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FORTY-SECOND ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS AND COMPUTERS

October 26 - 29, 2008
Asilomar Hotel and
Conference Grounds

Technical Co-sponsor

IEEE
Signal Processing Society ®

FORTY-SECOND ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS & COMPUTERS

Organized in cooperation with

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Welcome from the General Chairman

Prof. Michael Schulte, University of Wisconsin

I am delighted to welcome you to the 42nd Asilomar Conference on Signals, Systems and Computers. For those of you coming to Asilomar for the first time, I hope you have a chance to enjoy the technical sessions and social events that make this conference a special event and encourage many of us to return year after year. The conference, which is relaxed and friendly, provides an excellent opportunity to interact with some of the top scholars in our field. The conference grounds, which are next to the Pacific coast, are beautiful and provide an excellent setting for meeting with friends and colleagues.

The Asilomar conference provides a welcoming environment for students to present their research. This year, the student paper contest received a record number of 108 submissions. The eight finalists in the student paper contest, chaired by Professor James Stine, will present their posters on Sunday afternoon before the welcome reception and social gathering. I hope you have an opportunity to attend this important event.

We are very fortunate to have Professor Deborah Estrin give this year's Sydney Parker Memorial Lecture, which will be held on Tuesday morning. Professor Estrin holds the Jon Postel Chair in Computer Networks at UCLA and is Founding Director of the NSF-funded Center for Embedded Networked Sensing. Her plenary talk, "Wireless Sensing Systems: From Ecosystems to Human Systems," will explore how wireless sensing is enabling new discoveries in human and natural systems.

This year's technical program is outstanding. It features important research in communication systems, MIMO, networking, adaptive systems, array processing, biomedical signal and image processing, multi-rate processing, architectures, hardware implementations, and speech, image and video processing. The success of this year's conference is due to the tremendous efforts of Professor Linda DeBrunner. Linda recruited outstanding technical area chairs, arranged the program committee meeting, and provided the overall technical organization and leadership for the conference. The technical area chairs, Robert Heath, Aylin Yener, Akbar Sayeed, Xiaoli Ma, Milos Doroslavacki, Lina Karam, Scott Acton, Oscar Gustafsson, and John W. Fisher, III, recruited outstanding session chairs, who invited papers from leading researchers in their fields. Linda and the technical area chairs arranged an exciting program from a total of 569 submitted papers, including 221 invited papers.

I would like to thank all the people who made this conference possible. I am extremely grateful to Linda, the technical area chairs, the session chairs, and all the authors for providing us with such a high quality program. I am also grateful to the members of the Steering Committee for providing the overall direction for the conference. Finally, special thanks are extended to Monique Fargues, Mike Matthews, Frank Kragh, Murali Tummala, and Sue Netzorg who work so hard each year to organize this conference.

On behalf of the entire Conference Committee, I hope you enjoy the 42nd Asilomar Conference on Signals, Systems and Computers.

Michael Schulte, University of Wisconsin, July 2008

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2008 Asilomar Conference Session Schedule

Sunday Afternoon, October 26, 2008

2:00 - 7:00 PM Registration – Main Lodge
5:00 - 6:30 PM Student Paper Contest – Merrill Hall
7:00 - 9:00 PM Welcoming Reception – Merrill Hall

Monday Morning, October 27, 2008

7:30 - 9:00 AM Breakfast – Crocker Dining Hall
8:00 AM - 6:00 PM Registration

8:30 AM - 12:10 PM MORNING SESSIONS
MA1 Waveform Design Methods
MA2 Advances in Bioimaging and Analysis
MA3a Relaying and Cooperation I
MA3b Stochastic Control and Decision Theory for Cognitive Radio Networks
MA4 Multiuser MIMO Networks
MA5 Programmable and Reconfigurable Architectures
MA6 MIMO Radar and Sensor Fusion
MA7 Adaptive Filtering: Theory and Applications
MA8a1 Array Processing and Source Localization (Poster)
MA8a2 Multiuser MIMO (Poster)
MA8a3 Beamforming (Poster)
MA8b1 Topics in Communications (Poster)
MA8b2 Radar Signal Processing (Poster)
MA8b3 Multi-rate and Digital Signal Processing (Poster)

12:00 - 1:00 PM Lunch – Crocker Dining Hall

Monday Afternoon, October 27, 2008

1:30 - 5:10 PM AFTERNOON SESSIONS
MP1 MIMO Radar
MP2 Retinal Image Analysis
MP3 Information Theory
MP4 Feedback in MIMO Systems
MP5 Computer Arithmetic I
MP6 Blind System Identification, Multi-channel System Inversion, and Speech Dereverberation
MP7 Signal Processing and Learning for Sensor Signal Exploitation
MP8a1 Distributed Detection and Estimation (Poster)
MP8a2 Wireless Network Management (Poster)
MP8a3 OFDM/UWB (Poster)
MP8a4 MIMO OFDM and Cooperative Relaying (Poster)

Monday Evening, October 27, 2008

6:00 - 9:30 PM Conference Cocktail/Social – Merrill Hall
The Cocktail/Social takes the place of Monday's dinner. No charge for conference attendees or their guest.

2008 Asilomar Conference Session Schedule
(continued)

Tuesday Morning, October 28, 2008

7:30 - 9:00 AM Breakfast – Crocker Dining Hall
8:00 AM - 5:00 PM Registration
8:15 - 9:45 AM TA1a - Conference Welcome and Plenary Session
9:45 - 10:15 AM Coffee Social

10:15 AM - 12:20 PM MORNING SESSIONS
TA1b Compressive Sensing
TA2b Functional Imaging and Analysis
TA3b Secrecy Capacity and Interference Channels
TA4b Multiuser MIMO Broadcast
TA5b Communication Architectures
TA6b Wireless Sensor Networks
TA7b Adaptive Methods and Monte Carlo Signal Processing
TA8b1 Image/Video Processing, Quantization and Coding (Poster)
TA8b2 Speech Analysis and Recognition (Poster)
TA8b3 Quantization, Coding, and Encryption (Poster)
TA8b4 Limited Feedback and Precoding (Poster)

12:00 - 1:00 PM Lunch – Crocker Dining Hall

Tuesday Afternoon, October 28, 2008

1:30 - 5:35 PM AFTERNOON SESSIONS
TP1a Distributed Statistical Inference
TP1b Statistical Signal Processing for Forensics and Security
TP2 Analysis Methods for Functional and Structural Brain Imaging
TP3a Delay-Rate Tradeoffs
TP3b Relaying and Cooperation II
TP4 Cooperative MIMO
TP5a Integrated Algorithm and Architecture Implementation
TP5b Cognitive Systems and Spectrum Sharing
TP6 Interference Management and Cooperative Communication in Ad-hoc Networks
TP7a Detection, Processing and Fusion in Distributed Sensor Systems
TP7b Performance Prediction and Analysis for Signal and Image Processing Systems
TP8a1 Adaptive Systems and Processing (Poster)
TP8a2 Detection and Estimation (Poster)
TP8a3 Space-Time Coding and Decoding (Poster)
TP8b1 Computer Arithmetic II (Poster)
TP8b2 Architectures and Implementation (Poster)
TP8b3 Image Analysis for Biomedical Applications (Poster)

Tuesday Evening, October 28, 2008

8:00 - 10:00 PM Bonfire at the fire pit next to Crocker Hall

2008 Asilomar Conference Session Schedule
(continued)

Wednesday Morning, October 29, 2008

7:30 - 9:00 AM	Breakfast – Crocker Dining Hall
8:00 AM - 12:00 PM	Registration – **Copyright Forms** must be turned in before the registration closes at 12:00 noon.

8:30 AM - 12:35 PM MORNING SESSIONS

WA1	Sensor Networks
WA2	Biological Imaging: Acquisition, Analysis and Modeling
WA3a	Ultra Wide Band
WA3b	OFDMA and Multiple Access
WA4	New Directions in MIMO
WA5a	Architectures for Positioning and Navigation
WA5b	Low Power Methods
WA6a	Network Information Theory and Security
WA6b	Wireless Network Utility Maximization: Fundamental Limits and Protocols
WA7a	Speech Recognition and Analysis
WA7b	Adaptive Receivers for OFDM and UWB Systems
WA8a	Network Coding
WA8b	Video Coding

12:00 - 1:00 PM Lunch – Meal tickets may be purchased at registration desk. This meal is not included in the registration.

Student Paper Contest

Merrill Hall - Sunday, October 26, 2008
Judging starts at 5:00 PM

(Listed in paper number order)

"Spectrum Allocation in Two-Tier Networks"
Vikram Chandrasekhar and Jeffrey Andrews, The University of Texas at Austin

"Signal-Domain Registration for Change Detection in Time-Reversal SAR"
Nicholas O'Donoughue, José Moura, and Yuanwei Jin, Carnegie Mellon University

"Parallel High-Radix Montgomery Multipliers"
Philip Amberg, Nathaniel Pinckney, and David Money Harris, Harvey Mudd College

"Refined Error Concealment for Multiple State Video Coding over Ad Hoc Networks"
Yiting Liao and Jerry D. Gibson, University of California, Santa Barbara

"Diffusion LMS Algorithms with Information Exchange"
Federico S. Cattivelli and Ali H. Sayed, University of California, Los Angeles

"Sparsity Adaptive Matching Pursuit Algorithm for Practical Compressed Sensing"
Thong Do, Johns Hopkins University, Lu Gan, Brunel University, Nam Nguyen, and Trac Tran, Johns Hopkins University

"Distortion-Rate Tradeoff of a Source Uniformly Distributed over Positive Semi-definite Matrices"
Rajesh Krishnamachari and Mahesh Varanasi, University of Colorado

"Delay-minimal Transmission for Average Power Constrained Multi-access Communications"
Jing Yang and Sennur Ulukus, University of Maryland

2008 Asilomar Conference Session Schedule

Coffee breaks will be at 10:10 AM and 3:10 PM, except on Tuesday morning when refreshments will be served outside Merrill Hall from 9:45-10:15 AM.

Tuesday, October 28, 2008

CONFERENCE WELCOME AND PLENARY SESSION 8:15 – 9:45 AM

1. Welcome from the General Chairperson:

Prof. Michael Schulte
University of Wisconsin

2. Student Paper Contest: **Prof. James Stine**
Oklahoma State University

3. Session TA1a Distinguished Lecture for the 2008 Asilomar Conference

Wireless Sensing Systems:
From Ecosystems to Human Systems

Prof. Deborah Estrin
University of California – Los Angeles

Abstract
Miniaturization and Moore's law has enabled us to combine sensing, computation and wireless communication in integrated, low-power devices, and to embed networks of these devices in the physical world. By placing sensing devices up close to the physical phenomena we are now able to study details in space and time that were previously unobservable. Looking back over the past few years we have made significant progress toward the vision of programmable, multi-modal, multi-scale observatories. We have made our greatest strides in these applications using: judicious application of server-side and in situ processing, mobility at multiple scales, and multi-scale data and models as context for in situ measurements. We are now applying these lessons learned and technical approaches to human as well as natural systems, in particular by exploring use of the installed base of image, location, and acoustic sensors that we all carry around in our pockets or on our belts-mobile phones. In this talk I will draw upon experiences with pilots and prototypes at CENS.

Biography
Deborah Estrin (Ph.D. MIT, 1985; BSEE UCB, 1980) is a Professor of Computer Science, holds the Jon Postel Chair in Computer Networks, and is Founding Director of the National Science Foundation funded Center for Embedded Networked Sensing (CENS). CENS' mission is to explore and develop innovative, end-to-end, distributed sensing systems, from ecosystems to human systems. Since the late 90's Estrin's work has focused on multi-disciplinary, experimental-systems research as applied to a variety of environmental monitoring challenges. Most recently this work includes participatory-sensing systems, at the personal and community level, leveraging the location, acoustic, image, and attached-sensor data streams increasingly available from mobile phones. Previously, Estrin's research addressed Internet protocol design and scaling, in particular, inter-domain and multicast routing.

Estrin chaired a 1998 DARPA/ISAT study on sensor networks and a 2001 NRC study on Networked Embedded Computing which produced the report Embedded Everywhere. She served as a founding member of the National Ecological Observatory Network (NEON) Advisory board, and is currently a member of the NRC Computer Science and Telecommunications Board (CSTB), and TTI/Vanguard. Estrin was selected as the first ACM-W Athena Lecturer in 2006, was awarded the Anita Borg Institute's Women of Vision Award for Innovation in 2007, and was inducted as a member of the American Academy of Arts and Sciences in 2007.

Program of 2008 Asilomar Conference on Signals, Systems, and Computers

Technical Program Chairman
Prof. Linda DeBrunner
Florida State University

Session MA1 Waveform Design Methods

Chair: *Arye Nehorai*

MA1-1 Waveform Design for Cognitive Radar 8:30 AM
Simon Haykin, McMaster University

MA1-2 Frames and a vector-valued ambiguity function 8:55 AM
John Benedetto, University of Maryland; Jeffrey Donatelli, University of California at Berkeley

MA1-3 Novel waveform and processing techniques for monostatic and bistatic radar 9:20 AM
Shahzada Basharat Rasool, Mark R. Bell, Purdue University

MA1-4 Evaluating Spatial Diversity in Randomly Distributed Radar Networks 9:45 AM
Rani Daher, Raviraj Adve, Univ. of Toronto

BREAK 10:10 AM

MA1-5 Unitary Design of Radar Waveform Diversity Sets 10:30 AM
Michael Zoltowski, Purdue University; Robert Calderbank, Princeton University; Tariq Qureshi, Purdue University; William Moran, University of Melbourne

MA1-6 Waveform Design for Dynamic Target Tracking in MIMO Radar 10:55 AM
Jun Zhang, Bhavana Manjunath, Antonia Papandreou-Suppappola, Arizona State University; Darryl Morrell, Arizona State University East

MA1-7 Bat-Inspired Adaptive Design of Waveform and Trajectory for Radar 11:20 AM
Martin Hurtado, Arye Nehorai, Washington University in St. Louis

MA1-8 Compressed Sensing in MIMO Radar 11:45 AM
Chun-Yang Chen, P. P. Vaidyanathan, Californiab Institute of Technology

Session MA2 Advances in Bioimaging and Analysis

Chair: *Jean-Christophe Olivo-Marin*

MA2-1 Towards Monitoring Cellular Motion and Function 8:30 AM
Jens Rittscher, Dirk Padfield, GE Global Research; Nick Thomas, GE Heathcare

MA2-2 Tracking Live Cells in 4D Microscopy: Active Surfaces vs. Active Meshes 8:55 AM
Alexandre Dufour, Jean-Christophe Olivo-Marin, Institut Pasteur

MA2-3 Quantitative Analysis of Border Cell Migration 9:20 AM
Shann-Ching Chen, The Scripps Research Institute

