

2004 IEEE International Symposium on Information Theory
 Sunday, June 27 to Friday, July 2, 2004, Chicago, Illinois, U.S.A.

Preliminary Technical Program

May 12, 2004

Monday, June 28, 2004	8:30 to 9:30	Plenary Lecture Information Theory in Cryptography Ueli Maurer <i>ETH, Zürich</i> <i>Salons D and E</i>								
	9:50 to 11:10	Interference and Relay Channels <i>Salon D</i>	Random Graph Codes <i>Salon E</i>	Markov Sources <i>Salon F</i>	Secret Key Agreement and Group Security <i>Salon G</i>	Ad Hoc Networks <i>Salon H</i>	Two Dimensional Interleaving <i>Los Angeles Room</i>	Lossless Coding I <i>Denver Room</i>	Geometry of Information Divergence <i>Kansas City Room</i>	
	11:30 to 12:50	Network Information Theory <i>Salon D</i>	Fountain Codes <i>Salon E</i>	Entropy <i>Salon F</i>	Capacity Analysis and Secret Communication <i>Salon G</i>	Coding for MIMO Channels <i>Salon H</i>	Interleaver Design <i>Los Angeles Room</i>	Lossless Coding II <i>Denver Room</i>	Mathematics and Information Theory <i>Kansas City Room</i>	
	14:20 to 15:40	Communication on MIMO Channels <i>Salon D</i>	Pseudocodewords and Stopping Sets <i>Salon E</i>	Feedback Capacity <i>Salon F</i>	Algebraic-Geometric Codes <i>Salon G</i>	Sensor Networks <i>Salon H</i>	Sequence Constructions <i>Los Angeles Room</i>	Run-length and Spectral-null Constrained Codes <i>Denver Room</i>	Redundancy of Source Codes <i>Kansas City Room</i>	
	16:00 to 17:40	Achieving the Diversity-Multiplexing Tradeoff <i>Salon D</i>	Analysis Techniques for Coding I <i>Salon E</i>	Multiple Access I <i>Salon F</i>	Queueing and Scheduling <i>Salon G</i>	Sensor Network Compression <i>Salon H</i>	Sequence Properties <i>Los Angeles Room</i>	Space-time Codes <i>Denver Room</i>	Equalization and Detection Techniques <i>Kansas City Room</i>	Quantum Protocols <i>Scottsdale Room</i>

Tuesday, June 29, 2004	8:30 to 9:30	Plenary Lecture The Mathematics of Making a Mess (Harnessing Entropy for Studying Markov Chains) Persi Diaconis <i>Stanford University</i> <i>Salons D and E</i>								
	9:50 to 11:10	Connections with Other Fields <i>Scottsdale Room</i>	Network Coding <i>Salon E</i>	Channel Side Information <i>Salon F</i>	Rate Compatible Puncturing <i>Salon G</i>	Space-time Block Codes I <i>Salon H</i>	Two-dimensional Constrained Channels <i>Los Angeles Room</i>	Source/Channel Coding <i>Denver Room</i>	Foundations of Estimation Theory <i>Kansas City Room</i>	
	11:30 to 12:50	Security <i>Scottsdale Room</i>	Broadcast Channels <i>Salon E</i>	Channel Capacity Computation <i>Salon F</i>	Cyclic and Quasi-cyclic Codes <i>Salon G</i>	Space-time Block Codes II <i>Salon H</i>	Constrained Coding <i>Los Angeles Room</i>	Source and Channel Coding Problems <i>Denver Room</i>	Universal Methods for Filtering and Prediction <i>Kansas City Room</i>	
	14:30 to 15:50	Security Protocols <i>Scottsdale Room</i>	LDPC Ensembles <i>Salon E</i>	Network Source Coding <i>Salon F</i>	Bandwidth and Power Allocation <i>Salon G</i>	Asymptotic Methods in Detection, Classification and Identification <i>Salon H</i>	Typical Sequences <i>Los Angeles Room</i>	Analysis Techniques for Coding II <i>Denver Room</i>	Coding for Insertion-Deletion Channels <i>Kansas City Room</i>	
	16:10 to 17:50	Cryptography: Extracting Randomness <i>Scottsdale Room</i>	LDPC Constructions <i>Salon E</i>	Capacity of MIMO Channels <i>Salon F</i>	Scheduling and Delay <i>Salon G</i>	Detection and Classification in Sensor Networks <i>Salon H</i>	Code Constructions and Applications <i>Los Angeles Room</i>	Soft Decoding of Block Codes <i>Denver Room</i>	Coding for Partial Response and Magnetic Recording Channels <i>Kansas City Room</i>	

Wednesday, June 30, 2004

8:30 to 9:30	<p>Shannon Lecture Robert J. McEliece California Institute of Technology Salons D and E</p>							
9:30 to 10:30	<p>Recent Results Poster Session Opening Salon A (The posters will remain in Salon A for viewing through July 1.)</p>							
10:40 to 12:20	Cooperation in Networks <i>Salon D</i>	LDPC Code Construction <i>Salon E</i>	Multiple Access II <i>Salon F</i>	Space Time Codes <i>Salon G</i>	Communication Schemes for Multi-antenna Systems <i>Salon H</i>	Implementation of Coding Systems <i>Los Angeles Room</i>	Lossy Source Coding I <i>Denver Room</i>	Detection and Estimation <i>Kansas City Room</i>

Thursday, July 1, 2004

8:30 to 9:30	<p>Plenary Lecture On Fourier and Wavelets: Representation, Approximation and Compression Martin Vetterli EPFL and University of California, Berkeley Salons D and E</p>							
9:50 to 11:10	Space-time Codes: New Constructions <i>Salon D</i>	Distance Bounds for Turbo and LDPC Codes <i>Salon E</i>	Imperfect Channel Estimation <i>Salon F</i>	ARQ and Queueing Problems <i>Salon G</i>	Quantum Information Theory <i>Salon H</i>	Algebraic Decoding Methods <i>Los Angeles Room</i>	Multiuser Source Coding I <i>Denver Room</i>	Optical Communication <i>Kansas City Room</i>
11:30 to 12:50	Analysis and Construction of Space-time Codes <i>Salon D</i>	Soft-in Soft-out Decoding <i>Salon E</i>	Capacity of Gaussian Channels <i>Salon F</i>	Power Control in Wireless Channels <i>Salon G</i>	Quantum Entropy and Codes <i>Salon H</i>	Algebraic and Combinatorial Methods in Coding Theory <i>Los Angeles Room</i>	Multiuser Source Coding II <i>Denver Room</i>	Optical Orthogonal Codes and Spreading Sequences <i>Kansas City Room</i>
14:20 to 15:40	Scaling Laws for Wireless Networks <i>Salon D</i>	Iterative Techniques for Channels with Memory <i>Salon E</i>	Universal Channel Coding <i>Salon F</i>	Wide-band Communication <i>Salon G</i>	Interpolation-based List Decoding of Reed-Solomon Codes <i>Salon H</i>	OFDM <i>Los Angeles Room</i>	Joint Source-channel Schemes <i>Denver Room</i>	Multidimensional Error Correction <i>Kansas City Room</i>
16:00 to 17:40	Relaying <i>Salon D</i>	Concatenated Convolutional Codes <i>Salon E</i>	Code Design for Fading Channels <i>Salon F</i>	Wideband Channel Capacity <i>Salon G</i>	Performance of Algebraic Soft Decoding of Reed-Solomon Codes <i>Salon H</i>	Codes for PAR Control <i>Los Angeles Room</i>	Robust Source Coding <i>Denver Room</i>	CDMA <i>Kansas City Room</i>

Friday, July 2, 2004

8:30 to 9:30	<p>Plenary Lecture Thomas J. Richardson Flarion Technologies Salons D and E</p>							
9:50 to 11:10	Throughput and Delay in Wireless Networks <i>Salon D</i>	Behavior of Iterative Decoders <i>Salon E</i>	Error Exponents I <i>Salon F</i>	Coding for Special Channels I <i>Salon G</i>	Combinatorial Constructions of Codes <i>Salon H</i>	Convolutional Codes <i>Los Angeles Room</i>	Lossy Source Coding II <i>Denver Room</i>	Learning Theory <i>Kansas City Room</i>
11:30 to 12:50	Capacity of Wireless Networks <i>Salon D</i>	Performance Evaluation of Iterative Decoders <i>Salon E</i>	Error Exponents II <i>Salon F</i>	Coding for Special Channels II <i>Salon G</i>	Weight Distribution in Codes <i>Salon H</i>	Decoding of Convolutional Codes <i>Los Angeles Room</i>	Lossy Source Coding III <i>Denver Room</i>	Boolean Functions <i>Kansas City Room</i>
14:20 to 15:40	MIMO Detection <i>Salon D</i>	Turbo Code Constructions <i>Salon E</i>	Multiuser Communications <i>Salon F</i>	Coding Systems <i>Salon G</i>	Estimation and Localization in Sensor Networks <i>Salon H</i>	Decoding of General Linear Codes <i>Los Angeles Room</i>	MDS Codes and Generalizations <i>Denver Room</i>	Multiuser Detection and Decoding <i>Kansas City Room</i>
16:00 to 17:40	Dirty Paper Coding <i>Salon D</i>	Lattice Codes and Coded Modulation <i>Salon E</i>	Capacity of Fading Channels <i>Salon F</i>	Cryptography <i>Salon G</i>	Tracking and Localization <i>Salon H</i>	List Decoding Methods and Applications <i>Los Angeles Room</i>	Individual Sequences <i>Denver Room</i>	Filter Banks <i>Kansas City Room</i>

Session MOA1 Monday, June 28, 2004 Salon D
Interference and Relay Channels
9:50 On Achievable Rate Regions for the Gaussian Interference Channels
Sason Igal
10:10 Capacity Approaching Codes for Relay Channels
Zheng Zhang, Israfil Bahceci, and Tolga Duman
10:30 An Achievable Rate for the Multiple Level Relay Channel
Liang-Liang Xie and P. R. Kumar
10:50 Improved Achievable Rates for User Cooperation and Relay Channels
Mohammad A. Khojastepour, Ashutosh Sabharwal, and Behnaam Aazhang

Session MOA2 Monday, June 28, 2004 Salon E
Random Graph Codes
9:50 Expander Codes Revisited: AWGN Channels and High Rates
Souvik Dihidar, Steven W. McLaughlin, and Prasad Tetali
10:10 On Nearly-MDS Expander Codes
Ron M. Roth and Vitaly Skachek
10:30 Distance Properties of Expander Codes
Alexander Barg and Gilles Zemor
10:50 The Average Weight Distribution of Tanner Code Ensembles and a way to Modify them to Improve Weight Distribution
Jean-Pierre Tillich

Session MOA3 Monday, June 28, 2004 Salon F
Markov Sources
9:50 On the Entropy of a Hidden Markov Process
Philippe Jacquet, Gadiel Seroussi, and Wojciech Szpankowski
10:10 On the Entropy Rate of a Hidden Markov Model
Sebastian Egner, Vladimir B. Balakirsky, Ludo M. G. M. Tolhuizen, Stan P. M. J. Baggen, and Henk D. L. Hollmann
10:30 Bounds on the Redundancy of HMM Patterns
Anand K. Dhulipala and Alon Orlitsky
10:50 Large Deviations Performance of Predictors for Markov Sources
Erez Sabbag and Neri Merhav

Session MOA4 Monday, June 28, 2004 Salon G
Secret Key Agreement and Group Security
9:50 Efficient Key Agreement and Signature Schemes using Compact Representations in $GF(p^{10})$
Kenneth Giuliani and Guang Gong
10:10 Secret Key Agreement from Correlated Source Outputs using LDPC Matrices
Jun Muramatsu
10:30 Attacks on a Secure Group Communication Scheme with Hierarchical Access Control
Willi Geiselmann and Rainer Steinwandt
10:50 Optimal Multiple Assignments Based on Integer Programming in Secret Sharing Schemes
Mitsugu Iwamoto, Hirotsuke Yamamoto, and Hirohisa Ogawa

Session MOA5 Monday, June 28, 2004 Salon H
Ad Hoc Networks
9:50 The Feasibility of Matchings in a Wireless Network
Steven A. Borbash and Anthony Ephremides
10:10 Fast Transmission in Ad Hoc Networks
Paul Balister, Bela Bollobas, Martin Haenggi, and Mark Walters
10:30 Efficient Routing in Wireless Networks with Random Node Distribution
Martin Haenggi
10:50 Realizing MIMO Gains without User Cooperation in Large Single-Antenna Adhoc Wireless Networks
Helmut Bölcskei and Rohit U. Nabar

Session MOA6 Monday, June 28, 2004 Los Angeles Room
Two Dimensional Interleaving
9:50 On the Optimality of Coloring with a Lattice
Yael Merksamer and Tuvi Etzion
10:10 Optimal Interleaving Schemes for Correcting Two-Dimensional Cluster Errors
Solomon W. Golomb and Wen-Qing Xu
10:30 Optimal t-Interleaving on Tori
Anxiao Jiang, Matthew Cook, and Jehoshua Bruck

