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Forty-Sixth Asilomar Conference on Signals, Systems and Computers

November 4–7, 2012
Asilomar Hotel and
Conference Grounds

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FORTY-SIXTH ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS & COMPUTERS

Organized in cooperation with

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Welcome from the General Chairman

Prof. Miloš Doroslovački
The George Washington University

Welcome to this unique conference. Many of us come here from year to year to be exposed to new ideas and to do brainstorming about them in an informal and relaxed way, surrounded by magnificent nature. To cite John Steinbeck, Nobel Prize laureate in literature and local to this part of California: “Ideas are like rabbits. You get a couple and learn how to handle them, and pretty soon you have a dozen.” I am sure that the conference will be stimulating for your future professional endeavors.

The biggest credit for the intellectual value of the conference goes to the Technical Program Chair Erik G. Larsson and his team, made of Technical Area Chairs and Session Chairs, as well as to all of you who contributed with papers. Erik and his team prepared an excellent program of 435 papers, including 171 invited, and a tutorial session. For their outstanding work in shaping the technical program I would like to thank Erik and the Technical Area Chairs: Henk Wymeersch, Gerald Matz, Vincent Poor, Erchin Serpedin, Marius Pesavento, Arye Nehorai, Joseph Cavallaro, Ghassan AlRegib and Phil Schniter.

The student paper contest this year attracted 87 submissions out of which 9 were chosen for the final competition. The Student Paper Contest Chair Geert Leus and a panel of judges will select the best three papers after the finalists present their posters on Sunday afternoon. I invite you to attend these presentations and in that way to give support to our young colleagues who will one day build the future of science and technology.

I am looking forward to listening to the plenary talk by Prof. Richard Baraniuk from the Rice University. Rich is an extraordinary researcher, teacher and person. He has been for long time on the frontline of research in compressive sensing, one of the most popular and challenging topics at this conference for several years. I am thrilled, and I guess so are you, to hear from him the report on what has been happening, what is going on now and where to go further.

I wish you three exciting days full of nice talks and walks. I hope that the weather will serve us well and that we will have three beautiful sunsets over the Pacific Ocean.

Miloš Doroslovački, The George Washington University, June 2012

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2012 Asilomar Conference Session Schedule

Sunday Afternoon, November 4, 2012

2:00 - 7:00 PM Registration — Main Lodge
4:00 - 6:30 PM Student Paper Contest — Merrill Hall
7:00 - 9:00 PM Welcoming Dessert Reception — Merrill Hall

Monday Morning, November 5, 2012

7:30 - 9:00 AM Breakfast – Crocker Dining Hall
8:00 AM - 6:00 PM Registration
8:15 - 9:45 AM MA1a — Conference Welcome and Plenary Session
9:45 - 10:15 AM Coffee Social

10:15 AM - 12:00 PM MORNING SESSIONS
MA1b Graphical Models in Signal Processing (invited)
MA2b Threshold Limits in Array Processing: Performance Analysis and Methods (invited)
MA3b Full-Duplex MIMO Communications (special session)
MA4b Green Radio (invited)
MA5b Voice Coding (invited)
MA6b DSP Architecture for Wireless Communications (invited)
MA7b Brain Dynamics: Improving Spatial and Temporal Resolution
MA8b1 Communication Systems I (Poster)
MA8b2 Array Signal Processing I (Poster)

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

Monday Afternoon, November 5, 2012

1:30 - 5:10 PM AFTERNOON SESSIONS
MP1a Compressive Sensing (invited)
MP1b Signal Processing and Learning in Complex Systems (invited)
MP2a Source Localization in Distributed Sensor Arrays (invited)
MP2b Network Beamforming (invited)
MP3a Large-Scale MIMO Systems (special session)
MP3b Coordinated Multipoint (invited)
MP4a Cognitive Radio Networks (invited)
MP4b Machine-to-Machine Communications and Networks (invited)
MP5a Image and Video Coding (invited)
MP5b Convex Optimization in Image and Video Analysis (invited)
MP6a Computer Arithmetic (invited)
MP6b Reconfigurable Architectures, Many-Core, Multi-Core, and SoC (invited)
MP7a Medical Image Analysis
MP7b Biological Modeling and Signal Analysis (partly invited)
MP8a1 MIMO Communications and Signal Processing I (Poster)
MP8a2 Signal Processing and Adaptive Systems I (Poster)

Monday Evening, November 5, 2012

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 guests.

2012 Asilomar Conference Session Schedule
(continued)

Tuesday Morning, November 6, 2012

7:30 - 9:00 AM Breakfast — Crocker Dining Hall
8:00 AM - 5:00 PM Registration

8:15 - 12:00 PM MORNING SESSIONS
TA1a MIMO in Optical Communications (invited)
TA1b Wireless Video Transmission Systems (invited)
TA2a Game Theory in Communications (invited)
TA2b Coding Theory for the Next-Generation Storage Systems (invited)
TA3a Multiuser and Massive MIMO (invited)
TA3b Compressive Estimation
TA4a Social Networks (invited)
TA4b Signal Processing for Cyber-Security and Privacy in Networks (invited)
TA5a 3D Video Processing (invited)
TA5b Computer Arithmetic Accelerators for Signal Processing
TA6a Low Power I (invited)
TA6b Low Power II (invited)
TA7a Biological Networks and Machine Learning (partly invited)
TA7b Sequence and Genome Analysis (partly invited)
TA8a1 Array Signal Processing II (Poster)
TA8a2 Signal Processing and Adaptive Systems II (Poster)
TA8b1 Communication Systems II (Poster)
TA8b2 MIMO Communications and Signal Processing II (Poster)
TA8b3 Architecture and Implementation of Signal Processing Systems (Poster)

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

Tuesday Afternoon, November 6, 2012

1:30 - 5:35 PM AFTERNOON SESSIONS
TP1a Network Optimization (invited)
TP1b Distributed Signal Processing (invited)
TP2a Consensus Based Algorithms
TP2b Cooperative Adaptation and Learning (invited)
TP3a Information Theoretic Signal Processing
TP3b Underwater Communications (invited)
TP4a Decoding and Detection
TP4b Smart Grid Communications and Networks (invited)
TP5a Design Methodologies and Architectures for Communications
TP5b Interference Alignment (invited)
TP6a Wireless Full Duplex
TP6b Biological Image Analysis
TP7a MIMO Radar and Waveform Design
TP7b Speech Processing and Speech Recognition (invited)
TP8a1 Relay Networks (Poster)
TP8a2 Sensor and Interference Networks (Poster)
TP8a3 Design Methodology and Computer Arithmetic (Poster)
TP8b1 Speech, Image, and Video Processing (Poster)
TP8b2 Biomedical Signal and Image Processing (Poster)

Tuesday Evening Open Evening — Enjoy the Monterey Peninsula

2012 Asilomar Conference Session Schedule
(continued)

Wednesday Morning, November 7, 2012

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.

8:15 AM - 12:00 PM MORNING SESSIONS
WA1a Feedback and Cooperation (invited)
WA1b Security
WA2a Distributed Algorithms for Wireless Networks
WA2b Topics in Wireless Networking
WA3a Adaptive Signal Processing
WA3b Compressive Signal Processing
WA4a Interference and Cognition
WA4b OFDM(A)
WA5a Applications of Video Processing
WA5b Image and Video Classification
WA6a CSI Feedback
WA6b Beamforming and Relaying (invited)
WA7a Applications of Sensor Array Processing
WA7b DOA Estimation
WA8 Tutorial – Coding Methods for Emerging Storage Systems

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

WA8 - TUTORIAL

Coding Methods for Emerging Storage Systems – Prof. Lara Dolecek and Prof. Anxiao (Andrew) Jiang

Abstract - Recent surge in large-scale data storage systems has created an immediate need to develop new coding methodologies attuned to the physical properties of the emerging non-volatile memory technologies. In this tutorial, we will first discuss new channel models for these technologies and demonstrate why the existing coding methods are increasingly inadequate. We will then survey recently proposed error correcting codes, modulation schemes and rewriting codes, all designed to meet the physical characteristics of the non-volatile memories while ensuring maximum lifetime and reliability. The tutorial will conclude with a discussion of several open problems in this area.

Bio: Prof. Lara Dolecek is an assistant professor in the Electrical Engineering Department at UCLA where she heads the Laboratory for Robust Information Systems. She received NSF CAREER Award in 2012, Hellman Fellow award in 2011, and David J. Sakrison Award from the EECS Department at UC Berkeley in 2007. Prof. Anxiao (Andrew) Jiang is an associate professor in Computer Science and Engineering Department of TAMU. He received NSF CAREER Award in 2008 and the 2009 IEEE Communications Society Best Paper Award in Signal Processing and Coding for Data Storage.

Student Paper Contest

Merrill Hall - Sunday, November 4, 2012, 4:00 - 6:30 PM
(Listed in category/track order)

Track A
"Unicasting on the S-Graph"
Satyanaranaya Vuppala and Giuseppe Abreu

Track B
"Volume of Ball and Hamming-type Bounds for Stiefel Manifold with Euclidean Distance"
Renaud-Alexandre Pitaval and Olav Tirkkonen

Track C
"Distributed Gram-Schmidt Orthogonalization Based on Dynamic Consensus"
Ondrej Slučiak, Hana Straková, Markus Rupp, and Wilfried N. Gansterer

Track D
"Identifying Multiple Infection Sources in a Network"
Wuqiong Luo and Wee Peng Tay

"The Gaussian CEO Problem for a Scalar Source with Memory: A Necessary Condition"
Jie Chen, Feng Jiang and A. Lee Swindlehurst

Track E
"Transmit Beamspace Design for Direction Finding in Colocated MIMO Radar with Arbitrary Receive Array and Even Number of Waveforms"
Arash Khabbazibasmenj, Sergiy A. Vorobyov, Aboulnasr Hassanien, and Matthew W. Morency

Track F
"Screening Fundus Images for Diabetic Retinopathy"
Sohini Roychowdhury, Dara Koozekanani, and Keshab K. Parhi

Track G
"A Low-Power Dual-Path Floating-Point Fused Add-Subtract Unit"
Jae Hong Min, Jongwook Sohn, and Earl E. Swartzlander, Jr.

Track H
"Joint Tracking of Clean Speech and Noise Using HMMs and Particle Filters for Robust Speech Recognition"
Aleem Mushtaq and Chin-Hui Lee

2012 Asilomar Conference Session Schedule

Coffee breaks will be at 9:55 AM and 3:10 PM. (Except Monday morning when refreshments will be served outside Merrill Hall from 9:45–10:15 AM)

Monday, November 5, 2012

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

1. Welcome from the General Chairperson

Prof. Miloš Doroslovački
The George Washington University

2. Session MA1a Distinguished Lecture for the 2012 Asilomar Conference

Compressive Sensing: 8 Years After

Prof. Richard G. Baraniuk
Victor E. Cameron Professor
Rice University

Abstract
Sensing and imaging systems are under increasing pressure to accommodate ever larger and higher-dimensional data sets; ever faster capture, sampling, and processing rates; ever lower power consumption; communication over ever more difficult channels; and radically new sensing modalities. Since its discovery in 2004, compressive sensing (CS) has stimulated a re-thinking of sensor and signal processing system design. In CS, analog signals are digitized and processed not via uniform sampling but via measurements using more general, even random, test functions. In contrast with conventional wisdom, the new theory asserts that one can combine "sub-Nyquist-rate sampling" with large-scale optimization for efficient and accurate signal acquisition when the signal has a sparse structure. In this talk, we will review the progress in field over the last eight years, with a special emphasis on the pros and cons of the technique.

Biography
Richard G. Baraniuk is the Victor E. Cameron Professor of Electrical and Computer Engineering at Rice University. His research interests lie in new theory, algorithms, and hardware for sensing, signal processing, and machine learning. He is a Fellow of the IEEE and AAAS and has received national young investigator awards from the US NSF and ONR, the Rosenbaum Fellowship from the Isaac Newton Institute of Cambridge University, the ECE Young Alumni Achievement Award from the University of Illinois, and the Wavelet Pioneer and Compressive Sampling Pioneer Awards from SPIE. His work on the Rice single-pixel compressive camera has been widely reported in the popular press and was selected by MIT Technology Review as a TR10 Top 10 Emerging Technology for 2007. For his teaching and education projects, including Connexions (cnx.org), he has received the C. Holmes MacDonald National Outstanding Teaching Award from Eta Kappa Nu, Tech Museum of Innovation Laureate Award, the Internet Pioneer Award from the Berkman Center for Internet Society at Harvard Law School, the World Technology Award for Education, the IEEE-SPS Education Award, and the WISE Education Award.