MA2-4 Intelligent Acquisition and Learning of Fluorescence Microscope Data Models 9:45 AM
Charles Jackson, Robert Murphy, Jelena Kovacevic, Carnegie Mellon University

BREAK 10:10 AM

MA2-5 Quantitative imaging of the collective cell movements shaping an embryo 10:30 AM
Willy Supatto, Scott E. Fraser, California Institute of Technology

MA2-6 Navigation and Estimation of Shape Variation on a Shape Manifold for Anatomical Segmentation. 10:55 AM
Saurav Basu, Scott T. Acton, University of Virginia

MA2-7 Quantitative analysis of deconvolution methods for fluorescence microscopy images 11:20 AM
Mahsa Ranji, Diego Calzolari, Jeffrey Price, The Burnham Institute for Medical Research

MA2-8 Localizing single molecules in three dimensions 11:45 AM
Sripad Ram, UT Southwestern Medical Center at Dallas; Jerry Chao, UT Dallas; E. Sally Ward, UT Southwestern Medical Center at Dallas; Raimund Ober, UT Dallas

Session MA3a Relaying and Cooperation I

Chair: *Yingbin Liang & Venu Veeravalli*

MA3a-1 Compute-and-Forward: A Novel Strategy for Cooperative Networks 8:30 AM
Bobak Nazer, Michael Gastpar, University of California, Berkeley

MA3a-2 Three-User Gaussian Multiple Access Channel with Partially Cooperating Encoders 8:55 AM
Osvaldo Simeone, NJIT; Oren Somekh, Princeton; Gerhard Kramer, Bell Laboratories; H. Vincent Poor, Princeton University; Shlomo Shamai, Technion

MA3a-3 On the Capacity of Wireless Interference Networks 9:20 AM
V. Sreekanth Annapureddy, CSL; Venugopal Veeravalli, University of Illinois at Urbana-Champaign

MA3a-4 Threshold based distributed detection that achieves full diversity in wireless sensor networks 9:45 AM
Yijia Fan, Princeton University; Furuzan Atay Onat, Halim Yanikomeroglu, Carleton University; H. Vincent Poor, Princeton University

Session MA3b Stochastic Control and Decision Theory for Cognitive Radio Networks

Chair: *Qing Zhao*

MA3b-1 Channel Probing for Opportunistic Access with Multi-channel Sensing 10:30 AM
Keqin Liu, Qing Zhao, University of California at Davis

MA3b-2 Medium Access in Cognitive Radio Networks: A Competitive Multi-armed Bandit Framework — 10:55 AM
Lifeng Lai, Princeton University; Hai Jiang, University of Alberta; H. Vincent Poor, Princeton University

MA3b-3 Dynamic spectrum access with learning for cognitive radio — 11:20 AM
Jayakrishnan Unnikrishnan, Venugopal Veeravalli, University of Illinois at Urbana-Champaign

MA3b-4 Optimal channel probing and access through learning — 11:45 AM
Sahand Haji Ali Ahmad, Mingyan Liu, University of Michigan

Session MA4 Multiuser MIMO Networks

Chair: *Jeff Andrews & Ashu Sabharwal*

MA4-1 Random Access Cooperative Communication — 8:30 AM
Chris Hunter, Ashutosh Sabharwal, Rice University

MA4-2 Enhancing uplink throughput via local base station cooperation — 8:55 AM
Osvaldo Simeone, New Jersey Institute of Technology; Oren Somekh, Princeton; H. Vincent Poor, Princeton University; Shlomo Shamai, Technion

MA4-3 Utilizing Temporal Correlation in Multiuser MIMO Feedback — 9:20 AM
Il Han Kim, Kyeongyeon Kim, David Love, Purdue University

MA4-4 Generalized Degrees of Freedom of the K User Symmetric Gaussian Interference Channel — 9:45 AM
Syed Jafar, University of California Irvine; Sriram Vishwanath, University of Texas at Austin

BREAK — 10:10 AM

MA4-5 Spatial Interference Cancelation for Mobile Ad Hoc Networks: Imperfect CSI — 10:30 AM
Kaibin Huang, Robert Heath, Jr., The University of Texas at Austin; Jeffrey Andrews, University of Texas at Austin; Dongning Guo, Randall Berry, Northwestern University

MA4-6 Parametric channel estimation and prediction, with applications to channel state feedback for MIMO downlink schemes — 10:55 AM
Hooman Shirani-Mehr, Giuseppe Caire, University of Southern California

MA4-7 On the performance of iterative receivers for interfering MIMO-OFDM systems in measured channels — 11:20 AM
Peter Hammarberg, Lund University; PierLuigi Salvo Rossi, NTNU; Fredrik Tufvesson, Ove Edfors, Lund University; Veli-Matti Kolmonen, Helsinki University of Technology; Peter Almers, Lund University; Ralf Mueller, NTNU; Andreas Molisch, MERL and Lund University

MA4-8 Is Relayed collaborative Communication Worth it — 11:45 AM
Sana Sfar, Interdigital Communications LLC; Jerry Foschini, Reinaldo Valenzuela, Laurence Mailaender, Dimitri Chizikh, Kemal Karakayali, Bell labs; Alcatel-lucent; Rick Blum, Lehigh University

Session MA5 Programmable and Reconfigurable Architectures

Chair: *Suleyman Demirsoy*

MA5-1 A Low-power Two-in-One Flexible Decimation and Channel Selection Filter for Bandpass Sampling SDR — 8:30 AM
Alper Ucar, Ediz Cetin, Izzet Kale, University of Westminster

MA5-2 High Performance Matrix Multiplier using Fused Vector Operators — 8:55 AM
Martin Langhammer, Altera

MA5-3 Design and architecture of spatial multiplexing MIMO decoders for FPGAs — 9:20 AM
Chris H. Dick, Xilinx, Inc.; Kiarash Amiri, Rice University; Raghu Rao, Xilinx; Joseph R. Cavallaro, Rice University

MA5-4 Optimised and Targeted Arithmetic Implementation of UMB Physical Layer on Low Cost FPGA — 9:45 AM
R. W. Stewart, Y. Awad, Q. Gao, L. Crockett, University of Strathclyde; G. Rice, J. Bowman, Steepest Ascent Ltd

BREAK — 10:10 AM

MA5-5 Design Considerations for Reconfigurable Computing in Embedded Applications — 10:30 AM
Robert Voigt, U.S. Naval Academy

MA5-6 A Complete Full-Rate 802.11a Baseband Receiver Implemented on an Array of Programmable Processors — 10:55 AM
Anh Tran, Dean Truong, Bevan Baas, University of California, Davis

MA5-7 A Parallel Decoding Algorithm of LDPC Codes using CUDA — 11:20 AM
Shuang Wang, Samuel Cheng, University of Oklahoma-Tulsa; Qiang Wu, Soft Imaging, LLC

MA5-8 Efficient Time-Frequency and Bi-Frequency Signal Processing On A Reconfigurable Computer — 11:45 AM
Gary Upperman, Teresa Upperman, Department of Defense; Douglas Fouts, Phillip Pace, Naval Postgraduate School

Session MA6 MIMO Radar and Sensor Fusion

Chair: *Rabinder Madan*

MA6-1 MIMO radar: snake oil or good idea? — 8:30 AM
Frederick Daum, Jim Huang, Raytheon

MA6-2 MIMO radar waveform design based on filter bank theory 8:55 AM
P. P. Vaidyanathan, Chun-Yang Chen, California Institue of Technology

MA6-3 Communication-Inspired Sensing 9:20 AM
Liuqing Yang, Univ. of Florida

MA6-4 On the Distribution of Ambiguity Levels in MIMO Radar 9:45 AM
Mohamed Haleem, Alexander Haimovich, New Jersey Institute of Technology

BREAK 10:10 AM

MA6-5 Cooperative Transmit Beamforming for MIMO Radar Systems 10:30 AM
Athina Petropulu, Lun Dong, Drexel University; H. Vincent Poor, Princeton University

MA6-6 MIMO Radar Detection of Targets in Compound-Gaussian Clutter 10:55 AM
Murat Akcakaya, Martin Hurtado, Arye Nehorai, Washington University in St. Louis

MA6-7 Compressed Sensing for OFDM/MIMO Radar 11:20 AM
Christian Berger, Shengli Zhou Zhou, Peter Willett, University of Connecticut

MA6-8 Adaptive Sensing for MIMO Radar Systems 11:45 AM
Daniel Fuhrmann, Washington University in St. Louis

Session MA7 Adaptive Filtering: Theory and Applications

Chair: *Jean-Yves Tourneret & Neil Bershad*

MA7-1 Variable length adaptive filtering within incremental learning algorithms for distributed networks 8:30 AM
Leilei Li, Yonggang Zhang, Jonathon Chambers, Electronic and Electrical Engineering School, Loughborough University

MA7-2 An Affine Combination of Two NLMS Adaptive Filters - Transient Mean-Square Analysis 8:55 AM
Jose Carlos M. Bermudez, Federal University of Santa Catarina; Neil J. Bershad, University of California Irvine; Jean-Yves Tourneret, University of Toulouse

MA7-3 Affine combination of adaptive filters 9:20 AM
Renato Candido, Magno T. M. Silva, Vitor H. Nascimento, University of Sao Paulo

MA7-4 Interference-Driven Adaptation in Sparse Approximations 9:45 AM
Bob L. Sturm, John J. Shynk, University of California, Santa Barbara

BREAK 10:10 AM

MA7-5 Distributed prediction of time series data with kernels and adaptive filtering techniques in sensor networks 10:30 AM
Paul Honeine, Cédric Richard, Université de Technologie de Troyes; Jose Carlos M. Bermudez, Federal University of Santa Catarina; Hichem Snoussi, Université de Technologie de Troyes

MA7-6 Diffusion LMS Algorithms with Information Exchange 10:55 AM
Federico S. Cattivelli, Ali H. Sayed, Univ. of California, Los Angeles

MA7-7 Analytical Analysis of Transient and Steady-State Properties of the Proportionate NLMS Algorithm 11:20 AM
Kevin Wagner, Naval Research Laboratory; Milos Doroslovacki, The George Washington University

MA7-8 Fault Tolerant Adaptive Filters Based on Number Theoretic Transforms 11:45 AM
Chandrashekar Rhadakrishnan, William Jenkins, The Pennsylvania State University

Session MA8a1 Array Processing and Source Localization

Chair: *Brian Evans* 8:30 AM - 10:10 AM

MA8a1-1 On the use of the Global Matched Filter for DOA estimation in the presence of correlated waveforms.
Jean Jacques Fuchs, IRISA/université de Rennes

MA8a1-2 Hybrid Cramer-Rao Bound for Moving Array
Da Xie, Tingting Niu, Jianguo Huang, Northwestern Polytechnical University; Hongya Ge, New Jersey Institute of Technology

MA8a1-3 Nonparametric and Sparse Signal Representations in Array Processing via Iterative Adaptive Approaches
Tarik Yardibi, Jian Li, University of Florida; Petre Stoica, Uppsala University

MA8a1-4 Passive Sonar Target Localization Using a Histogram Filter with Model Derived Priors
Colin Jemmott, R. Lee Culver, Nirmal Bose, The Pennsylvania State University

MA8a1-5 Localization of Packet Based Radio Transmitters in Space, Time, and Frequency
Goran Ivkovic, Predrag Spasojevic, Ivan Seskar, Rutgers University

MA8a1-6 DOA Estimation Using Vector Sensor Arrays
Hung Lai, Lockheed Martin; Kristine Bell, George Mason University; Henry Cox, Lockheed Martin

MA8a1-7 Array Steered Response Time-alignment for Propagation Delay Compensation for Acoustic Localization
Pasi Pertilä, Tampere University of Technology

MA8a1-8 Advanced Sonar Processing Techniques for Underwater Acoustic Multi-Input Multi-Output Communications
Brian Stein, Yang You, Terry Brudner, Brian Evans, The University of Texas at Austin

MA8a1-9 GPS Free Positioning in Ad Hoc Wireless Networks Using 4th Generation Mobiles
Brian Kelley, University of Texas at San Antonio

MA8a1-10 Analog preprocessor mapping in antenna arrays to reduce ADC power consumption
Vijay Venkateswaran, Electrical engineering (EWI), TU-Delft

Session MA8a2 Multiuser MIMO

Chair: *James Zeidler* 8:30 AM - 10:10 AM

MA8a2-1 A GMD-Based Precoding Scheme for Downlink Multiuser Multistream MIMO Channels
Zhilan Xiong, Ranaji Krishna, Sangarapillai Lambotharan, Jonathon Chambers, Loughborough University

MA8a2-2 A Combinatorial Approach to Maximizing the Sum Rate in the MIMO BC with Linear Precoding
Raphael Hunger, David A. Schmidt, Michael Joham, Technische Universität München

MA8a2-3 Transceiver Design for Sum-MSE Optimization in MIMO MAC with Imperfect Channel Estimation
Patricia Layec, Orange Labs; Pablo Piantanida, SUPELEC, Department of Telecommunications; Raphaël Visoz, Orange Labs; Antoine O. Berthet, SUPELEC, Department of Telecommunications

MA8a2-4 Instantaneous and Average Rate Maximization in MIMO Multiple-Access Channels (MAC) with Linear Processing
Adam Anderson, James Zeidler, University of California, San Diego; Michael Jensen, Brigham Young University

MA8a2-5 LMMSE Channel Estimation for MIMO W-CDMA with Out-of-Cell Interference Mitigation
Roland Tresch, ftw.; Christian Mehlführer, Vienna University of Technology; Maxime Guillaud, ftw.