Session MOA7 Monday, June 28, 2004 Denver Room
Lossless Coding I
9:50 Relative Redundancy:
Alon Orlitsky, Narayana P. Santhanam, and Junan Zhang
10:10 Average Case Universal Lossless Compression with Unknown Alphabets
Gil I. Shamir
10:30 Prediction and Adaptive Coding of Sources with Large or Infinite Alphabet.
Boris Ryabko and Jaakko Astola
10:50 Code Design for Lossless Multiterminal Networks
Vladimir Stankovic, Angelos D. Liveris, Zixiang Xiong, and Costas N. Georghiades

Session MOA8 Monday, June 28, 2004 Kansas City Room
Geometry of Information Divergence
9:50 Information Closures of Exponential Families
Imre Csiszár and František Matúš
10:10 The Weak Information Topology
Peter Harremoës
10:30 Jensen-Shannon Divergence and Hilbert Space Embedding
Bent Fuglede and Flemming Topsøe
10:50 A Distribution Dependent Refinement of Pinsker's Inequality
Erik Ordentlich and Marcelo J. Weinberger

Session MOB1
Monday, June 28, 2004
Network Information Theory
Salon D

11:30 Cut-set Arguments for Source-Channel Networks
Michael Gastpar

11:50 Cut Sets and Information Flow in Networks of Two-way Channels
Gerhard Kramer and Serap A. Savari

12:10 On Optimal Multiresolution Source-Channel Coding across Degraded Broadcast Channels
Ertem Tuncel

12:30 Zero-Error Communication over Networks
Juerg Wullschlegler

Session MOB2
Monday, June 28, 2004
Fountain Codes
Salon E

11:30 Raptor Codes
Amin Shokrollahi

11:50 Finite Length Analysis of LT-Codes
Richard Karp, Michael Luby, and Amin Shokrollahi

12:10 Rateless Codes on Noisy Channels
Ravi Palanki and Jonathan Yedidia

12:30 Raptor Codes on Symmetric Channels
Omid Etesami, Mehdi Molkarai, and Amin Shokrollahi

Session MOB3
Monday, June 28, 2004
Entropy
Salon F

11:30 On Minimum Entropy Graph Colorings
Jean Cardinal, Samuel Fiorini, and Gilles Van Assche

11:50 On the Maximum Entropy Theorem for Complex Random Vectors
Georg Tauboeck

12:10 On The Relation between the Shannon Entropy and the Von Neumann Entropy
Siu Wai Ho and Raymond W. Yeung

12:30 Entropy Measures of Physics via Complexity
Giorgio Kaniadakis and Flemming Topsøe

Session MOB4
Monday, June 28, 2004
Capacity Analysis and Secret Communication
Salon G

11:30 Achieving the Perfect Secrecy for the Gaussian Wiretap Channel with Side Information
Chaichana Mitrpant, Yuan Luo, and A. J. Han Vinck

11:50 Generalized Coset Schemes for the Wire-tap Channel: Application to Biometrics
Gérard D. Cohen and Gilles Zémor

12:10 The Private Key Capacity Region for Three Terminals
Chunxuan Ye and Prakash Narayan

12:30 Rates for Bit Commitment and Coin Tossing from Noisy Correlation
Hideki Imai, Joern Mueller-Quade, Anderson C. A. Nascimento, and Andreas Winter

Session MOB5
Monday, June 28, 2004
Coding for MIMO Channels
Salon H

11:30 Space-Time Codes From Property-L
Mehrdad Shamsi and Ian F. Blake

11:50 Capacity-Achieving Multiple Coding for MIMO Rayleigh Fading Systems
Jianhan Liu, Jinghu Chen, Anders Høst-Madsen, and Marc P. C. Fossorier

12:10 Detectors and Asymptotic Analysis for Bandwidth-efficient Space-time Multiple-access Systems
Yi Wu, Markku Juntti, and Teng Joon Lim

12:30 An Iterative Channel Estimation Scheme for Beamforming Transmission and Detection in MIMO Systems
Yang Tang and Branka Vucetic

Session MOB6
Monday, June 28, 2004
Interleaver Design
Los Angeles Room

11:30 Contention-Free Interleavers
Ajit Nimbalkar, Keith T. Blankenship, Brian Classon, Thomas E. Fuja, and Daniel J. Costello, Jr.

11:50 On Lowering the Error Floor of Bit-Interleaved Turbo-Coded Modulation
Eirik Rosnes and Øyvind Ytrehus

12:10 Short-Cycle-Free Interleaver Design for Increasing Minimum Squared Euclidean Distance
Sheryl L. Howard, Siavash S. Zeinoddin, Christian Schlegel, and Vincent C. Gaudet

12:30 Interleavers for Turbo Codes that Yield a Minimum Distance Growing with Blocklength
Joseph Boutros and Gilles Zémor

Session MOB7
Monday, June 28, 2004
Lossless Coding II
Denver Room

11:30 Bounds on Expansion in LZ1-Like Coding
Vittorio Castelli and Luis A. Lastras-Montano

11:50 Linear Time Universal Coding of Tree Sources via FSM Closure
Alvaro Martin, Gadiel Seroussi, and Marcelo J. Weinberger

12:10 Error Resilient LZ'77 Scheme and Its Analysis
Stefano Lonardi, Wojciech Szpankowski, and Mark Daniel Ward

12:30 On Certain Pathwise Properties of the Sliding Window Lempel Ziv Algorithm
Luis A. Lastras-Montano

Session MOB8
Monday, June 28, 2004
Mathematics and Information Theory
Kansas City Room

11:30 Optimization of Matrix Monotone Functions: Saddle-Point, Worst Case Noise Analysis, and Applications
Holger Boche and Eduard Jorswieck

11:50 A New Proof of Parisi's Conjecture for the Finite Random Assignment Problem
Chandra Nair, Balaji Prabhakar, and Mayank Sharma

12:10 On a Conjecture of Majani and Rumsey
Xue-Bin Liang

12:30 An Approximation of the Gilbert-Elliott Channel via a Queue-based Channel Model
Libo Zhong, Fady Alajaji, and Glen Takahara

Session MOC1 Monday, June 28, 2004 Salon D
Communication on MIMO Channels
14:20 A Geometrical Investigation of the Rank-1 Ricean MIMO Channel at High SNR
Jan Hansen and Helmut Bölcskei
14:40 Non-Coherent MIMO Communication: Grassmannian Constellations and Efficient Detection
Ramy H. Gohary and Tim N. Davidson
15:00 Optimal Linear Precoding for BICM over MIMO Channels
Nicolas Gresset, Joseph Boutros, and Loic Brunel

Session MOC2 Monday, June 28, 2004 Salon E
Pseudocodewords and Stopping Sets
14:20 Lower Bounds on the Minimum Pseudo-Weight of Linear Codes
Pascal O. Vontobel and Ralf Koetter
14:40 Pseudocodeword Weights and Stopping Sets
Christine Kelley, Deepak Sridhara, Jun Xu, and Joachim Rosenthal
15:00 LP Decoding Corrects a Constant Fraction of Errors
Jon Feldman, Tal Malkin, Rocco A. Servedio, Cliff Stein, and Martin J. Wainwright
15:20 Analysis of an Algorithm for Irregular LDPC Code Construction
Aditya Ramamoorthy and Richard D. Wesel

Session MOC3 Monday, June 28, 2004 Salon F
Feedback Capacity
14:20 Capacity-achieving Feedback Scheme for Markov Channels with Channel State Information
Jialing Liu, Nicola Elia, and Sekhar C. Tatikonda
14:40 Capacity Achieving Scheme for the Colored Gaussian Channel with Feedback
Ayelet Shahar-Doron and Meir Feder
15:00 Linear Gaussian Channels: Feedback Capacity under Power Constraints
Shaohua Yang, Aleksandar Kavcic, and Sekhar C. Tatikonda
15:20 On the Sufficiency of Power Control for a Class of Channels with Feedback
Desmond S. Lun and Muriel Médard

Session MOC4 Monday, June 28, 2004 Salon G
Algebraic-Geometric Codes
14:20 A Class of Algebraic-Geometric Codes for Lee-Metric and Their Decoding
Xinwen Wu, Margreta Kuijper, and Parampalli Udaya
14:40 On the Missing Evaluation Codes from Order Domain Theory
Henning E. Andersen and Olav Geil
15:00 Algebraic-Geometric Codes on the Erasure Channel
Andrew Brown and Amin Shokrollahi
15:20 Pseudonoise Sequences Based on Algebraic Function Fields
Andrew Klapper

Session MOC5 Monday, June 28, 2004 Salon H
Sensor Networks
14:20 Information Retrieval and Processing in Sensor Networks: Deterministic Scheduling vs. Random Access
Min Dong, Lang Tong, and Brian M. Sadler
14:40 Computing and Communicating Statistics in Sensor Networks
Arvind Giridhar and P. R. Kumar
15:00 The Growth of Lacunae in Sensor Networks
Srisankar S. Kunniyur and Santosh S. Venkatesh
15:20 Delay Issues in Linear Sensory Networks
Cedric Florens, Masoud Sharif, and Robert McEliece

Session MOC6 Monday, June 28, 2004 Los Angeles Room
Sequence Constructions
14:20 Recursive Construction of Golay Sequences
Changho Suh and Chan-Soo Hwang
14:40 A New Optimal Double Periodical Construction of One Target Two-dimensional Arrays
Oscar Moreno and Solomon W. Golomb
15:00 Multi-sequences with d-perfect Property
Xiutao Feng, Quanlong Wang, and Zongduo Dai
15:20 Generalized Binary Udaya-Siddiqi Sequences
Xiaohu Tang, Parampalli Udaya, and Pingzhi Fan

Session MOC7 Monday, June 28, 2004 Denver Room
Run-length and Spectral-null Constrained Codes
14:20 Sliding-Block Decodable Encoders Between (d, k) -Constrained Systems of Equal Capacity
Navin Kashyap and Paul H. Siegel
14:40 A Convolution Interpretation of (M, d, k) Run-Length-Limited Capacity
Yogesh Sankarasubramaniam, Steven W. McLaughlin, and Erozan M. Kurtas
15:00 On Guided Scrambling with Guaranteed Maximum Run-Length Constraints
Adriaan J. van Wijngaarden and Kees A. Schouhamer Immink
15:20 An Algorithm to Enumerate Codewords for Third-Order Spectral-Null Codes
Ching-Nung Yang

Session MOC8 Monday, June 28, 2004 Kansas City Room
Redundancy of Source Codes
14:20 On Second-Order Properties of Minimum Redundancy Block Codes
Yuriy A. Reznik
14:40 Redundancy-Complexity Tradeoff of Tree-structured Encoding for Successively Refinable Sources
Jun Yang and Zhen Zhang
15:00 Variable-to-Variable Codes with Small Redundancy Rates
Michael Drmota and Wojciech Szpankowski
15:20 Bounds on the Expected Cost of One-to-One Codes
Serap A. Savari and Akshay Naheta

Session MOD1 Monday, June 28, 2004 Salon D

Achieving the Diversity-Multiplexing Tradeoff

- 16:00 Decision-Feedback Equalization Achieves Full Diversity for Finite Delay Spread Channels
Abdelkader Medles and Dirk T. M. Slock
- 16:20 Optimal Diversity Multiplexing Tradeoff for ISI Channels
Leonard Gropop and David N. C. Tse
- 16:40 Permutation Codes for Parallel Fading Channel: Achieving the Diversity-multiplexing Tradeoff
Saurabh Tavildar and Pramod Viswanath
- 17:00 On the Optimality of Lattice Space-Time (LAST) Coding
Hesham El Gamal, Giuseppe Caire, and Mohamed Oussama Damen
- 17:20 Generalized Unified Construction of Space-Time Codes with Optimal Rate-Diversity Tradeoff
Hsiao-feng Lu and P. Vijay Kumar

Session MOD2 Monday, June 28, 2004 Salon E

Analysis Techniques for Coding I

- 16:00 On the Effect of Parity-Check Weights in Iterative Decoding
Nandakishore Santhi and Alexander Vardy
- 16:20 Finite-Length Scaling for Iteratively Decoded LDPC Ensembles
Abdelaziz Amraoui, Andrea Montanari, Thomas Richardson, and Ruediger Urbanke
- 16:40 Weight Distribution of LDPC Code Ensembles: Combinatorics Meets Statistical Physics
Changyan Di, Andrea Montanari, and Ruediger Urbanke
- 17:00 Concentration Theorem for Tripartite LDPC Codes
Peyman Meshkat and Hamid Jafarkhani
- 17:20 On the Complexity of Exact Maximum Likelihood Decoding on Certain Tail-biting Trellises
Priti Shankar