Program of the
2012 Asilomar Conference on
Signals, Systems, and Computers

Technical Program Chairman
Prof. Erik G. Larsson
Linköping University

Session MA1b Graphical Models in Signal Processing (invited)

Chair: *Lorenzo Vangelista, University of Padova*

MA1b-1 Approximate Message Passing for Spectral Estimation: A Solution to the Gridding Problem? 10:15 AM
Philip Schniter, Ohio State University; Christian Austin, MIT Lincoln Laboratory; Jason Parker, Air Force Research Laboratory

MA1b-2 Local Consensus Estimators for Distributed Learning of Graphical Models 10:40 AM
Qiang Liu, Alexander Ihler, University of California, Irvine

MA1b-3 Sparse Covariance Selection with Edge Restrictions 11:05 AM
Anastasios Kyrillidis, Volkan Cevher, École Polytechnique Fédérale de Lausanne

MA1b-4 Learning Graphical Models for Dynamical Processes 11:30 AM
Andrea Montanari, Jose Bento, Morteza Ibrahimi, Stanford University

Session MA2b Threshold Limits in Array Processing: Performance Analysis and Methods (invited)

Chair: *Mohammed Nabil El Korso, TU Darmstadt*

MA2b-1 Threshold Performance for Conditional and Unconditional Direction-of-Arrival Estimation 10:15 AM
Yuri I. Abramovich, Defence Science and Technology Organisation; Ben A. Johnson, Lockheed Martin Australia and ITR

MA2b-2 Aspects of Threshold Region Mean-Squared Error Prediction: Method of Interval Errors, Bounds, Taylor's, and Extensions 10:40 AM
Christ D. Richmond, Larry L. Horowitz, MIT Lincoln Laboratory

MA2b-3 Lower Bounds on the MSE for Mixed Far-Field and Near-Field Sources Direction-of-Arrivals 11:05 AM
Alexandre Renaux, Rèmy Boyer, Paris XI Univ.; Sylvie Marcos, CNRS

MA2b-4 On the Resolvability of Closely Spaced Targets Using a MIMO Radar 11:30 AM
Mohammed Nabil El Korso, Technische Universität Darmstadt; Frédéric Pascal, Supélec / SONDRA; Marius Pesavento, Technische Universität Darmstadt

Session MA3b Full-Duplex MIMO Communications (special session)

Chair: *Dan Bliss, MIT Lincoln Laboratory*

MA3b-1 Phase Noise: Understanding the Bottleneck in Full-duplex Designs 10:15 AM
Achaleshwar Sahai, Gaurav Patel, Ashutosh Sabharwal, Rice University

MA3b-2 Hardware and Environmental Phenomenological Limits on Full-Duplex MIMO Relay Performance 10:40 AM
Daniel Bliss, Timothy Hancock, Massachusetts Institute of Technology; Phil Schniter, Ohio State University

MA3b-3 Open Problems in Full Duplex Wireless 11:05 AM
Phil Levis, Stanford University

MA3b-4 Analog and Digital Self-Interference Cancellation in Full-Duplex MIMO-OFDM Transceivers with Limited Resolution in A/D Conversion 11:30 AM
Taneli Riihonen, Aalto University

Session MA4b Green Radio (invited)

Co-Chairs: *Cristina Comaniciu, Stevens Institute of Technology and Aylin Yener, Penn State University*

MA4b-1 On Energy Harvesting Multi-User Networks with Energy Storage Imperfections 10:15 AM
Kaya Tutuncuoglu, Aylin Yener, Penn State

MA4b-2 Information-Theoretically Achievable Rates in an Energy Harvesting Broadcast Channel 10:40 AM
Omur Ozel, Sennur Ulukus, University of Maryland

MA4b-3 Throughput and Energy Efficiency under Queueing and Secrecy Constraints 11:05 AM
Mustafa Cenk Gursoy, Mustafa Ozmen, Syracuse University

MA4b-4 Non-Invasive Green Small Cell Network 11:30 AM
Baher Mawlawi, Ejder Bastug, Chahé Nerguizian, Sylvain Azarian, Mérouane Debbah, Supelec

Session MA5b Voice Coding (invited)

Chair: *Jerry D. Gibson, University of California, Santa Barbara*

MA5b-1 Scalable Wideband Speech Coding for IP Networks 10:15 AM
Koji Seto, Tokunbo Ogunfunmi, Santa Clara University

MA5b-2 Multimode Tree Coding of Speech with Backward Pitch Prediction and Perceptual Pre- and Post-weighting 10:40 AM
Ying-Yi Li, Jerry Gibson, University of California, Santa Barbara

MA5b-3 Source Models and Rate Distortion Bounds for Speech 11:05 AM
Jerry Gibson, University of California, Santa Barbara

MA5b-4 Compressed Sensing Based Scalable Speech Coders 11:30 AM
Bhaskar Rao, Michelle Daniels, University of California, San Diego

Session MA6b DSP Architecture for Wireless Communications (invited)

Chair: *Ahmed Eltawil, University of California, Irvine*

MA6b-1 Verifying Equivalence of Digital Signal Processing Circuits 10:15 AM
Keshab Parhi, University of Minnesota

MA6b-2 Implementation of a Real-Time Wireless Interference Alignment Network 10:40 AM
Jackson Massey, Jonathan Starr, Andreas Gerslauer, Robert Heath, University of Texas at Austin

MA6b-3 ΣΔ Modulators for Low-power Digitally Intensive Radio Transmitters. 11:05 AM
Rashmi Nanda, Dejan Markovic, University of California, Los Angeles

MA6b-4 A Sphere Decoding Approach for The Vector Viterbi Algorithm 11:30 AM
Peter Kairouz, Aolin Xu, Naresh Shanbhag, Andrew Singer, University of Illinois, Urbana-Champaign

Session MA7b Brain Dynamics: Improving Spatial and Temporal Resolution

Chair: *Hubert Preissl, University of Tübingen*

MA7b-1 Signal Artefacts in Functional MRI Studies of the Unsedated Human Fetal Brain In-Utero 10:15 AM
Colin Studholm, University of Washington

MA7b-2 New Perspectives in MEG Functional Connectivity 10:40 AM
Paolo Belardinelli, University of Tübingen

MA7b-3 Inferring Biological Network Connectivity Using a Novel Phase Synchronization Technique 11:05 AM
Rathinaswamy Govindan, Children's National Medical Center; Jan Raethjen, University of Kiel; Adre du Plessis, Children's National Medical Center

MA7b-4 Spatio-temporal Dynamics in Movement Control: New Vistas for Closed-loop Decoding Using MEG 11:30 AM
Matthias Witte, University of Graz

Session MA8b1 Communication Systems I

Chair: *David Browne, MIT Lincoln Laboratory*

10:15 AM - 12:00 PM

MA8b1-1 Optimum Training for CSI Acquisition in Cognitive Radio Channels
Alberto Rico-Alvariño, Carlos Mosquera, Universidade de Vigo

MA8b1-2 Spectrum Opportunity Detection with Weak and Correlated Signals
Yao Xie, Duke University; David Siegmund, Stanford University

MA8b1-3 A Blind Linear Smoothing Method for OFDM Systems without Cyclic Prefix
Xiaodong Yue, Songlin Tian, Xuefu Zhou, University of Central Missouri

MA8b1-4 Soft-Output Sphere Detection for Coded Unique Word OFDM
Alexander Onic, Alpen-Adria-Universität Klagenfurt; Andreas Schenk, Friedrich-Alexander-Universität Erlangen-Nürnberg; Mario Huemer, Alpen-Adria-Universität Klagenfurt; Johannes B. Huber, Friedrich-Alexander-Universität Erlangen-Nürnberg

MA8b1-5 A Cross-Layer HARQ Scheme Robust to Imperfect Feedback
Sébastien Marcille, Thales Communications and Security; Philippe Ciblat, Télécom ParisTech; Christophe Le Martret, Thales Communications and Security

MA8b1-6 A Representation for the Symbol Error Rate of Arbitrary Constellations under AWGN
Adithya Rajan, Cihan Tepedelenlioglu, Arizona State University

MA8b1-7 Systematic Pruning of Blind Decoding Results
Dongwoon Bai, Jungwon Lee, Sungsoo Kim, Hanju Kim, Inyup Kang, Samsung US R&D Center

MA8b1-8 Underlay Cognitive Radios with Finite Transmission Modes and Capacity Guarantees for Primary Users
Antonio G. Marques, Javier Ramos, Carlos Figuera, Eduardo Morgado, King Juan Carlos University

MA8b1-9 Stochastic Soft-Input Soft-Output Detection for Intersymbol Interference Channels
Werner Haselmayr, Bernhard Etzlinger, Andreas Springer, Johannes Kepler University

MA8b1-10 Generic Low Complex Filter Bank Based Spectrum Sensing Approach for LTE Cognitive Radio
Thomas Schlechter, Mario Huemer, Alpen-Adria Universität Klagenfurt

MA8b1-11 A Study of Data Rate Equivalent UW-OFDM and CP-OFDM Concepts
Christian Hofbauer, Mario Huemer, Klagenfurt University

MA8b1-12 Constrained Least-Squares Estimation and Compensation of Phase Noise in OFDM Radio Link
Pramod Mathecken, Taneli Riihonen, Stefan Werner, Risto Wichman, Aalto University School of Electrical Engineering

MA8b1-13 Stopping Criteria for Iterative Decoding Based on Mutual Information
Jinhong Wu, Samsung Information Systems America; Branimir Vojcic, Jia Sheng, George Washington University

MA8b1-14 Frequency-Selective I/Q Imbalance Compensation for OFDM Receivers Using Decision-Feedback Adaptive Filtering
R. Keith McPherson, Jim Schroeder, Harris Corporation

MA8b1-15 Non-data Aided Symbol and Carrier Synchronization via Band-Edge Filters
Xiaofei Chen, Elettra Venosa, fredric harris, San Diego State University; Chris Dick, Xilinx Corp.

MA8b1-16 Coded QPSK Using Balanced Incomplete Block Design
Mohammad Noshad, Maite Brandt-Pearce, University of Virginia

Session MA8b2 Array Signal Processing I

Chair: *Marius Pesavento, TU Darmstadt*

10:15 AM - 12:00 PM

MA8b2-1 Passive Radar Signal Processing in Single Frequency Networks
Konstanty Bialkowski, I. Vaughan Clarkson, University of Queensland

MA8b2-2 Direct Passive Geolocation under Propagation Speed Uncertainty
Guy Liron, RAFAEL Advanced Defense Systems; Anthony J. Weiss, Tel Aviv University; Alon Amar, RAFAEL Advanced Defense Systems

MA8b2-3 How to Design a Delay-and-Sum Beamformer for Rigid Rotationally Symmetric Arrays?
Karim Helwani, Sascha Spors, Telekom Innovation Laboratories, Technische Universität Berlin; Herbert Buchner, Technische Universität Berlin

MA8b2-4 Optimal Diagonal Loading for Spatial Spectrum Estimation in the Snapshot Deficient Regime
Milutin Pajovic, Massachusetts Institute of Technology/ Woods Hole Oceanographic Institution; James Preisig, Woods Hole Oceanographic Institution; Arthur Baggeroer, Massachusetts Institute of Technology

MA8b2-5 2D DOA Estimation of Multiple Coherent Sources Using a New Antenna Array Configuration
Nizar Tayem, Prince Mohammad Bin Fahd University

MA8b2-6 Performance Analysis on Synthetic Aperture Radar-based Vibration Estimation in Clutter
Qi Wang, Balu Santhanam, Matthew Pepin, Majeed Hayat, University of New Mexico

MA8b2-7 Search Methods for Determining Direction of Arrival Acoustically
David Grasing, Sean Schumer, Anthony Rotolo, US Army

MA8b2-8 Implementation and Demonstration of Receiver-Coordinated Distributed Transmit Beamforming across an Ad-Hoc Radio Network.
Pat Bidigare, Miguel Oyarzun, David Raeman, Dave Cousins, Dan Chang, Rich O'Donnell, Raytheon BBN Technologies; Rick Brown, Worcester Polytechnic Institute

MA8b2-9 Algebraic Confidence for Sensor Localization
Jani Saloranta, University of Oulu; Stefano Severi, Jacobs University Bremen; Davide Macagnano, University of Oulu; Giuseppe Abreu, Jacobs University Bremen

MA8b2-10 Breaking the Isotropic Scattering Assumption in Wide-beam Stripmap SAR Imaging
Jacob Gunther, Utah State University; Chad Knight, Space Dynamics Laboratory; Todd Moon, Utah State University

MA8b2-11 A Distributed Adaptive GSC Beamformer over Coordinated Antenna Arrays Network for Interference Mitigation
Songtao Lu, Jinping Sun, Beihang University

MA8b2-12 Spatial Coherence Modeling for Passive Ranging Using Distributed Arrays
Hongya Ge, New Jersey Institute of Technology; Ivars Kirsteins, Naval Undersea Warfare Center

MA8b2-13 Waveform Diversity and Optimal Change Detection
Carl Rossler, Emre Ertin, Randolph Moses, Ohio State University

MA8b2-14 Subband Gradient Flow Acoustic Source Separation for Moderate Reverberation Environment
Shuo Li, Milutin Stanacevic, Stony Brook University

MA8b2-15 Gradient Flow Source Localization in Noisy and Reverberant Environment
Shuo Li, Milutin Stanacevic, Stony Brook University

MA8b2-16 Analysis of Data Fusion Techniques for Small Arms Fire Localization
David Grasing, George Cakiades, Sachi Desai, U.S. Army RDECOM-ARDEC

Session MP1a Compressive Sensing (invited)

Chair: *Christoph Studer, Rice University*

MP1a-1 Effect of Spatial Coupling and Bayesian Priors on Compressive Sensing Performance 1:30 PM
Arian Maleki, Christoph Studer, Jianing Shi, Richard Baraniuk, Rice University

MP1a-2 Structured Signal Recovery from Single-Bit Measurements 1:55 PM
Yaniv Plan, University of Michigan

MP1a-3 CoSaMP with Redundant Dictionaries 2:20 PM
Mark Davenport, Stanford University; Deanna Needell, Claremont McKenna College; Michael Wakin, Colorado School of Mines

MP1a-4 Compressed Sensing with Radar Applications 2:45 PM
Max Hugel, Holger Rauhut, University of Bonn; Thomas Strohmer, University of California, Davis

Session MP1b Signal Processing and Learning in Complex Systems (invited)

Chair: *Michael Rabbat, McGill University*

MP1b-1 Dynamics of Social Connections 3:30 PM
Lin Li, Anna Scaglione, University of California, Davis

MP1b-2 Dynamic Games with Side Information in Economic Networks 3:55 PM
Ceyhun Eksin, Pooya Molavi, Alejandro Ribeiro, University of Pennsylvania

MP1b-3 Adaptive Decision-Making over Complex Networks 4:20 PM
Sheng-Yuan Tu, Ali Sayed, University of California, Los Angeles

MP1b-4 A Factor Graph Approach to Diffusion Adaptive Filtering Methods 4:45 PM
Andrew Bean, Thomas Riedl, Andrew Singer, University of Illinois, Urbana-Champaign

Session MP2a Source Localization in Distributed Sensor Arrays (invited)

Chair: *Christoph Mecklenbräuker, TU Vienna*

MP2a-1 Convergence Analysis of Distributed PAST Based on Consensus Propagation 1:30 PM
Carolina del Socorro Reyes Membreno, Markus Rupp, Vienna University of Technology

MP2a-2 Localization of Acoustic Sources Utilizing a Decentralized Particle Filter 1:55 PM
Florian Xaver, Gerald Matz, Vienna University of Technology; Peter Gerstoft, University of California, San Diego; Norbert Görtz, Vienna University of Technology