MA8a2-6 Efficient Linear Successive Allocation for the MIMO Broadcast Channel
Christian Guthy, Wolfgang Utschick, Technische Universität München; Guido Dietl, DoCoMo Communications Laboratories Europe GmbH; Pedro Tejera, Technische Universität München

MA8a2-7 Dirty Paper Coding for Fading Channels with Partial Transmitter Side Information
Chinmay Vaze, Mahesh Varanasi, University of Colorado, Boulder

MA8a2-8 On Capacity Scaling of (Long) MIMO Amplify-and-Forward Multi-Hop Networks
Jörg Wagner, Wittneben Armin, ETH Zurich

MA8a2-9 Zero-Forcing-Based Two-Phase Relaying with Multiple Mobile Stations
Hyun Jong Yang, Bang Chul Jung, Joohwan Chun, Korea Advanced Institute of Science and Technology

MA8a2-10 Coordinated Linear Beamforming in Downlink Multi-Cell Wireless Networks
Luca Venturino, Universita degli Studi di Cassino; Narayan Prasad, NEC Labs America; Xiaodong Wang, Columbia University

Session MA8a3 Beamforming

Chair: *Jian Li* 8:30 AM - 10:10 AM

MA8a3-1 Review of User Parameter-Free Robust Adaptive Beamforming Algorithms
Lin Du, Tarik Yardibi, Jian Li, University of Florida; Petre Stoica, Uppsala University

MA8a3-2 A Semiblind Adaptive Antenna for WCDMA Using a Least-Squares Constant-Modulus Formulation
Sheng-Luen Wei, John J. Shynk, University of California, Santa Barbara

MA8a3-3 Designing a spatial filter to improve SNR in two-class discrimination problems for BCI applications
David Gutierrez, Cinvestav Monterrey

MA8a3-4 Robust Interference Control Techniques for Multi-User Cognitive Radios Using Worst-Case Performance Optimization
Kanapathippillai Cumanan, Ranaji Krishna, Vimal Sharma, Sangarapillai Lambotharan, Loughborough University

MA8a3-5 Passive Beamforming Enhancements in Relation to Active-Passive Data Fusion
Bryan Yocom, Thomas Yudichak, Brian La Cour, Applied Research Laboratories: The University of Texas at Austin

MA8a3-6 Preprocessing by Eigenbeams and Doppler Filters to Improve Performance of Detection of Signal Number
Ryuhei Takahashi, Kazufumi Hirata, Maniwa Hisakazu, Mitsubishi Electric Corporation

MA8a3-7 Antenna Grouping Techniques for MIMO Beamforming Systems
Kyungchul Kim, Jungwoo Lee, Seoul National University

MA8a3-8 Sensibility study for the Near-Field Sub-Band Beamforming method for Damage Detection in Bridges
Alessio Medda, Victor DeBrunner, Florida State University

MA8a3-9 Adaptive Factored Beamforming For Vector Sensor Arrays
Hung Lai, Henry Cox, Lockheed Martin; Kristine Bell, George Mason University

MA8a3-10 Sidelobe Suppressing Beamforming Using Linearly Constrained Adaptive Arrays for Low Angle Tracking
Jungtai Kim, Hyun Jong Yang, Joohwan Chun, Korea Advanced Institute of Science and Technology

Session MA8b1 Topics in Communications

Chair: *Todd Moon* 10:30 AM - 12:10 PM

MA8b1-1 Reed Solomon Coded M-ary Hyper Phase-Shift Keying
James Caldwell, Student/ Naval Postgraduate School; Clark Robertson, Professor/ Naval Postgraduate School

MA8b1-2 Bandwidth Efficient Constant Envelope Modulation with Binary Convolutional Coding
Douglas Hermes, United States Air Force; Frank Kragh, Clark Robertson, Naval Postgraduate School

MA8b1-3 Joint Channel and Frequency Offset Estimators for Frequency-Flat Fast Fading Channels
Rami Khal, Yuriy Zakharov, Junruo Zhang, University of York

MA8b1-4 Multi-threshold TOP --- Full-diversity Vector Perturbation Precoding with Finite-rate Feedforward
Johannes Maurer, Joakim Jaldén, Gerald Matz, Vienna University of Technology

MA8b1-5 Performance of Bit-interleaved Frequency Domain Turbo Equalization over Experimental Underwater Acoustic Channels
Chantri Polprasert, James Ritcey, U. of Washington

MA8b1-6 Joint Bayesian Soft Multiuser Decoding and Multichannel Estimation Based on the Variational IEM Algorithm
Alexander Kocian, University of Rome Tor Vergata; Bin Hu, Nokia Denmark; Bernard Fleury, Aalborg University

MA8b1-7 MIMO-BICM with Imperfect Channel State Information: EXIT Chart Analysis and LDPC Code Optimization
Clemens Novak, Vienna University of Technology; Gottfried Lechner, Telecommunications Research Center Vienna (ftw.); Gerald Matz, Vienna University of Technology

MA8b1-8 A Thresholding Algorithm for Improved Split-Row Decoding of LDPC Codes
Tinoosh Mohsenin, Bevan Baas, UC Davis

MA8b1-9 Theoretical Models of Oscillators, Phase Noise and the Effects of Nonlinearity
Yenming Chen, University of Southern California / Northrop Grumman; Robert Scholtz, University of Southern California

MA8b1-10 ISI Effects in a Hybrid ICA-SVM Modulation Recognition Algorithm
David Boutte, Balu Santhanam, University of New Mexico

MA8b1-11 Generalized Minimum Probability of Symbol Error Adaptive Equalization
Jacob Gunther, Todd Moon, Utah State University

MA8b1-12 An Efficient Early Stopping Scheme for LDPC Decoding Based on Check-Node Messages
Z. H. Cai, J. Hao, U. Ubolthip Sethakaset, Institute for Infocomm Research

MA8b1-13 Optimal Detection in MIMO Rayleigh Fast Fading Channels with Imperfect Channel Estimation
Junruo Zhang, Yuriy Zakharov, University of York; Vladimir Baronkin, N. N. Andreev Acoustics Institute

MA8b1-14 Optimal Power Allocation Policies for the Reliable Transmission of a Single Packet via ARQ Protocols
Moritz Wiese, Technical University of Berlin; Anastasios Giovanidis, Gerhard Wunder, Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute

MA8b1-15 Opportunistic Power Allocation for Point-to-Point Communication in Self-Organized Networks
Mehdi Bennis, Centre for Wireless Communications, CWC; Merouane Debbah, SUPELEC

Session MA8b2 Radar Signal Processing

Chair: *Scott Hensley* 10:30 AM - 12:10 PM

MA8b2-1 Parameter Estimation of Linear Frequency-Modulated Signal Using Integrated Cubic Phase Function
Pu Wang, Hongbin Li, Stevens Institute of Technology; Braham Himed, Signal Labs Inc.

MA8b2-2 High-Resolution Wavenumber Domain Focusing of Squinted SAR Data with a Curved Orbit Geometry
Thierry Michel, Scott Hensley, Jet Propulsion Laboratory

MA8b2-3 A Terrain Elevation Error Model for Stereometric SAR Systems Engineering
Nick Marechal, The Aerospace Corp

MA8b2-4 Signal-Domain Registration for Change Detection in Time-Reversal SAR
Nicholas O'Donoughue, José M. F. Moura, Yuanwei Jin, Carnegie Mellon University

MA8b2-5 The Use of Complementary Sets in MIMO Radar
Stephen Searle, University of Melbourne; Stephen Howard, DSTO; Bill Moran, University of Melbourne

MA8b2-6 Retrodirective Airborne Radar for Urban Surveillance
Louis Fertig, Georgia Tech Research Institute

MA8b2-7 MIMO Radar Direction Finding Performance Using Swerling Models
Tuomas Aittomäki, Visa Koivunen, Helsinki University of Technology

MA8b2-8 Overcoming Polar Format Issues in MultiChannel SAR Autofocus
Hyun Jeong Cho, David Munson, University of Michigan

MA8b2-9 Nonlinear Decision Rules for Robust Noncoherent Integration
Don Day, Johns Hopkins University

MA8b2-10 Reduced-Rank STAP Algorithm for Adaptive Radar Based on Joint Iterative Optimization of Adaptive Filters
Rui Fa, Rodrigo de Lamare, Danilo Zanatta Filho, University of York

Session MA8b3 Multi-rate and Digital Signal Processing

Chair: *Peter Stoica* 10:30 AM - 12:10 PM

MA8b3-1 A Nyquist Folding Analog-to-Information Receiver
Gerald Fudge, Mark Chivers, Sujit Ravindran, L-3 Communications Integrated Systems; Ross Bland, UT Southwestern; Phillip Pace, Naval Postgraduate School; Jarvis Haupt, University of Wisconsin at Madison

MA8b3-2 Extensive Behavioral Analysis of Super Resolution Techniques for Time of Arrival Estimation in Indoor Positioning Systems
G M Roshan Indika Godaliyadda, Hari K. Garg, National University of Singapore

MA8b3-3 Finite Wordlength Digital Filter Design Using Simulated Annealing
Byung Wook Jung, Hyun Jong Yang, Joohwan Chun, Korea Advanced Institute of Science and Technology

MA8b3-4 Sub-Band Analysis for Fault Detection and its Geometric Interpretation
S. Serhat Seker, Ahmet Hamdi Kayran, Istanbul Technical University

MA8b3-5 Performance Analysis of Post-Doppler STAP
Christopher Teixeira, Northrop Grumman Corporation

MA8b3-6 Coefficient Dither in Fixed-Point FIR Digital Filters
Sourav Dey, Alan Oppenheim, MIT

MA8b3-7 Optimal Preconditioning for the Interpolation of Missing Data in a Band-Limited Sequence
Prabhu Babu, Erik Gudmundson, Petre Stoica, Uppsala University

MA8b3-8 Fixed-Point Filter Design and Riemannian Geometry
Michael Cerna, Jim Nagle, Lothar Wenzel, National Instruments

MA8b3-9 Shortest Paths in Spaces of IIR-Filters
Michael Cerna, Jim Nagle, Lothar Wenzel, National Instruments

MA8b3-10 The Nth-Order Cyclostationarity of OFDM Signals in Time Dispersive Channels
Anjana Punchihewa, University of British Columbia; Octavia Dobre, Qiyun Zhang, Memorial University of Newfoundland; Sreeraman Rajan, Robert Inkol, Defence Research and Development Canada

MA8b3-11 Sparsity Adaptive Matching Pursuit Algorithm for Practical Compressed Sensing
Thong Do, Johns Hopkins University; Lu Gan, Brunel University; Nam Nguyen, Trac Tran, Johns Hopkins University

MA8b3-12 Piece-wise linear DFT interpolation for IIR systems: performance and error bound computation
Vahid Raissi Dehkordi, Fabrice Labeau, Benoit Boulet, McGill University

MA8b3-13 A Polyphase Nonlinear Equalization Architecture and Semi-blind Identification Method
Benjamin Miller, Joel Goodman, Matthew Herman, MIT Lincoln Laboratory

MA8b3-14 Comparison of multiplierless implementation of nonlinear-phase versus linear-phase FIR filters
Muhammad Abbas, Fahad Qureshi, Zakaullah Sheikh, Oscar Gustafsson, Hakan Johansson, Kenny Johansson, Linkoping University

MA8b3-15 Factorization of Paraunitary Polyphase Matrices Using Subspace Projections
Peter Vouras, Naval Research Lab; Trac Tran, Johns Hopkins University

Session MP1 MIMO Radar

Chair: *Rick Blum*

MP1-1 Sparse signal representation for MIMO radar imaging 1:30 PM
William Roberts, Tarik Yardibi, Jian Li, Xing Tan, University of Florida; Petre Stoica, Uppsala University

MP1-2 Target Localization Accuracy and Multiple Target Localization: Tradeoff in MIMO Radars 1:55 PM
Hana Godrich, NJIT; Alexander Haimovich, New Jersey Institute of Technology; Rick Blum, NJIT

MP1-3 Antenna Placement for Velocity Estimation using MIMO Radar 2:20 PM
Qian He, currently visiting Lehigh University, University of Electronic Science and Technology of China; Rick Blum, Lehigh University; Alexander Haimovich, New Jersey Institute of Technology; Zishu He, University of Electronic Science and Technology of China

MP1-4 Complex Point Target Model for Multistatic Radar 2:45 PM
Daniel Fuhrmann, Washington University in St. Louis

BREAK 3:10 PM

MP1-5 Theoretical assessment of MIMO Radar Performance in the Presence of Discrete and Distributed Clutter 3:30 PM
Yuri I. Abramovich, Gordon Frazer, Defence Science Technology Organisation

MP1-6 MIMO STAP Clutter Mitigation Performance Demonstration using Acoustic Arrays 3:55 PM
Vito Mecca, Jeffrey Krolik, Duke University; Frank Robey, MIT Lincoln Laboratory

MP1-7 HF Skywave MIMO Radar: The HiLoW Experimental Program 4:20 PM
Gordon Frazer, Yuri I. Abramovich, Defence Science and Technology Organization; Ben A. Johnson, RLM Pty. Ltd.

Session MP2 Retinal Image Analysis

Chair: *Peter Soliz*

MP2-1 Using Image Content to Diagnose and Stratify Diabetic Retinopathy 1:30 PM
Kenneth Tobin, Oak Ridge National Laboratory; Edward Chaum, University of Tennessee Health Science Center; Luca Giancardo, Thomas Karnowski, Oak Ridge National Laboratory

MP2-2 Implications of Computer-assisted Retinal Image Analysis to Clinical Practice and Research in Ophthalmology: A need for Inter-disciplinary Teams 1:55 PM
Stephen Russell, University of Iowa

MP2-3 Survey of Automatic Retina Image Processing for Computer-aided Diagnosis 2:20 PM
Michael Abramoff, University of Iowa

MP2-4 Retinal Fundus Image Constrast Normalization using Mixture of Gaussians 2:45 PM
Abhir Bhalerao, Sarabjot Singh Anand, University of Warwick; Ponnusamy Saravanan, University Hospitals of Coventry and Warwickshire

BREAK 3:10 PM

MP2-5 Autofluorescence Image Analysis in Age-related Macular degeneration (AMD) and Stargardt Disease (STGD) 3:30 PM
R Theodore Smith, Nuno Gomes, Mihai Busuioc, Noah Lee, Andrew Laine, Columbia University

MP2-6 Interactive Segmentation for Geographic Atrophy in Retinal Fundus Images 3:55 PM
Noah Lee, R Theodore Smith, Andrew Laine, Columbia University

MP2-7 Detection and Phenotyping of Retinal Disease using AM-FM Processing for Feature Extraction 4:20 PM
Carla Agurto, Sergio Murillo, Victor Murray, Marios Pattichis, The University of New Mexico; Stephen Russell, Michael Abramoff, University of Iowa; Peter Soliz, VisionQuest Biomedical

MP2-8 New AM-FM Analysis Methods for Retinal Image Characterization 4:45 PM
Victor Murray, Marios Pattichis, University of New Mexico; Peter Soliz, VisionQuest Biomedical and University of Iowa

Session MP3 Information Theory

Chair: *Sennur Ulukus*

MP3-1 Secret communication and key-sharing using sources and channels 1:30 PM
Vinod Prabhakaran, University of Illinois, Urbana-Champaign; Krishnan Eswaran, Kannan Ramchandran, University of California, Berkeley

MP3-2 On Secure Broadcasting 1:55 PM
Ersen Ekrem, Sennur Ulukus, University of Maryland

MP3-3 End-to-end Secure Multi-hop Communication with Untrusted Relays is Possible 2:20 PM
Xiang He, Aylin Yener, Penn State

MP3-4 Multiple descriptions with codebook reuse 2:45 PM
Young-Han Kim, UCSD

BREAK 3:10 PM

MP3-5 Cognitive Relaying with One-sided Interference 3:30 PM
Onur Sahin, Elza Erkip, Polytechnic University

MP3-6 On the Capacity of Cognitive Channels with Strong Interference 3:55 PM
Sriram Sridharan, Goochul Jung, Sriram Vishwanath, UT Austin