Session MOD3 Monday, June 28, 2004 Salon F

Multiple Access I

- 16:00 Achievable Rates for Multiple Access Channels with Correlated Messages
Sandeep S. Pradhan, Suhan Choi, and Kannan Ramchandran
- 16:20 On the Multiple-Access Channel with Partial State Information at the Encoders
Yakup Cemal and Yossef Steinberg
- 16:40 On the Structure of the Capacity Region
Ninoslav Marina and Bixio Rimoldi
- 17:00 Channel Configuration of Multiple-Access Channel
Yoichiro Watanabe and Koichi Kamoi
- 17:20 Construction of New Signature Codes for the T-terminal Binary Adder Multiple Access Channel with Partially Active Users
Edward C. van der Meulen and Saskia Vangheluwe

Session MOD4 Monday, June 28, 2004 Salon G

Queueing and Scheduling

- 16:00 Scheduling for Efficient Data Broadcast over Two Channels
Kevin Foltz, Lihao Xu, and Jehoshua Bruck
- 16:20 Optimal Universal Schedules for Discrete Broadcast
Michael Langberg, Alexander Sprintson, and Jehoshua Bruck
- 16:40 Throughput Optimal Power and Rate Control for Multiaccess and Broadcast Communications
Edmund M. Yeh and Aaron S. Cohen
- 17:00 An Analysis of Blocking Switches using Error Control Codes
Can E. Koksal
- 17:20 Large Deviations in a Two-Servers System with Dynamic Routing
Eugene E. A. Pechersky, Yuri Yu.M. Suhov, and Nikita N. D. Vvedenskaya

Session MOD5 Monday, June 28, 2004 Salon H

Sensor Network Compression

- 16:00 Robust Coding Schemes for Distributed Sensor Networks with Unreliable Sensors
Jun Chen and Toby Berger
- 16:20 Transmitting to Co-located Users in Wireless Ad Hoc and Sensory Networks
Michael Katz and Shlomo Shamai (Shitz)
- 16:40 Rate Region of the Quadratic Gaussian CEO Problem
Vinod Prabhakaran, David N. C. Tse, and Kannan Ramchandran
- 17:00 On Interacting Encoders and Decoders in Multiuser Settings
Stark C. Draper, Brendan J. Frey, and Frank R. Kschischang
- 17:20 Coding and Routing Complexity in Sensor Networks
Sekhar C. Tatikonda and Kannan Ramchandran

Session MOD6 Monday, June 28, 2004 Los Angeles Room

Sequence Properties

- 16:00 Results on the Nonlinear Span of Binary Sequences
Panagiotis Rizomiliotis and Nicholas Kalouptsidis
- 16:20 Linear Complexity over F_p of Sidel'nikov Sequences
Toon Segers, Tor Helleseth, Martijn Maas, and John Erik Mathiassen
- 16:40 Asymptotic Behavior of Normalized Linear Complexity of Ultimately Non-Periodic Binary Sequences
Zongduo Dai, Shaoquan Jiang, Kyoki Imamura, and Guang Gong
- 17:00 Multiple-Shift Complementary Sequences and Their Peak-to-Average Power Ratio Values
Yan Xin and Ivan J. Fair
- 17:20 Determinants of Binary Circulant Matrices
Gerard Maze and Hugo Parlier

- Session MOD7 Monday, June 28, 2004 Denver Room
- Space-time Codes**
- 16:00 High-Throughput Error Correcting Space-Time Block Codes
Philippa A. Martin and Desmond P. Taylor
- 16:20 Information Lossless STBCs from Crossed-product Algebras
Shashidhar Vummintala, B. Sundar Rajan, and Bharat Al Sethuraman
- 16:40 On the Decoding and Diversity-Multiplexing Gain Tradeoff of a Recent Multilevel Construction of Space-Time Codes
P. Vijay Kumar and Hsiao-feng Lu
- 17:00 STBCs with Optimal Diversity-multiplexing Tradeoff for 2, 3 and 4 Transmit Antennas
Shashidhar Vummintala, B. Sundar Rajan, and P. Vijay Kumar

- Session MOD8 Monday, June 28, 2004 Kansas City Room
- Equalization and Detection Techniques**
- 16:00 Bayesia and bib-Bayesian Methods for Joint Decoding and Detection in the Presence of Phase Noise
Giulio Colavolpe, Alan Barbieri, Giuseppe Caire, and Nicolas Bonneau
- 16:20 On the Soft-decision in the Iterative Receiver for Coded MIMO Systems
Jinho Choi, Yi Hong, and Jinhong Yuan
- 16:40 Minimum Mean Square Error Equalization using Priors for Two-Dimensional Intersymbol Interference
Naveen Singla and Joseph A. O'Sullivan
- 17:00 Linear Equalization Via Factor Graphs
Robert J. Drost and Andrew C. Singer
- 17:20 Joint Delayed-Decision Feedback Sequence Estimation with Adaptive State Allocation
Peter A. Hoeher, Sabah Badri-Hoeher, Shiyang Deng, Claudiu Krakovszky, and Wen Xu

- Session MOD9 Monday, June 28, 2004 Scottsdale Room
- Quantum Protocols**
- 16:00 A Family of Quantum Protocols
Igor Devetak, Aram Harrow, and Andreas Winter
- 16:20 Security of Quantum Key Distribution with Imperfect Devices
Daniel Gottesman, Hoi-Kwong Lo, Norbert Lutkenhaus, and John Preskill
- 16:40 Reliability of Calderbank-Shor-Steane Codes and Security of Quantum Key Distribution
Mitsuru Hamada
- 17:00 Quantum Key Distribution with Vacua or Dim Pulses as Decoy States
Hoi-Kwong Lo
- 17:20 On Intrinsic Information
Matthias Christandl and Renato Renner

- Session TUA1 Tuesday, June 29, 2004 Scottsdale Room
- Connections with Other Fields**
- 9:50 An Information Theoretic Model for Physical Unclonable Functions
Pim Tuyls, Boris Skoric, Sjoerd Stallinga, Ton Akkermans, and Wil Ophey
- 10:10 A Differential Approach to a Polynomial Equivalence Problem
Ludovic Perret and Abdelmejid Bayad
- 10:30 Minimax Regret Portfolios for Restricted Stock Sequences
Thomas M. Cover
- 10:50 Language Evolution and Information Theory
Rudolf Ahlswede, Erdal Arıkan, Lars Baumer, and Christian Deppe

- Session TUA2 Tuesday, June 29, 2004 Salon E
- Network Coding**
- 9:50 Byzantine Modification Detection in Multicast Networks using Randomized Network Coding
Tracey Ho, Ben Leong, Ralf Koetter, Muriel Médard, and Michelle Effros
- 10:10 Required Alphabet Size for Linear Network Coding
Christina Fragouli and Emina Soljanin
- 10:30 A Comparison of Network Coding and Tree Packing
Yunnan Wu, Philip Chou, and Kamal Jain
- 10:50 Convolutional Network Codes
Elona Erez and Meir Feder

- Session TUA3 Tuesday, June 29, 2004 Salon F
- Channel Side Information**
- 9:50 Maximum Likelihood Decoding of Trellis Codes in Fading Channels with no Receiver CSI is a Polynomial-complexity Problem
Chun-Hao Hsu and Achilleas Anastasopoulos
- 10:10 The Effect of Channel Side Information at Transmitter on Coding Complexity
Vijay Nagarajan, Youjian Liu, and Jilei Hou
- 10:30 Adaptive Coding for the Variably Coherent Channel
Oliver M. Collins
- 10:50 Entropy Amplification by Aperiodic Noise and Side Information Problems
Aaron S. Cohen and Ram Zamir

- Session TUA4 Tuesday, June 29, 2004 Salon G
- Rate Compatible Puncturing**
- 9:50 Optimal Puncturing for Multiple Parallel Concatenated Codes
Fredrik Brannstrom, Lars K. Rasmussen, and Alex Grant
- 10:10 Puncturing for Finite Length Low-Density Parity-Check Codes
Jeongseok Ha, Jaehong Kim, and Steven W. McLaughlin
- 10:30 Rate-Compatible Low-Density Parity-Check Codes
Tao Tian, Chris Jones, and John D. Villasenor
- 10:50 Rate-Compatible Array LDPC Codes
Ajay Dholakia and Sedat Oelcer

- Session TUA5 Tuesday, June 29, 2004 Salon H
- Space-time Block Codes I**
- 9:50 Rotationally Invariant Space Time Constellations
Jun Shi and Wesel D. Richard
- 10:10 Low-Density Parity-Check Space-Time Codes: Performance Analysis and Code Construction
Yuankai Wang, Reza Omrani, Keith M. Chugg, and P. Vijay Kumar
- 10:30 Upper Bound Analysis of Diversity for Unitary Space Time Constellation
Guangyue Han and Joachim Rosenthal
- 10:50 On the BCJR-like Trellis for Space-Time Group Codes
Jyrki Lahtonen, Jarkko Hiltunen, and Anu Nikkanen

Session TUA6 Tuesday, June 29, 2004 Los Angeles Room

Two-dimensional Constrained Channels

- 9:50 Capacity Bounds for the Hard-Triangle Model
Zsigmond Nagy and Ken Zeger
- 10:10 Block Codes for the Hard-Square Model
Ismail Demirkan and Jack K. Wolf
- 10:30 Finite State Models of Constrained 2D Data
Jørn Justesen
- 10:50 Analysis of Bit-stuffing Codes and Lower Bounds on Capacity for 2-D Constrained Arrays using Quasi-stationary Measures
Soren Forchhammer

Session TUA7 Tuesday, June 29, 2004 Denver Room

Source/Channel Coding

- 9:50 Channel Decoding of Systematically Encoded Unknown Redundant Sources
Erik Ordentlich, Gadiel Seroussi, Sergio Verdú, Krishnamurthy Viswanathan, Marcelo J. Weinberger, and Tsachy Weissman
- 10:10 Source-Controlled Turbo Coding of Non-Uniform Memoryless Sources Based on Unequal Energy Allocation
Felipe Cabarcas, Richard D. Souza, and Javier Garcia-Frias
- 10:30 Universal Lossless Source Controlled Channel Decoding
Kai Xie and Gil I. Shamir
- 10:50 The Binary Reflected Gray Code is Optimal for M-PSK
Erik Agrell, Johan Lassing, Erik G. Ström, and Tony Ottosson

Session TUA8 Tuesday, June 29, 2004 Kansas City Room

Foundations of Estimation Theory

- 9:50 Consistent Estimation of the Basic Neighborhood of Markov Random Fields
Imre Csiszár and Zsolt Talata
- 10:10 Optimal Bregman Prediction and Jensen's Equality
Arindam Banerjee, Xin Guo, and Hui Wang
- 10:30 A Principle of Minimum Expected Risk
Maya R. Gupta
- 10:50 Maximum Entropy Models: Convergence Rates and Application in Dynamic System Monitoring
Gang Liang and Bin Yu

Session TUB1 Tuesday, June 29, 2004 Scottsdale Room

Security

- 11:30 Minimum Redundancy Tree for Key Distribution in Secure Multicast
Siu-Ping Chan and Chi-Wah Kok
- 11:50 Information-Theoretic Approach to Privacy Protection of Biometric Templates
Jasper Goseling and Pim Tuyls
- 12:10 A Point-Subset Compression Algorithm for Fiber-based Certificates of Authenticity
Darko Kirovski

Session TUB2 Tuesday, June 29, 2004 Salon E

Broadcast Channels

- 11:30 The Capacity Region of the Gaussian MIMO Broadcast Channel
Hanan Weingarten, Yossef Steinberg, and Shlomo Shamai (Shitz)
- 11:50 Minimax Duality of Gaussian Vector Broadcast Channels
Wei Yu and Tian Lan
- 12:10 Broadcast Channels with Cooperating Receivers: A Downlink for the Sensor Reachback Problem
Ron Dabora and Sergio D. Servetto
- 12:30 A Comparison of Time-Sharing, Beamforming, and DPC for MIMO Broadcast Channels with Many Users
Masoud Sharif and Babak Hassibi

Session TUB3 Tuesday, June 29, 2004 Salon F

Channel Capacity Computation

- 11:30 Computation of Information Rates by Particle Methods
Justin Dauwels and Hans-Andrea Loeliger
- 11:50 Numerical Capacity Analysis of Time-variable Fading Channels using Discrete Markov Models
Parastoo Sadeghi, Predrag Rapajic, and Sarah Johnson
- 12:10 A Generalization of the Arimoto-Blahut Algorithm
Mohammad Rezaeian and Alex Grant
- 12:30 Blahut-Arimoto Algorithms for Computing Channel Capacity and Rate-Distortion with Side Information
Frederic Dupuis, Wei Yu, and Frans Willems

