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Nota di contenuto	Bandwidth-Efficient Digital Modulation with Application to Deep-Space Communications; Table of Contents; Foreword; Preface; Chapter 1: Introduction; Chapter 2: Constant Envelope Modulations; 2.1 The Need for Constant Envelope; 2.2 Quadrature-Shift-Keying and Offset (Staggered) Quadrature-shift-Keying; 2.3 Differentially Encoded QPSK and Offset (Staggered) QPSK; 2.4 p4-QPSK: A Variation of Differentially Encoded QPSK with Instantaneous Amplitude Fluctuation Halfway between That of QPSK and OQPSK; 2.5 Power Spectral Density Considerations; 2.6 Ideal Receiver Performance 2.7 Performance in the Presence of Nonideal Transmitters 2.7.1 Modulator Imbalance and Amplifier Nonlinearity; 2.7.2 Data Imbalance; 2.8 Continuous Phase Modulation; 2.8.1 Full Response-MSK and SFSK; 2.8.2 Partial Response-Gaussian MSK; 2.9 Simulation Performance; References; Chapter 3: Quasi-Constant Envelope Modulations; 3.1 Brief Review of IJF-QPSK and SQORC and their Relation to FQPSK; 3.2 A Symbol-by-Symbol Cross-Correlator Mapping for FQPSK; 3.3 Enhanced

FQPSK; 3.4 Interpretation of FQPSK as a Trellis-Coded Modulation; 3.5 Optimum Detection; 3.6 Suboptimum Detection  
3.6.1 Symbol-by-Symbol Detection3.6.2 Average Bit-Error Probability Performance; 3.6.3 Further Receiver Simplifications and FQPSK-B Performance; 3.7 Cross-Correlated Trellis-Coded Quadrature Modulation; 3.7.1 Description of the Transmitter; 3.7.2 Specific Embodiments; 3.8 Other Techniques; 3.8.1 Shaped Offset QPSK; References; Chapter 4: Bandwidth-Efficient Modulations with More Envelope Fluctuation; 4.1 Bandwidth-Efficient TCM with Prescribed Decoding Delay-Equal Signal Energies; 4.1.1 ISI-Based Transmitter Implementation; 4.1.2 Evaluation of the Power Spectral Density 4.1.3 Optimizing the Bandwidth Efficiency4.2 Bandwidth-Efficient TCM with Prescribed Decoding Delay-Unequal Signal Energies; References; Chapter 5: Strictly Bandlimited Modulations with Large Envelope Fluctuation (Nyquist Signaling); 5.1 Binary Nyquist Signaling; 5.2 Multilevel and Quadrature Nyquist Signaling; References; Chapter 6: Summary; 6.1 Throughput Performance Comparisons; References

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#### Sommario/riassunto

An important look at bandwidth-efficient modulations with applications to today's Space programBased on research and results obtained at the California Institute of Technology's Jet Propulsion Laboratory, this timely book defines, describes, and then delineates the performance (power and bandwidth) of digital communication systems that incorporate a wide variety of bandwidth-efficient modulations appropriate for the design and implementation of space communications systems.The author compares the performance of these systems in the presence of a number of practical (non-ideal)

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