Abstract

In order to satisfy the huge communications demands MIMO (Multiple input and Multiple Output) systems is one of the techniques which provide high data rates under the constraints of limited bandwidth and transmit power. Space-Time Block Coding (STBC) is based on MIMO transmission strategy which exploits transmit diversity. STBCs are divided into two main classes i.e. Orthogonal Space-Time Block Codes (OSTBCs) and Non-Orthogonal Space-Time Block Codes (NO-STBCs). The Quasi-Orthogonal Space-Time Block Codes (QO-STBCs) belong to class of NO-STBCs and have been our area of interest. Full data rate and full diversity can only achieved with QSTBCs with a small loss in the diversity gain. The foremost purpose of this work is to provide a unified theory of QSTBCs for four transmit antennas and one receive antennas.

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Index Terms

Computer Science

Communications

Keywords
MIMO, STBC, OSTBC, QSTBC