Session TUB4 Tuesday, June 29, 2004 Salon G

Cyclic and Quasi-cyclic Codes

- 11:30 Bounds on the Minimum Distances of a Class of q -ary Images of q^m -ary Irreducible Cyclic Codes
Isaac Woungang, Alireza Sadeghian, and William, W. Melek
- 11:50 On Existence of Good Self-dual Quasi-cyclic Codes
Bikash K. Dey
- 12:10 Quasicyclic Irreducible Goppa Codes
John A. Ryan and Patrick Fitzpatrick
- 12:30 On Multiple Burst-Correcting Shortened Cyclic Codes
Mario Blaum, Luis Javier Garcia Villalba, Bruce Wilson, and Shaohua Yang

Session TUB5 Tuesday, June 29, 2004 Salon H

Space-time Block Codes II

- 11:30 On Optimal Cyclotomic Lattices and Diagonal/Single-Layer Space-Time Block Codes
Genyuan Wang and Xiang-Gen Xia
- 11:50 Improving the Diversity Product of Space-Time Hamiltonian Constellations
Terasan Niyomsataya, Ali Miri, and Monica Nevins
- 12:10 On the Random Coding Exponent of Multiple Antenna Systems using Space-Time Block Codes
Joakim Jalden, Mikael Skoglund, and Bjorn Ottersten
- 12:30 Higher Order Differential Matrix Modulation
Gerhard A. Bauch

Session TUB6 Tuesday, June 29, 2004 Los Angeles Room

Constrained Coding

- 11:30 An Improvement to the Bit Stuffing Algorithm
Sharon Aviran, Paul H. Siegel, and Jack K. Wolf
- 11:50 Encoding Algorithms for 2 Dimensional Run-Length-Limited Constraints
Hiroshi Kamabe
- 12:10 Trade-Off Functions for Constrained Systems with Unconstrained Positions
T. Lei Poo, Panu Chaichanavong, and Brian H. Marcus
- 12:30 A Ramsey Theory Approach to Ghostbusting
Navin Kashyap, Paul H. Siegel, and Alexander Vardy

Session TUB7 Tuesday, June 29, 2004 Denver Room

Source and Channel Coding Problems

- 11:30 Fixed Binning Schemes: An Operational Duality Between Channel and Source Coding Problems with Side Information
Hua Wang and Pramod Viswanath
- 11:50 On Joint Information Embedding and Lossy Compression
Alina Maor and Neri Merhav
- 12:10 On Causal and Semi-causal Codes for Joint Information Embedding and Source Coding
Neri Merhav and Erik Ordentlich
- 12:30 Uniquely Decodable Multiple Access Source Codes
Qian Zhao and Michelle Effros

Session TUB8 Tuesday, June 29, 2004 Kansas City Room

Universal Methods for Filtering and Prediction

- 11:30 On the Optimality of Symbol-by-symbol Filtering and Denoising
Erik Ordentlich and Tsachy Weissman
- 11:50 Universal Denoising for the Finite-input-general-output Channel
Amir Dembo and Tsachy Weissman
- 12:10 Universal Discrete Denoising under Channel Uncertainty
George M. Gemelos, Styrmir Sigurjonsson, and Tsachy Weissman
- 12:30 Universal Piecewise Linear Least Squares Prediction
David Luengo, Suleyman S. Kozat, and Andrew C. Singer

Session TUC1 Tuesday, June 29, 2004 Scottsdale Room

Security Protocols

- 14:30 Random Coding Technique for Digital Fingerprinting Codes: Fighting Two Pirates Revisited
Bob Blakeley and Gregory A. Kabatiansky
- 14:50 Fighting Three Pirates with Scattering Codes
Hans Georg Schaathun
- 15:10 Good Ternary 2-traceability Codes Exist
Gregory A. Kabatiansky
- 15:30 Universal Hash Functions over $GF(2^n)$
Khoongming Khoo and Swee-Huay Heng

Session TUC2 Tuesday, June 29, 2004 Salon E

LDPC Ensembles

- 14:30 Asymptotic Weight and Stopping Set Distributions for Detailedly Represented Irregular LDPC Code Ensembles
Ryoji Ikegaya, Kenta Kasai, Tomoharu Shibuya, and Kohichi Sakaniwa
- 14:50 Relations Between Belief Propagation on Erasure and Symmetric Channels
Omid Etesami
- 15:10 Performance of Low-Density Parity-Check Codes with Linear Minimum Distance
Hossein Pishro-Nik and Faramarz Fekri
- 15:30 Capacity-Achieving Ensembles for the Binary Erasure Channel with Bounded Complexity
Henry Pfister, Igal Sason, and Ruediger Urbanke

Session TUC3 Tuesday, June 29, 2004 Salon F

Network Source Coding

- 14:30 On the Compression of Encrypted Data using a Wyner-Ziv Framework
Prakash Ishwar, Vinod M. Prabhakaran, and Kannan Ramchandran
- 14:50 Encoder Side Information is Useful in Source Coding
Emin Martinian, Gregory W. Wornell, and Ram Zamir
- 15:10 Source Coding with Feedforward: Gaussian Sources
Sandeep S. Pradhan

Session TUC4 Tuesday, June 29, 2004 Salon G

Bandwidth and Power Allocation

- 14:30 Collaborative Algorithms for Bandwidth and Rate Allocation in Wireless Networks
Ananth Subramanian and Ali Sayed
- 14:50 Optimal Power Allocation for Parallel Gaussian Broadcast Channels with Independent and Common Information
Nihar Jindal and Andrea Goldsmith
- 15:10 Water Filling for Uncoded Communications over Parallel Gaussian Channels
Max H. M. Costa and Fabio A. L. Gomes
- 15:30 Joint Bandwidth and Power Allocation in Downlink Transmission
Krishnan Kumaran and Harish Viswanathan

Session TUC5 Tuesday, June 29, 2004 Salon H

Asymptotic Methods in Detection, Classification and Identification

- 14:30 The Error Exponent for Finite-Hypothesis Channel Identification
Patrick Mitran and Aleksandar Kavcic
- 14:50 Asymptotic Robust Neyman-Pearson Testing Based on Moment Classes
Charuhas P. Pandit, Sean P. Meyn, and Venugopal V. Veeravalli
- 15:10 Towards an Information Theoretic Framework for Object Recognition
M. Brandon Westover and Joseph A. O'Sullivan
- 15:30 CPM Reception Combining Complexity Reduction Techniques for Schemes on Minimum Euclidean Distance Upper Bound and MSK
Francisco A. T. B. N. Monteiro and Antonio C. B. Rodrigues

Session TUC6 Tuesday, June 29, 2004 Los Angeles Room

Typical Sequences

- 14:30 On Universal Types
Gadiel Seroussi
- 14:50 On Hierarchical Type Covering
Ertem Tuncel, Jayanth K. Nayak, and Kenneth Rose
- 15:10 On Deviation of Two-sample Sliding Averages in Certain Markov Chains
Luis A. Lastras-Montano

Session TUC7 Tuesday, June 29, 2004 Denver Room

Analysis Techniques for Coding II

- 14:30 Analysis of Bin Models with Applications in Coding Theory
Olgica Milenkovic
- 14:50 Maxwell's Construction: The Hidden Bridge between Maximum-Likelihood and Iterative Decoding
Cyril Measson, Ruediger Urbanke, and Andrea Montanari
- 15:10 Reliable Channel Regions for Good Codes Transmitted over Parallel Channels
Ruoheng Liu, Predrag Spasojevic, and Emina Soljanin

Session TUC8 Tuesday, June 29, 2004 Kansas City Room

Coding for Insertion-Deletion Channels

- 14:30 Coding for Insertion/deletion Error Propagation Effects Associated with Fixed Length Decoding Windows
Willem A. Clarke and Hendrik C. Ferreira
- 14:50 On Lower Bounds for the Capacity of Deletion Channels
Eleni Drinea and Michael Mitzenmacher
- 15:10 Insertion/deletion Channels: Reduced-state Lower Bounds on Channel Capacities
Aleksandar Kavcic and Ravi H. Motwani

Session TUD1 Tuesday, June 29, 2004 Scottsdale Room

Cryptography: Extracting Randomness

- 16:10 Extracting Randomness from Generalized Symbol-Fixing and Markov Sources
Robert Koenig and Ueli Maurer
- 16:30 Privacy Amplification Secure Against an Enemy with Selectable Knowledge
Robert Koenig, Ueli Maurer, and Renato Renner
- 16:50 Smooth Renyi Entropy and Applications
Renato Renner and Stefan Wolf
- 17:10 A New Algorithm for Cryptanalysis of Filtered LFSRs : the "Probability Matching" Algorithm.
Sabine Leveiller
- 17:30 Reconstruction of a Linear Scrambler
Mathieu Cluzeau

Session TUD2 Tuesday, June 29, 2004 Salon E

LDPC Constructions

- 16:10 Construction of Good LDPC Codes using Dilation Matrices
Marcus Greferath, Michael O'Sullivan, and Roxana Smarandache
- 16:30 Methodologies for Designing LDPC Codes using Protographs and Circulants
Jeremy Thorpe, Kenneth Andrews, and Sam Dolinar
- 16:50 Explicit Construction of Families of LDPC Codes with No 4-Cycles
Jon-Lark Kim, Uri N. Peled, Irina Perepelitsa, Vera Pless, and Shmuel Friedland
- 17:10 Grouping-and-shifting Designs for Structured LDPC Codes with Large Girth
Jin Lu, Jose M. F. Moura, and Urs Niesen
- 17:30 Construction of Quasi-Cyclic LDPC Codes Based on the Minimum Weight Codewords of Reed-Solomon Codes
Lei Chen, Ivana Djurdjevic, Shu Lin, and Khaled Abdel-Ghaffar

Session TUD3 Tuesday, June 29, 2004 Salon F

Capacity of MIMO Channels

- 16:10 Limits to Multi-Antenna Capacity of Spatially Selective Channels
Tony S. Pollock, Thushara D. Abhayapala, and Rodney A. Kennedy
- 16:30 The Effect of Line-of-sight Components on the Asymptotic Capacity of MIMO Systems
Laura Cottatellucci and Merouane Debbah
- 16:50 Asymptotic Capacity Analysis of Transmit Antenna Selection
Shahab Sanayei and Aria Nosratinia
- 17:10 On the Capacity of Vector Antenna MIMO Systems
Sandeep H. Krishnamurthy, Anand S. Konanur, Keyoor C. Gosalia, Gianluca Lazzi, and Brian L. Hughes
- 17:30 Source-field Wave-field Concentration and Dimension: Towards Spatial Information Content
Rodney A. Kennedy and Thushara D. Abhayapala

Session TUD4 Tuesday, June 29, 2004 Salon G

Scheduling and Delay

- 16:10 Delay Guarantee versus Throughput in Broadcast Fading Channels
Masoud Sharif and Babak Hassibi
- 16:30 Delay Optimal Multiaccess Communication for General Packet Length Distributions
Edmund M. Yeh
- 16:50 Distributed Scheduling in Wireless Data Networks with Service Differentiation
Piyush Gupta, Yogesh Sankarasubramaniam, and Alexander Stolyar
- 17:10 Order Optimal Energy Efficient Transmission Policies for Fading Channels in the Small Delay Regime
Randall Berry

Session TUD5

Tuesday, June 29, 2004

Salon H

Detection and Classification in Sensor Networks

- 16:10 Adaptive Signaling Schemes for Detection in Wireless Sensor Networks
Jean-Francois Chamberland and Venugopal V. Veeravalli
- 16:30 Information Bounds and Asymptotically Optimal Procedures for Detecting Changes in Decentralized Decision Systems
Yajun Mei
- 16:50 A Simple Method to Reach Detection Consensus in Massively Distributed Sensor Networks
Yao-Win Hong, Lih Feng Cheow, and Anna Scaglione
- 17:10 Classification in Sensor Networks
Venkatesh Saligrama, Murat Alanyali, Onur Savas, and Shuchin Aeron

Session TUD6

Tuesday, June 29, 2004

Los Angeles Room

Code Constructions and Applications

- 16:10 Single User Tracing Superimposed Codes
Miklos Csuros and Miklos Ruszinko
- 16:30 New Results and Applications of Superimposed Codes (and Related Combinatorial Structures) to the Design of Efficient Group Testing Procedures
Annalisa De Bonis and Ugo Vaccaro
- 16:50 Partition Codes
Arkadii G. D'yachkov, Vyacheslav V. Rykov, David Torney, and Sergey M. Yekhanin
- 17:10 Consta-dihedral Codes and their Transform-Domain Characterization
Shashidhar Vummintala and B. Sundar Rajan
- 17:30 Vandermonde-Cocyclic Codes and a Suitable DFT
Kiran T. Gowda and B. Sundar Rajan