MP3-7 Gaussian Fading Interference Channels: Power Control and Outage Probability 4:20 PM
Yang Weng, Daniela Tuninetti, UIC

MP3-8 Interference Channels with Co-operating Receivers 4:45 PM
Vinod Prabhakaran, Pramod Viswanath, University of Illinois, Urbana-Champaign

Session MP4 Feedback in MIMO Systems

Chair: *David Love & Vasanthan Raghavan*

MP4-1 On the Use of Feedback in Multiple Antenna Common Information Broadcasting 1:30 PM
Chun Kin Au Yeung, David Love, Purdue University

MP4-2 Two Models for Noisy Feedback in MIMO Channels 1:55 PM
Vaneet Aggarwal, Princeton University; Gajanana Krishna, Stanford University; Srikrishna Bhashyam, Indian Institute of Technology Madras; Ashutosh Sabharwal, Rice University

MP4-3 Nested Codebook Design For MIMO Precoders 2:20 PM
Badri Varadarajan, Eko Onggosanusi, Anand Dabak, Runhua Chen, Texas Instruments

MP4-4 Codebook Design for the Spatially Correlated MISO Broadcast Channel 2:45 PM
Vasanthan Raghavan, University of Illinois; Venugopal Veeravalli, University of Illinois at Urbana-Champaign

BREAK 3:10 PM

MP4-5 On the Capacity of MIMO Broadcast Channels with Reduced Feedback by Antennas Selection and Optimal Combining 3:30 PM
Matthew Pugh, Bhaskar Rao, University of California, San Diego

MP4-6 Feedback Requirements in MIMO Broadcast Channels: An Asymptotic Analysis 3:55 PM
Alireza Bayesteh, Amir K. Khandani, University of Waterloo

MP4-7 Space-Frequency Coding for MIMO-OFDM Systems with Limited Feedback 4:20 PM
Eunmo Kang, Akbar Sayeed, University of Wisconsin-Madison

MP4-8 Progressive Feedback for High Resolution Limited Feedback in MIMO Systems 4:45 PM
Robert Heath, Jr., The University of Texas at Austin; Tao Wu, Anthony C.K. Soong, Huawei Technologies (USA)

Session MP5 Computer Arithmetic I

Chair: *Braden Phillips*

MP5-1 Optimizing addition for sub-threshold logic 1:30 PM
David Blaauw, University of Michigan; Braden Phillips, The University of Adelaide

MP5-2 Fast and Accurate Activity Evaluation in Multipliers 1:55 PM
Arnaud Tisserand, LIRMM, CNRS-Univ. Montpellier

MP5-3 Radix-10 Digit-Recurrence Algorithm for Combined Division and Square Root with Limited Precision Primitives 2:20 PM
Milos D. Ercegovac, UCLA

MP5-4 Design challenges in floating-point addition and multiplication rounding for x87 2:45 PM
Dimitri Tan, Carl Lemonds, Peter-Michael Seidel, Advanced Micro Devices Inc.

BREAK 3:10 PM

MP5-5 Fused Floating-Point Arithmetic for DSP 3:30 PM
Earl E. Swartzlander, Jr., University of Texas at Austin; Hani Saleh, Advanced Micro Devices

MP5-6 Parallel High-Radix Montgomery Multipliers 3:55 PM
Philip Amberg, Nathaniel Pinckney, David Money Harris, Harvey Mudd College

MP5-7 Dual Base Number System and Elliptic Curve Cryptography 4:20 PM
Christophe Doche, Macquarie University; Laurent Imbert, University of Calgary

MP5-8 Improving Fused Multiply Add Performance 4:45 PM
David Lutz, ARM

Session MP6 Blind System Identification, Multi-channel System Inversion, and Speech Dereverberation

Chair: *Patrick A. Naylor*

MP6-1 Model-Based Dereverberation of Speech in the Mel-Spectral Domain 1:30 PM
Armin Sehr, Walter Kellermann, University Erlangen-Nuremberg

MP6-2 Adaptive Inverse Filtering of Room Acoustics 1:55 PM
Wancheng Zhang, Patrick Naylor, Imperial College London

MP6-3 Principles and applications of dereverberation for noisy and reverberant audio signals 2:20 PM
Masato Miyoshi, Keisuke Kinoshita, Tomohiro Nakatani, Takuya Yoshioka, NTT Communication Science Laboratories, NTT Corporation

MP6-4 Decomposition and dereverberation of multichannel audio 2:45 PM
Michael M. Goodwin, Creative ATC

BREAK 3:10 PM

MP6-5 Multi-Microphone Speech Dereverberation Based on Eigen-Decomposition - A Study 3:30 PM
Sharon Gannot, School of Engineering, Bar-Ilan University

MP6-6 Towards Multi-Microphone Speech Dereverberation using Spectral Enhancement and Statistical Reverberation Models 3:55 PM
Emanuel A.P. Habets, Technion - Israel Institute of Technology

MP6-7 Multi-Channel Listening-Room Compensation using a Decoupled Filtered-X LMS Algorithm 4:20 PM
Stefan Goetze, University of Bremen; Markus Kallinger, University of Oldenburg; Alfred Mertins, University of Luebeck; Karl-Dirk Kammeyer, University of Bremen

MP6-8 A General Derivation of Wave-Domain Adaptive Filtering and Application to Acoustic Echo Cancellation 4:45 PM
Herbert Buchner, Sascha Spors, Deutsche Telekom Laboratories

Session MP7 Signal Processing and Learning for Sensor Signal Exploitation

Chair: *Emre Ertin*

MP7-1 Interaction Analysis using Switching Structures Autoregressive Models 1:30 PM
Michael Siracusa, John Fisher, MIT

MP7-2 Learning Classifiers for Wireless Sensor Networks 1:55 PM
Emre Ertin, Ohio State University

MP7-3 Space Cutting for Distributed Localization 2:20 PM
Volkan Cevher, Petros Boufounos, Marco Duarte, Richard Baraniuk, Rice University

MP7-4 Joint Shape and Texture Analysis of Objects Boundaries in Images Using A Riemannian Approach 2:45 PM
Wei Liu, Anuj Srivastava, Florida State University

BREAK 3:10 PM

MP7-5 Fast posterior updates for sparse undetermined linear models 3:30 PM
Lee Potter, Philip Schniter, Justin Ziniel, Ohio State University

MP7-6 Virtual Sensors for Remote Sensing: Algorithms and Performance Analysis 3:55 PM
Benjamin Friedlander, University of California, Santa Cruz

MP7-7 Fourier-Domain Multichannel Autofocus for Synthetic Aperture Radar 4:20 PM
Kuang-Hung Liu, David Munson, University of Michigan

MP7-8 A CMOS Video Sensor for High Dynamic Range (HDR) Imaging 4:45 PM
Thomas Poonnen, Li Liu, Ketan Karia, Michael Joyner, Jeffrey Zarnowski, Panavision Imaging, LLC

Session MP8a1 Distributed Detection and Estimation

Chair: *Weilian Su* 1:30 PM - 3:10 PM

MP8a1-1 Resource Allocation for Distributed Detection in Sensor Networks
Frank Namin, Aria Nosratinia, University of Texas at Dallas

MP8a1-2 Distributed Non-Parametric Detection with Adaptive Quantization for Wireless Sensor Networks
Hongbin Li, Pu Wang, Stevens Institute of Technology

MP8a1-3 Outage Diversity for Distributed Estimation over Parallel Fading Channels
Cihan Tepedelenlioglu, Arizona State University; Habib Senol, Kadir Has University; Kai Bai, Arizona State University

MP8a1-4 Modeling of Data Fusion Algorithms in Cluster-based Wireless Sensor Networks
Welian Su, Theodoros Bougiouklis, NAVAL POSTGRADUATE SCHOOL

MP8a1-5 Distributed Routing in Wireless Sensor Networks for Signal Detection with Random Phase
Yang Yang, Rick Blum, Lehigh University

MP8a1-6 An Energy-efficient and Distributed Approach to Beamforming in a Wireless Sensor Network
Nikolaos Papalexidis, Owens Walker, Murali Tummala, John McEachen, Naval Postgraduate School

Session MP8a2 Wireless Network Management

Chair: *Keith Teague* 1:30 PM - 3:10 PM

MP8a2-1 A Closer Look at the Physical and Protocol Models for Wireless Ad Hoc Networks with Multi-Packet Reception
Hyunchul Kim, Hamid Sadjadpour, University of California Santa Cruz; Jose Joaquin Garcia-Luna-Aceves, University of California, Santa Cruz

MP8a2-2 Doppler Measurements Rendering Random Routing
Liang Dong, Western Michigan University

MP8a2-3 Protocols For Half-Duplex Multiple Relay Networks
Peter Rost, Gerhard P. Fettweis, Technische Universität Dresden

MP8a2-4 Admission Control for Power-Controlled Wireless Networks under General Interference Functions
Slawomir Stanczak, Michal Kaliszan, Fraunhofer German-Sino Lab for Mobile Communications; Nicholas Bambos, Stanford University

MP8a2-5 Multi-Channel Packet Capture in 802.11b/g Wireless Networks
Douglas Geiger, George Scheets, Keith Teague, Jason Pitts, Oklahoma State University

MP8a2-6 A New Achievable Rate For A Stochastic Two Relay Network With No Interference
Ghosheh Abed Hodtani, Sharif Univ.of Tech.

MP8a2-7 Joint Distributed Adaptive Quantization and Power Allocation in Wireless Sensor Networks
Muhammad Hafeez Chaudhary, Abdellatif Vandendorpe, Luc Vandendorpe, Ecole Polytechnique de Louvain

Session MP8a3 OFDM/UWB

Chair: *Xiaoli Ma* 1:30 PM - 3:10 PM

MP8a3-1 Iterative Detection for the Uplink of an OFDMA System with Frequency Offsets
Sajid Ahmed, Li Zhang, University of Leeds

MP8a3-2 Performance Evaluation of Adaptive MIMO-OFDM Systems with Imperfect Feedback in Measurement Based Channels
Harri Pennanen, Jouko Leinonen, Xiaojia Lu, Marek Skowron, Matti Latva-aho, Centre for Wireless Communications, university of Oulu

MP8a3-3 Frequency-Domain Joint Channel and Phase Noise Estimation in OFDM WLAN Systems
Payam Rabiei, Won Namgoong, Naofal Al-Dhahir, University of Texas at Dallas

MP8a3-4 Fast-Varying Doppler Compensation for Underwater Acoustic OFDM Systems.
Taehyuk Kang, Ronald A. Iltis, University of California Santa Barbara

MP8a3-5 Peak-to-Average Power Ratio versus Instantaneous-to-Average Power Ratio for OFDM
Qijia Liu, G. Tong Zhou, Xiaoli Ma, Georgia Institute of Technology; Jie Wu, FutureWei Technologies Inc.

MP8a3-6 Optimal Constellation Distortion for PAR Reduction in MIMO-OFDM Systems
Moshe Malkin, Hao Zou, Alan John Malek, Stanford EE; Brian Krongold, University of Melbourne; John Cioffi, Stanford University

MP8a3-7 A Regularized Least Squares Approach for Ultra-Wideband Time-of-Arrival Estimation with Wavelet Denoising
Ted C.-K. Liu, Xiaodai Dong, Wu-Sheng Lu, University of Victoria

MP8a3-8 Adaptive Reduced-Rank Interference Suppression for DS-UWB Systems Based on Switched Approximation of Basis Functions
Sheng Li, Rodrigo de Lamare, Danilo Zanatta Filho, University of York

MP8a3-9 CDMA vs. OFDM for Wideband Cellular Systems
Yong Peng, Southern Methodist University; Giridhar Mandyam, Qualcomm Inc.; Dinesh Rajan, Southern Methodist University

MP8a3-10 New Multi-User OFDM Scheme: Braided Code Division Multiple Access
Marcos B.S. Tavares, Michael Lentmaier, Technische Universitaet Dresden; Kamil Sh. Zigangirov, University of Notre Dame; Gerhard P. Fettweis, Technische Universität Dresden

MP8a3-11 Equalization for OFDM Over Doubly-Selective Channels Based on Oversampling
Shakti Prasad Shenoy, Institut Eurecom; Francesco Negro, Irfan Ghauri, Infineon Technologies France; Dirk Slock, Institut Eurecom

Session MP8a4 MIMO OFDM and Cooperative Relaying

Chair: *Lars Thiele* 1:30 PM - 3:10 PM

MP8a4-1 A Novel Framework for the Utilisation of Dynamic Relays in Cellular Networks
Agisilaos Papadogiannis, Eric Hardouin, Ahmed Saadani, France Telecom R&D

MP8a4-2 Power Allocation Method for GMD-based Precoded MIMO-OFDM System with Reduced Feedback
Kyeong Jin Kim, Nokia, Inc.; Peter Wang, Nokia Simens Network; Ronald A. Iltis, University of California

MP8a4-3 New protocols for the Cooperative MAC
Charlotte Hucher, Ghaya Rekaya-Ben Othman, Ecole Nationale Supérieure des Télecommunications; Ahmed Saadani, France Telecom Research & Developpement

MP8a4-4 Weighted Sum-Rate Maximization for Downlink OFDMA Systems
Chathuranga Weeraddana, Wei Li, Marian Codreanu, Matti Latva-aho, Centre for Wireless Communications

MP8a4-5 Temporal Autocorrelation Estimation for OFDM with Application to Spatial Interpolation
Peter Klenner, Karl-Dirk Kammeyer, University Bremen

MP8a4-6 Robust Gain Allocation against Phase Uncertainty at the Relays for Multiuser Cooperative Networks
Celal Esli, Armin Wittneben, ETH Zurich

MP8a4-7 Distributed Turbo Coding Using Log-Likelihood Thresholding for Cooperative Communications
Ghaleb Al-Habian, Ali Ghrayeb, Concordia University; Mazen Hasna, Adnan Abu-Dayya, Qatar University

MP8a4-8 On Distributed Codes with Noisy Relays
Ragnar Thobaben, Royal Institute of Technology (KTH)

MP8a4-9 A low-complexity Doppler compensation scheme for mobile SIMO-OFDM systems
Malte Schellmann, Lars Thiele, Volker Jungnickel, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut

MP8a4-10 Predicting SINR conditions in mobile MIMO-OFDM systems by interpolation techniques
Malte Schellmann, Lars Thiele, Volker Jungnickel, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut

MP8a4-11 Cooperation Diversity for Clipped OFDM with Iterative Reception
Thomas Ketseoglou, California State Polytechnic University, Pomona

MP8a4-12 Design of Co-phasing Allpass Filters for Full-Duplex OFDM Relays
Taneli Riihonen, Stefan Werner, Helsinki University of Technology; Juan Cousseau, Universidad Nacional del Sur; Risto Wichman, Helsinki University of Technology