MP2a-3 Bayesian Sparse Sensing of the Japanese 2011 Earthquake 2:20 PM
Peter Gerstoft, University of California, San Diego; Christoph Mecklenbräuker, Vienna University of Technology

MP2a-4 Distributed Source Localization in Subarray Sensor Networks. 2:45 PM
Christian Steffens, Michael Rübsamen, Marius Pesavento, Technische Universität Darmstadt

Session MP2b Network Beamforming (invited)

Chair: *Shahram Shahbazpanahi, University of Ontario Institute of Technology*

MP2b-1 Distributed Beamforming in Coarsely Synchronized Relay Networks 3:30 PM
Adrian Schad, Technische Universität Darmstadt; Babak Khalaj, Sharif University of Technology; Marius Pesavento, Technische Universität Darmstadt

MP2b-2 Distributed Beamforming for Two-Way Relaying Networks with Individual Power Constraints 3:55 PM
Jianshu Zhang, Florian Römer, Martin Haardt, Technische Universität Ilmenau

MP2b-3 Beamforming Design for Two-Way Relay Networks Under Per-Node Power Constraint 4:20 PM
Shahram ShahbazPanahi, University of Ontario; Yindi Jing, University of Alberta

MP2b-4 Improving Achievable Rate for the Two-User SISO Interference Channel with Improper Gaussian Signaling 4:45 PM
Yong Zeng, Mustafa Cenk Yetis, Erry Gunawan, Yong Liang Guan, Nanyang Technological University; Rui Zhang, National University of Singapore

Session MP3a Large-Scale MIMO Systems (special session)

Co-Chairs: *Tom Marzetta, Alcatel-Lucent/Bell-Labs and Saif K. Mohammed, Linköping University*

MP3a-1 Spectral Efficiency in Large-Scale MIMO-OFDM Systems with Per Antenna Power Cost 1:30 PM
Derrick Wing Kwan Ng, Robert Schober, University of British Columbia

MP3a-2 On Coherent Combining of Distributed Observations 1:55 PM
Jakob Hoydis, Supelec; Thorsten Wild, Stephan ten Brink, Bell Laboratories, Alcatel-Lucent; Mérouane Debbah, Supelec

MP3a-3 Measured Propagation Characteristics for Very Large MIMO at 2.6 GHz 2:20 PM
Xiang Gao, Fredrik Tufvesson, Ove Edfors, Fredrik Rusek, Lund University

MP3a-4 Decentralized (Cell-Free) Large-Scale Antenna System 2:45 PM
Alexei Ashikhmin, Thomas L Marzetta, Bell Laboratories, Alcatel-Lucent; Hong Yang, Alcatel-Lucent

Session MP3b Coordinated Multipoint (invited)

Chair: *Wing-Kin Ma, The Chinese University of Hong Kong*

MP3b-1 A Decentralized Method for Joint Admission Control and Beamforming in Coordinated Multicell Downlink 3:30 PM
Hoi-To Wai, Wing-Kin Ma, Chinese University of Hong Kong

MP3b-2 Analyzing the IA Feasibility Problem via New Tools from Algebraic Geometry 3:55 PM
Liangzhong (Steven) Ruan, Vincent Lau, Hong Kong University of Science and Technology

MP3b-3 Design of Coordinated Multi-Point (CoMP) Transmission and Reception Schemes for the 4G Cellular Downlink 4:20 PM
Narayan Prasad, NEC Laboratories America, Inc.; Ali Tajer, Princeton University; Xiaodong Wang, Columbia University

MP3b-4 Joint Transceiver Design and Base Station Clustering for Heterogeneous Networks 4:45 PM
Mingyi Hong, Meisam Razaviyayn, Ruoyu Sun, Zhi-Quan Luo, University of Minnesota

Session MP4a Cognitive Radio Networks (invited)

Chair: *Visa Koivunen, Aalto University*

MP4a-1 Cooperative Compressive Wideband Power Spectrum Sensing 1:30 PM
Dyonisius Dony Ariananda, Geert Leus, Delft University of Technology

MP4a-2 On Hybrid Cooperation in Underlay Cognitive Radio Networks 1:55 PM
Nurul Huda Mahmood, Norwegian University of Science and Technology; Ferkan Yilmaz, King Abdullah University of Science and Technology; Geir Egil Øien, Norwegian University of Science and Technology; Mohamed-Slim Alouini, King Abdullah University of Science and Technology

MP4a-3 Sequential Good Channel Search for Multi-channel Cognitive Radio 2:20 PM
Raied Caromi, Seshadri Mohan, University of Arkansas, Little Rock; Lifeng Lai, Worcester Polytechnic Institute

MP4a-4 A Sensing Policy Based on Confidence Bounds and a Restless Multi-armed Bandit Model 2:45 PM
Jan Oksanen, Visa Koivunen, Aalto University; H. Vincent Poor, Princeton University

Session MP4b Machine-to-Machine Communications and Networks (invited)

Chair: *KC Chen, National Taiwan University*

MP4b-1 Not Every Bit Counts: Shifting the Focus from Machine to Data for Machine-to-Machine Communications 3:30 PM
Chih-Hua Chang, Hung-Yun Hsieh, Hsuan-Jung Su, National Taiwan University

MP4b-2 Exploring Utility-based Optimization and Management for Wireless Sensor Networks and Machine-to-Machine Communications 3:55 PM
Petri Mähönen, Janne Riihijarvi, RWTH Aachen University

MP4b-3 Controlling Access Overload and Signaling Congestion in M2M Networks 4:20 PM
Rath Vannithamby, Intel Corporation

MP4b-4 Dynamic Spectrum Allocation under Cognitive Cellular Network for M2M Applications 4:45 PM
Qing Wang, IBM Research China; Bongjun Ko, IBM T. J. Watson Research Laboratory; Kwang-Cheng Chen, National Taiwan University; Junsong Wang, IBM Research China; Ting He, IBM T. J. Watson Research Laboratory; Yonghua Lin, IBM Research China; Kang-won Lee, IBM T. J. Watson Research Laboratory

Session MP5a Image and Video Coding (invited)

Chair: *Marios Pattichis, University of New Mexico*

MP5a-1 Dynamically Reconfigurable AVC Deblocking Filter with Power and Performance Constraints 1:30 PM
Yuebing Jiang, Marios Pattichis, University of New Mexico

MP5a-2 On the Use of Image Quality Estimators for Improved JPEG2000 Coding 1:55 PM
Thien Phan, Phong Vu, Damon Chandler, Oklahoma State University

MP5a-3 Blind Quality Assessment of Videos Using a Model of Natural Scene Statistics and Motion Coherency 2:20 PM
Michele Saad, Al Bovik, University of Texas at Austin

MP5a-4 The Emerging High Efficiency Video Coding Standard for Developing Wireless Ultrasound Video Telemedicine Systems 2:45 PM
Andreas Panayides, Zinon Antoniou, University of Cyprus; Marios Pattichis, University of New Mexico; Constantinos Pattichis, University of Cyprus

Session MP5b Convex Optimization in Image and Video Analysis (invited)

Chair: *Vishal Monga, Penn State University*

MP5b-1 Compressive Sensing and Sparse Array Processing 3:30 PM
P. P. Vaidyanathan, California Institute of Technology

MP5b-2 Single-Image Super-Resolution Using Multihypothesis Prediction 3:55 PM
Chen Chen, James Fowler, Mississippi State University

MP5b-3 L-infinity Regularized Models for Segmentation, Cartoon-Texture Decomposition, and Image Restoration 4:20 PM
Hayden Schaeffer, Luminita Vese, University of California, Los Angeles

MP5b-4 Implicit Gibbs Prior Models for Tomographic Reconstruction 4:45 PM
Pengchong Jin, Eri Haneda, Charles Bouman, Purdue University

Session MP6a Computer Arithmetic (invited)

Chair: *Michael Schulte, AMD Research and University of Wisconsin*

MP6a-1 Shared Implementation of Radix-10 and Radix-16 Square Root Algorithm with Limited Precision Primitives 1:30 PM
Milos D. Ercegovac, University of California, Los Angeles; Robert McIlhenny, Californi State University Northridge

MP6a-2 Decimal On-line Multioperand Addition 1:55 PM
Carlos Garcia-Vega, Sonia Gonzalez-Navarro, Julio Villalba, Emilio L. Zapata, University of Malaga

MP6a-3 Variable-Accuracy Multiplication Using Approximate Binary Logarithms and Parallel Error Correction 2:20 PM
Michael Sullivan, Earl Swartzlander, University of Texas at Austin

MP6a-4 Experiments with Multiplier Reduction Trees 2:45 PM
Neil Burgess, David Lutz, ARM

Session MP6b Reconfigurable Architectures, Many-Core, Multi-Core, and SoC (invited)

Chair: *Neil Burgess, ARM*

MP6b-1 FPGA-based Processor Solution for Front-End Image Detection Applications 3:30 PM
Colm Kelly, Thales Air Defence Limited; Roger Woods, Queen's University Belfast

MP6b-2 Is There a Smarter Way to Use 100 Billion Transistors? 3:55 PM
Muhammad Usman Khan, Francis Li, Ying Tiong, Michael Liebelt, Brian Ng, Braden Phillips, University of Adelaide

MP6b-3 Performance and Power Optimizations for Accelerated Processing Units 4:20 PM
Michael Schulte, AMD

MP6b-4 Reliable Low Power Distributed Arithmetic Filters via N-modular Redundancy 4:45 PM
Muhammad S. Khairy, AmirHossein Gholamipour, Fadi J. Kurdahi, Ahmed M. Eltawil, University of California, Irvine

Session MP7a Medical Image Analysis

Chair: *Alejandro F. Frangi, Alejandro F Frangi, University of Sheffield, Sheffield, UK; Universitat Pompeu Fabra, Barcelona, Spain*

MP7a-1 4D Signal Processing for Spatio-Temporal Analysis of Longitudinal 3D Imagery 1:30 PM
Guido Gerig, University of Utah

MP7a-2 Computational Diffusion MRI: On Some Recent Advances and Beyond 1:55 PM
Rachid Deriche, INRIA Sophia Antipolis

MP7a-3 Analytics for Time-Varying Catheterization Imaging Data: A Probabilistic Approach 2:20 PM
Ioannis Kakadiaris, University of Houston

MP7a-4 Estimating 3D Tongue Motion with MR Images 2:45 PM
Fangxu Xing, Junghoon Lee, Johns Hopkins University; Emi Z. Murano, University of Maryland; Jonghye Woo, Johns Hopkins University; Maureen Stone, University of Maryland Dental School; Jerry Prince, Johns Hopkins University

Session MP7b Biological Modeling and Signal Analysis (partly invited)

Chair: *Scott T. Acton, University of Virginia*

MP7b-1 Cell Mechanics Analysis by Physically-Constrained Optical Flow 3:30 PM
Jean-Christophe Olivo-Marin, Timothee Lecomte, Alexandre Dufour, Nancy Guillen, Roman Thibeaux, Institut Pasteur

MP7b-2 Exploitation of Radar Doppler Signatures for Gait Analysis 3:55 PM
Jennifer Palmer, Kristin Bing, Amy Sharma, Georgia Tech Research Institute

MP7b-3 A Third-Order Approximate Solution of the EEG Forward Problem in Four-Shell Ellipsoidal Geometry 4:20 PM
D. Gutiérrez, M. Alcocer-Sosa, Center of Research and Advanced Studies

MP7b-4 Phase Congruency Singular Value Decomposition for Multi-Scale Neuron Enhancement 4:45 PM
Emmanuel Denloye-Ito, Scott Acton, University of Virginia

Session MP8a1 MIMO Communications and Signal Processing I

Chair: *Andreas Burg, Ecole Polytechnique Federale de Lausanne (EPFL)*

1:30 PM - 3:10 PM

MP8a1-1 Low-Complexity Vector Precoding for Multi-user Systems
Maitane Barrenechea, University of Mondragon; Andreas Burg, École Polytechnique Fédérale de Lausanne; Mikel Mendicute, University of Mondragon

MP8a1-2 Non-Binary Coded Modulation and Iterative Detection for High Spectral Efficiency in MIMO
Nicholas Chang, David Romero, MIT Lincoln Laboratory

MP8a1-3 Low-Complexity Lattice Reduction-Aided Channel Inversion Methods for Large Multi-User MIMO Systems
Keke Zu, Rodrigo C. de Lamare, University of York; Martin Haardt, Ilmenau University of Technology

MP8a1-4 Multiuser Detection Performance in Multibeam Satellite Links under Imperfect CSI
Jesús Arnau, Carlos Mosquera, University of Vigo

MP8a1-5 On Convergence Constraint Precoder Design for Iterative Frequency Domain Multiuser SISO Detector
Valtteri Tervo, Antti Tölli, University of Oulu; Juha Karjalainen, Renesas Mobile Europe Oy; Tad Matsumoto, Japan Advanced Institute of Science and Technology

MP8a1-6 Grassmannian Packings from Orbits of Projective Group Representations
Renaud-Alexandre Pitaval, Olav Tirkkonen, Aalto University

MP8a1-7 Volume of Ball and Hamming-type Bounds for Stiefel Manifold with Euclidean Distance
Renaud-Alexandre Pitaval, Olav Tirkkonen, Aalto University

MP8a1-8 Distributed Resource Allocation for MISO Downlink Systems via the Alternating Direction Method of Multipliers
Satya Joshi, Marian Codreanu, Matti Latva-aho, Centre for Wireless Communications

MP8a1-9 Max-Rate MIMO Broadcast DFE Transceiver Design under Power and SER Constraints
Chih-Hao Liu, P. P. Vaidyanathan, California Institute of Technology

MP8a1-10 Performance of Asymmetric Antenna Configurations in Polarized Channels
Robert Severinghaus, Murali Tummala, John McEachen, Naval Postgraduate School

MP8a1-11 On Robust Training Sequence Design for Correlated MIMO Channel Estimation
Nafiseh Shariati, KTH Royal Institute of Technology; Jiaheng Wang, Southeast University; Mats Bengtsson, KTH Royal Institute of Technology

MP8a1-12 The Proportional Fair Sharing Algorithm under i.i.d. Models
Matthew Pugh, University of California, San Diego