Session TUD7

Tuesday, June 29, 2004

Denver Room

Soft Decoding of Block Codes

- 16:10 Iterative Soft-decision Decoding of Reed-Solomon Codes Based on Adaptive Parity-check Matrices
Jing Jiang and Krishna R. Narayanan
- 16:30 Sparse Factor Graph Representations of Reed-Solomon and Related Codes
Jonathan S. Yedidia
- 16:50 Limited-Trial Chase-Like Bounded-Distance Decoding
Jos H. Weber and Marc P. C. Fossorier
- 17:10 Soft-Decision Decoding of Linear Block Codes using Preprocessing
Yingquan Wu, Ralf Koetter, and Christoforos N. Hadjicostis
- 17:30 On the Dynamics of Continuous-Time Analog Iterative Decoding
Saied Hemati and Amir H. Banihashemi

Session TUD8

Tuesday, June 29, 2004

Kansas City Room

Coding for Partial Response and Magnetic Recording Channels

- 16:10 On Near-Capacity Coding Systems for Partial-Response Channels
Joseph B. Soriaga and Paul H. Siegel
- 16:30 Coded Optimal Partial-response Signaling
Fredrik Rusek and John B. Anderson
- 16:50 An Analysis on Optimal Rates of BDB Encoders for RLL and MTR Systems
Panu Chaichanavong
- 17:10 Mismatch Information Rates in Magnetic Recording
Dieter M. Arnold
- 17:30 Average Transition Density Constraints for Mitigating Transition Noise in Magnetic Recording
Roy D. Cideciyan and Thomas Mittelholzer

Session WEA1

Wednesday, June 30, 2004

Salon D

Cooperation in Networks

- 10:40 On the Achievable Rate for Receiver Cooperation in Ad-Hoc Networks
Anders Høst-Madsen
- 11:00 Capacity of Ad-Hoc Networks with Node Cooperation
Nihar Jindal, Urbashi Mitra, and Andrea Goldsmith
- 11:20 Forwarding Strategies in a Gaussian Parallel-Relay Network
Ivana Maric and Roy Yates
- 11:40 Diversity and Multiplexing Tradeoff Bounds for Cooperative Diversity Schemes
Narayan Prasad and Mahesh K. Varanasi
- 12:00 The Outage Behavior of Coded Cooperation
Todd E. Hunter and Aria Nosratinia

Session WEA2

Wednesday, June 30, 2004

Salon E

LDPC Code Construction

- 10:40 Low-Density Parity-Check Codes with Rates Very Close to the Capacity of the q-ary Symmetric Channel for Large q
Amin Shokrollahi and Wei Wang
- 11:00 Low-Density Parity-Check Codes with Fast Decoding Convergence Speed
Xudong Ma and En-hui Yang
- 11:20 An Efficient Encoding Method for LDPC Codes Based on Cyclic Shift
Hachiro Fujita and Kohichi Sakaniwa
- 11:40 Structured LDPC Codes over $GF(2^l)$ and Companion-Matrix-Based Decoding
Vidya Kumar, Olgica Milenkovic, and Bane Vasic
- 12:00 On Regular Quasi-Cyclic LDPC Codes From Binomials
Roxana Smarandache and Pascal O. Vontobel

Session WEA3 Wednesday, June 30, 2004 Salon F

Multiple Access II

- 10:40 Multiple Access and Time Division: A New Look
Yalin E. Sagduyu and Anthony Ephremides
- 11:00 Window Decoding for the Multiaccess Channel with Generalized Feedback
J. Nicholas Laneman and Gerhard Kramer
- 11:20 An Approach to Capacity Analysis of Coarsely Managed Wideband Multiple Access Systems
Tarik Muharemovic, Ashutosh Sabharwal, and Behmaam Aazhang
- 11:40 Asymptotic Spectral Efficiency of Spatially Correlated MIMO Multiple-Access Channels with Arbitrary Signaling Inputs for Joint and Separate Decoding
Chao-Kai Wen and Kai-Kit Wong
- 12:00 Spectral Efficiency of Joint Multiple Cell-Site Processors for Randomly Spread DS-CDMA Systems
Oren Somekh, Benjamin M. Zaidel, and Shlomo Shamai (Shitz)

Session WEA4 Wednesday, June 30, 2004 Salon G

Space Time Codes

- 10:40 Exponential Diversity Achieving Spatio-Temporal Power Allocation Scheme for MIMO Fading Channels
Premkumar Karumbu, Arun Rangarajan, and Vinod Sharma
- 11:00 A Complete Family of Good Quasi-Orthogonal STBC and A New Family of Orthogonal STBC for Four Transmit Antennas
Yinggang Du and K. T. Chan
- 11:20 Space-Time Precoding with Mean and Covariance Feedback: Implications for Wideband Systems
Upamanyu Madhow and Gwen Barriac
- 11:40 Progressive Union Bound of Space-Time Block Codes and its Saddlepoint Approximation
Madhavan Vajapeyam, Jifeng Geng, and Urbashi Mitra

Session WEA5 Wednesday, June 30, 2004 Salon H

Communication Schemes for Multi-antenna Systems

- 10:40 High-SNR Power Offset in Multi-Antenna Communication
Angel Lozano, Antonia Tulino, and Sergio Verdú
- 11:00 How Good is a Uniform Power Allocation on a MIMO Ricean Channel?
Daniel Hoesli and Amos Lapidoth
- 11:20 Asymptotic Capacity of Beamforming with Limited Feedback
Wiroonsak Santipach and Michael L. Honig
- 11:40 Optical MIMO Transmission with Multipulse PPM
Stephen G. Wilson, Maite Brandt-Pearce, Michael Baedke, and Qianling Cao
- 12:00 Selection Diversity in Multiple Antenna Systems with Matrix Modulation
Pirjo Pasanen and Olav Tirkkonen

Session WEA6 Wednesday, June 30, 2004 Los Angeles Room

Implementation of Coding Systems

- 10:40 An Analog Decoder for the UMTS Standard
Alexandre Graell i Amat, Sergio Benedetto, Guido Montorsi, Daniele Vogrig, Andrea Neviani, and Andrea Gerosa
- 11:00 A Scalable Architecture of a Structured LDPC Decoder
Jason Kwok-San Lee, Benjamin Lee, Jeremy Thorpe, Kenneth Andrews, Sam Dolinar, and Jon Hamkins
- 11:20 Density Evolution Analysis of Device Mismatch in Analog Decoders
Chris Winstead and Christian Schlegel
- 11:40 A Repeat Request Strategy Based on Sliding Window Decoding of Convolutional Codes
Juergen Freudenberger, Martin Bossert, and Sergo Shavgulidze
- 12:00 Analytical Approach to Reliability-Based Incremental Redundancy with Convolutional Codes
Eugene Visotsky, Yakun Sun, Michael L. Honig, and Vinayak Tripathi

Session WEA7 Wednesday, June 30, 2004 Denver Room

Lossy Source Coding I

- 10:40 Estimating the Optimal Support and the Rate of Convergence to the Panter-Dite Formula for a Laplacian Source
Victoria Yee and David L. Neuhoff
- 11:00 Near Rate-Distortion Bound Performance of Sparse Matrix Codes
Tatsuto Murayama
- 11:20 Rapid Near-Optimal VQ Design with a Deterministic Data Net
Michelle Effros and Leonard J. Schulman
- 11:40 Improved Convergence Rates in Empirical Vector Quantizer Design
Andras Antos, Laszlo Gyorfi, and Andras Gyorgy
- 12:00 Lagrangian Global Optimization of Two-description Scalar Quantizers
Sorina Dumitrescu and Xiaolin Wu

Session WEA8 Wednesday, June 30, 2004 Kansas City Room

Detection and Estimation

- 10:40 Blind Quality Estimation for Corrupted Source Signals Based on A-Posteriori Probabilities
Ragnar Thobaben and Ingmar Land
- 11:00 Asymptotic Optimality of Finite-Memory Detection
Gianluigi Ferrari, Giulio Colavolpe, and Riccardo Raheli
- 11:20 Practical Algorithms for Modeling Sparse Data
Alon Orlitsky, S. Sajama, Narayana P. Santhanam, Krishnamurthy Viswanathan, and Junan Zhang
- 11:40 Complexity-Regularized Multiresolution Density Estimation
Rebecca M. Willett and Robert D. Nowak
- 12:00 Using Universal Coding Approach to Randomness Testing
Boris Ryabko, Viktor Monarev, and Yuriy Shokin

- Session THA1 Thursday, July 1, 2004 Salon D
Space-time Codes: New Constructions
- 9:50 Closed Form Designs of Complex Orthogonal Space-Time Block Codes of Rates $(k+1)/(2k)$ for $2k-1$ or $2k$ Transmit Antennas
Kejie Lu, Shengli Fu, and Xiang-Gen Xia
 - 10:10 Construction of Quasi-Orthogonal STBC with Minimum Decoding Complexity
Chau Yuen, Yong Liang Guan, and Tjeng Thieng Tjhung
 - 10:30 Construction and Analysis of a New 4×4 Orthogonal Space-Time Block Code
Robert Calderbank, Suhas Diggavi, and Naofal Al-Dhahir
 - 10:50 The Golden Code: A 2×2 Full-Rate Space-Time Code with Non-Vanishing Determinants
Jean-Claude Belfiore, Ghaya Rekaya, and Emanuele Viterbo

- Session THA2 Thursday, July 1, 2004 Salon E
Distance Bounds for Turbo and LDPC Codes
- 9:50 Minimum Distance Bounds of Irregular QC-LDPC Codes and their Applications
Min-Ho Shin, Joon-Sung Kim, and Hong-Yeop Song
 - 10:10 On the Free Distance of LDPC Convolutional Codes
Arvind Sridharan, Dmitri V. Truhachev, Michael Lentmaier, Daniel J. Costello, Jr., and Kamil Sh. Zigangirov
 - 10:30 A New Upper Bound on the Minimum Distance of Turbo Codes
Alberto Perotti and Sergio Benedetto
 - 10:50 An Upper Bound on the Minimum Distance of Serially Concatenated Convolutional Codes
Alberto Perotti and Sergio Benedetto

- Session THA3 Thursday, July 1, 2004 Salon F
Imperfect Channel Estimation
- 9:50 The Effect of Incorrect Doppler Information on the Cutoff Rate of the AR-1 Fading Channel
Saswat Misra, Ananthram Swami, and Lang Tong
 - 10:10 On the Effect of Channel Estimation Error with Superimposed Training upon Information Rates
Azadeh Vosoughi and Anna Scaglione
 - 10:30 The Effect of CSI Imperfection on the Performance of SVD Based Adaptive Modulation in MIMO Systems
Zhendong Zhou and Branka Vucetic
 - 10:50 Performance Analysis of Optimum Multiuser Detector under Phase Mismatch
Toshiyuki Tanaka

- Session THA4 Thursday, July 1, 2004 Salon G
ARQ and Queueing Problems
- 9:50 Coding Performance of Various Type-I HARQ Schemes with Bit-Interleaved Coded Modulations
Jung-Fu (Thomas) Cheng
 - 10:10 Matching Air-Interface with Backbone: Distributed End-to-End Resource Allocation in Hybrid Networks
Mung Chiang
 - 10:30 On the Scalability of H-ARQ Systems in Wireless Multicast
Stefania Sesia, Giuseppe Caire, and Guillaume Vivier

- Session THA5 Thursday, July 1, 2004 Salon H
Quantum Information Theory
- 9:50 Quantum Pseudo-telepathy and the Kochen-Specker Theorem
Renato Renner and Stefan Wolf
 - 10:10 Universal Distortion-free Entanglement Concentration
Keiji Matsumoto and Masahito Hayashi
 - 10:30 On Feedback and the Classical Capacity of a Noisy Quantum Channel
Garry A. Bowen and Rajagopal Nagarajan
 - 10:50 Information Capacity of Bosonic Channels
Vittorio Giovannetti, Saikat Guha, Seth Lloyd, Lorenzo Maccone, Jeffrey H. Shapiro, Brent J. Yen, and Horace P. Yuen

- Session THA6 Thursday, July 1, 2004 Los Angeles Room
Algebraic Decoding Methods
- 9:50 Probabilistic Decoding of a Class of Algebraic Codes on the Q-ary Symmetric Channel
Andrew Brown, Lorenz Minder, and Amin Shokrollahi
 - 10:10 On Polylogarithmic Decoding Complexity for Reed-Muller Codes
Ilya Dumer
 - 10:30 Decoding of Concatenated Codes with Interleaved Outer Codes
Jørn Justesen and Christian Thommesen
 - 10:50 On the Performance of Integrated Interleaving Coding Schemes
Xiangyu Tang and Ralf Koetter

- Session THA7 Thursday, July 1, 2004 Denver Room
Multiuser Source Coding I
- 9:50 Approaching the Slepian-Wolf Boundary using Practical Channel Codes
Javier Garcia-Frias and Felipe Cabarcas
 - 10:10 Layered Priority Encoded Transmission for Video Streaming to Heterogeneous Receivers
Ramaprabhu Janakiraman and Lihao Xu
 - 10:30 A New Source-Splitting Approach to the Slepian-Wolf Problem
Todd P. Coleman, Anna H. Lee, Muriel Médard, and Michelle Effros
 - 10:50 Lossy Source Coding under a Maximum Distortion Constraint with Decoder Side-Information
Jayanth K. Nayak, Ertem Tuncel, and Kenneth Rose

