

## Efficient Signal Detection Using QRD-M Based on Channel Condition in MIMO-OFDM System

**Authors :** Jae-Jeong Kim, Ki-Ro Kim, Hyoung-Kyu Song

**Abstract :** In this paper, we propose an efficient signal detector that switches M parameter of QRD-M detection scheme is proposed for MIMO-OFDM system. The proposed detection scheme calculates the threshold by 1-norm condition number and then switches M parameter of QRD-M detection scheme according to channel information. If channel condition is bad, the parameter M is set to high value to increase the accuracy of detection. If channel condition is good, the parameter M is set to low value to reduce complexity of detection. Therefore, the proposed detection scheme has better trade off between BER performance and complexity than the conventional detection scheme. The simulation result shows that the complexity of proposed detection scheme is lower than QRD-M detection scheme with similar BER performance.

**Keywords :** MIMO-OFDM, QRD-M, channel condition, BER

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