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Bibliography; 4 Convolutional Codes; 4.1 Convolutional Codes as Binary Trellis Codes; 4.2 Codes and Encoders; 4.3 Fundamental Theorems from Basic Algebra; 4.4 Systematic Encoders; 4.5 Systematic Feedback and Recursive Systematic Encoder Realizations; 4.6 Maximum Free-Distance Convolutional Codes; Appendix 4.A  
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8.5 The Factor Graph of Trellises8.6 Exactness of the Sum-Product Algorithm for Trees; 8.7 Binary Factor Graphs; Variable Node Messages; Parity-Check Node Messages; Log Likelihood Ratio (LLR); LLR Variable Node Messages; LLR Check Node Messages; 8.8 Normal Factor Graphs; Symbol Variable Replication; State Variable Replication; Bibliography; 9 Low-Density Parity-Check Codes; 9.1 Introduction; 9.2 LDPC Codes and Graphs; 9.3 Message Passing Decoding Algorithms; 9.4 Density Evolution; 9.5 Density Evolution for Binary Erasure Channels; 9.6 Binary Symmetric Channels and the Gallager Algorithms  
9.7 The AWGN Channel

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## Sommario/riassunto

Trellis and turbo coding are used to compress and clean communications signals to allow greater bandwidth and clarityPresents the basics, theory, and applications of these techniques with a focus on potential standard state-of-the art methods in the futureProvides a classic basis for anyone who works in the area of digital communications A Wiley-IEEE Press Publication

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