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Forty-Eighth Asilomar Conference on Signals, Systems and Computers

November 2–5, 2014
Asilomar Hotel and
Conference Grounds

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IEEE
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FORTY-EIGHTH ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS & COMPUTERS

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Welcome from the General Chairman

Prof. Roger Woods
Queen's University Belfast, UK

Welcome to the 48th Asilomar Conference on Signals, Systems, and Computers! I have had a long involvement with the Conference since my first publication in 1997 when I was immediately struck by the unique nature of the Asilomar conference environment. The picturesque sand dunes and warm sunshine provide a wonderful backdrop to a conference that allows easy access to, and interaction with key researchers. Understandably, over the years, I have needed little persuasion to attend. There will never be a better opportunity to capture the attention of a key researcher in your area of expertise than at Asilomar!

The technical program was crafted expertly by the Technical Program Chair, Geert Leus, and his team of Technical Area Chairs: Shengli Zhou, Zhengdao Wang, Bhaskar Rao, Michael Rabbat, Zhi Tian, Visa Koivunen, Selin Aviyente, Jorn Janneck, Mohsin Jamali, and Matt McKay. I would like to thank Geert and his team for assembling a high quality program with 439 accepted papers and 164 invited papers. The student paper contest this year has been chaired by Joe Cavallaro and he has selected a total of 11 submissions. The student finalists will present poster presentations to the judges on Sunday afternoon and of course, everyone is welcome to attend. The awards for the top three papers will be made at the plenary session. A key Innovation this year has been to inculcate two major themes, brain machine interface and neural networks, and processing of high dimensional large scale data.

This year's plenary talk will be given by Professor Georgios B. Giannakis, from the University of Minnesota. I am pleased to have such a high profile speaker with a strong background in signal processing across a wide range of applications. Georgios will describe signal processing techniques to handle massive datasets which are noisy, incomplete, vulnerable to cyber-attacks and have outliers. The growth of Big Data represents a major ongoing challenge for humanity. The derivation of suitable data processing techniques is a vital activity and I am especially looking forward to seeing what can be accomplished in this area. Georgios has had a long engagement with the conference having acted as part of the technical committee as early as 1993 and presented his first paper at Asilomar in 1988.

I am privileged to have served as this year's General Chair. I hope that you enjoy the 2014 Conference programme whilst taking some time out to encounter the very special environment and atmosphere that Asilomar has to offer.

Prof. Roger Woods
Queen's University Belfast, UK, June 2014

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2014 Asilomar Conference Session Schedule

Sunday Afternoon, November 2, 2014

3:00–7:00 PM Registration — Merrill Hall
4:00–6:30 PM Student Paper Contest — Heather
7:00–9:00 PM Welcoming Dessert Reception — Merrill Hall

Monday Morning, November 3, 2014

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 — Chapel
9:45–10:15 AM Coffee Social

10:15 AM–11:55 PM MORNING SESSIONS
MA1b Learning and Optimization for Big Data
MA2b EEG Based Brain Computer Interface
MA3b Underwater Wireless Networks
MA4b Physical Layer Security I
MA5b Image and Video Processing
MA6b Sparse Estimation and Learning in Multi-Channel and Array Systems
MA7b Architectures for Detection and Decoding
MA8b1 Synchronization and Channel Estimation (Poster)
MA8b2 Relaying (Poster)
MA8b3 Active Sensing and Target Recognition (Poster)
MA8b4 Physiological Signal Processing (Poster)

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

Monday Afternoon, November 3, 2014

1:30–5:10 PM AFTERNOON SESSIONS
MP1a Big Data Analytics
MP1b Tensor-Based Signal Processing
MP2a Neural Engineering and Signal Processing
MP2b Brain Connectomics
MP3a Compressed Sensing I
MP3b Compressed Sensing II
MP4a Underwater Acoustic Communications and Networking
MP4b Massive MIMO I
MP5a Smart Grid: Learning and Optimization
MP5b Image and Video Quality
MP6a Array Calibration
MP6b Wireless Localization
MP7a Resource-aware and Domain-specific Computing
MP7b Detection and Estimation for Networked Data
MP8a1 Network Resource Allocation and Localization (Poster)
MP8a2 Bioinformatics and Medical Imaging (Poster)
MP8a3 Source Separation and Array Processing (Poster)
MP8a4 Digital Communications (Poster)
MP8a5 Image and Speech Processing (Poster)

Monday Evening, November 3, 2014

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 and a guest.