MP8a4-13 Implementation Concepts for Distributed Cooperative Transmission
Volker Jungnickel, Lars Thiele, Malte Schellmann, Thomas Wirth, Fraunhofer Institute for Telecommunications; Wolfgang Zirwas, Thomas Haustein, Egon Schulz, Nokia Siemens Networks

Session TA1b Compressive Sensing

Chair: *Emmanuel Candes*

TA1b-1 Robust Recovery of Low-rank Matrices from Noisy Measurements 10:15 AM
Emmanuel Candes, Caltech; Maryam Fazel, University of Washington; Pablo Parrilo, MIT; Ben Recht, Caltech

TA1b-2 Greedy Signal Recovery and Uncertainty Principles 10:40 AM
Deanna Needell, Roman Vershynin, UC Davis; Joel Tropp, California Institute of Technology

TA1b-3 Exact Low-rank Matrix Completion via Semidefinite Programming 11:05 AM
Benjamin Recht, Emmanuel Candes, California Institute of Technology

TA1b-4 L1 filtering and streaming measurements in compressive sampling 11:30 AM
Muhammad Asif, Justin Romberg, Georgia Tech

TA1b-5 Group Testing and Sparse Signal Recovery 11:55 AM
Anna Gilbert, University of Michigan

Session TA2b Functional Imaging and Analysis

Chair: *Yongyi Yang*

TA2b-1 Current Role of PET in Oncology: Potentials and Challenges in the Management of Non-Small Cell Lung Cancer 10:15 AM
Phaneendra Yalavarthy, Daniel Low, Camille Noel, Washington University in St. Louis; Zhouping Wei, Philips Medical Systems; Deshan Yang, Aditya Apte, Jeffrey Bradley, Joseph Deasy, Issam El Naqa, Washington University in St. Louis

TA2b-2 Helical Artifact Suppression in Iterative CT Reconstruction 10:40 AM
Jiao Wang, University of Notre Dame; Jean-Baptiste Thibault, GE Healthcare; Zhou Yu, Purdue University; Ken Sauer, University of Notre Dame; Charles Bouman, Purdue University

TA2b-3 Improved PASL EPI Acquisitions With Parallel Imaging and UNFOLD 11:05 AM
W. Scott Hoge, Brigham and Women's Hospital and Harvard Medical School; Huan Tan, Robert A. Kraft, Wake Forest University School of Medicine

TA2b-4 Spatio-temporal MAP reconstruction of gated cardiac images using DFT basis functions 11:30 AM
Xiaofeng Niu, Yongyi Yang, Illinois Institute of Technology

TA2b-5 New Image Analysis Tools for Hyperpolarized Helium-3 Magnetic Resonance Imaging Ventilation Defect Changes over time. 11:55 AM
Grace Parraga, Robarts Research Institute; David G. McCormack, The University of Western Ontario

Session TA3b Secrecy Capacity and Interference Channels

Chair: *Daniela Tuninetti*

TA3b-1 Feedback is useful for Two-way Secure Communication 10:15 AM
Xiang He, Aylin Yener, Penn State

TA3b-2 On the Noisy Interference Regime of the MISO Gaussian Interference Channel 10:40 AM
Bernd Bandemer, Aydin Sezgin, Arogyaswami Paulraj, Stanford University

TA3b-3 Parametrization of the MISO Interference Channel with Transmit Beamforming and Partial Channel State Information 11:05 AM
Johannes Lindblom, Erik G. Larsson, Linköping University; Eduard A. Jorswieck, Dresden University of Technology

TA3b-4 Outer bounds for the MIMO interference channel 11:30 AM
Peter Parker, Daniel W. Bliss, MIT Lincoln Laboratory

Session TA4b Multiuser MIMO Broadcast

Chair: *Timothy Davidson*

TA4b-1 Probabilistically Constrained Robust Power Allocation in Downlink Multiuser MISO Systems 10:15 AM
Nikola Vucic, Fraunhofer HHI; Holger Boche, TU Berlin

TA4b-2 Probabilistically-Constrained Approaches to the Design of the Multiple Antenna Downlink 10:40 AM
Michael Botros Shenouda, Timothy Davidson, McMaster University

TA4b-3 Network MIMO with reduced backhaul requirements by MAC coordination 11:05 AM
Federico Boccardi, Howard Huang, Angeliki Alexiou, Alcatel-Lucent

TA4b-4 Spectral Efficiency of Wireless Networks with Multi-Antenna Base-Stations and Spatially Distributed Nodes 11:30 AM
Siddhartan Govindasamy, Daniel W. Bliss, David H. Staelin, Massachusetts Institute of Technology

Session TA5b Communication Architectures

Chair: *Joseph R. Cavallaro*

TA5b-1 Configurable High-Throughput Decoder Architecture for Quasi-Cyclic LDPC Codes 10:15 AM
Christoph Studer, Nicholas Preyss, Christoph Roth, Andreas Burg, ETH Zurich, Switzerland

TA5b-2 High-level Methodology for Implementing Communication Algorithms in Programmable Logic: a Sphere Decoder Case Study 10:40 AM
Jorn W. Janneck, Ian D. Miller, David B. Parlour, Xilinx Inc.; Chris H. Dick, Xilinx, Inc.

TA5b-3 Forward Error Correction Decoding for WiMAX and 3GPP LTE Modems 11:05 AM
Manish Goel, Jing-Fei Ren, Yuming Zhu, Seok-Jun Lee, Texas Instruments, Inc; Yang Sun, Rice University

TA5b-4 Next Generation Iterative LDPC Solutions for Magnetic Recording Storage 11:30 AM
Kiran Gunnam, Shaohua Yang, Yuanxing Lee, LSI Corporation; Mark Yeary, University of Oklahoma; Gwan Choi, Texas A&M University

TA5b-5 FPGA Implementation of High Throughput 600 Mbps Wireless LAN System using 4 X 2 MIMO-OFDM 11:55 AM
Wahyul Amien Syafei, Yuhei Nagao, Masayuki Kurosaki, Baiko Sai, Hiroshi Ochi, Kyushu Institute of Technology

Session TA6b Wireless Sensor Networks

Chair: *Ananthram Swami*

TA6b-1 Information Quality Aware Sensor Network Services 10:15 AM
Sadaf Zahedi, UCLA; Edith Ngai, Erol Gelenbe, Imperial College; Dinkar Mylaraswamy, Honeywell; Mani Srivastava, UCLA

TA6b-2 A Linear Iterative Algorithm for Distributed Sensor Localization 10:40 AM
Usman Khan, Soummya Kar, José M. F. Moura, Carnegie Mellon University

TA6b-3 Utility-Based Joint Sensor Selection and Congestion Control for Mission-Oriented WSNs 11:05 AM
Thomas La Porta, Penn State University; Amotz Bar Noy, CUNY; Sharanya Eswaran, Penn State University; Matt Johnson, CUNY; Archan Misra, IBM Research; Diego Pizzocaro, Alun Preece, University of Cardiff; Hosam Rowaihy, Penn State University

TA6b-4 Distributed Equalization and Decoding Using Wireless Sensor Networks 11:30 AM
Hao Zhu, Alfonso Cano, Georgios B. Giannakis, University of Minnesota

TA6b-5 Network Information Flow: Gossiping with Groups 11:55 AM
Mehmet E. Yildiz, Tuncer Can Aysal, Anna Scaglione, Cornell University

Session TA7b Adaptive Methods and Monte Carlo Signal Processing

Chair: *Petar Djuric*

TA7b-1 Complex systems and particle filtering 10:15 AM
Monica F. Bugallo, Petar M. Djuric, Stony Brook University

TA7b-2 Multiple Target Tracking Using Likelihood Particle Filtering and Adaptive Waveform Design 10:40 AM
Ioannis Kyriakides, Tom Trueblood, Antonia Papandreou-Suppappola, Arizona State University

TA7b-3 Detection of variance changes and mean value jumps in measurement noise for multipath mitigation in urban navigation 11:05 AM
Mariana Spangenberg, TéSA; Jean-Yves Tourneret, ENSEEIHT; Vincent Calmettes, University of Toulouse; Grégoire Duchâteau, Thales Alenia Space

TA7b-4 Cooperative Blind Equalization of Frequency-Selective Channels in Sensor Networks using Decentralized Particle Filtering 11:30 AM
Claudio Jose Bordin, Jr., Marcelo G. S. Bruno, Instituto Tecnologico de Aeronautica

TA7b-5 Adaptive Local Quantizer Design for Tracking in a WSN 11:55 AM
Onur Ozdemir, Ruixin Niu, Pramod K. Varshney, Syracuse University

Session TA8b1 Image/Video Processing, Quantization and Coding

Chair: *John Fisher* 10:15 AM - 11:55 AM

TA8b1-1 Joint Detection, Segmentation, and Registration of Elastically Deformable Objects
Gilad Cohen, Joseph Francos, Rami Hagege, Ben Gurion University

TA8b1-2 A Spatial Neighborhood Model for Detection for Hyperspectral Imaging
Cameron Grant, Todd Moon, Jacob Gunther, Matthew Stites, Utah State University; Gustavious Williams, Brigham Young University

TA8b1-3 Iris Recognition using the Ridge Energy Direction (RED)Algorithm
Robert Ives, Randy Broussard, Lauren Kennell, Ryan Rakvic, Delores Etter, U.S. Naval Academy

TA8b1-4 Image and Video Colorization
Vivek Jacob, Postgraduate student; Sumana Gupta, Professor

TA8b1-5 Invariance Properties of AM-FM Image Features
Senthil Prakash Ramalingam, Aravind Rangarajan, Indian Institute of Technology Madras

TA8b1-6 Comparison of Wavelet Filters Using Objective Quality Measures
Bhawna Garg, Panjab University, Chandigarh

TA8b1-7 Complex Wavelet Based Modulation Analysis
Jean-Marc Luneau, Aalborg University; Jerome Lebrun, CNRS; Søren Holdt Jensen, Aalborg University

TA8b1-8 Algorithms for Old Master Painting Canvas Thread Counting from X-Rays
Andrew Klein, Worcester Polytechnic Insitute; William Sethares, Heichang Lee, Univ. of Wisconsin - Madison; C. Richard Johnson, Jr., Cornell University; Ella Hendriks, Van Gogh Museum

TA8b1-9 Performance prediction for reconstruction problems in computer vision
Matthew Ferrara, Air Force Research Laboratory; Peter Stiller, Texas A & M University

Session TA8b2 Speech Analysis and Recognition

Chair: *John Fisher* 10:15 AM - 11:55 AM

TA8b2-1 LSF and LPC - Derived Features for Large Vocabulary Distributed Continuous Speech Recognition in Brazilian Portuguese
Vladimir Alencar, Abraham Alcaim, PUC-RIO

TA8b2-2 Automatic labelling of foreign-accented speech
Rene Arechiga, New Mexico Tech

TA8b2-3 Objective Analysis of Temporally Varying Audio Quality Metrics
Joseph Hardin, Charles Creusere, Klipsch School of Electrical and Computer Engineering

TA8b2-4 Improved Detection Performance of a Speech Recognizer in an Automotive Environment.
Ashtosh Sapru, Aricent Communications Pvt. Ltd.; Ravi Lakkundi, Nisar Ahmed, Aricent Communications Pvt Limited

TA8b2-5 Waveform Approximating Residual Audio Coding with Perceptual Pre- and Post-Filtering
Jesper Kjær Nielsen, Jesper Rindom Jensen, Mads Græsbøll Christensen, Søren Holdt Jensen, Torben Larsen, Aalborg University

TA8b2-6 Fast Speaker Identification Using Speaker Model Clustering
Vijendra Raj Apsingekar, Phillip De Leon, New Mexico State University

TA8b2-7 An Off-site Text-Independent Speaker Identification Model Using Multi-Classifiers
Pankaj Sharma, Maheshchandra Srivastava, Vineet Khandelwal, Jaypee Institute of Information Technology University

Session TA8b3 Quantization, Coding, and Encryption

Chair: *John Fisher* 10:15 AM - 11:55 AM

TA8b3-1 An Improved WSQ Fingerprint Image Compression Algorithm
Jinshan Tang, Xiaoming Liu, Alcorn State University

TA8b3-2 Efficient Correlation Extraction for Distributed Audio Coding
Sandeep Matta, Charles Creusere, New Mexico State University

TA8b3-3 Weighted Distortion for Robust Video Coding
Sunday Nyamweno, Ramdas Satyan, Sedar Burak Solak, Fabrice Labeau, McGill University

TA8b3-4 Optimization of Audience Encoding in Low-Resolution Soccer Video Sequences
Luca Superiori, Alfredo Font Perez, Markus Rupp, TU Vienna

TA8b3-5 Generalized Fast Index Assignment for Robust Multiple Description Scalar Quantizers
Rui Ma, Fabrice Labeau, McGill University

TA8b3-6 Image Encryption Algorithms Based on Generalized P-Gray Code Bit Plane Decomposition
Yicong Zhou, Karen Panetta, Tufts University; Sos Agaian, University of Texas at San Antonio

Session TA8b4 Limited Feedback and Precoding

Chair: *P. P. Vaidyanathan & Eduard Jorswieck* 10:15 AM - 11:55 AM

TA8b4-1 Limited CSI Feedback based on an Adaptive Codebook for Temporally Correlated MISO Fading Channels
Dan Zhang, Meik Dörpinghaus, Gerd Ascheid, RWTH Aachen University

TA8b4-2 Per-Antenna Power Constrained MIMO Transceivers Optimized for BER
Ching-Chih Weng, P. P. Vaidyanathan, California Institute of Technology

TA8b4-3 Joint Design of Limited Feedback and Multiuser Precoding Based on a Precoding MSE Metric
Michael Joham, TU Munich; Paula Castro, University of A Coruna; Jian Zhen, TU Munich; Luis Castedo, University of A Coruna; Wolfgang Utschick, TU Munich

TA8b4-4 Joint Optimization of Transceivers with Decision Feedback and Bit Loading
Ching-Chih Weng, Chun-Yang Chen, P. P. Vaidyanathan, California Institute of Technology

TA8b4-5 Mobility Dependent Feedback Scheme for point-to-point MIMO Systems
Gonzalo Vazquez-Vilar, Vinay Majjigi, Aydin Sezgin, Arogyaswami Paulraj, Stanford University

TA8b4-6 Joint Throughput Optimized CQI and Precoding Weight Calculation for MIMO HSDPA
Christian Mehlführer, Sebastian Caban, Martin Wrulich, Markus Rupp, Vienna University of Technology

TA8b4-7 Tile based MIMO OFDMA systems: Impact of outdated feedback
Aydin Sezgin, Bernd Bandemer, Stanford University; Eduard A. Jorswieck, Dresden University of Technology

TA8b4-8 Distortion-Rate Tradeoff of a Source Uniformly Distributed over Positive Semi-definite Matrices
Rajesh Krishnamachari, Mahesh Varanasi, University of Colorado

