# 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

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

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

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

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

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

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

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

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

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

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

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

MP3a-1 On the Energy Efficiency/Spectral Efficiency Tradeoff in OFDMs Systems with Large Numbers of Base Station Antennas 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

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-Toi Wai, Win-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, Ruo-Yu Sun, Zhi-Quan Luo, University of Minnesota*

## Session MP4a Cognitive Radio Networks

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

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

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

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

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

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

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, Davir 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

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

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 Khalek, Robert Heath, 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

Co-Chairs: *Marco Luise 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

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

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

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

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

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

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

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

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

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, Ajman University of Science & Technology*

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
*Qing Zhao, Baha Alzalg, 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 Hatem, 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 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

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

Co-Chairs: *Hongbin Li 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

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

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

Co-Chairs: *Anna Scaglione 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, Xiao Li, 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

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: *Martin Haardt, TU Ilmenau*

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

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
*Hyunggi Kim, Hyuck Kwon, Kanghee Lee, Wichita State University*

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

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

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

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: *Marius Pesavento, TU Darmstadt*

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, Ilmenau University of Technology; Carola Schroeter, (none); 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 Ariananda, Geert Leus, Delft University of Technology*