- Session THA8 Thursday, July 1, 2004 Kansas City Room
Optical Communication
- 9:50 Capacity of the Generalized PPM Channel
Jon Hamkins, Matthew Klimesh, Robert McEliece, and Bruce Moision
 - 10:10 Multipulse PPM on Memoryless Channels
Jon Hamkins and Bruce Moision
 - 10:30 Space Diversity for the Multimode Optical Fiber Channel
Zhijun Zhao and Richard E. Blahut
 - 10:50 Extended Carrier-hopping Prime Codes for Optical and Wireless CDMA Systems
Wing C. Kwong, Guu-Chang Yang, and Cheng-Yuan Chang

- Session THB1 Thursday, July 1, 2004 Salon D
- Analysis and Construction of Space-time Codes**
- 11:30 Designs and Full-rank STBCs from DFT-Domain Description of Cyclic Codes
Udupi Sripathi, Shashidhar Vummintala, and B. Sundar Rajan
- 11:50 Performance Bounds for Space-time Block Codes with Antenna Selection
Xian Nian Zeng and Ali Ghrayeb
- 12:10 Four Antenna Space-Time Lattice Constellations from Division Algebras
Jarkko Hiltunen, Camilla Hollanti, and Jyrki Lahtonen
- 12:30 Trace-Orthonormal Full Diversity Cyclotomic Linear Dispersion Codes
Jian-Kang Zhang, Jing Liu, and Kon Max Wong

- Session THB2 Thursday, July 1, 2004 Salon E
- Soft-in Soft-out Decoding**
- 11:30 Filling-in some of the Decoding gap Between Belief Propagation (BP) and Maximum A Posteriori (MAP) for Convolutional Codes
Peter C. Massey
- 11:50 Belief-Propagation with Information Correction: Improved Near Maximum-Likelihood Decoding
Nedeljko Varnica and Marc P. C. Fossorier
- 12:10 Soft-Input Soft-Output Decoding Algorithm of Linear Block Codes Based on Minimum Distance Search
Jun Asatani, Takuya Koumoto, Toru Fujiwara, and Tadao Kasami
- 12:30 On APP-Decoding using BEAST
Irina E. Bocharova, Rolf Johannesson, Boris D. Kudryashov, and Maja Loncar

- Session THB3 Thursday, July 1, 2004 Salon F
- Capacity of Gaussian Channels**
- 11:30 Markov Processes Asymptotically Achieve the Capacity of Finite State Intersymbol Interference Channels
Jiangxin Chen and Paul H. Siegel
- 11:50 On the Discreteness of the Capacity-achieving Probability Measure of Signal-dependent Gaussian Channels
Terence H. Chan and Frank R. Kschischang
- 12:10 Tight Closed-Form Capacity Bounds for the Peak-Limited Discrete-Time Channel
Andrew L. McKellips
- 12:30 Mutual Information and MMSE in Gaussian Channels
Dongning Guo, Shlomo Shamai (Shitz), and Sergio Verdú

- Session THB4 Thursday, July 1, 2004 Salon G
- Power Control in Wireless Channels**
- 11:30 Asymptotically Optimal Power Allocation with MMSE Receivers
Weimin Xiao
- 11:50 Capacity Region of Power Controlled Fading CDMA: Transmit Strategies and Convexity Issues
Onur Kaya and Sennur Ulukus
- 12:10 Distributed Power and Admission Control for Time Varying Wireless Networks
Tim Holliday, Andrea Goldsmith, Peter Glynn, and Nick Bambos
- 12:30 A Semi-Algebraic Approach to Multiuser Beamforming and Power Control
Holger Boche and Martin Schubert

- Session THB5 Thursday, July 1, 2004 Salon H
- Quantum Entropy and Codes**
- 11:30 Remarks on Clifford Codes
Andreas Klappenecker and Martin Roetteler
- 11:50 Universal Non-destructive Estimation of Quantum Relative Entropy
Alexei Kaltchenko
- 12:10 On Quantum MDS Codes
Martin Roetteler, Markus Grassl, and Thomas Beth
- 12:30 Entropy Measures and Catalysis of Bipartite Quantum State Transformations
Matthew Klimesh

- Session THB6 Thursday, July 1, 2004 Los Angeles Room
- Algebraic and Combinatorial Methods in Coding Theory**
- 11:30 A System of Polynomials for the Complex Hamming Spaces
Vladimir I. Levenshtein
- 11:50 Association Schemes and Metrics on a Finite Group
Vladimir Sidelnikov
- 12:10 On the Maximal Rate of Quasi-Orthogonal Designs
Md. Zafar Ali Khan and B. Sundar Rajan
- 12:30 Generalization and Applications of McEliece's Theorem
Francis Castro and Oscar Moreno

- Session THB7 Thursday, July 1, 2004 Denver Room
- Multiuser Source Coding II**
- 11:30 Communication and Distributional Complexity of Joint Probability Mass Functions
Sidharth Jaggi and Michelle Effros
- 11:50 Progressive Coding of Information with Progressively Coded Side Information
Jia Wang and Jun Sun
- 12:10 On Successive Refinement for the Wyner-Ziv Problem
Yossef Steinberg and Neri Merhav
- 12:30 On Hierarchical Joint Source-channel Coding
Yossef Steinberg and Neri Merhav

- Session THB8 Thursday, July 1, 2004 Kansas City Room
- Optical Orthogonal Codes and Spreading Sequences**
- 11:30 Optimal Optical Orthogonal Codes with $\lambda > 1$
Oscar Moreno, Reza Omrani, and P. Vijay Kumar
- 11:50 Multiple-wavelength Optical Orthogonal Codes under Prime-sequence Permutations
Guo-Chang Yang, Wing C. Kwong, and Cheng-Yuan Chang
- 12:10 Frequency Hopping Sequences with Optimal Partial Autocorrelation Property
Yu-Chang Eun, Soek-Yong Jin, Yun-Pyo Hong, and Hong-Yeop Song

Session THC1 Thursday, July 1, 2004 Salon D
Scaling Laws for Wireless Networks
14:20 A Lower Bound to the Scaling Behavior of Sensor Networks
Michael Gastpar and Martin Vetterli
14:40 Scaling Laws in Random Heterogeneous Networks
Alex Reznik, Sanjeev R. Kulkarni, and Sergio Verdú
15:00 The Transport Capacity of Wireless Networks over Fading Channels
Feng Xue, Liang-Liang Xie, and P. R. Kumar
15:20 Information-Theoretic Upper Bounds on the Capacity of Large Extended ad-hoc Wireless Networks
Olivier Levesque and İ. Emre Telatar

Session THC2 Thursday, July 1, 2004 Salon E
Iterative Techniques for Channels with Memory
14:20 Designing Good LDPC Codes for Markov-Modulated Channels
Andrew W. Eckford, Frank R. Kschischang, and Subbarayan Pasupathy
14:40 Decoding of Linear Codes with Low-Density Generator Matrix over Finite-State Binary Markov Channels
Hanqing Lou and Javier Garcia-Frias
15:00 Analysis of LDPC Decoding for Correlated and Uncorrelated Block Fading Channels
Xiaowei Jin, Andrew W. Eckford, and Thomas E. Fuja
15:20 Turbo-like Codes for the Block-Fading Channel
Albert Guillen i Fabregas and Giuseppe Caire

Session THC3 Thursday, July 1, 2004 Salon F
Universal Channel Coding
14:20 The Zero-Error Capacity of Compound Channels
Jayanth K. Nayak and Kenneth Rose
14:40 Variable Length Codes over Unknown Channels
Aslan Tchamkerten and İ. Emre Telatar
15:00 Universal Variable-Length Channel Codes
Stark C. Draper, Brendan J. Frey, and Frank R. Kschischang

Session THC4 Thursday, July 1, 2004 Salon G
Wide-band Communication
14:20 Noncoherent Eigenbeamforming for a Wideband Cellular Uplink
Noah Jacobsen, Gwen Barriac, and Upamanyu Madhow
14:40 Optimal Pulses for Ultra-Wide Band Communication Systems on Gaussian and Dense Multipath Channels
Burak Berksoy, Nilesh Bhuvanendran, and Lei Wei
15:00 Power Spectra of UWB Time-hopping Modulated Signals: a Shot Noise Approach.
Pierre Bremaud and Andrea Ridolfi
15:20 Semicohherent PPM for Wideband Communications
Ulrich G. Schuster, Moritz Borgmann, and Helmut Bölcskei

Session THC5 Thursday, July 1, 2004 Salon H
Interpolation-based List Decoding of Reed-Solomon Codes
14:20 Improved List Decoding of Reed-Solomon and Reed-Muller Codes over Rings
Marc A. Armand
14:40 Reduced Complexity Interpolation for Soft-decoding of Reed-Solomon Codes
Arshad Ahmed, Ralf Koetter, and Naresh R. Shanbhag
15:00 Divide-and-Conquer Interpolation for List Decoding of Reed-Solomon Codes
Jun Ma, Peter Trifonov, and Alexander Vardy
15:20 Polynomial Matrix-Chain Interpolation in Sudan-type Reed-Solomon Decoders
Farzad Parvaresh and Alexander Vardy

Session THC6 Thursday, July 1, 2004 Los Angeles Room
OFDM
14:20 Generalized Bounds on the Crest-factor Distribution of OFDM Signals with Applications to Code Design
Simon Litsyn and Gerhard Wunder
14:40 System Capacity of Wideband OFDM Communications over Fading Channels without Channel Knowledge
Dieter Schafhuber, Helmut Bölcskei, and Gerald Matz
15:00 UEP Transmission in Multilevel Coded Wavelet-based OFDM System
Xinying Gao, Haixia Zhang, and Dongfeng Yuan
15:20 Bit Loading Algorithms for OFDM
Yaniv George and Ofer Amrani

Session THC7 Thursday, July 1, 2004 Denver Room
Joint Source-channel Schemes
14:20 Joint Source-Channel Cooperation: Diversity versus Spectral Efficiency
Deniz Gunduz and Elza Erkip
14:40 Source-Channel Diversity Approaches for Multimedia Communication
J. Nicholas Laneman, Emin Martinian, and Gregory W. Wornell
15:00 Adaptive Joint Source/Channel Rate Allocation Policies for Delay Sensitive Applications over Fading Channels
C. Thejaswi and Vinod Sharma
15:20 On the Performance of Parallel Concatenated Joint Source-Channel Coding with Variable-Length Codes
Joerg Kliewer

Session THC8 Thursday, July 1, 2004 Kansas City Room
Multidimensional Error Correction
14:20 Cross-Symbol Codes
Ron M. Roth and Gadiel Seroussi
14:40 Two-Dimensional Burst-Correcting Codes
Moshe Schwartz and Tuvi Etzion
15:00 Fast Decoding of Rank-Codes with Rank Errors and Column Erasures
Gerd Richter and Simon Plass

Session THD1

Thursday, July 1, 2004

Salon D

Relaying

- 16:00 On the Capacity of AWGN Relay Channels with Linear Relaying Functions
Sina Zahedi, Mehdi Mohseni, and Abbas El Gamal
- 16:20 On the Capacity of Wireless Erasure Relay Networks
Radhika Gowaikar, Amir F. Dana, Ravi Palanki, Babak Hassibi, and Michelle Effros
- 16:40 On Energy Efficiency of Relay Transmissions
Yingwei Yao, Xiaodong Cai, and Georgios B. Giannakis
- 17:00 Diversity Gains and Clustering in Wireless Relaying
Melda Yuksel and Elza Erkip
- 17:20 The Impact of Relaying on the Capacity of Broadcast Channels
Yingbin Liang and Venugopal V. Veeravalli

Session THD2

Thursday, July 1, 2004

Salon E

Concatenated Convolutional Codes

- 16:00 A New Look at the Error Correcting Capabilities of Convolutional Codes
Sabine Ertl, Rolf Johannesson, and Victor Pavlushkov
- 16:20 Codes with Good Slope for Serially Concatenated Trellis Coded Modulation
Bernd Baumgartner, Axel Hof, and Martin Bossert
- 16:40 Design of Turbo Codes using High Rate Nonsystematic Convolutional Encoders
Francesca Vatta, Bartolo Scanavino, Adrish Banerjee, and Daniel J. Costello, Jr.
- 17:00 Finite Length Serial Concatenation of SPC Codes with Convolutional Codes
Lei Wei

