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Research Article

Closed Loop Quasi-Orthogonal STBC for Multiple Transmitters and Multiple Receivers

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ABSTRACT

This paper presents how to design Quasi-Orthogonal Space Time Block Coding for multiple transmitting antennas and one receiver with feedback. Multipath wireless environment creates difficulty because of diversity at multiple receivers and multiple transmitters. Diversity is reduced by using Quasi-Orthogonal STBC. For simplicity we considered four transmitters and one receiver. The diversity is achieved by reducing the non-zero off diagonal terms of quasi orthogonal matrix and by reducing the number of phase rotations at the transmitter. The phase rotations are achieved by single phase and two phase methods with low number of feedback bits. In this paper we concluded that two bit feedback is better than three bit feedback which is achieved by calculation of BER (bit error rate). These techniques are effective over fading channels and indoor wireless networks with low data rate systems .with this method we can achieve low-complexity and full diversity.

Keywords: Full diversity, Space time Block Codes, Bit Error Rate. Phase feedback method.

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