TA8b4-9 LR-Aided Precoding with a Modified LLL Algorithm for Limited Feedback MIMO Systems
Hyun Jong Yang, Joohwan Chun, Korea Advanced Institute of Science and Technology

TA8b4-10 Hybrid ARQ Schemes in Multiple-Antenna Slow Fading Channels: A Capacity Perspective
Cong Shen, Michael Fitz, University of California, Los Angeles

Session TP1a Distributed Statistical Inference

Chair: *Lang Tong & Parv Venkitasubramaniam*

TP1a-1 Distributed Parameter Estimation in Sensor Networks With Random Link Failures and Quantized Inter-Sensor Communication 1:30 PM
Soummya Kar, José M. F. Moura, Carnegie Mellon University

TP1a-2 Analysis of noisy consensus algorithms on arbitrary graphs 1:55 PM
Ram Rajagopal, Martin Wainwright, University of California at Berkeley

TP1a-3 Decentralized Detection with Long-Distance Communication 2:20 PM
O. Patrick Kreidl, Alan S. Willsky, MIT

TP1a-4 On the Divergence-Cost Function in Distributed Detection with a Secrecy Constraint 2:45 PM
Stefano Marano, Vincenzo Matta, University of Salerno; Peter Willett, University of Connecticut

Session TP1b Statistical Signal Processing for Forensics and Security

Chair: *Hong (Vicky) Zhao*

TP1b-1 Secure Methods for Fuzzy Key Binding in Biometric Authentication Applications 3:30 PM
Francis Minhthang Bui, Dimitrios Hatzinakos, University of Toronto

TP1b-2 Detection and Defense against Colluded Misbehaviors in Reputation Systems 3:55 PM
Yafei Yang, Yuhong Liu, Yan Sun, University of Rhode Island

TP1b-3 Attack-Resistant Cooperation Strategies in P2P Live Streaming Social Networks 4:20 PM
W. Sabrina Lin, University of Maryland, College Park; H. Vicky Zhao, University of Alberta; K. J. Ray Liu, University of Maryland, College Park

TP1b-4 Several Practical Versions of the Gradient Attack on Fingerprinting Schemes 4:45 PM
Shan He, Thomson Corporate Research; Darko Kirovski, Microsoft Research

TP1b-5 Statistical Fusion of Multiple Cues for Image Tampering Detection 5:10 PM
Yu-Feng Hsu, Shih-Fu Chang, Columbia University

Session TP2 Analysis Methods for Functional and Structural Brain Imaging

Chair: *Vince Calhoun & Sunanda Mitra*

TP2-1 Generating Structure-function Correlation by ICA- based Mapping of Activation Patterns on Co-registered fMRI and FA-DTI 1:30 PM
Sunanda Mitra, M. O'Boyle, F. Afrin, B. Nutter, M. Baker, R. Pal, B. Ghosh, Texas Tech University

TP2-2 Optimal Sampling Geometries for TV-Norm Reconstruction of fMRI Data 1:55 PM
Oliver Jeromin, Vince Calhoun, Marios Pattichis, University of New Mexico

TP2-3 Spatial Patterns and Functional Profiles for Discovering Structure in fMRI Data 2:20 PM
Polina Golland, Danial Lashkari, Archana Venkataraman, MIT CSAIL

TP2-4 Brain Surface Conformal Parameterization with Holomorphic Flow Method and Its Application to HIV/AIDS 2:45 PM
Yalin Wang, UCLA, Neurology Department; Jie Zhang, Zhejiang University, China; Tony Chan, Arthur Toga, Paul Thompson, UCLA Mathematics Department

BREAK 3:10 PM

TP2-5 Exploration of the Optimal Group-discriminating Features Using CC-ICA 3:30 PM
Jing Sui, Vince Calhoun, The Mind Research Network

TP2-6 Pushing the limits of MR diffusion tensor imaging 3:55 PM
Edward Hsu, University of Utah

TP2-7 Hippocampal Shape in Twin Pairs Discordant for Schizophrenia 4:20 PM
Theo van Erp, Paul Thompson, Gil Hoftman, University of California Los Angeles; Matti Huttunen, Jouko Lönnqvist, Jaakko Kaprio, Oili Salonen, Leena Valanne, Carl-Gustav Standertskjöld-Nordenstam, Department of Mental Health and Alcohol Research; Veli-Pekka Poutanen, University of Helsinki Central Hospital, Meilahti Clinics; Arthur Toga, Tyrone Cannon, University of California Los Angeles

TP2-8 Comparison of Boosting and Partial Least Squares techniques for real-time Pattern Recognition of Brain Activation in Functional Magnetic Resonance Imaging 4:45 PM
Herbert Davis, Stefan Posse, E. Castro Witting, Peter Soliz, VisionQuest Biomedical LLC

Session TP3a Delay-Rate Tradeoffs

Chair: *Tara Javidi*

TP3a-1 Achievable throughput and queueing delay for imperfect cooperative retransmission MAC protocols 1:30 PM
Steven Weber, Athina Petropulu, Drexel University

TP3a-2 Delay-minimal Transmission for Average Power Constrained Multi-access Communications 1:55 PM
Jing Yang, Sennur Ulukus, University of Maryland

TP3a-3 Delay analysis of Block Coding over a Noisy Channel with Limited Feedback 2:20 PM
Raghava N. Swamy, Tara Javidi, UCSD

TP3a-4 Throughput Delay Tradeoff for Wireless Multicast Using Hybrid-ARQ Protocols 2:45 PM
Jianqi Wang, Seung Young Park, David Love, Michael Zoltowski, Purdue University

Session TP3b Relaying and Cooperation II

Chair: *Osvaldo Simeone*

TP3b-1 Inter-cell Relay Cooperation In Heterogeneous Cellular Uplink Systems 3:30 PM
Harish Ganapathy, The University of Texas, Austin; Jeffrey Andrews, University of Texas at Austin; Constantine Caramanis, The University of Texas, Austin

TP3b-2 Training Design for Information Rate Optimization over Amplify and Forward Relay Channels 3:55 PM
Yupeng Jia, Azadeh Vosoughi, University of Rochester

TP3b-3 Distributed Space-time Codes with Relay Preprocessing for Low SNR Source-Relay Links 4:20 PM
Birsen Sirkeci-Mergen, San Jose State University

TP3b-4 Analysis of Amplify-and-Forward DSTBCs over the Random Set Relay Channel 4:45 PM
Qiang Xue, Giuseppe Abreu, University of Oulu; Behnaam Aazhang, Rice University

TP3b-5 Circumventing Base Station Cooperation through Kalman Prediction of Intercell Interference 5:10 PM
Ralf Bendlin, Yih-Fang Huang, University of Notre Dame; Josef Nossek, Michel Ivrlac, Munich University of Technology

Session TP4 Cooperative MIMO

Chair: *Aria Nosratinia*

TP4-1 Switching Between Antenna Selection and Spatial Multiplexing in the Amplify-and-Forward MIMO Relay Channel 1:30 PM
Steven Peters, Robert Heath, Jr., University of Texas at Austin

TP4-2 MIMO Two-way Relay Channel: Diversity-Multiplexing Trade-off Analysis 1:55 PM
Deniz Gunduz, Princeton/Stanford University; Andrea Goldsmith, Stanford University; H. Vincent Poor, Princeton University

TP4-3 Deterministic capacity of MIMO relay networks 2:20 PM
Anders Host-Madsen, University of Hawaii

TP4-4 Layered Randomized Cooperation for Multicast 2:45 PM
Ozgu Alay, Ran Ding, Elza Erkip, Yao Wang, Polytechnic University; Anna Scaglione, Cornell University

BREAK 3:10 PM

TP4-5 Coding for the fading interference channel 3:30 PM
Jean-Claude Belfiore, Maya Badr, Lina Mroueh, ENST

TP4-6 Multiaccess Relay Channel with Opportunistic Channel Access 3:55 PM
Mohamed Abouelseoud, Aria Nosratinia, University of Texas at Dallas

TP4-7 Optimum Time-Division in MIMO Two-Way Decode-and-Forward Relaying Systems 4:20 PM
Jian Zhao, Marc Kuhn, Armin Wittneben, ETH Zurich; Gerhard Bauch, DoCoMo Euro-Labs

TP4-8 Resource Allocation for the Parallel Relay Channel with Multiple Relays 4:45 PM
Kagan Bakanoglu, Elza Erkip, POLYTECHNIC UNIVERSITY; Stefano Tomasin, University of Padova

TP4-9 To Code or Not To Code In Multi-Hop Relay Channels 5:10 PM
Rahul Vaze, Robert Heath, Jr., The University of Texas at Austin

Session TP5a Integrated Algorithm and Architecture Implementation

Chair: *Keshab Parhi*

TP5a-1 Forward Error Correction for High-Speed I/O 1:30 PM
Rajan Narasimha, Naresh Shanbhag, University of Illinois at Urbana-Champaign

TP5a-2 VLSI Architecture Design for Algebraic Soft-decision Reed-Solomon Decoding 1:55 PM
Xinmiao Zhang, Case Western Reserve University

TP5a-3 Efficient Algorithm and VLSI Architecture Design for Variable Block Size Motion Compensated De-Interlacing 2:20 PM
Hongbin Sun, Nanning Zheng, Xi'an Jiaotong University; Tong Zhang, Rensselaer Polytechnic Institute

TP5a-4 High-Speed Implementation of Smith-Waterman Algorithm for DNA Sequence Scanning in VLSI 2:45 PM
Chao Cheng, Marvell Semiconductor; Keshab K. Parhi, University of Minnesota, Twin Cities

Session TP5b Cognitive Systems and Spectrum Sharing

Chair: *Sriram Vishwanath*

TP5b-1 Spectrum Sharing in Cellular Networks: An Ad Hoc Network Underlay 3:30 PM
Brett Kaufman, Behnaam Aazhang, Rice University

TP5b-2 Spectrum Allocation from a Game Theoretic Perspective: Properties of Nash Equilibria 3:55 PM
Peter von Wrycza, M. R. Bhavani Shankar, Mats Bengtsson, Björn Ottersten, Royal Institute of Technology (KTH)

TP5b-3 Secondary Transmission Profile for a Single-band Cognitive Interference Channel 4:20 PM
Debashis Dash, Ashutosh Sabharwal, Rice University

TP5b-4 Experimental Study of a Wavelet-based Spectrum Sensing Technique 4:45 PM
Erika Portela Lopes de Almeida, Paulo Henrique Portela de Carvalho, Pedro Antero Braga Cordeiro, University of Brasilia; Robson Domingos Vieira, Instituto Nokia de Tecnologia

TP5b-5 Wireless Resource Allocation With Perceived Quality Fairness 5:10 PM
Andreas Saul, DoCoMo Euro-Labs

Session TP6 Interference Management and Cooperative Communication in Ad-hoc Networks

Chair: *Min Dong & Ben Liang*

TP6-1 Generalized Degrees of Freedom of X Networks 1:30 PM
Syed Jafar, Chiachi Huang, University of California Irvine

TP6-2 On the Role of Feedback and Interaction in Networks 1:55 PM
Krishnan Eswaran, Michael Gastpar, UC Berkeley

TP6-3 Adaptive Power Loading for OFDM Cooperative Networks 2:20 PM
Osama Amin, Murat Uysal, University of Waterloo

TP6-4 Spectrum Enforcement and Liability Assignment in Cognitive Radio Systems 2:45 PM
George Atia, Venkatesh Saligrama, Boston University; Anant Sahai, UC Berkeley

BREAK 3:10 PM

TP6-5 Generalized Relaying in the Presence of Interference 3:30 PM
Ron Dabora, Ivana Maric, Andrea Goldsmith, Stanford Univ.

TP6-6 Spectrum Allocation in Two-Tier Networks 3:55 PM
Vikram Chandrasekhar, The University of Texas at Austin; Jeffrey Andrews, University of Texas at Austin

TP6-7 Distributed Spectrum Sensing for Cognitive Radios by Exploiting Sparsity 4:20 PM
Juan-Andres Bazerque, Georgios B. Giannakis, University of Minnesota

TP6-8 Interference Channel with One Cognitive Transmitter 4:45 PM
Yi Cao, Biao Chen, Syracuse University

Session TP7a Detection, Processing and Fusion in Distributed Sensor Systems

Chair: *Akos Ledeczi & Xenofon Koutsooukos*

TP7a-1 Lightweight Acoustic Classification for Cane-Toad Monitoring 1:30 PM
Thanh Dang, Nirupama Bulusu, Portland State University; Wen Hu, CSIRO ICT Centre

TP7a-2 Applying Blind Methods to Bird Call Classification and Detection in a Complex Acoustic Environment 1:55 PM
Lewis Girod, Vladimir Bychkovsky, MIT

TP7a-3 Target Tracking in Urban Environments using Audio-Video Signal Processing in Heterogeneous Wireless Sensor Networks 2:20 PM
Manish Kushwaha, ISIS, Vanderbilt University; Songhwai Oh, School of Engineering, UC Merced; Isaac Amundson, Xenofon Koutsoukos, Akos Ledeczi, ISIS, Vanderbilt University

TP7a-4 Energy-efficient Sensor Management in Multi-static Active Sonar Networks 2:45 PM
Andreas Terzis, I-Jeng Wang, Johns Hopkins University

Session TP7b Performance Prediction and Analysis for Signal and Image Processing Systems

Chair: *Matthew Ferrara*

TP7b-1 Performance of Cued Target Acquisition Systems: Impact of Automatic Target Recognition 3:30 PM
Robert Frankot, Raytheon Missile Systems

TP7b-2 Confuser Rejection Performance Model 3:55 PM
David Doria, Raytheon Space and Airborne Systems

TP7b-3 SAR Focusing Performance for Moving Objects with Random Motion Components 4:20 PM
Ahmed Fasih, Emre Ertin, Randolph Moses, The Ohio State University

TP7b-4 Detecting Curves in SAR Data 4:45 PM
Kaitlyn Voccola, Margaret Cheney, Birsen Yazici, Rensselaer Polytechnic Institute; Matthew Ferrara, Air Force Research Lab

TP7b-5 Non-Algorithm-Specific ATR Performance Estimation 5:10 PM
Donald Waagen, Nitesh Shah, Harry Schmitt, Raytheon Company

Session TP8a1 Adaptive Systems and Processing

Chair: *Victor DeBrunner* 1:30 PM - 3:10 PM

TP8a1-1 Reduced-Rank Interference Suppression for GPS Systems based on Adaptive Basis-Function Approximation
Danilo Zanatta Filho, Rodrigo de Lamare, Rui Fa, University of York

TP8a1-2 Active Noise Control Based On Kernel Least-Mean-Square Algorithm
Hua Bao, University of Texas at Dallas; Issa Panahi, Nishank Pathak, University of Texas as Dallas

