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Nota di contenuto	<p>Intro -- Preface -- Organization -- Contents -- New Bounds for Linear Codes of Covering Radius 2 -- 1 Introduction -- 2 An Upper Bound on the Length Function <math>q(3,2)</math> -- 3 Upper Bounds on the Length Function <math>q(r,2)</math>, <math>r \geq 5</math> Odd -- 4 Comparison with the Previously Known Results -- References -- Multidimensional Decoding Networks for Trapping Set Analysis -- 1 Introduction -- 2 Preliminaries -- 3 Multidimensional Network Framework -- 4 Trapping Set Characterization -- 5 Representations Yielding Transitivity -- 6 Conclusions -- References -- Erasure Correction and Locality of Hypergraph Codes -- 1 Introduction -- 2 Preliminaries -- 3 Bounds on Regular Hypergraph Codes -- 4 Bounds on Biregular Hypergraph Codes -- 5 Conclusions -- References -- Reed-Muller Codes: Information Sets from Defining Sets -- 1 Introduction -- 2 Preliminaries -- 3 Information Sets for Abelian Codes -- 4 Cyclic Codes as Two-Dimensional Cyclic Codes -- 5 Reed-Muller Codes -- 6 Information Sets for First-Order Reed-Muller Codes -- 7 Information Sets for Second-Order Reed-Muller Codes -- 8 Conclusions -- References -- Distance Properties of Short LDPC Codes and Their Impact on the BP, ML and Near-ML Decoding Performance -- 1 Introduction -- 2 Preliminaries -- 2.1 Ensembles of Binary and Binary Images of Nonbinary Regular LDPC Codes -- 2.2 QC LDPC Codes -- 3 Stopping Redundancy and Convergence to the ML Decoding Performance -- 4 Upper Bounds on ML and BP Decoding Error Probability for Ensembles of LDPC Codes -- 5 Simulation Results -- 6 Discussion -- References -- Decoding a Perturbed Sequence Generated by an LFSR -- 1 Introduction -- 2 A Decoding Problem -- 3 The Decoding Algorithm -- References -- A Construction of Orbit Codes -- 1 Introduction -- 2 Preliminaries -- 3 Our Construction -- 4 Open Questions -- References -- Analysis of Two Tracing Traitor Schemes via Coding Theory.</p> <p>1 Introduction -- 2 Open Tracing Traitor Schemes - How Do They Work? -- 3 How to Compare t-IPP Codes and t-IPP Family of Sets? -- 4 New Lower Bound on the Size of IPPS Codes -- 4.1 The Previous Results -- 4.2 Constant Weight Codes with Large Distance and Traceability Set System -- References -- Reliable Communication Across Parallel Asynchronous Channels with Glitches -- 1 Introduction -- 2 Problem Formulation -- 3 Related Work -- 4 Coding Schemes -- 4.1 Single-Code Based Coding Frameworks (<math>W=1</math>) -- 4.2 A Multiple-Code Based Coding Framework (<math>W &gt; 1</math>) -- 4.3 A Comparison of the Efficiency of the Techniques -- 5 Summary -- A Appendices -- A.1 A Sketch of the Proof that the Transmission of Information Is Practically Error Free -- A.2 The Proof that When <math>R_{\max}</math> Is Maximized, the Density of Ones Tends to 1/2 -- References -- On the Kernel of Z2s-Linear Hadamard Codes -- 1 Introduction -- 2 Generalized Gray Map -- 3 Construction of Z2s-Linear Hadamard Codes -- 4 Partial Classification of Z2s-Linear Hadamard Codes -- 5 Conclusions -- References -- Random Network Coding over Composite Fields -- 1 Introduction -- 2 The Multicast Problem -- 3 Calculations in Composite Fields -- 4 Success Probability</p>

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### Sommario/riassunto

This book constitutes the refereed proceedings of the 5th International Castle Meeting on Coding Theory and Applications, ICMCTA 2017, held in Vihula, Estonia, in August 2017. The 24 full papers presented were carefully reviewed and selected for inclusion in this volume. The papers cover relevant research areas in modern coding theory, including codes and combinatorial structures, algebraic geometric codes, group codes, convolutional codes, network coding, other applications to communications, and applications of coding theory in cryptography. .

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