Session THD3

Thursday, July 1, 2004

Salon F

Code Design for Fading Channels

- 16:00 Training Codes for the Noncoherent Multi-Antenna Block Correlated-Rayleigh-Fading Channel
Shivratna Srinivasan and Mahesh K. Varanasi
- 16:20 Optimal Constructions of Space-Time Codes over Multiple Fading Blocks
Hsiao-feng Lu and P. Vijay Kumar
- 16:40 Partitioning Techniques for Design of Multilevel Codes for Rayleigh Fading Channels
Siddhartha Mallik and Ralf Koetter
- 17:00 Closed Form Capacity Expressions for Space Time Block Codes over Fading Channels
Hao Zhang and T. Aaron Gulliver
- 17:20 Bounds on the Performance of Rotated Lattice Constellations
Eva Bayer-Fluckiger, Frederique E. Oggier, and Emanuele Viterbo

Session THD4

Thursday, July 1, 2004

Salon G

Wideband Channel Capacity

- 16:00 Channel Coherence in the Low SNR Regime
Lizhong Zheng, David N. C. Tse, and Muriel Médard
- 16:20 Near-optimal Signaling for Wideband Fading Channels
Xinzhou Wu and R. Srikant
- 16:40 The Capacity of Spread-Spectrum Rayleigh Fading Channels in the Presence of Channel Uncertainty
Richard J. Barton
- 17:00 The Gaussian Interference Channel at Low SNR
Chaitanya K. Rao and Babak Hassibi
- 17:20 Benefits of Correlated MIMO Schemes for Wideband Communication
Wenyi Zhang and J. Nicholas Laneman

Session THD5

Thursday, July 1, 2004

Salon H

Performance of Algebraic Soft Decoding of Reed-Solomon Codes

- 16:00 Exponential Error Bounds for Algebraic Soft-Decision Decoding of Reed-Solomon Codes
Niranjan N. Ratnakar and Ralf Koetter
- 16:20 Performance Enhancements for Algebraic Soft Decision Decoding of Reed-Solomon Codes
Mostafa El-Khamy, Jonathan Harel, and Robert J. McEliece
- 16:40 Adaptive and Iterative Soft-decision List Decoding
Feng Cai, Marc A. Armand, and Mehul Motani
- 17:00 List Decoding Of Concatenated Codes: Improved Performance Estimates
Alexander Barg and Andrew McGregor

Session THD6

Thursday, July 1, 2004

Los Angeles Room

Codes for PAR Control

- 16:00 On Signals with Very High Peak-to-average Power Ratio
Gregory Freiman, Simon Litsyn, and Alexander Yudin
- 16:20 Combined Block Coded Modulation and Peak-to-Average Power Ratio Reduction in OFDM Systems
Houshou Chen
- 16:40 On the PAR of Binary Reed-Muller OFDM Codes
Kaustuvmani Manji and B. Sundar Rajan
- 17:00 ICI Self Cancellation - Golay Complementary Reed Muller Code Scheme for OFDM Systems
Dong-Joon Shin, Jae-Hyun Park, Jae-Yup Lee, and Sang-Won Lee
- 17:20 Crest-Factor Analysis of Carrier Interferometry MC-CDMA and OFDM Systems
Gerhard Wunder and Kenneth G. Paterson

Session THD7 Thursday, July 1, 2004 Denver Room

Robust Source Coding

- 16:00 Frog-in-the-Box Index Codes with Maximum Likelihood Decoding for Robust Scalar Quantization
Ilju Na and David L. Neuhoff
- 16:20 Cell Density Functions and Effective Channel Code Rates for Quantizers with Uniform Decoders and Channel Optimized Encoders
Ben Farber and Ken Zeger
- 16:40 Robust Predictive Quantization: A New Analysis and Optimization Framework
Alyson K. Fletcher, Sundeeep Rangan, Vivek K. Goyal, and Kannan Ramchandran
- 17:00 First-order Multiplexed Source Codes for Error-resilient Entropy Coding
Herve Jegou and Christine Guillemot
- 17:20 Source Coding using a Class of Universal Hash Functions
Hiroki Koga

Session THD8 Thursday, July 1, 2004 Kansas City Room

CDMA

- 16:00 Sum Capacity of Binary Signatures that Minimize the Total Squared Correlation
Frederik Vanhaverbeke and Marc Moeneclaey
- 16:20 Blind Bandwidth-efficient Schemes for CDMA on Dispersive MIMO Channels
Emanuele Grossi, Marco Lops, and Luca Venturino
- 16:40 An Asymptotic Analysis of Band-Limited DS/SSMA Communication Systems
Yeon K. Jeong, Joon H. Cho, and James S. Lehnert
- 17:00 Maximizing the Spectral Efficiency of CDMA: A Max-Min Fair Approach
Ateet Kapur and Mahesh K. Varanasi
- 17:20 Isometric Multi-signature Multi-user MC-CDMA in Frequency-Selective Fading
Matthew J. M. Peacock, Iain B. Collings, and Michael L. Honig

Session FRA1 Friday, July 2, 2004 Salon D

Throughput and Delay in Wireless Networks

- 9:50 Throughput and Delay in Random Wireless Networks: 1-D Mobility is Just as Good as 2-D
James Mammen and Devavrat Shah
- 10:10 Optimal Throughput-Delay Trade-off in Energy Constrained Wireless Networks
Abbas El Gamal, James Mammen, Balaji Prabhakar, and Devavrat Shah
- 10:30 Closing the Gap in the Capacity of Random Wireless Networks
Massimo Franceschetti, Olivier Dousse, David N. C. Tse, and Patrick Thiran
- 10:50 Throughput Scaling in Wireless Networks with Restricted Mobility
Aurelie C. Lozano, Sanjeev R. Kulkarni, and Pramod Viswanath

Session FRA2 Friday, July 2, 2004 Salon E

Behavior of Iterative Decoders

- 9:50 EXIT Functions for the Gaussian Channel
Eran Sharon, Alexei Ashikhmin, and Simon Litsyn
- 10:10 Turbo Codes and Shannon's Condition for Reliable Communication
Michael Lentmaier, Dmitri V. Truhachev, Kamil Sh. Zigangirov, and Daniel J. Costello, Jr.
- 10:30 Bounds on Information Combining for the Accumulator of Repeat-Accumulate Codes without Gaussian Assumption
Ingmar Land, Jossy Sayir, and Peter A. Hoeher
- 10:50 Non-Gaussian Behaviour of Extrinsic Log-Values
Nicholas Letzepis and Alex Grant

Session FRA3 Friday, July 2, 2004 Salon F

Error Exponents I

- 9:50 Feedback, Queueing, and the Reliability of the Ideal Poisson Channel above Capacity
Aaron B. Wagner and Venkat Anantharam
- 10:10 On the Reliability Exponent of the Discrete-time Geometric-server Timing Channel
Guy Nakibly and Shraga I. Bross
- 10:30 On the Random Coding Error Exponents of the Single-user and the Multiple-access Gel'fand-Pinsker Channels
Anelia Somekh-Baruch and Neri Merhav
- 10:50 Error Exponent Region for Gaussian Multiple Access Channels and Gaussian Broadcast Channels
Lihua Weng, Achilleas Anastasopoulos, and Sandeep S. Pradhan

Session FRA4 Friday, July 2, 2004 Salon G

Coding for Special Channels I

- 9:50 Reconstruction of Permutations Distorted by Single Reversal Errors
Elena Konstantinova
- 10:10 On Unequal Error Protection for Information Symbols via Active Distances
Victor Pavlushkov, Rolf Johannesson, and Viktor V. Zyablov
- 10:30 Optimization of LDPC Codes for UEP Channels
Charly Poulliat, David Declercq, and Inbar Fijalkow
- 10:50 Unequal Error Protection using Low-Density Parity-Check Codes
Nazanin Rahnavard and Faramarz Fekri

Session FRA5 Friday, July 2, 2004 Salon H

Combinatorial Constructions of Codes

- 9:50 Quasi-Perfect Codes with Small Distance
Tuvi Etzion and Benjamin Mounits
- 10:10 New Good Linear Codes by Special Puncturings
Markus Grassl and Greg White
- 10:30 Linear Codes with Complementary Duals Meet the Gilbert-Varshamov Bound
Nicolas Sendrier
- 10:50 Nonintersecting Subspaces Based on Finite Alphabets
Frederique E. Oggier, N. J. A. Sloane, A. R. Calderbank, and Suhas N. Diggavi

Session FRA6 Friday, July 2, 2004 Los Angeles Room

Convolutional Codes

- 9:50 Blind Recognition of Punctured Convolutional Codes
Peizhong Lu, Li Shen, Xiangyang Luo, and Yan Zou
- 10:10 Analysis of Convolutional Codes on the Erasure Channel
Brian Kurkoski, Paul H. Siegel, and Jack K. Wolf
- 10:30 Sphere Packing Bounds for Convolutional Codes
Eirik Rosnes and Øyvind Ytrehus
- 10:50 Convolutional Codes with Cyclic Structure
Heide Gluesing-Luerssen, Barbara Langfeld, and Wiland Schmale

Session FRA7 Friday, July 2, 2004 Denver Room
Lossy Source Coding II
9:50 Efficient Algorithms and Minimax Bounds for Zero-Delay Lossy Source Coding
Andras Gyorgy, Tamas Linder, and Gabor Lugosi
10:10 A Minimum Description Length Proposal for Lossy Data Compression
Mokshay M. Madiman, Matthew Harrison, and Ioannis Kontoyiannis
10:30 The Empirical Distribution of Rate-Constrained Source Codes
Tsachy Weissman and Erik Ordentlich
10:50 Coding Unstable Scalar Markov Processes Into Two Streams
Anant Sahai

Session FRA8 Friday, July 2, 2004 Kansas City Room
Learning Theory
9:50 Consistency in a Model for Distributed Learning
Joel B. Predd, Sanjeev R. Kulkarni, and H. Vincent Poor
10:10 Entropic Graphs for Intrinsic Dimension Estimation in Manifold Learning
Jose A. Costa and Alfred O. Hero
10:30 Adaptive Regression Estimation with Multilayer Feedforward Neural Networks
Michael Kohler and Adam Krzyzak
10:50 PAC Learning for Markov Decision Processes and Dynamic Games
Rahul Jain and Pravin Varaiya

Session FRB1 Friday, July 2, 2004 Salon D
Capacity of Wireless Networks
11:30 Power Bandwidth Trade-off in Sensory and Ad-hoc Wireless Networks
Amir F. Dana and Babak Hassibi
11:50 The Effect of Interference on the Capacity of Multi-hop Wireless Networks
Murali Kodialam and Thyaga Nandagopal
12:10 Capacity Scaling in Wireless ad-hoc and Sensor Networks: Achievability of $O(\frac{W}{n^{1/3}})$ bits/sec/node
Shuchin Aeron and Saligrama Venkatesh
12:30 Scaling Laws for Correlated Data Gathering
Razvan Cristescu, Baltasar Beferull-Lozano, and Martin Vetterli

Session FRB2 Friday, July 2, 2004 Salon E
Performance Evaluation of Iterative Decoders
11:30 A Simple Method of Approximating the Error Floor of Turbo Codes with S-Type Permutors
Axel Huebner and Daniel J. Costello, Jr.
11:50 Tight Bounds for LDPC Codes under MAP Decoding
Andrea Montanari
12:10 Approximate Algorithms for Computing the Minimum Distance of Low-Density Parity-Check Codes
Xiaoyu Hu, Marc P. C. Fossorier, and Evangelos Eleftheriou
12:30 Estimating LDPC Codeword Error Rates via Importance Sampling
Bo Xia and William E. Ryan

Session FRB3 Friday, July 2, 2004 Salon F
Error Exponents II
11:30 Statistical Mechanical Evaluation of Error Exponents for Lossy Data Compression
Tadaaki Hosaka and Yoshiyuki Kabashima
11:50 On the Computation of the Joint Source-channel Error Exponent for Memoryless Systems
Yangfan Zhong, Fady Alajaji, and L. Lorne Campbell
12:10 Error Exponents for Channel Coding and Signal Constellation Design
Jianyi Huang, Sean P. Meyn, and Muriel Médard
12:30 Achievable Rates and Decoding Error Probability for Parallel Channels with Dependent Noise and Restricted Number of Users
Vladimir B. Balakirsky and A. J. Han Vinck

Session FRB4 Friday, July 2, 2004 Salon G
Coding for Special Channels II
11:30 Low Complexity Code Design for the 2-user Gaussian Multiple Access Channel
Aline Roumy, David Declercq, and Eric Fabre
11:50 Distributed Decoding in a Cellular Multiple-Access Channel
Emre Aktas, Jamie Evans, and Stephen Hanly
12:10 An Upper Bound on the Size of t-EC-AUED Codes
Bella Bose and Torleiv Kløve
12:30 Probability of Undetected Error for a Class of Asymmetric Error-Detecting Codes
Torleiv Kløve, Paul Oprisan, and Bella Bose