Session MP8a2 Signal Processing and Adaptive Systems I

Chair: *Lu Chun-Shien, Institute of Information Science, Academia Sinica*

1:30 PM - 3:10 PM

MP8a2-1 Fast Compressed Image Sensing Based on Sampling Matrix Design
Chun-Shien Lu, Hung-Wei Chen, Sung-Hsien Hsieh, Academia Sinica

MP8a2-2 Particle Filtering for Multivariate State-Space Models
Petar M Djuric, Monica F. Bugallo, Stony Brook University

MP8a2-3 Extracting Atmospheric Profiles from Hyperspectral Data with Particle Filters
Dustin Rawlings, Jacob Gunther, Todd Moon, Utah State University

MP8a2-4 Using Dictionary Learning for Improving Hyperspectral Pixel Classification
Andrew Pound, Jacob Gunther, Todd K. Moon, Utah State University; Gustavious P. Williams, Brigham Young University

MP8a2-5 Fault Localization in Smart Grid Using Wavelet Analysis and Unsupervised Learning
Huaiguang Jiang, Jun Zhang, Wenzhong Gao, University of Denver

MP8a2-6 Sensitivity of Polynomial Composition and Decomposition for Signal Processing Applications
Sefa Demirtas, Guolong Su, Alan V. Oppenheim, Massachusetts Institute of Technology

MP8a2-7 A Variable Regularization Control Method for NLMS Algorithm
Junghsi Lee, Hsu-Chang Huang, Yuan-Ze University

MP8a2-8 Electromagnetic Field Recognition for Proactive Robot Communication Connectivity Maintenance
Mustafa Ayad, Jun Jason Zhang, Richard Voyles, Mohammad Mahoor, University of Denver

MP8a2-9 A Data Reusage Algorithm Based on Incremental Combination of LMS Filters
Luiz Chamon, Humberto Ferro, Cássio Lopes, University of São Paulo

MP8a2-10 Superresolution by Compressive Sensing Algorithms
Albert Fannjiang, Wenjing Liao, University of California, Davis

MP8a2-11 Compressive Ladar Detector Noise Performance
Darryl Sale, Christopher J. Rozell, Justin Romberg, Aaron D. Lanterman, Georgia Institute of Technology

MP8a2-12 Rank Property of the MIMO Gaussian Wiretap Channel with an Average Power Constraint
Ali Fakoorian, A. Lee Swindlehurst, University of California, Irvine

MP8a2-13 Nonlinear System Identification Using Compressed Sensing
Manjish Naik, Douglas Cochran, Arizona State University

MP8a2-14 The Resolution of Derived Secondary Information from Filter Banks May Not Follow Directly from the Signal Models
Victor DeBrunner, Guifeng Liu, Florida State University

MP8a2-15 MIMO Radar Spatial Compressive Sensing with Unknown Parameters
Marco Rossi, Alexander M. Haimovich, New Jersey Institute of Technology; Yonina C. Eldar, Technion, Israel Institute of Technology

MP8a2-16 Classification of Multivariate Data Using Dirichlet Process Mixture Models
Petar M Djuric, Stony Brook University; Andre Ferrari, Universite de Nice-Sophia Antipolis

MP8a2-17 Compressed Sensing Radar Amid Noise and Clutter
Peter Tuuk, S. Lawrence Marple, Georgia Tech Research Institute

Session TA1a MIMO in Optical Communications (invited)

Chair: *Peter Winzer, Alcatel-Lucent*

TA1a-1 Physical Layer Security in Space-Division Multiplexed Fiber Optic Communications 8:15 AM
Kyle Guan, Emina Soljanin, Peter Winzer, Bell Laboratories, Alcatel-Lucent

TA1a-2 Modeling of Linear and Nonlinear Coupling in Multiple-Mode Fiber Optic Transmission with MIMO Signal Processing 8:40 AM
Cristian Antonelli, Antonio Mecozzi, University of L'Aquila; Mark Shtaif, Tel Aviv University

TA1a-3 Mode Coupling in Coherent Mode-Division-Multiplexed Systems: Impact on Capacity and Signal Processing Complexity 9:05 AM
Joseph Kahn, Stanford University; Keang-Po Ho, Silicon Image

TA1a-4 Experimental Characterization of the Fiber-Optic MIMO Channel 9:30 AM
Sebastian Randel, Roland Ryf, Peter Winzer, Bell Laboratories, Alcatel-Lucent

Session TA1b Wireless Video Transmission Systems (invited)

Chair: *Andreas Molish, University of Southern California*

TA1b-1 Enhanced Adaptive Streaming over LTE-Advanced Wireless Networks 10:15 AM
Jeff Foerster, Intel

TA1b-2 Subcarrier Mapping Based on Slice Visibility for Video Transmission over OFDM Channels 10:40 AM
Laura Toni, Pamela C. Cosman, Laurence B. Milstein, University of California, San Diego

TA1b-3 An Online Learning Framework for Perceptually Optimized Adaptive Video Transmission 11:05 AM
Amin Abdel Khalek, University of Texas at Austin; Constantine Caramanis, Robert W. Heath, Jr., The University of Texas at Austin

TA1b-4 Device-to-Device Communications for Wireless Video Delivery 11:30 AM
Negin Golrezaei, Alexandros Dimakis, Andreas F. Molisch, University of Southern California

Session TA2a Game Theory in Communications (invited)

Co-Chairs: *Marco Luise, University of Pisa and Giacomo Bacci, University of Pisa*

TA2a-1 Distributed Spectrum Sharing Policies for Selfish Users with Imperfect Monitoring Ability 8:15 AM
Yuanzhang Xiao, Mihaela van der Schaar, University of California, Los Angeles

TA2a-2 Energy Efficiency Games in Cloud Computing for Wireless Networks 8:40 AM
Tao Lin, Tansu Alpcan, Arun Vishwanath, University of Melbourne

TA2a-3 Mean Field Energy Games in Wireless Networks 9:05 AM
François Mériaux, Laboratoire des Signaux et Systèmes (L2S); Vineeth S Varma, Orange Labs; Samson Lasaulce, Laboratoire des Signaux et Systèmes (L2S)

TA2a-4 Learning Efficient Satisfaction Equilibrium via Trial and Error in Decentralized Wireless Networks 9:30 AM
Samir Perlaza, Princeton University; Zhu Han, University of Houston; H. Vincent Poor, Princeton University

Session TA2b Coding Theory for the Next-Generation Storage Systems (invited)

Chair: *Lara Dolecek, University of California, Los Angeles*

TA2b-1 Content-assisted File Decoding for Nonvolatile Memories 10:15 AM
Anxiao Jiang, Yue Li, Yue Wang, Texas A&M University; Jehoshua Bruck, California Institute of Technology

TA2b-2 LDPC Codes on Euclidean Geometries: Trapping Set Structure 10:40 AM
Qiuju Diao, Ying Tai, Shu Lin, Khaled Abdel-Ghaffar, University of California, Davis

TA2b-3 Covering Codes for Multilevel Flash Memories 11:05 AM
Kathryn Haymaker, Christine Kelley, University of Nebraska-Lincoln

TA2b-4 Comparison of ECC Performance on MLC and TLC Flash Memories 11:30 AM
Paul H. Siegel, Brian K. Butler, Scott Kayser, Eitan Yaakobi, Xiaojie (Eric) Zhang, University of California, San Diego

Session TA3a Multiuser and Massive MIMO (invited)

Chair: *Nihar Jindal, Broadcom*

TA3a-1 Downlink Outage Probability in MIMO HetNets 8:15 AM
Harpreet S. Dhillon, University of Texas at Austin; Marios Kountouris, École supérieure d'électricité; Jeff Andrews, University of Texas at Austin

TA3a-2 Coverage and Capacity in mmWave MIMO Systems 8:40 AM
Salam Akoum, Omar El Ayach, Robert W. Heath, University of Texas at Austin

TA3a-3 A Millimeter-Wave Massive MIMO System for Next Generation Mobile Broadband 9:05 AM
Zhouyue Pi, Jianzhong Zhang, Farooq Khan, Samsung Corp.

TA3a-4 Towards Improving LTE SU/MU-MIMO Performance: Issues in Channel Estimation, Interpolation and Feedback 9:30 AM
Ozgun Y. Bursalioglu, Sean A. Ramprashad, Haralabos C. Papadopoulos, NTT DoCoMo Labs

Session TA3b Compressive Estimation

Chair: *Wee Peng Tay, Nanyang Technological University, Singapore*

TA3b-1 Compressive Estimation in AWGN: General Observations and a Case Study 10:15 AM
Dinesh Ramasamy, Sriram Venkateswaran, Upamanyu Madhow, University of California, Santa Barbara

TA3b-2 On Application of LASSO for Sparse Support Recovery with Imperfect Correlation Awareness 10:40 AM
Piya Pal, P. P. Vaidyanathan, California Institute of Technology

TA3b-3 Compressive Multiplexers for Correlated Signals 11:05 AM
Ali Ahmed, Justin Romberg, Georgia Institute of Technology

TA3b-4 Optimal Acquisition Policy for Compressed Measurements with Limited Observations 11:30 AM
Sourabh Bhattacharya, Ashutosh Nayyar, Tamer Basar, University of Illinois, Urbana-Champaign

Session TA4a Social Networks (invited)

Chair: *Patrick Wolfe, Harvard University*

TA4a-1 Hub Discovery in Partial Correlation Graphical Models 8:15 AM
Al Hero, University of Michigan

TA4a-2 Geometric Network Analysis Tools 8:40 AM
Michael Mahoney, Stanford University

TA4a-3 Learning over Social Networks via Diffusion Adaptation 9:05 AM
Xiaochuan Zhao, Ali Sayed, University of California, Los Angeles

TA4a-4 Large Networks of Dynamic Agents: Consensus under Adversarial Disturbances 9:30 AM
Dario Bauso, Tamer Basar, University of Illinois, Urbana-Champaign

Session TA4b Signal Processing for Cyber-Security and Privacy in Networks (invited)

Chair: *Lalitha Sankar, Arizona State University*

TA4b-1 Secure Estimation in Cyber-Physical Systems 10:15 AM
Yilin Mo, Bruno Sinopoli, Carnegie Mellon University

TA4b-2 Analyzing Privacy and Utility Using Axioms 10:40 AM
Daniel Kifer, Bing-Rong Lin, Penn State University

TA4b-3 Quantifying the Delay-Privacy Trade-off in the Design of a Scheduling Policy 11:05 AM
Sachin Kadloor, Negar Kiyavash, University of Illinois, Urbana-Champaign; Parv Venkitasubramaniam, Lehigh University

TA4b-4 A Formal Framework for Joint Privacy and Security Modeling and Analysis in Data and Communication Networks 11:30 AM
John Baras, University of Maryland

Session TA5a 3D Video Processing (invited)

Chair: *Patrick Le Callet, Polytech'Nantes Université de Nantes*

TA5a-1 Full-Reference Quality Assessment of Stereoscopic Images by Modeling Binocular Rivalry 8:15 AM
Ming-Jun Chen, Che-Chun Su, University of Texas at Austin; Do-Kyoung Kwon, Texas Instruments; Lawrence K. Cormack, Alan Bovik, University of Texas at Austin

TA5a-2 Visual Quality in Stereoscopic 3DTV 8:40 AM
Ramanathan Palaniappan, Nikil Jayant, Georgia Institute of Technology; Pravin Mane, VQLink

TA5a-3 Depth Map Estimation in DIBR Stereoscopic 3D Videos Using a Combination of Monocular Cues 9:05 AM
Mohammed Aabed, Dogancan Temel, Ghassan AlRegib, Georgia Institute of Technology

TA5a-4 Perceptual Depth Indicator for S-3D Content Based on Binocular and Monocular cues 9:30 AM
Pierre Lebreton, Alexander Raake, Telekom Innovation Laboratories; Marcus Barkowsky, Patrick Le Callet, LUNAM Université, Université de Nantes

Session TA5b Computer Arithmetic Accelerators for Signal Processing

Chair: *Roger Woods, Queen's University Belfast*

TA5b-1 Imprecise Arithmetic for Low Power Image Processing 10:15 AM
Pietro Albicocco, Gian Carlo Cardarilli, University of Rome Tor Vergata; Alberto Nannarelli, Technical University of Denmark; Massimo Petricca, Marco Re, University of Rome Tor Vergata

TA5b-2 Linearization Using Efficient Complex Polynomial Evaluations 10:40 AM
Pouya Dormiani, Milos Ercegovac, University of California, Los Angeles

TA5b-3 FPGA-Accelerated Simulation of Truncated-Matrix Multipliers 11:05 AM
George Walters, Penn State Erie, The Behrend College

TA5b-4 A Low-Power Dual-Path Floating-Point Fused Add-Subtract Unit 11:30 AM
Jae Hong Min, Jongwook Sohn, Earl E. Swartzlander, Jr., University of Texas at Austin

Session TA6a Low Power I (invited)

Chair: *James Stine, Oklahoma State University*

TA6a-1 Breaking the 3-D IC Power Delivery Wall 8:15 AM
Mircea Stan, Kaushik Mazumdar, University of Virginia

TA6a-2 A Review of QCA Adders and Metrics 8:40 AM
Weiqiang Liu, Maire O'Neill, Queen's University of Belfast; Earl Swartzlander, University of Texas at Austin

TA6a-3 Circuits for Ultra-low Power Millimeter-Scale Sensor Nodes: Progress, Opportunities, and Challenges 9:05 AM
Yoonmyung Lee, Dennis Sylvester, David Blaauw, University of Michigan

TA6a-4 Distributed Power Delivery for Energy Efficient and Low Power Systems 9:30 AM
Selcuk Kose, University of South Florida; Eby Friedman, University of Rochester

Session TA6b Low Power II (invited)

Chair: *James Stine, Oklahoma State University*

TA6b-1 The Energy-Efficiency of Asynchronous Architectures 10:15 AM
Rajit Manohar, Cornell University

TA6b-2 Optimized Low-Power Elementary Function Approximation for Chebyshev Series Approximations 10:40 AM
Masoud Sadeghian, Oklahoma State University; James Stine, Oklahoma State Universtiy