TP8a1-3 An Efficient and Effective Variable Step Size NLMS Algorithm
Hideki Takekawa, Tetsuya Shimamura, Saitama University; Shihab Jimaa, KUSTAR University

TP8a1-4 A Robust Active Noise Control Algorithm without identifying secondary path
Hieu Thai, Minh Ta, Victor DeBrunner, Florida State University

TP8a1-5 New Stable IIR Modeling of Long FIR filters with Low Complexity
Jie Chen, Keshab K. Parhi, University of Minnesota

Session TP8a2 Detection and Estimation

Chair: *Antonia Papandreou-Suppappola* 1:30 PM - 3:10 PM

TP8a2-1 Leading Edge Detection in Colored Noise for IR-UWB Signals
Sayit Korkmaz, Alle-Jan van der Veen, TU Delft

TP8a2-2 Estimating Homeomorphic Deformations of Multi-Dimensional Signals - An Accuracy Analysis
Benjamin Friedlander, University of California, Santa Cruz

TP8a2-3 Subspace-based Cooperative Spectrum Sensing for Cognitive Radio
Raghavendra Rao, Qi Cheng, Oklahoma State University; Priyadip Ray, Syracuse University

TP8a2-4 An Exact Recursive Filter For Quadrature Amplitude Modulation Dynamics
Robert Elliott, University of Calgary; William Malcolm, Australian national University

TP8a2-5 Propagator Method for Joint Time Delay and Frequency Estimation
Mahmoud Qasaymeh, Hirenkumar Gami, Wichita State University; Nizar Tayem, ITT Technical Institute; Ravi Pendse, Wichita State University

TP8a2-6 Joint Estimation of Gain/Phase Mismatches And I/Q Imbalances In Array Antenna Subsystems
Zhiwen Zhu, Xinping Huang, Communications Research Centre Canada

TP8a2-7 Nonparametric detection of the number of signals and random matrix theory
Shira Kritchman, Boaz Nadler, Weizmann Institute of Science

TP8a2-8 Extension of Reed-Mallett-Brennan (RMB) Loss for Application to STAP With Collected Data
Christopher Teixeira, Northrop Grumman Corporation

TP8a2-9 Parameter estimation in wireless channel networks using second order statistics
Magnus Mossberg, Karlstad University

TP8a2-10 Parameter Estimation from Shift-Invariant Subspaces
Richard Vaccaro, University of Rhode Island

TP8a2-11 Structured Non-negative Matrix Factorization with Sparsity Patterns
Hans Laurberg, Aalborg University; Mikkel N. Schmidt, Technical University of Denmark; Mads Græsbøll Christensen, Søren Holdt Jensen, Aalborg University

TP8a2-12 An Overview of Renyi Entropy and Some Potential Applications
Ed Beadle, Jim Schroeder, Harris Corp.; Bill Moran, University of Melbourne

TP8a2-13 Detection of Signal Discontinuities from Noisy Fourier Data
Adityavikram Viswanathan, Douglas Cochran, Anne Gelb, Dennis Cates, Arizona State University

TP8a2-14 On the Effect of Channel Estimation Error Upon the Performance of Distributed Detection Systems
Hamidreza Ahmadi, Azadeh Vosoughi, University of Rochester

TP8a2-15 Sequential Unfolding SVD for Low Rank Orthogonal Tensor Approximation
Jussi Salmi, Andreas Richter, Visa Koivunen, Helsinki University of Technology

TP8a2-16 On Separation Performance Enhancement in Convolutive Blind Source Separation
Radoslaw Mazur, Alfred Mertins, University of Luebeck

TP8a2-17 The Decentralized Estimation of the Sample Covariance
Anna Scaglione, Roberto Pagliari, Cornell University; Hamid Krim, North Carolina State University

TP8a2-18 Adaptive Discovery of Sparse Signals in Noise
Jarvis Haupt, Rui Castro, Robert Nowak, University of Wisconsin -- Madison

TP8a2-19 Applying Blind Methods to Bird Call Classification and Detection in a Complex Acoustic Environment
Vladimir Bychkovsky, Lewis Girod, MIT

TP8a2-20 Maximum Likelihood Parameters Estimation in Non-uniform Noise Fields Using Moving Array
Da Xie, Tingting Niu, Jianguo Huang, Northwestern Polytechnical University; Hongya Ge, New Jersey Institute of Technology

Session TP8a3 Space-Time Coding and Decoding

Chair: *Benjamin Friedlander* 1:30 PM - 3:10 PM

TP8a3-1 Full-Rate Full-Diversity Differential MIMO
M. Rezk, UCSC; Benjamin Friedlander, University of California, Santa Cruz

TP8a3-2 Joint Channel-Symbol Estimation for High-Performance Differential MIMO
M. Rezk, UCSC; Benjamin Friedlander, University of California, Santa Cruz

TP8a3-3 Embedded Alamouti Space-Time Codes for High Rate and Low Decoding Complexity
Mohanned Sinnokrot, John Barry, Vijay Madisetti, Georgia Institute of Technology

TP8a3-4 New Soft Stack Decoder for MIMO Channel
Abdellatif Salah, Ghaya Rekaya Ben-Othman, Rym Ouertani, TELECOM ParisTech; Samuel Guillouard, Thomson R&D

TP8a3-5 Multiple Phase Decoder for MIMO Systems
Zhi Quan, Yuriy Zakharov, Junruo Zhang, University of York

TP8a3-6 4x4 Perfect Space-Time Code Partition
Mireille Sarkiss, Ghaya Rekaya-Ben Othman, Jean-Claude Belfiore, Ecole Nationale Supérieure des Télécommunications

TP8a3-7 Systematic Design of Space-Time Convolutional Codes
Christophe Rouchy, Hamid Sadjadpour, UCSC

TP8a3-8 Iterative Inter-symbol Interference Canceling Receiver for Direct Space-Time GF(q) LDPC Modulation
Adam R. Margetts, Nicholas B. Chang, Keith W. Forsythe, Daniel W. Bliss, MIT Lincoln Laboratory

TP8a3-9 Space-Time Coding with Receive Switch Diversity
Adarsh Narasimhamurthy, Cihan Tepedelenlioglu, Arizona State University

Session TP8b1 Computer Arithmetic II

Chair: *Alberto Nannarelli* 3:30 PM - 5:10 PM

TP8b1-1 A Residue to Binary Converter for the {2n + 2, 2n + 1, 2n} Moduli Set
Kazeem Alagbe Gbolagade, Delft University of Technology/University For Development Studies,Ghana; Sorin Dan Cotofana, Delft University of Technology,

TP8b1-2 Power Dissipation in Division
Wei Liu, Alberto Nannarelli, Technical University of Denmark

TP8b1-3 Transcedental Functions on a Shift-Enabled Reconfigurable Device: CORDIC as a Case-Study
Scott Miller, Mihai Sima, Michael McGuire, University of Victoria

TP8b1-4 A Decimal Fully Parallel and Pipelined Floating Point Multiplier
Ramy Eissa, Amira Mohamed, Rodina Samy, Tarek Eldeeb, Yasmeen Farouk, Mostafa Elkhouly, SilMinds; Hossam Fahmy, Cairo University

TP8b1-5 Towards Optimal Multiple Constant Multiplication: A Hypergraph Approach
Oscar Gustafsson, Linkoping University

TP8b1-6 An Empirical Study on Standard Cell Synhtesis of Elementary Function Look-Up Tables
Oscar Gustafsson, Kenny Johansson, Linkoping University

TP8b1-7 A Rounding Method with Improved Error Tolerance for Division by Convergence
Inwook Kong, Earl E. Swartzlander, Jr., University of Texas at Austin

TP8b1-8 Polynomial Multiplication over Finite Fields Using Field Extensions and Interpolation
Murat Cenk, Cankaya University; Cetin Koc, Oregon State University; Ferruh Ozbudak, Middle East Technical University

TP8b1-9 Spectral Modular Arithmetic for Binary Extension Fields
Gokay Saldamli, Eczacibasi Embedded Design Center; Cetin Koc, Oregon State University

TP8b1-10 A Low Power Radix-4 Dual Recoded Integer Squaring Implementation For Use in Design of Application Specific Arithmetic Circuits
Jason Moore, Student/SMU; Mitchell A. Thornton, David W. Matula, Professor/SMU

TP8b1-11 High-Speed Parallel CRC Circuits
Christopher Kennedy, Arash Reyhani-Masoleh, The University of Western Ontario

TP8b1-12 Forcing one-sided results in Goldschmdit algorithm
Daniel Piso Fernández, Javier Díaz Bruguera, University of Santiago de Compostela

Session TP8b2 Architectures and Implementation

Chair: *Oscar Gustafsson* 3:30 PM - 5:10 PM

TP8b2-1 Implementation of a correlator of bipolar sequences and matrix element squaring with application to interference-limited multiple-access systems
Hossam Fahmy, Cairo University; Ayman Elezabi, American University in Cairo

TP8b2-2 Power Estimation Methodology for VLIW Digital Signal Processor
Mostafa E.A. Ibrahim, Cairo University; Markus Rupp, Vienna University of Technology; Hossam Fahmy, Cairo University

TP8b2-3 Filter Designs for a Reconfigurable Photonic Integrated Circuit
Yujia Wang, John J. Shynk, University of California, Santa Barbara

TP8b2-4 High Performance On the Fly Reconfigurable MIMO Detector
Pankaj Bhagawat, Rajballav Dash, Gwan Choi, Texas A&M University

TP8b2-5 Implementation and Complexity Analysis of List Sphere Detector for MIMO-OFDM systems
Markus Myllylä, Markku Juntti, Centre for Wireless Communications; Joseph R. Cavallaro, Rice University

TP8b2-6 The Cube Coefficient Subspace Architecture for Nonlinear Digital Predistortion
Matthew Herman, Benjamin Miller, Joel Goodman, MIT Lincoln Laboratory

TP8b2-7 Sparse FIR filters and its impact on FPGA area usage
Sean Patronis, Linda DeBrunner, Florida State Univeristy

TP8b2-8 Implementing Indoor Positioning System via ZigBee Devices
Yao Zhao, Liang Dong, Western Michigan University; Jiang Wang, Bo Hu, Yuzhuo Fu, Shanghai Jiao Tong University

TP8b2-9 Iris Recognition Processing via Parallel Logic in Field Programmable Gate Arrays
Ryan Rakvic, Bradley Ulis, Randy Broussard, Robert Ives, USNA

TP8b2-10 Dynamically regularized RLS-DCD algorithm and its FPGA design
Jie Liu, Yuriy Zakharov, Junruo Zhang, University of York

TP8b2-11 ASIC implementation comparison of SIC and LSD receivers for MIMO-OFDM
Johanna Ketonen, Markus Myllylä, Markku Juntti, Centre for Wireless Communications, University of Oulu

TP8b2-12 Optimally Quantized Offset Min-Sum Algorithm for Flexible LDPC Decoder
Daesun Oh, Keshab K. Parhi, University of Minnesota

TP8b2-13 A New MIMO Detector Architecture Based on a Forward-Backward Trellis Algorithm
Yang Sun, Joseph R. Cavallaro, Rice University

TP8b2-14 Architecture-aware design of a decimation filter based on a dual wordlength multiply-accumulate unit
Erik Lindahl, Oscar Gustafsson, Linkoping University

Session TP8b3 Image Analysis for Biomedical Applications

Chair: *Nilanjan Ray* 3:30 PM - 5:10 PM

TP8b3-1 An Image enhancement technique in theJPEG domain for cancer detection
Jinshan Tang, Alcorn State University

TP8b3-2 Real-Time Motion Tracking in MRI: A Simulation Study
Jeff Orchard, University of Waterloo; Robert Staruch, University of Toronto

TP8b3-3 Ultrasound Despeckling for Active Contour Segmentation
Peter Tay, Western Carolina University

TP8b3-4 Automatic Blood Cell Classification by Joint Histogram Based Feature and Bhattacharya Kernel
Sharmin Nilufar, PhD Student; Nilanjan Ray, Assistant Professor; Hong Zhang, Professor

TP8b3-5 Learning Shape Features for Tracking Multiple Leukocytes in Intravital Microscopic Experiment
Baidya Nath Saha, University of Alberta; Dipti Prasad Mukherjee, Indian Statistical Institute

TP8b3-6 Separating Backscatter and Attenuation in Ultrasound Imagery Using Anisotropic Regularization
Yongjian Yu, Xiaodong Tao, GE Corporate - Americas; Feng Lin, GE Corporate -Americas; Mirsaid Seyed-Bolorforosh, GE Corporate - Americas

TP8b3-7 Estimation in real-time affinity-based biosensors
Haris Vikalo, Arjang Hassibi, University of Texas at Austin

TP8b3-8 Reduced Rank Formulation for Increased Computational Efficiency in Medical Ultrasound Model-Based Beamforming
Michael Ellis, William Walker, University of Virginia

TP8b3-9 Joint Maximum Likelihood Estimation of the fMRI Hemodynamic Response Function and Activation
Negar Bazargani, Aria Nosratinia, University of Texas at Dallas

TP8b3-10 A Fast Inverse Consistent Deformable Image Registration Method Based on Symmetric Optical Flow Computation
Deshan Yang, Hua Li, Daniel Low, Joseph Deasy, Issam El Naqa, Washington University in Saint Louis

TP8b3-11 An Automated Three-Dimensional Visualization and Classification of Emphysema using Neural Network
Kok Liang Tan, Toshiyuki Tanaka, Keio University; Hidetoshi Nakamura, Tokyo Electric Power Hospital; Toru Shirahata, Hiroaki Sugiura, Keio University

Session WA1 Sensor Networks

Chair: *John W. Fisher, III*

WA1-1 Estimating a Random Field in Sensor Networks Using Quantized Spatially Correlated Data and Fusion-center Feedback 8:30 AM
Aleksandar Dogandzic, Kun Qiu, Iowa State University

WA1-2 Quantization for Distributed Detection under Link Outages 8:55 AM
Ying Lin, State University of New York, New Paltz

WA1-3 Distributed Estimation of Channel Gains in Sensor Networks 9:20 AM
Sivagnanasundaram Ramanan, John MacLaren Walsh, Drexel University

WA1-4 Evaluation of Local Decision Thresholds for Distributed Detection in Wireless Sensor Networks using Multiobjective Optimization 9:45 AM
Engin Masazade, Sabanci University; Ramesh Rajagopalan, Florida State University; Pramod K. Varshney, Syracuse University; Gullu Kiziltas Sendur, Mehmet Keskinoz, Sabanci University

BREAK 10:10 AM

WA1-5 Source Localization using Random Arrays of Sensors under Multipath Fading 10:30 AM
Georgios Tsivgoulis, Owens Walker III, Murali Tummala, John McEachen, Naval Postgraduate School