Session FRB5 Friday, July 2, 2004 Salon H
Weight Distribution in Codes
11:30 Bounds on Distance Distributions in Codes of Known Size
Alexei Ashikhmin, Gérard D. Cohen, Michael Krivelevich, and Simon Litsyn
11:50 Bounds on Codes Derived by Counting Components in Varshamov Graphs
Katie O'Brien and Patrick Fitzpatrick
12:10 A Mass Formula for Z₄ Cyclic Codes of Length 2^e
Taher Abualrub, Ali Ghrayeb, and Robert H. Oehmke
12:30 Weight Enumerators of Duadic and Quadratic Residue Codes
Philippe Gaborit, Carmen-Simona Nedeloaia, and Alfred Wassermann

Session FRB6 Friday, July 2, 2004 Los Angeles Room
Decoding of Convolutional Codes
11:30 Forward-only Iterative Decoding of Convolutional Self-orthogonal Codes
David Haccoun, Yu-Cheng He, and Christian Cardinal
11:50 A Simple Parallel Dual Code Decoding Algorithm for Convolutional Codes with High Throughput and Low Latency
Yu Liao and John Kieffer
12:10 Reduced Complexity Decoding Strategies for LDPC Convolutional Codes
Ali E. Pusane, Michael Lentmaier, Kamil Sh. Zigangirov, and Daniel J. Costello, Jr.
12:30 Reduced-Complexity Iterative Decoding using a Variable-Size Trellis Structure
Dharmika N. Bokolamulla and Tor M. Aulin

Session FRB7 Friday, July 2, 2004 Denver Room

Lossy Source Coding III

- 11:30 Rate-Distortion Behavior of Non-Bandlimited Signals with Finite Rate of Innovation
Ivana Jovanovic and Baltasar Beferull-Lozano
- 11:50 Good Trellis Source Codes at Fractional Rates
Tomas Eriksson, John B. Anderson, and Mirek Novak
- 12:10 Performance of Low Rate Entropy-Constrained Scalar Quantizers
Daniel Marco and David L. Neuhoff
- 12:30 Optimal Quantization in Neural Coding
Mark D. McDonnell and Derek Abbott

Session FRB8 Friday, July 2, 2004 Kansas City Room

Boolean Functions

- 11:30 Hyper-bent Functions and Cyclic Codes
Claude Carlet and Philippe Gaborit
- 11:50 Cubic Boolean Functions with Highest Resiliency
Claude Carlet and Pascale Charpin
- 12:10 On Some Properties of Symmetric Boolean Functions
Marion Videau
- 12:30 New p-ary Bent Sequences
Young-Sik Kim, Ji-Woong Jang, Jong-Seon No, and Tor Helleseth

Session FRC1 Friday, July 2, 2004 Salon D

MIMO Detection

- 14:20 Asymptotically Tight Bound on SER of MIMO Zero-forcing Receivers with Correlated Fading
Mario Kiessling and Joachim Speidel
- 14:40 On Estimating the Symbol APP in MIMO Systems
Adriel P. Kind and Alex Grant
- 15:00 A Study of Low-Complexity and Low-Latency MIMO Detectors
Christoph Windpassinger, Lutz H.-J. Lampe, Robert F. H. Fischer, and Thorsten Hehn
- 15:20 Optimal Estimator-Detector Receivers for Space-Time Block Coding
Olivier Roy, Alex Grant, and Sylvie Perreau

Session FRC2 Friday, July 2, 2004 Salon E

Turbo Code Constructions

- 14:20 Accumulate Repeat Accumulate Codes
Aliazam Abbasfar, Dariush Divsalar, and Kung Yao
- 14:40 Low-Density Mirror-Concatenated (LDMC) Codes: A Generalization of Irregular Repeat-and-Accumulate (IRA)
Sam Dolinar and Kenneth Andrews
- 15:00 Enhancement of Turbo Codes using Cyclic Redundancy Check with Interleaver Optimisation
Andrew J. Rogers, Martin Tomlinson, Marcel A. Ambroze, and Mohammed Z. Ahmed
- 15:20 Variable Rate Bit-Interleaved Turbo-Coded Modulation
Jianghong Luo, Ruoheng Liu, and Predrag Spasojevic

Session FRC3 Friday, July 2, 2004 Salon F

Multiuser Communications

- 14:20 Asymptotic Design and Analysis of Multistage Detectors for Asynchronous CDMA Systems
Laura Cottatellucci, Merouane Debbah, and Ralf R. Muller
- 14:40 The Cross-Entropy Method for Blind Multiuser Detection
Zaifei Liu, Arnaud Doucet, and Sumeetpal Singh
- 15:00 On Sequence Design for a Synchronous CDMA Channel
Rajesh Sundaresan
- 15:20 Differential Bandwidth and Equivalent Bandwidth for Overloaded Multiuser
Joon H. Cho

Session FRC4 Friday, July 2, 2004 Salon G

Coding Systems

- 14:20 Binary Shaping for Low-Duty-Cycle Communications
Richard J. Barron
- 14:40 Serially Concatenated Continuous Phase Modulation with Ring Convolutional Codes
Ming Xiao and Tor M. Aulin
- 15:00 Embedded Turbo Coding in Pattern Position Modulation for Ultra Wideband Radio System
Chunyu Bi
- 15:20 Design of Woven Coded CPFSK via Hierarchical Code Structure
Stefan Kempf, Sergo Shavgulidze, and Martin Bossert

Session FRC5 Friday, July 2, 2004 Salon H

Estimation and Localization in Sensor Networks

- 14:20 Decentralized Estimation in an Inhomogeneous Environment
Zhi-Quan Luo and Jin-Jun Xiao
- 14:40 Adaptive Sampling for Wireless Sensor Networks
Robert D. Nowak, Rebecca M. Willett, and Aline Martin
- 15:00 On Diffusive Source Localization using Dumb Sensors
Saravanan Vijayakumaran, Yoav Levinbook, and Tan F. Wong
- 15:20 Virtual Radar Approach to Event Localization in Sensor Networks
Bharath Ananthasubramaniam and Upamanyu Madhow

Session FRC6 Friday, July 2, 2004 Los Angeles Room

Decoding of General Linear Codes

- 14:20 Statistical Approach to ML Decoding of Linear Block Codes on Symmetric Channels
Haris Vikalo and Babak Hassibi
- 14:40 Minimum Basis Search Algorithm for Maximum Likelihood
Michael Ben-Yishai and Jakov Snyder
- 15:00 On the Thinnest Coverings of Ellipsoids
Ilya Dumer, Mark S. Pinsker, and Viacheslav V. Prelov
- 15:20 Miscorrection Probability Beyond The Minimum Distance
Yuval Cassuto and Jehoshua Bruck

Session FRC7 Friday, July 2, 2004 Denver Room
MDS Codes and Generalizations
14:20 A Generalization of MDS Codes
Yuan Luo, Fang-Wei Fu, Chaichana Mitrpant, and A. J. Han Vinck
14:40 MDS Self-Dual Codes
Jon-Lark Kim and Yoonjin Lee
15:00 On q-ary Grey-Rankin Bound and Codes Meeting this Bound
Stefan Dodunekov, Tor Helleseth, and Victor Zinoviev
15:20 Matrix Characterization of Near MDS Codes over Z_m and Abelian Groups
G. Viswanath and B. Sundar Rajan

Session FRC8 Friday, July 2, 2004 Kansas City Room
Multiuser Detection and Decoding
14:20 Application of Maximal Ratio Combining for Iterative Multiuser Decoding
Lars K. Rasmussen and Tao Lin
14:40 Multiuser Detection Based on Reduced Complexity Probabilistic Data Association
Peng Hui Tan and Lars K. Rasmussen
15:00 A Generalized Probabilistic Data Association Multiuser Detector for CDMA Systems
Yufei Huang and Jianqiu (Michelle) Zhang
15:20 Improving the Performance of Linear Parallel Interference Cancellation for CDMA using a Method of the Statistical Mechanics
Akira Shojiguchi, Toshiyuki Tanaka, Akira Mizutani, Takumi Mizuno, and Masato Okada

Session FRD1 Friday, July 2, 2004 Salon D
Dirty Paper Coding
16:00 Writing on Many Pieces of Dirty Paper at Once: The Binary Case
Ashish Khisti, Uri Erez, and Gregory W. Wornell
16:20 Multiple User Writing on Dirty Paper
Young-Han Kim, Arak Sutivong, and Styrmir Sigurjonsson
16:40 Random Coding Bound of Information Hiding E-capacity
Mariam E. Haroutunian and Smbat A. Tonoyan
17:00 A Close-to-Capacity Dirty Paper Coding Scheme
Stephan ten Brink and Uri Erez

Session FRD2 Friday, July 2, 2004 Salon E
Lattice Codes and Coded Modulation
16:00 Product Lattice Codes
Amir J. Salomon and Ofer Amrani
16:20 MMSE-GDFE Lattice Decoding for Solving Under-determined Linear Systems with Integer Unknowns
Mohamed Oussama Damen, Hesham El Gamal, and Giuseppe Caire
16:40 Channel Dependent Tree Pruning Algorithms for the Sphere Decoder
Harold Artes
17:00 Derivation on Bit Error Probability of Coded QAM using Integer Codes
Hristo Kostadinov, Hiroyoshi Morita, and Nikolai Manev

Session FRD3 Friday, July 2, 2004 Salon F
Capacity of Fading Channels
16:00 Duality Bounds on the Cut-Off Rate with Applications to Ricean Fading
Amos Lapidoth and Natalia Miliou
16:20 The Uniqueness of the Capacity-Achieving Distribution over Non-Coherent Flat-Fading Channels
Majid Fozumbal, Steven W. McLaughlin, and Ronald W. Schafer
16:40 Spectral Efficiency of Peak-Power-Limited Rician Block Fading Channels
Mustafa C. Gursoy, H. Vincent Poor, and Sergio Verdú
17:00 Capacity of Pilot-Aided MIMO Communication Systems
Haidong Zhu, Rong-Rong Chen, and Behrouz Farhang-Boroujeni

Session FRD4 Friday, July 2, 2004 Salon G
Cryptography
16:00 On the Vector Decomposition Problem for m-torsion Points on an Elliptic Curve
Negar Kiyavash and Iwan Duursma
16:20 On the Zeta Functions of Two Towers of Function Fields
Kenneth W. Shum, Ian F. Blake, and V. Kumar Murty
16:40 On the Secondary Constructions of Resilient Functions
Claude Carlet
17:00 Optimal Left-to-Right Binary Signed-Digit Representation for Integers
Xiaoyu Ruan and Rajendra S. Katti
17:20 Arithmetic Homophonic Coding with Dummy Symbols
Andrey Fionov

Session FRD5 Friday, July 2, 2004 Salon H
Tracking and Localization
16:00 Detection and Localization of an Anomaly from Noisy Projections
Lionel Fillatre and Igor V. Nikiforov
16:20 Receiver Design for Rapidly Time-Varying Channels
Christian Sgraja, Juergen Lindner, and S. Unnikrishna Pillai
16:40 Joint Multiple Target Tracking and Classification in Sensor Networks
Tom Vercauteren, Dong Guo, and Xiaodong Wang
17:00 2D Rigid Body Target Modeling for Tracking and Identification
Lang Hong

Session FRD6 Friday, July 2, 2004 Los Angeles Room
List Decoding Methods and Applications
16:00 List Sequence Turbo Decoding Techniques
Carl Fredrik H. Leanderson and Carl-Erik W. Sundberg
16:20 Finding a List of Best Paths in a Trellis
Georg Schmidt, Vladimir R. Sidorenko, Victor V. Zyablov, and Martin Bossert
16:40 8-PSK Turbo Equalization with the List-Sequential (LISS) Algorithm
Christian Kuhn and Joachim Hagenauer
17:00 Waveform Synthesis using List-Decoding of Codes over the Real Alphabet
RaviKiran Gopalan and Oliver M. Collins

Session FRD7

Friday, July 2, 2004

Denver Room

Individual Sequences

- 16:00 Finite-state Rate-distortion for Individual Sequences
Dharmendra S. Modha and Daniela Pucci de Farias
- 16:20 Signal Sampling and Recovery under Long-memory Errors
Mirek Pawlak and Ulrich Stadtmuller
- 16:40 Causal Coding of Individual Sequences and the Lempel-Ziv Differential Entropy
Tamas Linder and Ram Zamir
- 17:00 Applicability of the Sample Path Method of Ergodic Processes to Individual Sequences
Shigeaki Kuzuoka and Tomohiko Uyematsu
- 17:20 Memoryless Individual Sequences
Andrew B. Nobel

Session FRD8

Friday, July 2, 2004

Kansas City Room

Filter Banks

- 16:00 Filter Bank Frame-Expansion with Erasures- A Para-Pseudo Inverse Based Reconstruction
Ravi H. Motwani and Christine Guillemot
- 16:20 Factorization of Two-Channel 2D Paraunitary Filter Banks over Fields of Characteristic Two
Farshid Delgosha and Faramarz Fekri
- 16:40 Surflets: A Sparse Representation for Multidimensional Functions Containing Smooth Discontinuities
Venkat Chandrasekaran, Michael B. Wakin, Dror Baron, and Richard G. Baraniuk