TA6b-3 Yield-Driven Minimum Energy CMOS Circuit Design 11:05 AM
Max Korbel, Dylan Stow, Chris Ferguson, David Harris, Harvey Mudd College

TA6b-4 Power Efficient Design of Parallel/Serial FIR Filters in RNS 11:30 AM
Massimo Petricca, Pietro Albicocco, Gian Carlo Cardarilli, University of Rome Tor Vergata; Alberto Nannarelli, Technical University of Denmark; Marco Re, University of Rome Tor Vergata

Session TA7a Biological Networks and Machine Learning (partly invited)

Chair: *Olgica Milenkovic, University of Illinois, Urbana-Champaign*

TA7a-1 Wavelet Packets Based Clustering for the Study of Functional Connectivity in the Rat Brain 8:15 AM
Alessio Medda, Georgia Institute of Technology; Shella Keilholz, Emory University School of Medicine

TA7a-2 Reconstructing a Sparse Matrix Using Row and Column Pooling 8:40 AM
Or Zuk, Broad Institute of MIT and Harvard

TA7a-3 Alignment of Multiple Biological Networks Based on Semi-Markov Random Walk Scores 9:05 AM
Sayed Mohammad Ebrahim Sahraeian, Byung-Jun Yoon, Texas A&M University

TA7a-4 Reducing the Number of Features for Seizure Prediction of Spectral Power in Intracranial EEG 9:30 AM
Yun Park, Brown University; Theoden Netoff, Keshab Parhi, University of Minnesota

Session TA7b Sequence and Genome Analysis (partly invited)

Chair: *Sharon Aviran, University of California, Berkeley*

TA7b-1 Sparse Inference of Regulatory Networks Using Information-Theoretic Methods 10:15 AM
Mo Deng, Amin Emad, Olgica Milenkovic, University of Illinois, Urbana-Champaign

TA7b-2 Structural Stabilization of RNA-Protein Binding Sites through High Linkage SNPs 10:40 AM
Matthew Halvorsen, Joshua S. Martin, Wes Sanders, Justin Ritz, Alain Laederach, University of North Carolina, Chapel Hill

TA7b-3 Detection of Antipodal Persistence in Large Scale Differential Gene Expression Experiments 11:05 AM
Alfred Hero, Robert Brown, Hamed Firouzi, University of Michigan, Ann Arbor

TA7b-4 Efficient Genotyping of Individuals Using Overlapping Pool Sequencing and Imputation 11:30 AM
Farhad Hormozdiari, Zhanyong Wang, Wen-Yun Yang, Eleazar Eskin, University of California, Los Angeles

Session TA8a1 Array Signal Processing II

Chair: *Peter Gerstoft, University of California San Diego*

8:15 AM - 9:55 AM

TA8a1-1 An Analytical Framework for Transmit Beamforming with Peak Power Constraint
Zhenhua Yu, Xiaoli Ma, G. Tong Zhou, Georgia Institute of Technology

TA8a1-2 On the Applicability of Source Localization Techniques to Passive Multistatic Radar
Daniel Hack, Lee Patton, Matrix Research, Inc.; Braham Himed, Michael Saville, Air Force Research Laboratory

TA8a1-3 Sparse Frequency Diverse MIMO Radar Imaging
Changchang Liu, Weidong Chen, University of Science and Technology of China

TA8a1-4 EEG Source Localization Using Beamforming in Energy-Constrained Regions
D. Gutiérrez, C. C. Zaragoza-Martínez, Center of Research and Advanced Studies

TA8a1-5 Hybrid Cramer-Rao Lower Bound for Sniper Localization via a Helicopter-Based Acoustic Array
Lou Fertig, Georgia Tech Research Institute

TA8a1-6 A ML Localizer of Multiple Radar Targets
Francesco Bandiera, Michele Mancino, Giuseppe Ricci, University of Salento; Danilo Orlando, ELETTRONICA S.p.A.

TA8a1-7 Recursive Updating Algorithm for Robust Capon Beamforming with Steering Vector Mismatches
Evgeny Mavrychev, Nizhniy Novgorod State Technical University

TA8a1-8 A Generalized Sinusoidal Frequency Modulated Waveform for Active Sonar
David Hague, John Buck, University of Massachusetts Dartmouth

TA8a1-9 Consistent Linear Tracker with Position and Range Rate Measurements
Steven Bordonaro, Naval Undersea Warfare Center; Peter Willett, Yaakov Bar-Shalom, University of Connecticut

TA8a1-10 Joint Adaptive Beamforming and Echo Cancellation Using a Non Reference Anchor Array Framework
Karan Nathwani, Rajesh Hegde, Indian Institute of Technology Kanpur

TA8a1-11 Tensor Decompositions with Vandermonde Factor and Applications in Signal Processing
Mikael Sorensen, Lieven De Lathauwer, KU Leuven

TA8a1-12 A Correction and Generalization to the Sparse Learning via Iterative Minimization Method for Target off the Grid in MIMO Radar Imaging
Changchang Liu, Li Ding, Weidong Chen, University of Science and Technology of China

TA8a1-13 Synthetic Beamforming with Distributed Digital Subarrays
Bo-Kai Feng, David Jenn, Naval Postgraduate School

TA8a1-14 Velocity Spectrum Analysis in Seismic Prospecting Combining Detection Principles, Beamspace Techniques and Coherent Signal-Subspace Processing
Rafael Krummenauer, Martin Tygel, Amauri Lopes, University of Campinas

TA8a1-15 Cooperative Localization in Wireless Networks under Bandwidth Constraints
Panos Alevizos, Nikos Fasarakis-Hilliard, Aggelos Bletsas, Technical University of Crete

TA8a1-16 Cramer-Rao Lower Bounds for Estimation of Phase in LBI Based Localization Systems
Mohammad Pourhomayoun, Mark Fowler, Binghamton University

Session TA8a2 Signal Processing and Adaptive Systems II

Chair: *Nascimento Vitor, Univ. of Sao Paulo*

8:15 AM - 9:55 AM

TA8a2-1 Comparison of Least Mean Fourth and Least Mean Square Tracking
Eweda Eweda, National Knowledge Center, Abu Dhabi

TA8a2-2 Extending MC-SURE to Denoise Sensor Data Streams
Mandoye Ndoye, Chandrika Kamath, Lawrence Livermore National Laboratory

TA8a2-3 Improved Robustness and Accelerated Power Amplifier Identification with Adaptive Wiener Models in the Complex Domain
Robert Dallinger, Markus Rupp, Vienna University of Technology

TA8a2-4 Efficient FFT Based Comb Filtering without Doing the FFT
Jim Rasmussen, The MITRE Corporation

TA8a2-5 A Connection-Constraint Algorithm for a Sparse Adaptive Photonic Filter
Suk-seung Hwang, Chosun University; John J. Shynk, University of California, Santa Barbara

TA8a2-6 Discriminative Dictionary Learning via Mutual Exclusion
Raghu Raj, U.S. Naval Research Laboratory

TA8a2-7 Convergence Analysis of Clipped Input Adaptive Filters Applied to System Identification
Mehdi Bekrani, Andy W. H. Khong, Nanyang Technological University

TA8a2-8 Sparse RLS Adaptive Filter with Diagonal Loading
Yuriy Zakharov, University of York; Vitor Nascimento, University of São Paulo

TA8a2-9 Distributed Consensus Based Joint Resource and Routing Optimization in Wireless Sensor Networks
Markus Leinonen, Marian Codreanu, Markku Juntti, University of Oulu

TA8a2-10 Tracking Analysis of the ε-NSRLMMN Algorithm
Mohammed Faiz, Azzedine Zerguine, King Fahd University of Petroleum and Minerals

TA8a2-11 Homotopy algorithm Using Dichotomous Coordinate Descent Iterations for Sparse Recovery
Yuriy Zakharov, University of York; Vitor Nascimento, University of São Paulo

TA8a2-12 Hirschman Uncertainty Using Rényi, Instead of Shannon, Entropy is Invariant to the Rényi Entropy Order
Kirandeep Ghuman, Victor DeBrunner, Florida State University

TA8a2-13 Joint Distributed Parameter and Channel Estimation in Wireless Sensor Networks via Variational Inference
Aitzaz Ahmad, Erchin Serpedin, Hazem Nounou, Mohamed Nounou, Texas A&M University

TA8a2-14 Performance Analysis for 2-D Convolution Implemented with the 2-D Modified Discrete Fourier Transform
Chandrashekar Radhakrishnan, University of Illinois; William Jenkins, Pennsylvania State University

Session TA8b1 Communication Systems II

Chair: *Yao Xie, Duke University*

10:15 AM - 12:00 PM

TA8b1-1 Experimental Analysis of Cyclostationary Detectors under Cyclic Frequency Offsets
Eric Rebeiz, Paulo Urriza, Danijela Cabric, University of California, Los Angeles

TA8b1-2 Buffer Aware Power Control for Cognitive Radio Networks
Eman Naguib, Tamer Elbatt, Mohammed Nafie, Nile University

TA8b1-3 Suboptimal Method for Pilot and Data Power Allocation in Combined Positioning and Communications OFDM Systems
Rafael Montalban, Gonzalo Seco-Granados, Universitat Autònoma de Barcelona; A. Lee Swindlehurst, University of California, Irvine

TA8b1-4 Stochastic Online Learning under Unknown Time-Varying Models
Pouya Tehrani, Qing Zhao, University of California, Davis

TA8b1-5 Spectrum Sensing Scheduling in a Cost-based Framework
Aditya Kelkar, Qi Cheng, Oklahoma State University

TA8b1-6 The Optimal Fusion Rule for Cooperative Spectrum Sensing from a Diversity Perspective
Dongliang Duan, Liuqing Yang, Louis L. Scharf, Colorado State University

TA8b1-7 Diffuse Mid-UV Communication in the Presence of Obscurants
Derek Young, Jerry Brewer, Jeannette Chang, Tina Chou, Jacques Kvam, Matthew Pugh, Sandia National Labs

TA8b1-8 Quickest Search for Anomaly Detection
Sattar Vakili, Qing Zhao, University of California, Davis; Ananthram Swami, Army Research Laboratory

TA8b1-9 Weighted Cyclic Prefix OFDM: PAPR Analysis and Performances Comparison with DFT-Precoding
Damien Roque, GIPSA-lab and DGA; Cyrille Siclet, Jean-Marc Brossier, GIPSA-lab; Pierre Siohan, Orange-Labs

TA8b1-10 Predicting Spectrum Vacancy for Opportunistic Communications
David Browne, MIT Lincoln Laboratory

TA8b1-11 Cross-Layer Transmission Rate/Power Policy for Cognitive Multi-Access Networks with Imperfect Sensing
Ghada Saleh, Amr El-Keyi, Mohammed Nafie, Nile University

TA8b1-12 A Cross Layer Routing Protocol for Cognitive Radio Networks Using Channel Activity Tracking
Sandeep Gogineni, Syracuse University; Onur Ozdemir, ANDRO Computational Solutions; Engin Masazade, Chilukuri Mohan, Pramod Varshney, Syracuse University

Session TA8b2 MIMO Communications and Signal Processing II

Chair: *Ali Tajer, Princeton University*

10:15 AM - 12:00 PM

TA8b2-1 Relaying and Base Station Cooperation: a Comparative Survey for Future Cellular Networks
Raphael Rolny, Marc Kuhn, Armin Wittneben, Swiss Federal Institute of Technology Zurich; Thomas Zasowski, Swisscom ICC

TA8b2-2 A Feasibility Study on Opportunistic Interference Alignment: Limited Feedback and Sum-Rate Enhancement
Hyun Jong Yang, Stanford University; Won-Yong Shin, Dankook University; Bang Chul Jung, Gyeongsang National University; Arogyaswami Paulraj, Stanford University

TA8b2-3 Joint Interference and Phase Alignment in Multiuser MIMO Interference Channels
Seyed Morteza Razavi, Tharmalingam Ratnarajah, Mathini Sellathurai, Queen's University Belfast

TA8b2-4 User-Aided Sub-Clustering for CoMP Transmission: Feedback Overhead vs. Data Rate Trade-off
Lars Thiele, Fraunhofer Heinrich Hertz Institute

TA8b2-5 Chance Constrained and Ergodic Robust QoS Power Minimization in the Satellite Downlink
Andreas Gründinger, Arailym Butabayeva, Michael Joham, Wolfgang Utschick, Technische Universität München

TA8b2-6 Joint Channel and Data Estimation for MIMO Communications with Sparse Pilots
Yejian Chen, Stephan ten Brink, Bell Laboratories, Alcatel-Lucent

TA8b2-7 Simulated Annealing User Scheduling for Coordinated Heterogeneous MIMO Networks
Hakimeh Purmehdi, Robert Elliott, Witold Krzymien, University of Alberta, and TRLabs

TA8b2-8 Carrier-Cooperative Zero-Forcing for Power Minimization in Parallel MIMO Broadcast Channels
Stephan Herrmann, Christoph Hellings, Wolfgang Utschick, Technische Universität München

TA8b2-9 Performance of MMSE Multi-antenna Receiver under Hierarchial Poisson Random Fields of Interferences
Wei Shi, James Ritcey, University of Washington

TA8b2-10 Concurrent Training and Data Transmission in Multiple-Access Channels
Adriano Pastore, Javier Rodríguez Fonollosa, Universitat Politècnica de Catalunya

TA8b2-11 Best and Worst-Case Statistics for Linear Beamforming in the MISO Correlated Broadcast Channel
Vasanthan Raghavan, University of Southern California; Stephen Hanly, Macquarie University

TA8b2-12 From Single- to Multi-User Scheduling in LTE-A Uplink Exploiting Virtual MIMO
Martin Kurras, Lars Thiele, Fraunhofer Heinrich Hertz Institute

Session TA8b3 Architecture and Implementation of Signal Processing Systems

Chair: *Jörn W. Janneck, Lund University*

10:15 AM - 12:00 PM

TA8b3-1 Receiver Implementations for Co-Channel Interference Suppression in MIMO-OFDM
Johanna Ketonen, Markku Juntti, University of Oulu

TA8b3-2 Implementation of LS, MMSE and SAGE Channel Estimators for Mobile MIMO-OFDM
Johanna Ketonen, Markku Juntti, University of Oulu; Jari Ylioinas, Nokia Siemens Networks; Joseph R. Cavallaro, Rice University

