A Maximum Likelihood (ML) based OSTBC-OFDM System over Multipath Fading Channels

Foundation of Computer Science (FCS), NY, USA

Volume 130

Number 12

Year of Publication: 2015

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10.5120/ijca2015907142

Abstract

This paper proposes a space-time block-coded orthogonal frequency-division multiplexing (STBC-OFDM) scheme for frequency-selective fading channels which does not require channel knowledge either at the transmitter or at the receiver. This paper proposed a generalized maximum likelihood estimation decoding algorithm. Due to the orthogonality nature of STBC, the rule for decoding was reduced to a single step. The performance investigation of the proposed system was done over Rayleigh fading channel and also over the Rician fading channel. Simulation results reveal the performance of proposed STBC communication system is near optimum.

References

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Index Terms

Computer Science  Wireless

Keywords

MIMO, STBC-OFDM, Alamouti Scheme, Maximum likelihood estimator, BER.