WA1-6 Distributed Estimation over Fading Channels Using One-bit Quantization 10:55 AM
Tao Wu, Qi Cheng, Oklahoma State University

Session WA2 Biological Imaging: Acquisition, Analysis and Modeling

Chair: *Michael Liebling*

WA2-1 In toto imaging and the Digital Fish Project: Open tools for an imaging based approach to systems biology 8:30 AM
Sean Megason, Harvard Medical School

WA2-2 Image processing in mechanics of growing plants 8:55 AM
Tigran Bacarian, University of California, Irvine

WA2-3 Automatic Annotation of Patterns in Bioimages 9:20 AM
Hanchuan Peng, Janelia Farm Research Campus, Howard Hughes Medical Institute

WA2-4 Multimodality and Multidimensional Microscopy in the Developing Embryonic Heart 9:45 AM
Michael Liebling, University of California Santa Barbara

BREAK 10:10 AM

WA2-5 Sub-resolution maximum-likelihood localization of fluorescent molecules based on an accurate image formation model 10:30 AM
François Aguet, Michael Unser, EPFL (Ecole Polytechnique Fédérale de Lausanne)

WA2-6 Model based MR spectroscopic imaging 10:55 AM
Mathews Jacob, Ramin Eslami, University of Rochester

WA2-7 Improved Signal Extraction from Fluorescence Immunoassay Image Sequences 11:20 AM
Prasun Mahanti, Fulton School of Engineering; Thomas Taylor, College of Liberal Arts and Sciences; Douglas Cochran, Fulton School of Engineering; Mark Hayes, College of Liberal Arts and Sciences; Matthew Petkus, The Dial Corporation

WA2-8 Signal processing for rapid bacterial detection 11:45 AM
Vivek Nandakumar, Terry Alford, Department of Electrical Engineering; Jeffrey La Belle, Biodesign Institute

Session WA3a Ultra Wide Band

Chair: *Lutz Lampe*

WA3a-1 Effects of Imperfections on the Performance of OFDM-based UWB Systems 8:30 AM
Juan Montojo, UCSD-ECE and Qualcomm Inc.; Laurence Milstein, UCSD-ECE

WA3a-2 Performance of Coded Transmitted Reference Pulse Cluster UWB Systems 8:55 AM
Zhonghua Liang, Xiaodai Dong, T. Aaron Gulliver, University of Victoria

WA3a-3 Receiver Optimization in Frequency-Shifted Reference Ultra-Wideband Systems 9:20 AM
Zhiguo Lai, Harshit Joshi, Dennis Goeckel, University of Massachusetts

WA3a-4 Performance of Concatenated Coded IR-UWB 9:45 AM
Zahra Ahmadian, Lutz Lampe, University of British Columbia

Session WA3b OFDMA and Multiple Access

Chair: *Chia-Chin Chong*

WA3b-1 Reduced-Feedback Opportunistic Scheduling and Beamforming with Power Allocation for MIMO-OFDMA 10:30 AM
Man-On Pun, Princeton Uniersity; Kyeong Jin Kim, Nokia, Inc.; Ronald A. Iltis, Nokia; H. Vincent Poor, Princeton Uniersity

WA3b-2 Impact of Diversity on OFDMA Ranging 10:55 AM
Jianqiang Zeng, Hlaing Minn, University of Texas at Dallas; Chia-Chin Chong, Fujio Watanabe, DoCoMo USA Labs Inc.

WA3b-3 Cooperative OFDM Relay Transmission using Rateless Codes 11:20 AM
Gang Wu, Wei Lin, Deli Jia, Shaoqian Li, University of Electronic Science and Technology of China; Ye (Geoffrey) Li, Georgia Institute of Technology

WA3b-4 OFDMA based Cooperative Relay Networks 11:45 AM
Zhongshan Zhang, University of Alberta; Chintha Tellambura, Univ. of Alberta

WA3b-5 A Practical SDMA Protocol for 60 GHz Millimeter Wave Communications 12:10 PM
Pengfei Xia, Samsung Electronics

Session WA4 New Directions in MIMO

Chair: *Venu Veeravalli*

WA4-1 Adaptive Time Reversal Beamforming in Dense Multipath Communication Networks 8:30 AM
Yuanwei Jin, José M. F. Moura, Nicholas O'Donoughue, Carnegie Mellon University

WA4-2 Finite lattice-size effects in MIMO decoding 8:55 AM
Christoph Studer, Dominik Seethaler, Helmut Bölcskei, ETH Zurich

WA4-3 Space-time Reversal Techniques for Wideband MIMO Communication 9:20 AM
Thiagarajan Sivanadyan, Akbar Sayeed, University of Wisconsin - Madison

WA4-4 Angular domain processing for MIMO wireless systems with non-uniform antenna arrays 9:45 AM
Dayu Huang, Vasanthan Raghavan, Ada Poon, University of Illinois; Venugopal Veeravalli, University of Illinois at Urbana-Champaign

BREAK 10:10 AM

WA4-5 Compressed Sensing of Wireless Channels in Time, Frequency, and Space 10:30 AM
Waheed Uz Zaman Bajwa, Akbar Sayeed, Robert Nowak, University of Wisconsin-Madison

WA4-6 Broadband SVD and Non-Linear Precoding and Equalisation Applied to Broadband MIMO Channels 10:55 AM
Waleed Al-Hanafy, Andrew Millar, Chi Hieu Ta, Stephan Weiss, University of Strathclyde

WA4-7 Diversity-Fidelity Tradeoff in Transmission of Analog Sources over MIMO Fading Channels 11:20 AM
Mahmoud Taherzadeh, Kamyar Moshksar, Amir K. Khandani, University of Waerloo

WA4-8 Multi-User and Multi-Cell MIMO based on Limited Feedback in Downlink OFDM Systems 11:45 AM
Lars Thiele, Malte Schellmann, Thomas Wirth, Volker Jungnickel, Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut

Session WA5a Architectures for Positioning and Navigation

Chair: *Andrew Dempster*

WA5a-1 Efficient Signal Acquisition and Tracking for a Real Time GPS/Galileo Software Receiver 8:30 AM
Marco Pini, Maurizio Fantino, Istituto Superiore Mario Boella; Fabio Dovis, Politecnico di Torino

WA5a-2 An Unambiguous Detector Architecture for Galileo E5 Signal Acquisition 8:55 AM
Nagaraj Channarayapatna Shivaramaiah, Andrew Dempster, University of New South Wales

WA5a-3 On the Implications of Analog to Digital Conversion on Variable-Rate Bandpass Sampling GNSS Receivers 9:20 AM
Alper Ucar, Ediz Cetin, Izzet Kale, University of Westminster

WA5a-4 Understanding the GIOVE-B Broadcast Codes of the Galileo System 9:45 AM
Grace Xingxin Gao, Stanford University; Dennis Akos, University of Colorado; Todd Walter, Per Enge, Stanford University

Session WA5b Low Power Methods

Chair: *James E. Stine, Jr.*

WA5b-1 Analysis of Voltage Overscaled Computer Arithmetics in Low Power Signal Processing Systems 10:30 AM
Yang Liu, Tong Zhang, Rensselaer Polytechnic Institute; Keshab K. Parhi, University of Minnesota

WA5b-2 Low Power Signal Processing Through Complexity Reduction and Quality-Vdd Tradeoffs 10:55 AM
Nilanjan Banerjee, Kaushik Roy, Purdue University

WA5b-3 Reducing Power Dissipation in Pipelined Accumulators 11:20 AM
Alberto Nannarelli, Technical University of Denmark; Marco Re, GianCarlo Cardarilli, University of Rome "Tor Vergata"

WA5b-4 Self Modifying Finite Automata (SMFA) based State Machine Implementation for Lower Energy 11:45 AM
Ka-Ming Keung, Akhilesh Tyagi, Iowa State University

WA5b-5 Single-ended half-swing low-power SRAM design 12:10 PM
Harsha Choday, James E. Stine, Oklahoma State University

Session WA6a Network Information Theory and Security

Chair: *Faramarz Fekri*

WA6a-1 Capacity of Ad-Hoc Networks under Multipacket Transmission and Reception 8:30 AM
Shirish Karande, Zheng Wang, Hamid Sadjadpour, UCSC; Jose Joaquin Garcia-Luna-Aceves, University of California, Santa Cruz

WA6a-2 Analysis of Latency in Secure Wireless Sensor Networks with Key Predistribution 8:55 AM
Ramanan Subramanian, Kevin Chan, Faramarz Fekri, Georgia Institute of Technology

WA6a-3 Capacity Scaling Laws for Underwater Networks 9:20 AM
Daniel E. Lucani, Muriel Médard, Milica Stojanovic, MIT

WA6a-4 Entropy Vectors and Network Information Theory 9:45 AM
Babak Hassibi, Sormeh Shadbakht, Caltech

Session WA6b Wireless Network Utility Maximization: Fundamental Limits and Protocols

Chair: *Alejandro Ribeiro & Georgios Giannakis*

WA6b-1 Delay Analysis of Scheduling Policies in Wireless Networks (Invited Paper) 10:30 AM
Gagan Gupta, Purdue University; Ness Shroff, The Ohio State University

WA6b-2 Optimal Spectrum Allocation in Gaussian Interference Networks 10:55 AM
Hongxia Shen, Hang Zhou, Randall Berry, Michael Honig, Northwestern University

WA6b-3 Asymptotic Delay Guarantees for Throughput Optimal Scheduling 11:20 AM
Koushik Kar, Rensselaer Polytechnic Institute; Saswati Sarkar, University of Pennsylvnia

WA6b-4 Optimal layered architectures for wireless networks 11:45 AM
Alejandro Ribeiro, Georgios B. Giannakis, University of Minnesota

WA6b-5 Opportunism, Backpressure, and Stochastic Optimization with the Wireless Broadcast Advantage 12:10 PM
Michael Neely, Rahul Urgaonkar, USC

Session WA7a Speech Recognition and Analysis

Chair: *Jerry Gibson*

WA7a-1 A Double-Talk Detector Based on Generalized Mutual Information for Stereophonic Acoustic Echo Cancellation in the Presence of Nonlinearity — 8:30 AM
Kun Shi, Xiaoli Ma, G. Tong Zhou, Georgia Institute of Technology

WA7a-2 A Phonetically Switched ADPCM speech coder — 8:55 AM
Pravin Kumar Ramadas, Jerry D. Gibson, University of California, Santa Barbara

WA7a-3 A probabilistic principal component analysis based hidden Markov model for audio-visual speech recognition — 9:20 AM
Zhanyu Ma, Arne Leijon, Royal Institute of Technology (KTH)

WA7a-4 Synthesis of Enhanced Audio from Low Bitrate Compressed Audio Based on Unit Selection and Statistical Conversion Methods — 9:45 AM
Demetrios Cantzos, University of Southern California; Athanasios Mouchtaris, Foundation for Research and Technology; Chris Kyriakakis, University of Southern California

Session WA7b Adaptive Receivers for OFDM and UWB Systems

Chair: *Richard Martin*

WA7b-1 Adaptive MIMO Channel Shortening with Post-FEQ Diversity Combining — 10:30 AM
Gokhan Altin, Richard Martin, The Air Force Institute of Technology

WA7b-2 On the Ill Convergence of Blind Equalization Algorithms for M-ary PPM with Small Alphabet Size — 10:55 AM
Andrew Klein, Xinming Huang, Worcester Polytechnic Insistute (WPI)

WA7b-3 A Cost Function Level Analysis of Autocorrelation Minimization Based Blind Adaptive Channel Shorteners — 11:20 AM
Ciira Wa Maina, John Walsh, Drexel University

WA7b-4 Adaptive Resource Allocation Within Three-Stage OFDM Relay Networks — 11:45 AM
Nasr Eltayeb, S. K. Kassim, Jonathan Chambers, Loughborough University

WA7b-5 Adaptive Downlink OFDMA Resource Allocation — 12:10 PM
Ian Wong, Freescale Semiconductor; Brian Evans, The University of Texas at Austin

Session WA8a Network Coding

Chair: *Shalinee Kishore*

WA8a-1 Robust network coding subgraph construction under uncertainty — 8:30 AM
Christopher Chang, Tracey Ho, Michelle Effros, California Institute of Technology

WA8a-2 Randomized Network Coding in Broadcast Wireless Networks with Fading Edges — 8:55 AM
Yingda Chen, Shalinee Kishore, Lehigh University

WA8a-3 Two-Way Relaying with Network Coding for Multiple Orthogonal Channels — 9:20 AM
Petar Popovski, Aalborg University/Oticon A/S; Toshiaki Koike-Akino, Vahid Tarokh, Harvard University

WA8a-4 A Study of the Routing Capacity Regions of Networks — 9:45 AM
Ali Kakhbod, University of Michigan; Serap A. Savari, S. M. Sadegh Tabatabaei Yazdi, Texas A&M University

Session WA8b Video Coding

Chair: *Lina Karam*

WA8b-1 Determining Efficient Bit Stream Extraction Paths in H.264/AVC Scalable Video Coding — 10:30 AM
Dongeun Lee, Yonghee Lee, Heejung Lee, Jonghun Lee, Heonshik Shin, Seoul National University

WA8b-2 Bitplane Selective Distributed Video Coding — 10:55 AM
Wei-Jung Chien, Lina Karam, Arizona State University

WA8b-3 Refined Error Concealment for Multiple State Video Coding over Ad Hoc Networks — 11:20 AM
Yiting Liao, Jerry D. Gibson, University of California, Santa Barbara

WA8b-4 Bitrate allocation for multiple video streams at competitive equilibria — 11:45 AM
Mayank Tiwari, Theodore Groves, Pamela Cosman, University of California, San Diego

WA8b-5 Rate Estimation Via Maximum Likelihood Parameter Estimation: Application in Fast Mode-Selection within the H.264/AVC — 12:10 PM
Koohyar Minoo, Truong Nguyen, UCSD

Author List

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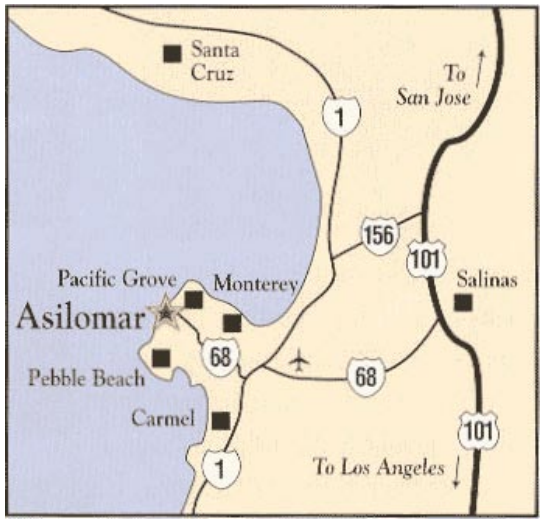
Santa Cruz
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