TA8b3-3 Low Complexity Opportunistic Decoder for Network Coding
Bei Yin, Michael Wu, Guohui Wang, Joseph R. Cavallaro, Rice University

TA8b3-4 Sparse Polynomial Equalization of an RF Receiver via Algorithm, Analog, and Digital Codesign
Andrew Bolstad, Benjamin A. Miller, Karen Gettings, Mike Ericson, Helen Kim, Merlin Green, Dan Santiago, MIT Lincoln Laboratory

TA8b3-5 Implementation of a QPSK Transceiver for Software Defined Radio on a Graphic Processing Unit (GPU)
Rehan Muzammil, M. Salim Beg, The Aligarh Muslim University; Mohsin M. Jamali, University of Toledo

TA8b3-6 Karatsuba Implementation of FIR Filters
Pietro Albicocco, Gian Carlo Cardarilli, Salvatore Pontarelli, Marco Re, University of Rome Tor Vergata

TA8b3-7 Real-Time Hardware Design for Improving Laser Detection and Ranging Accuracy
Jarrod Brown, Graduate Student; Clay Hughes, Linda DeBrunner, Florida State University

TA8b3-8 Dataflow Programming in CAL—Balancing Expressiveness, Analyzability, and Implementability
Johan Eker, Ericsson Research; Jörn Janneck, Lund University

Session TP1a Network Optimization (invited)

Chair: *Atilla Eryilmaz, Ohio State University*

TP1a-1 Optimizing Transmissions for Wireless Video 1:30 PM
Michael Neely, Giuseppe Caire, University of Southern California

TP1a-2 Gossip-Based Random Projection Algorithm for SVMs 1:55 PM
Lee Soo Min, Angelia Nedich, University of Illinois, Urbana-Champaign

TP1a-3 Random Hamiltonian Cycles with Random Link Deletions 2:20 PM
Joohwan Kim, R. Srikant, University of Illinois, Urbana-Champaign

TP1a-4 Temporal Statistical Characterization of Interference for Joint Encoding and Random Access 2:45 PM
C. Emre Koksal, Atilla Eryilmaz, Nithin Sugavanam, Oklahoma State University

Session TP1b Distributed Signal Processing (invited)

Co-Chairs: *Hongbin Li, Stevens Institute of Technology and Jun Fang, Stevens Institute of Technology*

TP1b-1 Gossip-based Distributed Stochastic Approximation: The Price of Non-double Stochasticity 3:30 PM
Gemma Morral, Pascal Bianchi, Gersende Fort, Institut Telecom / Telecom ParisTech / CNRS-LTCI; Jérémie Jakubowicz, Institut Telecom / Telecom Sud Paris

TP1b-2 Distributed Maximum a Posteriori Probability Estimation for Tracking of Dynamic Systems 3:55 PM
Felicia Jakubiec, Alejandro Ribeiro, University of Pennsylvania

TP1b-3 Identifying Multiple Infection Sources in a Network 4:20 PM
Wuqiong Luo, Wee Peng Tay, Nanyang Technological University

TP1b-4 Distributed Learning in Large Scale Multi-Agent Games: A Modified Fictitious Play Approach 4:45 PM
Brian Swenson, Soummya Kar, Carnegie Mellon University

TP1b-5 An Iterative Precoding Approach for Joint Transmission of Distributed Correlated Sources 5:10 PM
Jun Fang, University of Electronic Science and Technology of China; Hongbin Li, Stevens Institute of Technology

Session TP2a Consensus Based Algorithms

Chair: *Lara Dolecek, University of California, Los Angeles*

TP2a-1 Toward Resource-Optimal Averaging Consensus over the Wireless Medium 1:30 PM
Matthew Nokleby, Rice University; Waheed U. Bajwa, Rutgers; Robert Calderbank, Duke University; Behnaam Aazhang, Rice University

TP2a-2 Distributed Average Consensus Using Bounded Transmissions 1:55 PM
Sivaraman Dasarathan, Mahesh Banavar, Cihan Tepedelenlioglu, Andreas Spanias, Arizona State University

TP2a-3 Distributed Gram-Schmidt Orthogonalization Based on Dynamic Consensus 2:20 PM
Ondrej Sluciak, Vienna University of Technology; Hana Strakova, University of Vienna; Markus Rupp, Vienna University of Technology; Wilfried Gansterer, University of Vienna

TP2a-4 Simultaneous Distributed Sensor Self-Localization and Target Tracking Using Belief Propagation and Likelihood Consensus 2:45 PM
Florian Meyer, Erwin Riegler, Ondrej Hlinka, Franz Hlawatsch, Vienna University of Technology

Session TP2b Cooperative Adaptation and Learning (invited)

Co-Chairs: *Danilo Mandic, Imperial College and Ali Sayed, University of California, Los Angeles*

TP2b-1 Mean-Square Analysis of Continuous-Time Distributed Estimation Strategies 3:30 PM
Vitor Nascimento, University of São Paulo; Ali Sayed, University of California, Los Angeles

TP2b-2 Extrinsic Gossip and Reducing Self-reinforcement in Distributed Consensus 3:55 PM
Andrew Bean, Angelia Nedich, Andrew Singer, University of Illinois, Urbana-Champaign

TP2b-3 Non-linear Least Squares Estimation via Network Diffusion 4:20 PM
Simon Li, Anna Scaglione, University of California, Davis

TP2b-4 Fast Cooperative Distributed Learning 4:45 PM
Dusan Jakovetic, Jose M F. Moura, Joao Xavier, Carnegie Mellon University

TP2b-5 Exploiting the Noncircularity of Complex Cooperative Learning Systems 5:10 PM
Dahir Dini, Danilo Mandic, Imperial College London

Session TP3a Information Theoretic Signal Processing

Co-Chairs: *P. P. Vaidyanathan, California Institute of Technology and Piya Pal, California Institute of Technology*

TP3a-1 The Gaussian CEO Problem for a Scalar Source with Memory: A Necessary Condition 1:30 PM
Jie Chen, Feng Jiang, Arnold Swindlehurst, University of California, Irvine

TP3a-2 Empirical Rate-Distortion Study of Compressive Sensing-based Joint Source-Channel Coding 1:55 PM
Muriel L. Rambeloarison, Soheil Feizi, Georgios Angelopoulos, Muriel Medard, Massachusetts Institute of Technology

TP3a-3 Greedy Adaptive Measurements with Signal and Measurement Noise 2:20 PM
Entao Liu, Edwin Chong, Louis Scharf, Colorado State University

TP3a-4 Role of Bandwidth in the Quality of Inversion of Linear Multirate Systems with Noise 2:45 PM
P. P. Vaidyanathan, Piya Pal, California Institute of Technology

Session TP3b Underwater Communications (invited)

Chair: *Geert Leus, TU Delft*

TP3b-1 Differentially Coherent OFDM with Fractional FFT Demodulation 3:30 PM
Yashar M Aval, Millica Stojanovic, Northeastern University

TP3b-2 Channel Estimation for Multi-layer Block Transmissions over Underwater Acoustic Channels 3:55 PM
Srinivas Yerramalli, University of Southern California; Zijian Tang, Netherlands Organization for Applied Scientific Research; Urbashi Mitra, University of Southern California

TP3b-3 Outage Performance of a Multiuser Distributed Antenna System in Underwater Acoustic Channels 4:20 PM
Zhaohui Wang, Shengli Zhou, University of Connecticut; Zhengdao Wang, Iowa State University; Josko Catipovic, Naval Undersea Warfare Center; Peter Willett, University of Connecticut

TP3b-4 Underwater Channel Aware Routing 4:45 PM
Paolo Casari, Matteo Lazzarin, Michele Zorzi, University of Padova

TP3b-5 Soft-Adaptive Turbo Equalization- Using Soft Information in Adaptation 5:10 PM
Atulya Yellepeddi, Massachusetts Institute of Technology/ Woods Hole Oceanographic Institute; James Preisig, Woods Hole Oceanographic Institute

Session TP4a Decoding and Detection

Chair: *Rodrigo de Lamare, The University of York*

TP4a-1 Low-Complexity and Approximative Sphere Decoding of Sparse Signals 1:30 PM
Benjamin Knoop, Till Wiegand, Steffen Paul, University of Bremen

TP4a-2 Dynamic Threshold Schemes for Multi-Level Nonvolatile Memories 1:55 PM
Frederic Sala, Ryan Gabrys, Lara Dolecek, University of California, Los Angeles

TP4a-3 Iterative Detection and Decoding for MIMO Systems with Knowledge-Aided Belief Propagation Algorithms 2:20 PM
Jingjing Liu, Peng Li, Rodrigo de Lamare, University of York

TP4a-4 Quantization, Absorbing Regions and Practical Message Passing Decoders 2:45 PM
Behzad Amiri, University of California, Los Angeles; Shayan Garani Srinivasa, Western Digital Corporation; Lara Dolecek, University of California, Los Angeles

Session TP4b Smart Grid Communications and Networks (invited)

Co-Chairs: *Anna Scaglione, University of California, Davis and Zhifang Wang, University of California, Davis*

TP4b-1 Demand Response in Radial Distribution Networks 3:30 PM
Na Li, Lingwen Gan, Steven Low, California Institute of Technology; Lijun Chen, University of Colorado at Boulder

TP4b-2 Competitive Privacy in the Smart Grid 3:55 PM
Lalitha Sankar, Princeton University; Soummya Kar, Carnegie Mellon University; H. Vincent Poor, Princeton University

TP4b-3 Secure Network and Information Architectures for Smart Grid Data Analysis and Control 4:20 PM
Marina Thottan, Young Jin Kim, Gary Atkinson, Bell Laboratories, Alcatel-Lucent

TP4b-4 The Impact of Volatile Generation/Load Profile in Smart Grid on the Grid Vulnerability to Cascading Overload Failures 4:45 PM
Zhifang Wang, Anna Scaglione, University of California, Davis; Robert J. Thomas, Cornell University

TP4b-5 Power Resource Allocation in a Network of Fast Charging Stations 5:10 PM
George Michailidis, Michael Devetsikiotis, Safak Bayram, University of Michigan

Session TP5a Design Methodologies and Architectures for Communications

Chair: *Joseph R. Cavallaro, Rice University*

TP5a-1 High-Level Architecture Modeling and Exploration for Streaming Applications 1:30 PM
Usman Mazhar Mirza, Flavius Gruian, Lund University

TP5a-2 Sequential Decoding of Non-Binary LDPC Codes on Graphics Processing Units 1:55 PM
David Romero, Nicholas Chang, MIT Lincoln Laboratory

TP5a-3 A GPU Implementation of Belief Propagation Decoder for Polar Codes 2:20 PM
Bharath Kumar Reddy, Nitin Chandrachoodan, Indian Institute of Technology, Madras

TP5a-4 High Performance Efficient Parallel Nonbinary LDPC Decoding on GPU 2:45 PM
Guohui Wang, Hao Shen, Bei Yin, Yang Sun, Joseph R. Cavallaro, Rice University

Session TP5b Interference Alignment (invited)

Chair: *Tharm Ratnarajah, Queen's University Belfast*

TP5b-1 System-level Performance of Distributed Cooperation 3:30 PM
Ratheesh Mungara, Geordie George, Angel Lozano, Universitat Pompeu Fabra

TP5b-2 On the DoF of the Multiple-Antenna Time Correlated Interference Channel with Delayed CSIT 3:55 PM
Xinping Yi, David Gesbert, Eurecom Institute; Sheng Yang, Mari Kobayashi, École supérieure d'électricité

TP5b-3 Linear Transceiver Design for the Noisy Gaussian MIMO Interference Channel with Partial CSI 4:20 PM
Francesco Negro, Eurecom Institute; Irfan Ghauri, Infineon Technologies France; Dirk Slock, Eurecom Institute

TP5b-4 On the Nuclear Norm Approach for Interference Alignment 4:45 PM
Huiqin Du, Tharm Ratnarajah, Queen's University Belfast

TP5b-5 Interference Alignment in Coordinated Multi-Point Systems 5:10 PM
Seyed Morteza Razavi, Tharm Ratnarajah, Queen's University Belfast

Session TP6a Wireless Full Duplex

Chair: *Ashutosh Sabharwal, Rice University*

TP6a-1 Decode-and-Cancel for Interference Cancellation in Full-duplex Networks 1:30 PM
Jingwen Bai, Ashutosh Sabharwal, Rice University

TP6a-2 Full-Duplex MIMO Relaying: Achievable Rates under Limited Dynamic Range 1:55 PM
Brian Day, Ohio State University; Daniel Bliss, Adam Margetts, MIT Lincoln Laboratory; Philip Schniter, Ohio State University

TP6a-3 Full Duplex Wireless Communications with Partial Interference Cancellation 2:20 PM
Jianshu Zhang, Seyed Omid Taghizadeh Motlagh, Ilmenau University of Technology; Jian Luo, Fraunhofer Heinrich-Hertz-Institute; Martin Haardt, Ilmenau University of Technology

TP6a-4 Wideband Digital Cancellation for Full-Duplex Communications 2:45 PM
Mohammad Ali Khojastepour, Sampath Rangarajan, NEC Laboratories America, Inc.

