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Nota di contenuto	Part I Invited Talk: 1 Capacity of Higher-Dimensional Constrained Systems: B. Marcus -- Part II Communications: 2 From 1D Convolutional Codes to 2D Convolutional Codes of Rate 1/n: P. Almeida et al -- 3 A Coding-Based Approach to Robust Shortest-Path Routing: Á.I. Barbero and Ø. Ytrehus -- 4 Constructions of Fast-Decodable Distributed Space-Time Codes: A. Barreal et al -- 5 Cyclic Generalized Separable (L;G) Codes: S. Bezzateev -- 6 The One-out-of-k Retrieval Problem and Linear Network Coding: G. Bianchi et al -- 7 On the Error-Correcting Radius of Folded Reed–Solomon Code Designs: J. Brauchle

-- 8 SPC Product Codes over the Erasure Channel: S.D. Cardell and J. Climent -- 9 Complementary Dual Codes for Counter-Measures to Side-Channel Attacks: C. Carlet and S. Guilley -- 10 Input-State-Output Representation of Convolutional Product Codes: J. Climent et al -- 11 Burst Erasure Correction of 2D Convolutional Codes: J. Climent et al -- 12 Variations on Minimal Linear Codes: G. Cohenand S. Mesnager -- 13 Cryptanalysis of Public-Key Cryptosystems that use Subcodes of Algebraic Geometry Codes: A. Couvreur et al -- 14 Extending Construction X for Quantum Error-Correcting Codes: A. Degwekar et al -- 15 On the Fan Associated to a Linear Code: N. Dück et al -- 16 Lattice Encoding of Cyclic Codes from Skew-Polynomial Rings: J. Ducoat and F.Oggier -- 17 On Extendibility of Additive Code Isometries: S. Dyshko -- 18 The Extension Theorem with Respect to Symmetrized Weight Compositions: N. ElGarem et al -- 19 Minimal Realizations of Syndrome Formers of a Special Class of 2D Codes: E. Fornasini et al -- 20 Shifted de Bruijn Graphs: R. Freij -- 21 New Examples of Non-Abelian Group Codes: C. García Pillado et al -- 22 Cyclic Convolutional Codes over Separable Extensions: J. Gómez-Torrecillas et al -- 23 Reachability of Random Linear Systems over Finite Fields: U. Helmke et al -- 24 Classification of MDS Codes over Small Alphabets: J.I. Kokkala et al -- 25 On the Automorphism Groups of the Z2Z4-Linear Hadamard Codes and Their Classification: D.S. Krotov and M. Villanueva -- 26 Linear Batch Codes: H. Lipmaa and V. Skachek -- 27 An Extension of the Brouwer-Zimmermann Minimum Weight Algorithm; P. Lisonek and L. Trummer -- 28 On the Design of Storage Orbit Codes: S. Liu and F. Oggier -- 29 Hadamard Z2Z4Q8-Codes. Rank and Kernel: P. Montolio and J. Rifà -- 30 2-Designs and Codes from Simple Groups L3(q) and Higman-Sims Sporadic Simple Group HS: J. Moori and G.F. Randriafanomezantsoa Radohery -- 31 New Variant of the McEliece Cryptosystem: H. Moufek and K. Guenda -- 32 Power Decoding of Reed–Solomon Codes Revisited: J.S. R. Nielsen -- 33 On Fibre Products of Kummer Curves with Many Rational Points over Finite Fields: F. Özbudak et al -- 34 Hyperbolic Lattices with Complete Labeling Derived from f4g,4gg Tessellations: C. Quilles Queiroz et al -- 35 On Quasi-Symmetric 2-(64;24;46) Designs Derived from Codes: B.G. Rodrigues and V.D. Tonchev -- 36 Fractional Repetition and Erasure Batch Codes: N. Silberstein -- 37 Idempotents Generators for Minimal Cyclic Codes of Length pnq: G. Terra Bastos and M.Guerreiro -- 38 Reconstruction of Eigenfunctions of q-ary n-Dimensional Hypercube: A. Vasileva.

Sommario/riassunto

The topics covered in this book, written by researchers at the forefront of their field, represent some of the most relevant research areas in modern coding theory: codes and combinatorial structures, algebraic geometric codes, group codes, quantum codes, convolutional codes, network coding and cryptography. The book includes a survey paper on the interconnections of coding theory with constrained systems, written by an invited speaker, as well as 37 cutting-edge research communications presented at the 4th International Castle Meeting on Coding Theory and Applications (4ICMCTA), held at the Castle of Palmela in September 2014. The event’s scientific program consisted of four invited talks and 39 regular talks by authors from 24 different countries. This conference provided an ideal opportunity for communicating new results, exchanging ideas, strengthening international cooperation, and introducing young researchers into the coding theory community.