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3.3.1 Simplified QO-STBC model with real symbols only; 3.3.2 Decoding complexity of QO-STBC with CR; 3.4 Group-Constrained Linear Transformation; 3.4.1 Definition of GCLT; 3.4.2 Optimization of GCLT parameters; 3.4.2.1 GCLT of J4; 3.4.2.2 GCLT of J8; 3.4.2.3 GCLT of TBH8; 3.4.3 Performance comparison; 3.4.3.1 ML decoding complexity; 3.4.3.2 Decoding performance; 3.5 Chapter Summary; 4 . Quasi-Orthogonal Space-Time Block Code with Minimum Decoding Complexity; 4.1 Algebraic Structure of MDC-QOSTBC; 4.2 Square MDC-QOSTBC Design; 4.2.1 Definition of preferred AOD pair; 4.2.2 Relationship between MDC-QOSTBC and AOD through preferred AOD pair; 4.2.3 Lower bound on the code rate for square design; 4.2.4 Construction of preferred AOD pair; 4.2.4.1 Quaternion; 4.2.4.2 Systematic construction of preferred AOD pair; 4.2.4.3 Examples of MDC-QOSTBC constructed from preferred AOD pair; 4.3 Construction of MDC-QOSTBC from O-STBC; 4.3.1 Construction method; 4.3.2 Performance optimization; 4.3.2.1 Diversity product of MDC-QOSTBC; 4.3.2.2 Optimum CR angle for square- and rectangular-QAM; 4.3.2.3 Optimum CR angle for PSK; 4.3.3 Non-square MDC-QOSTBC design; 4.3.3.1 MDC-QOSTBC for odd number of transmit antennas; 4.3.3.2 Maximum code rate of square MDC-QOSTBC; 4.3.3.3 Maximum code rate of non-square MDC-QOSTBC; 4.4 Performance Results; 4.5 Chapter Summary; 5 . Differential QO-STBC; 5.1 DSTM Codeword Model and Design Criteria; 5.2 Unitary DSTM Based on QO-STBC; 5.2.1 Literature review; 5.2.2 Signal model of unitary DSTM scheme; 5.2.3 Double-symbol-decodable unitary DSTM; 5.2.3.1 STBC Unitary DSTM Based on Double-Symbol-Decodable QO-; 5.2.3.2 Design of constellation set; 5.2.4 Performance comparison; 5.2.5 Section summary; 5.3 Quasi-Unitary DSTM Based on MDC-QOSTBC

Sommario/riassunto

Quasi-Orthogonal Space-Time Block Code presents an up-to-date, comprehensive and in-depth discussion of an important emerging class of space-time codes, called the Quasi-Orthogonal STBC (QO-STBC). Used in Multiple-Input Multiple-Output (MIMO) communication systems, they provide transmit diversity with higher code rates than the well-known orthogonal STBC (O-STBC), yet at lower decoding complexity than non-orthogonal STBC. This book will help readers gain a broad understanding of the fundamental principles as well as the state-of-the-art work in QO-STBC, thus enabling them to appreciate