1. Record Nr. UNINA9910780732303321 Autore Viterbi Andrew J **Titolo** The foundations of the digital wireless world [[electronic resource]]: selected works of A.J. Viterbi / / Andrew J. Viterbi Hackensack, N.J., : World Scientific, c2010 Pubbl/distr/stampa **ISBN** 1-282-76153-6 9786612761539 981-4287-51-2 Descrizione fisica 1 online resource (189 p.) Collana IISc centenary lecture series ; ; v. 2 Classificazione ST 205 004.6 Disciplina 621.38 Soggetti Wireless communication systems Digital communications **Electronics** Wireless metropolitan area networks 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. CONTENTS; Preface; Brief Biography of Professor Andrew J. Viterbi; The Nota di contenuto Foundations of the Digital Wireless World (A Centenary Lecture by Professor Andrew J. Viterbi); Information Theory, Satellite Communication and Moore's Law; The Two Limits of Shannon; Convolutional Codes, Viterbi Decoding and Digital Satellite Television; The New Wireless Frontier: Personal Communication: Spread Spectrum Technology; Societal Benefits; 1. Phase-Locked Loop Dynamics in the Presence of Noise by Fokker-Planck Techniques Proc. IEEE. 1737 (1963).: PHASE-LOCKED LOOP DYNAMICS THE STEADY-STATE PHASE-ERROR PROBABILITY DENSITY FOR THE FIRST-ORDER LOOPMEAN TIME TO LOSS OF LOCK AND FREQUENCY OF SKIPPING CYCLES: STEADY-STATE PROBABILITY DISTRIBUTION FOR THE SECOND-ORDER LOOP; RANDOM MODULATION; OTHER ERROR FUNCTIONS; CONCLUSIONS AND COMPARISONS; ACKNOWLEDGMENT; REFEREICES: 2. Nonlinear Estimation of PSK-Modulated Carrier Phase with Application to Burst Digital Transmission IEEE Trans. Info. Theor.

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COMPARISON STANDARD; III. MAJOR RESULTS; IV. INTERPRETATION OF RESULTS AND SOME LIMITING CASES V. SIMULATIONS AND PRACTICAL DIGITAL IMPLEMENTATIONSVI. CONCLUSION; APPENDIX A; APPENDIXB; ACKNOWLEDGMENT; REFERENCES; 3. Error Bounds for Convolutional Codes and an Asymptotically Optimum Decoding Algorithm IEEE Trans. Info. Theor. IT-13, 260 (1967).; I. SUMMARY OF RESULTS; II. DESCRIPTION AND PROPERTIES OF THE ENCODER; III. THE LOWER BOUND; IV. A PROBABILISTIC NONSEQUENTIAL DECODING ALGORITHM; V. RANDOM CODING UPPER BOUND; VII. A SEMI-SEQUENTIAL MODIFICATION OF THE DECODING ALGORITHM; ACKNOWLEDGMENT; REFERENCES 4. Orthogonal Tree Codes for Communication in the Presence of White Gaussian Noise IEEE Trans. Commun. Technol. COM-15, 238 (1967). INTRODUCTION; THE ENCODNR; REFERENCES; 5. Convolutional Codes and Their Performance in Communication Systems IEEE Trans. Commun. Technol. COM-19, 751 (1971).; I. INTRODUCTION; II. CODE REPRESENTATION; III. MINIMUM DISTANCE DECODER FOR BINARY SYMMETRIC CHANNEL; IV. DISTANCE PROPERTIES OF CONVOLUTIONAL CODES: V. GENERALIZATION TO ARBITRARY CONVOLUTIONAL CODES: VI. GENERALIZATION OF OPTIMAL DECODER TO ARBITRARY MEMORYLESS CHANNELS VII. PERFORMANCE OF CONVOLUTIONAL CODES ON MEMORYLESS CHANNELSVIII. SYSTEMATIC AND NON SYSTEMATIC CONVOLUTIONAL CODES; IX. CATASTROPHIC ERROR PROPAGATION IN CONVOLUTIONAL CODES: X. PERFORMANCE BOUNDS FOR BEST CONVOLUTIONAL CODES

FOR GENERAL MEMORYLESS CHANNELS AND COMPARISON WITH BLOCK CODES; XI. PATH MEMORY TRUNCATION METRIC QUANTIZATION AND

## Sommario/riassunto

Professor Andrew J Viterbi has been extremely influential in the communications field via his invention of the Viterbi Algorithm, and his championing of CDMA technology developed by his company Qualcomm Inc. This book presents a selection of papers personally selected by him to mark his key technical contributions and his thoughts on CDMA technology as it evolved. <i>Sample Chapter(s) </i><br/>
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Chapter 1: The Foundations of the Digital Wireless World (3,852 KB)<br/>
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Contents: </i><br/>
Fokker-Planck Techniques

SYNCHRONIZATION; XII. OTHER DECODING ALGORITHMS FOR CONVOLUTION AL CODES; APPENDIX I; ACKNOWLEDGMENT;

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I. INTRODUCTION

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