Q-OFDMA systems to exploit the transmit -and receive- diversity. In contrast to extend spatial multiplexing techniques, where the main objective is to provide higher bit rates compared to a single-antenna system, spatial diversity techniques predominantly aim at an improved error performance. This is accomplished on the basis of a diversity gain and a coding gain. Indirectly, spatial diversity technique scan also be used to enhance bit rates, when employed in conjunction with an adaptive modulation/channel coding scheme. In order to further improve the performance of space-time coded MIMO systems, the space-time encoder can be concatenated with an outer channel encoder. This is of particular interest for OSTBCs, which offer only a diversity gain, but no built in coding gain.