Session TP6b Biological Image Analysis

Chair: *Scott T. Acton, University of Virginia*

TP6b-1 Assessment of Wallerian Degeneration by Automated Image Analysis 3:30 PM
Andrea Vaccari, Kanchana Gamage, Sapir Nachum, Barry Condron, Christopher Deppmann, Scott Acton, University of Virginia

TP6b-2 Robust Biological Image Sequence Analysis Using Graph Based Approaches 3:55 PM
B.S. Manjunath, Diana Delibaltov, Karthikeyen Shanmuga Vadivel, Vignesh Jagadeesh, University of California, Santa Barbara

TP6b-3 A Linear, Transportation-based, Embedding Method for Analyzing Biomedical Images 4:20 PM
G.K. Rohde, W. Wang, S. Basu, D. Slepcev, Carnegie Mellon University

TP6b-4 An Information Theoretic Framework for MRI Preprocessing, Multiclass Feature Selection and Segmentation of PF Tumors 4:45 PM
Shaheen Ahmed, Emory U.; K.M. Iftekharuddin, Old Dominion University; E.O. George, University of Memphis

TP6b-5 The Effect of Image Registration on the Localization of Single Molecules in Microscopy Experiments 5:10 PM
Raimund Ober, Edward Cohen, University of Texas at Dallas

Session TP7a MIMO Radar and Waveform Design

Chair: *Marius Pesavento, TU Darmstadt*

TP7a-1 Transmit Beamspace Design for Direction Finding in Colocated MIMO Radar with Arbitrary Receive Array and Even Number of Waveforms 1:30 PM
Arash Khabbazibasmenj, Sergiy Vorobyov, Aboulnasr Hassanien, Matthew Morency, University of Alberta

TP7a-2 Jammer Detection and Estimation with MIMO Radar 1:55 PM
Xiufeng Song, Peter Willett, Shengli Zhou, University of Connecticut

TP7a-3 Non-linear Processing for Multicarrier MIMO Radar for Improved Target Resolution 2:20 PM
Mir H. Mahmood, Mark R. Bell, Purdue University

TP7a-4 Generating Correlated QPSK Waveforms by Exploiting Real Gaussian Random Variables 2:45 PM
Jardak Seifallah Jardak, Tunisia Polytechnic School (TPS)-University of Carthage; Sajid Ahmed, Slim Alouini, King Abdullah University of Science and Technology

Session TP7b Speech Processing and Speech Recognition (invited)

Chair: *Tokunbo Ogunfunmi, Santa Clara University*

TP7b-1 Reproducing Kernel-based Methods for Extracting and Identifying Noise-Robust Speech Features 3:30 PM
Shantanu Chakrabartty, Michigan State University

TP7b-2 Joint Tracking of Clean Speech and Noise Using HMMS and Particle Filters for Robust Speech Recognition 3:55 PM
Aleem Mushtaq, Chin-Hui Lee, Georgia Institute of Technology

TP7b-3 Sparsity-Constrained Stranded Gaussian Mixture Hidden Markov Models for Automatic Speech Recognition 4:20 PM
Yong Zhao, Biing-Hwang (Fred) Juang, Georgia Institute of Technology

TP7b-4 Visual Speech Recognition Using Stereo-Vision Image 4:45 PM
Chao Sui, Mohammed Bennamoun, Roberto Togneri, Serajul Haque, Damien Pontifex, University of Western Australia

TP7b-5 On the Integration of Time-Frequency Masking Source Separation and Missing Data Speech Recognition in Underdetermined Environments 5:10 PM
Ingrid Jafari, Serajul Haque, Roberto Togneri, Sven Nordholm, University of Western Australia

Session TP8a1 Relay Networks

Chair: *Maite Brandt-Pearce, University of Virginia*

1:30 PM - 3:10 PM

TP8a1-1 On OFDMA Resource Allocation for Delay Constrained HARQ Systems
Sébastien Marcille, Thales Communications and Security; Philippe Ciblat, Télécom ParisTech; Christophe Le Martret, Thales Communications and Security

TP8a1-2 Cooperative AF MIMO Wireless Relay Networks under Relay Power Constraint
Kanghee Lee, Hyuck Kwon, Hyunggi Kim, Wichita State University; Hyuncheol Park, Yong Lee, Korea Advanced Institute of Science and Technogy

TP8a1-3 Average Sum-BER Analysis of AF Two-way Relay Networks with Direct Links
Cihan Tepedelenlioglu, Hyunjun Kim, Arizona State University

TP8a1-4 Performance Analysis of Amplify-and-Forward Relaying Using Fractional Calculus
Mehdi Mortazawi Molu, Norbert Goertz, Vienna University of Technology

TP8a1-5 Delay-Optimal Multi-flow Buffered Decode-and-Forward Relay Communications with Limited Renewable Energy Storage
Fan Zhang, Vincent Lau, Hong Kong University of Science and Technology

TP8a1-6 Relay Selection in Amplify-and-Forward Relay Networks with Frequency Selective Fading
Qingxiong Deng, Andrew G. Klein, Worcester Polytechnic Institute

TP8a1-7 On SINR Balancing for a Two-Hop Downlink Channel
Jan Schreck, Slawomir Stanczak, Technische Universität Berlin

TP8a1-8 A Power Saving Dual-Hop Architecture Based on Hybrid Spatial Modulation
Athanasios Stavridis, Sinan Sinanovic, University of Edinburgh; Marco Di Renzo, French National Center for Scientific Research (CNRS); Harald Haas, University of Edinburgh

TP8a1-9 On the Performance Loss of Distributed over Centralized Relay Beamforming
Qiang Xiao, University of Toronto; Min Dong, University of Ontario Institute of Technology; Ben Liang, University of Toronto

TP8a1-10 SNR Advantage of Group Transmissions in Multihop Networks with Amplify-and-forward Relays
Birsen Sirkeci-Mergen, San Jose State University

Session TP8a2 Sensor and Interference Networks

Chair: *Lifeng Lai, Worcester Polytechnic Institute*

1:30 PM - 3:10 PM

TP8a2-1 Multiple Access Game with a Cognitive Jammer
Karim Khalil, Eylem Ekici, Ohio State University

TP8a2-2 Stochastic Ordering of Interferences in Large-scale Networks
Junghoon Lee, Cihan Tepedelenlioglu, Arizona State University

TP8a2-3 Improving WLAN-Based Indoor Mobile Positioning Using Sparsity
Mohammad Pourhomayoun, Mark Fowler, Binghamton University

TP8a2-4 Parameter Tracking via Optimal Distributed Beamforming in an Analog Sensor Network
Feng Jiang, Jie Chen, Lee Swindlehurst, University of California, Irvine

TP8a2-5 On the Diversity Multiplexing Tradeoff in a 4-user Clustered Z-channel
Myung Gil Kang, Young-bin Kim, Wan Choi, Korea Advanced Institute of Science and Technology (KAIST)

TP8a2-6 Distributed Cross-Layer Optimal Power and Rate Control in Single-Hop Wireless Interference Networks
Ying Cui, Stephen Hanly, Macquarie University

TP8a2-7 Performance Analysis of Ad Hoc Networks with Interference Alignment
Yi Luo, Huiqin Du, Tharm Ratnarajah, Dave Wilcox, Queen's University Belfast

TP8a2-8 Convergence Properties of Incremental Subgradient Algorithms for Least-Squares Source Localization
Michael Rabbat, McGill University; Angelia Nedic, University of Illinois

TP8a2-9 Traffic Handling of Hybrid MAC in IEEE 802.15.4 Networks
Jae-Seok Bang, Hyung-Sin Kim, Yong-Hwan Lee, Seoul National University

TP8a2-10 Lifetime Maximization in Distributed Sensor Network with Event Triggered Adaptive Filtering
Amaresh Malipatil, Yih-Fang Huang, University of Notre Dame

TP8a2-11 Joint Localization and Clock Synchronization for Wireless Sensor Networks
Sundeep Prabhakar Chepuri, Geert Leus, Alle-Jan van der Veen, Delft University of Technology

Session TP8a3 Design Methodology and Computer Arithmetic

Chair: *Milos Ercegovac, University of California, Los Angeles*

1:30 PM - 3:10 PM

TP8a3-1 Runtime Voltage/Frequency Scaling for Energy-Aware Streaming Applications
Flavius Gruian, Lund University

TP8a3-2 Residue Codes for Error Correction in a Combined Decimal/Binary Redundant Floating Point Adder
Shehab Y. Elsayed, Hossam A. H. Fahmy, Cairo University

TP8a3-3 Hardware Implementation of the Hirschman Optimal Transform
Soumak Mookherjee, Linda DeBrunner, Victor DeBrunner, Florida State University

TP8a3-4 Partitioning and Mapping Dynamic Dataflow Programs
Mehmet Ali Arslan, Jörn Janneck, Krzysztof Kuchcinski, Lund University

TP8a3-5 Effects on Power Saving of Butterfly and Inverse Butterfly Nets Integration in Embedded Processors
Gian Carlo Cardarilli, Princeton University; Luca Di Nunzio, Rocco Fazzolari, Marco Re, Ruby B. Lee, University of Rome Tor Vergata

TP8a3-6 Modified Non-restoring Division Algorithm with Improved Delay Profile and Error Correction
Kihwan Jun, Earl Swartzlander, Jr., University of Texas at Austin

TP8a3-7 Analysis of Trade-offs in V2P-Table Design for NAND Flash
Borja Peleato, Rajiv Agarwal, John Cioffi, Stanford University

TP8a3-8 Toward Efficient Execution of Dataflow Actors
Gustav Cedersjö, Jörn Janneck, Lund University

Session TP8b1 Speech, Image, and Video Processing

Chair: *Michael Santoro, University of Chile / Georgia Tech*

3:30 PM - 5:10 PM

TP8b1-1 Improved Modeling of the Correlation Between Continuous-Valued Sources in LDPC-Based DSC
Mojtaba Vaezi, Fabrice Labeau, McGill University

TP8b1-2 Multispectral Vegetation Detection for Improved SAR CCD
Bea Yu, Rhonda Phillips, MIT Lincoln Laboratory

TP8b1-3 HVS Based Dictionary Learning for Scalable Sparse Image Representation
Bojana Begovic, Vladimir Stankovic, Lina Stankovic, University of Strathclyde; Samuel Cheng, School of Electrical and Computer Engineering

TP8b1-4 Regional Features with Adaptable Global Mappings for Recognition Systems
Katia Estabridis, Naval Air Weapons Center

TP8b1-5 A Robust Super Resolution Method for Video
Nafise Barzigar, Aminmohammad Roozgard, Samuel Cheng, Pramode Verma, University of Oklahoma

TP8b1-6 An Efficient Video Denoising Method Using Decomposition Approach for Low-Rank Matrix Completion
Nafise Barzigar, Aminmohammad Roozgard, Samuel Cheng, Pramode Verma, University of Oklahoma

TP8b1-7 Speech Enhancement of Color Noise Using Empirical Mode Decomposition
Min-Sung Koh, Esteban Rodriguez-Marek, Eastern Washington University

TP8b1-8 Objective Quality Assessment of Multiply Distorted Images
Dinesh Jayaraman, Anish Mittal, Anush Moorthy, Alan Bovik, University of Texas at Austin

TP8b1-9 Temporal Dispersal of Multiple Representations for Error-Resilient Video Streaming
Sourabh Khire, Georgia Institute of Technology; Arturo Rodriguez, Cisco Systems; Nikil Jayant, Georgia Institute of Technology

TP8b1-10 A New Map-based Approach to Video De-interlacing Using Forward-Backward Algorithm
Farhang Vedadi, Shahram Shirani, McMaster University

TP8b1-11 A Novel De-interlacing Method Based on Locally-Adaptive Nonlocal-Means
Roozbeh Dehghannasiri, Shahram Shirani, McMaster University

TP8b1-12 Regularization Function for Video Super-Resolution Using Auxillary High Resolution Still Images
Seyedreza Najafi, Shahram Shirani, McMaster University

TP8b1-13 Making Image Quality Assessment Robust
Anish Mittal, Anush Moorthy, Alan Bovik, University of Texas at Austin

TP8b1-14 Blur Identification Based on Spectrum Density Distribution
Dalong Li, Simske Steve, HP

TP8b1-15 Probabilistic Three-Pass SAR Coherent Change Detection
Jarred Barber, Stephen Kogon, MIT Lincoln Laboratory

TP8b1-16 A Generalized Likelihood Ratio Test for SAR CCD
Michael Newey, Gerald Benitz, Stephen Kogon, Massachusetts Institute of Techology Lincoln Laboratory

TP8b1-17 Camera Placement for Handheld 3D Video Communications
Stephen Mangiat, Jerry Gibson, University of California, Santa Barbara

TP8b1-18 Depth-Less 3D Rendering
Mashhour Solh, Ghassan AlRegib, Georgia Institute of Technology

Session TP8b2 Biomedical Signal and Image Processing

Chair: *Keshab K. Parhi, University of Minnesota*

3:30 PM - 5:10 PM

[Paper TP8b2-1 will be presented in MP8a.]

