

1. Record Nr.	UNINA9910830666403321
Autore	Schlegel Christian
Titolo	Trellis and turbo coding [[electronic resource] /] / Christian B. Schlegel, Lance C. Perez
Pubbl/distr/stampa	Piscataway, NJ, : IEEE Press Hoboken, NJ, : Wiley-Interscience, c2004
ISBN	1-280-34600-0 9786610346004 0-471-66783-8 1-60119-385-8 0-471-66784-6
Descrizione fisica	1 online resource (402 p.)
Collana	IEEE Press series on digital & mobile communication
Altri autori (Persone)	PerezLance
Disciplina	621.382 621.3822
Soggetti	Error-correcting codes (Information theory) Trellis-coded modulation Digital communications Coding theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	TRELLIS AND TURBO CODING; CONTENTS; Preface; 1 Introduction; 1.1 Modern Digital Communications; 1.2 The Rise of Digital Communications; 1.3 Communication Systems; 1.4 Error Control Coding; 1.5 Bandwidth, Power, and Complexity; 1.6 A Brief History-The Drive Toward Capacity; Bibliography; 2 Communication Theory Basics; 2.1 The Probabilistic Viewpoint; 2.2 Vector Communication Channels; 2.3 Optimum Receivers; 2.4 Matched Filters; 2.5 Message Sequences; 2.6 The Complex Equivalent Baseband Model; 2.7 Spectral Behavior; 2.8 Multiple Antenna Channels (MIMO Channels); Appendix 2.A; Bibliography 3 Trellis-Coded Modulation3.1 An Introductory Example; 3.2 Group-Trellis Codes; 3.3 The Mapping Function; 3.4 Construction of Codes; 3.5 Lattices; 3.6 Lattice Formulation of Trellis Codes; 3.7 Rotational Invariance; 3.8 V.fast; 3.9 Geometric Uniformity; 3.10 Historical Notes;

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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