TP8b2-1 Ultrasonic Bone Assessment of the Distal Forearm
Jonathan Kaufman, Gangming Luo, CyberLogic, Inc.; Robert Siffert, Mount Sinai School of Medicine

TP8b2-2 Performance Analysis of a 2-D EEG Compression Algorithm Using an Automatic Seizure Detection System
Hoda Daou, Fabrice Labeau, McGill University

TP8b2-3 A Novel Method for Tumor Localization and Tracking in Radiation Therapy
Mohammad Pourhomayoun, Mark Fowler, Zhanpeng Jin, Binghamton University

TP8b2-4 Screening Fundus Images for Diabetic Retinopathy
Sohini RoyChowdhury, Dara Koozakanani, Keshab K. Parhi, University of Minnesota

TP8b2-5 EEG/MEG Artifact Suppression for Improved Neural Activity Estimation
Alexander Maurer, Lifeng Miao, Arizona State University; Jun Jason Zhang, University of Denver; Antonia Papandreou-Suppappola, Arizona State University

TP8b2-6 Beta Process Based Adaptive Learning of Immunosignaturing Peptide-Antibody Factors
Anna Malin, Narayan Kovvali, Antonia Papandreou-Suppappola, Stephen Johnston, Phillip Stafford, Arizona State University

Session WA1a Feedback and Cooperation (invited)

Chair: *Giuseppe Abreu, Jacobs University*

WA1a-1 Random Access on Graphs: A Survey and New Results 8:15 AM
Enrico Paolini, University of Bologna; Gianluigi Liva, German Aerospace Center (DLR); Marco Chiani, University of Bologna

WA1a-2 Node Cooperation with Local Views 8:40 AM
David Kao, Ashutosh Sabharwal, Rice University

WA1a-3 A Feedback Strategy for the Full-Duplex Butterfly Network 9:05 AM
Aydin Sezgin, Anas Chaaban, Ruhr-University Bochum; Daniela Tuninetti, University of Illinois, Chicago

WA1a-4 Characterizing the Mutual Information Distribution of MIMO Systems: Beyond the Gaussian Approximation 9:30 AM
Shang Li, Matthew McKay, Hong Kong University of Science and Technology; Yang Chen, University of Macau

Session WA1b Security

Chair: *A. Lee Swindlehurst, University of California, Irvine*

WA1b-1 Distributed Jamming for Secure Communication in a Poisson Field of Legitimate Nodes and Eavesdroppers 10:15 AM
Wei Shi, James Ritcey, University of Washington

WA1b-2 Deploying Multi-antenna Energy-Harvesting Cooperative Jammers in the MIMO Wiretap Channel 10:40 AM
Amitav Mukherjee, Nokia Research Center; Jing Huang, University of California, Irvine

WA1b-3 Unicasting on the S-Graph 11:05 AM
Satyanaranaya Vuppala, Giuseppe Abreu, Jacobs University Bremen

WA1b-4 Secrecy Capacity Limits of Multiple Antenna Multiple Eavesdropper Multicast 11:30 AM
Jafar Mohammadi, Michal Kaliszan, Slawomir Stanczak, Berlin Institute of Technology

Session WA2a Distributed Algorithms for Wireless Networks

Chair: *Lee Swindlehurst, University of California, Irvine*

WA2a-1 Distributed and Autonomous Resource Allocation for Femto-Cellular Networks 8:15 AM
Harald Burchardt, University of Edinburgh; Zubin Bharucha, DoCoMo Euro-Labs; Harald Haas, University of Edinburgh

WA2a-2 Universal Computation with Low-Complexity Wireless Relay Networks 8:40 AM
Eric Slottke, Raphael Rolny, Armin Wittneben, Swiss Federal Institute of Technology Zurich

WA2a-3 A Unified Analysis of CDF-based Distributed Scheduling in a Heterogeneous Multicell 9:05 AM
Yichao Huang, Bhaskar D. Rao, University of California, San Diego

WA2a-4 Unsupervised Algorithms for Distributed Estimation over Adaptive Networks 9:30 AM
Muhammad Bin Saeed, Azzedine Zerguine, Salam Zummo, King Fahd University of Petroleum and Minerals; Ali Sayed, University of California, Los Angeles

Session WA2b Topics in Wireless Networking

Chair: *Harald Haas, University of Edinburgh*

WA2b-1 Joint Design of Multi-resolution Codes and Intra/Inter-layer Network Coding 10:15 AM
Tong Wang, Muriel Medard, Lizhong Zheng, Massachusetts Institute of Technology

WA2b-2 Link Allocation, Routing, and Scheduling for Fading Hybrid FSO/RF Networks 10:40 AM
Yi Tang, Maite Brandt-Pearce, University of Virginia

WA2b-3 Approximating the Capacity of Wireless Multiple Unicast Networks by Discrete Superposition Model 11:05 AM
Nicolas Schrammar, Mikael Skoglund, KTH Royal Institute of Technology

WA2b-4 Convolutional Network Codes for Reliable Point-to-Point Wireless Communication 11:30 AM
Samantha Summerson, Rice University; Anuj Batra, Texas Instruments

Session WA3a Adaptive Signal Processing

Chair: *Cedric Richard, Univ. de Nice Sophia-Antipolis*

WA3a-1 Diffusion Least-Mean Squares over Distributed Networks in the Presence of MAC Errors 8:15 AM
Saeed Ghazanfari-Rad, Fabrice Labeau, McGill University

WA3a-2 Stochastic Adaptive Filtering Using Model Combinations 8:40 AM
Chandrasekhar Radhakrishnan, Andrew Singer, University of Illinois, Urbana-Champaign

WA3a-3 A Closed-Form Condition for Convergence of the Gaussian Kernel-Least-Mean-Square Algorithm 9:05 AM
Cédric Richard, Université de Nice Sophia-Antipolis; Jose Carlos M. Bermudez, Federal University of Santa Catarina, Florianòpolis

WA3a-4 Complex Colored Water-Filling Algorithm for Gain Allocation in Proportionate Adaptive Filtering 9:30 AM
Kevin Wagner, Naval Research Laboratory; Milos Doroslovacki, George Washington University

Session WA3b Compressive Signal Processing

Chair: *Sergiy Vorobyov, University of Alberta*

WA3b-1 2D Signal Compression via Parallel Compressed Sensing with Permutations 10:15 AM
Hao Fang, Sergiy A. Vorobyov, Hai Jiang, Omid Taheri, University of Alberta

WA3b-2 Detecting an Abrupt Change of Finite Duration 10:40 AM
Blaise Kévin Guépié, Lionel Fillatre, Igor Nikiforov, Université de Technologie de Troyes

WA3b-3 Adaptive Sensing: A Tight Lower Bound and the Near-Optimal Compressive Binary Search 11:05 AM
Matthew Malloy, Robert Nowak, University of Wisconsin Madison

WA3b-4 Rapid Sensing of Underutilized, Wideband Spectrum Using the Random Demodulator 11:30 AM
Andrew Harms, Princeton University; Waheed Bajwa, Rutgers University; Robert Calderbank, Duke University

Session WA4a Interference and Cognition

Chair: *Thomas L Marzetta, Alcatel-Lucent/Bell Labs*

WA4a-1 Interference Alignment for Channel-Adaptive Waveform Modulation 8:15 AM
Urs Niesen, Thomas Marzetta, Bell Laboratories, Alcatel-Lucent

WA4a-2 On the Discrete Superposition Model of Partially Cognitive Interference Channels 8:40 AM
Nicolas Schrammar, Chao Wang, Lars K. Rasmussen, Mikael Skoglund, KTH Royal Institute of Technology

WA4a-3 Interference Management for Cognitive Radio Systems Exploiting Primary IR-HARQ: a Constrained Markov Decision Process approach 9:05 AM
Romain Tajan, University of Cergy - Pontoise; Charly Poulliat, University of Toulouse; Inbar Fijalkow, University of Cergy - Pontoise

WA4a-4 Energy-Aware Cooperative Quickest Detection for Cognitive Radio Networks 9:30 AM
Yan Xin, Kyungtae Kim, Sampath Rangarajan, NEC Laboratories America, Inc.

Session WA4b OFDM(A)

Chair: *Michael Zoltowski, Purdue University*

WA4b-1 Effect of Oscillator Phase Noise and Processing Delay in Full-Duplex OFDM Repeaters 10:15 AM
Taneli Riihonen, Pramod Mathecken, Risto Wichman, Aalto University

WA4b-2 Weighted CDF-based Scheduling for an OFDMA Relay Downlink with Partial Feedback 10:40 AM
Anh Nguyen, Yichao Huang, Bhaskar Rao, University of California, San Diego

WA4b-3 Transmitter-Side Timing Adjustment to Mitigate Interference between Multiple Nodes for OFDMA Mesh Network 11:05 AM
Sungeun Lee, Xiaoli Ma, Georgia Institute of Technology

WA4b-4 Detection of Code Spread OFDM Based on 0-1 Integer Quadratic Programming 11:30 AM
Ali Elgharini, Purdue university

Session WA5a Applications of Video Processing

Chair: *Mashhour Solh, Texas Instruments Inc.*

WA5a-1 Automatic Track Tracing in SAR CCD Images Using Search Cues 8:15 AM
Miriam Cha, Rhonda Phillips, MIT Lincoln Laboratory

WA5a-2 H.264/AVC Data Hiding Based on Intra Prediction Modes for Real Time Applications 8:40 AM
Samira Bouchama, Research Center on Scientific and Technical Information; Latifa Hamami, National Polytechnic School of Algiers; Hassina Aliane, Research Center on Scientific and Technical Information

WA5a-3 A Computer Vision System for Monitoring Vessel Motion in Conjunction with Vessel Wake Measurements 9:05 AM
Sam Tan, Jenelle Armstrong Piepmeier, David Kriebel, United States Naval Academy

WA5a-4 Acoustic Monitoring Techniques for Avian Detection and Classification 9:30 AM
Golrokh Mirzaei, Mohammad Wadood Majid, Selin Bastas, University of Toledo; Jeremy Ross, Bowling Green State University; Mohsin Jamali, University of Toledo; Peter Gorveski, Joseph Frizado, Verner Bingman, Bowling Green State University

Session WA5b Image and Video Classification

Chair: *Dihong Tian, Cisco Systems, Inc.*

WA5b-1 A Joint Sparsity Model for Video Anomaly Detection 10:15 AM
Xuan Mo, Vishal Monga, Pennsylvania State University; Raja Bala, Zhigang Fan, Xerox Research Center Webster

WA5b-2 Learning Dictionaries with Graph Embedding Constraints for Image Classification 10:40 AM
Karthikeyan Natesan Ramamurthy, Jayaraman J. Thiagarajan, Andreas Spanias, Arizona State University

WA5b-3 Training Image Classifiers with Similarity Metrics, Linear Programming, and Minimal Supervision 11:05 AM
Karl Ni, Ethan Phelps, MIT Lincoln Laboratory; Katherine Bouman, Massachusetts Institute of Technology; Nadya Bliss, MIT Lincoln Laboratory

WA5b-4 Randomized Tensor-based Algorithm for Image Classification 11:30 AM
Ryan Sigurdson, University of Rochester; Carmeliza Navasca, University of Alabama at Birmingham

Session WA6a CSI Feedback

Chair: *Robert Heath, University of Texas at Austin*

WA6a-1 Feedback Bit Allocation in a Gateway Channel 8:15 AM
Sung Lock Seo, Jung Hoon Lee, Wan Choi, Korea Advanced Institute of Science and Technology (KAIST)

WA6a-2 Tomlinson-Harashima Precoding for Multiuser MIMO Systems with Quantized CSI Feedback 8:40 AM
Liang Sun, Ming Lei, NEC Labs China

WA6a-3 Sum Rate Analysis and Quantizer Design for a Quantized Heterogeneous Feedback MIMO OFDMA Downlink 9:05 AM
Yichao Huang, Bhaskar D. Rao, University of California, San Diego

WA6a-4 CSI Feedback Delay and Degrees of Freedom Gain Trade-Off for the MISO Interference Channel 9:30 AM
Namyoon Lee, Robert Heath, University of Texas at Austin

Session WA6b Beamforming and Relaying (invited)

Chair: *Shahram Shahbazpanahi, University of Ontario Institute of Technology*

WA6b-1 SINR Constrained Beamforming for a MIMO Multi-user Downlink System 10:15 AM
Qingjiang Shi, Alcatel-Lucent Shanghai Bell Company; Meisam Razaviyayn, Mingyi Hong, Zhi-Quan Luo, University of Minnesota

WA6b-2 Pragmatic Multi-cell MIMO Beamforming with Decentralized Coordination 10:40 AM
Harri Pennanen, Antti Tölli, Matti Latva-aho, University of Oulu

WA6b-3 A Total Power Minimization Approach to Relay Selection for Two-Way Relay Networks 11:05 AM
Saurabh Talwar, Shahram ShahbazPanahi, University of Ontario Institute of Technology

WA6b-4 Joint Network-Channel-Coded Multi-Way Relaying 11:30 AM
Andreas Winkelbauer, Gerald Matz, Vienna University of Technology

Session WA7a Applications of Sensor Array Processing

Chair: *Martin Haardt, TU Ilmenau*

WA7a-1 Maximum Likelihood Source Localization in a Pipe using Guided Acoustic Waves 8:15 AM
Nicholas O'Donoughue, Joel Harley, Chang Liu, Jose' M.F. Moura, Irving Oppenheim, Carnegie Mellon University

WA7a-2 Field Testing of Indirect Displacement Estimation Using Accelerometers 8:40 AM
Viswanadh Kandula, Linda DeBrunner, Victor DeBrunner, Michelle Rambo-Roddenberry, Florida State University

WA7a-3 Wireless Sensor Network Discovery Using Large Aperture Array Signal Processing 9:05 AM
Marc Willerton, Imperial College London; Mahesh Banavar, Xue Zhang, Arizona State University; Athanassios Manikas, Imperial College London; Andreas Spanias, Trevor Thornton, Arizona State University; Anthony Constantinides, Eric Yeatman, Imperial College London

WA7a-4 Clipping Effect on Radiation Pattern in Downtilt Beamforming 9:30 AM
Qingsong Wen, Sungeun Lee, Xiaoli Ma, Georgia Institute of Technology

Session WA7b DOA Estimation

Chair: *Alexandre Renaux, Université d'Orsay*

WA7b-1 A Robust L-1 Penalized DOA Estimator 10:15 AM
Ashkan Panahi, Mats Viberg, Chalmers University of Technology

WA7b-2 Adaptive Direction Detection of Extended Targets in Noise Plus Unknown Subspace Interference 10:40 AM
Francesco Bandiera, University of Salento; Olivier Besson, ISAE (Institut Supérieur de l'Aéronautique et de l'Espace); Giuseppe Ricci, University of Salento

WA7b-3 A Semi-algebraic Framework for Approximate CP Decompositions via Joint Matrix Diagonalization and Generalized Unfoldings 11:05 AM
Florian Roemer, Carola Schroeter, Martin Haardt, Ilmenau University of Technology

WA7b-4 Direction of Arrival Estimation of Correlated Signals Using a Dynamic Non-uniform Linear Array 11:30 AM
Dyonisius Dony Arianandа, Geert Leus, Delft University of Technology

Author List

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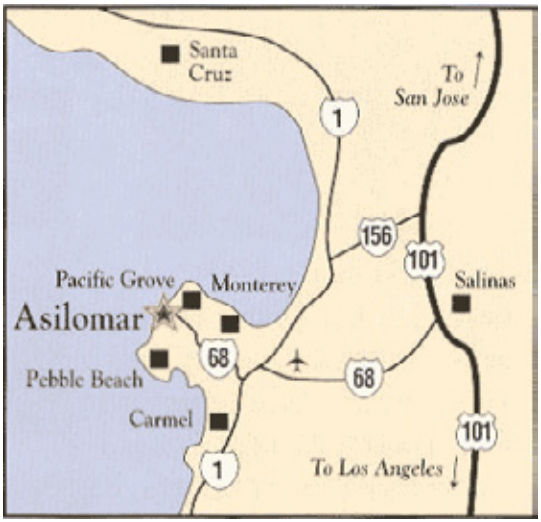
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