2014 Asilomar Conference Session Schedule
(continued)

Tuesday Morning, November 4, 2014

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

8:15 AM–11:55 PM MORNING SESSIONS
TA1a High Dimensional and Large Volume Data
TA1b Big Data Signal Processing
TA2a Neural Spike Train Analysis
TA2b Dynamic Brain Functional Connectivity
TA3a Distributed Optimization over Networks
TA3b Latest Coding Advances
TA4a Enhanced MIMO for LTE-A and 5G Systems
TA4b Cognitive Radio I
TA5a Recent Advances in Speech Coding
TA5b Historic Photographic Paper Identification via Textural Similarity Assessment
TA6a Compressive Methods in Radar
TA6b Statistical Inference in Smart Grids
TA7a Computer Arithmetic I
TA7b MIMO Sensing
TA8a1 Channel Estimation and MIMO Feedback (Poster)
TA8a2 Image Processing I (Poster)
TA8a3 Signal Processing for Communications (Poster)
TA8a4 Adaptive Filtering (Poster)
TA8b1 Multiuser and Cellular Systems (Poster)
TA8b2 Computer Arithmetic II (Poster)
TA8b3 Array Processing Methods (Poster)
TA8b4 Compressed Sensing III (Poster)

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

Tuesday Afternoon, November 4, 2014

1:30–5:35 PM AFTERNOON SESSIONS
TP1a Covariance Mining
TP1b Large-Scale Learning and Optimization
TP2a Bioinformatics and DNA Computing
TP2b Echo Cancellation
TP3a Machine Learning
TP3b Sparse Signal Recovery
TP4a Optical Communications
TP4b Energy Harvesting Wireless Communications
TP5a Speech Enhancement
TP5b Full Duplex MIMO Radio
TP6a Passive and Multistatic Radars
TP6b Many-Core Platforms
TP7a Design Methodologies for Signal Processing
TP7b Optical Wireless Communications
TP8a1 Cognitive Radio II (Poster)
TP8a2 Signal Processing Methods (Poster)
TP8a3 Image Processing II (Poster)
TP8a4 Sensor and Wireless Networks (Poster)
TP8b1 Topics in Communication Systems (Poster)
TP8b2 Relays, Cognitive, Cooperative, and Heterogeneous Networks (Poster)
TP8b3 Signal Processing Architectures (Poster)
TP8b4 Signal Processing Theory and Applications (Poster)

Tuesday Evening Open Evening — Enjoy the Monterey Peninsula

2014 Asilomar Conference Session Schedule
(continued)

Wednesday Morning, November 5, 2014

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–11:55 PM MORNING SESSIONS
WA1a MIMO Design for mmWave Systems
WA1b Massive MIMO II
WA2a 5G and Energy Efficient Cellular Networks
WA2b Mobile Health
WA3a Sparse Learning and Estimation
WA3b Advances in Statistical Learning
WA4a Physical Layer Security II
WA4b Coding and Decoding
WA5a Information Processing for Social and Sensor Networks
WA5b Document Processing and Synchronization
WA6a Adaptive Signal Design and Analysis
WA6b Distributed Detection and Optimization
WA7a Implementation of Sireless Systems
WA7b Video Coding Architecture and Design

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

Student Paper Contest

Heather - Sunday, November 2, 2014, 4:00–6:30 PM

Track A
"Everlasting Secrecy in Disadvantaged Wireless Environments against Sophisticated Eavesdroppers"
Azadeh Sheikholeslami, Dennis Goeckel, Hossein Pishro-nik, UMASS-Amherst, United States

"On Physical Layer Secrecy of Collaborative Compressive Detection"
Bhavya Kailkhura, Thakshila Wimalajeewa, Pramod Varshney, Syracuse University, United States

Track B
"Max-Min Fairness in Compact MU-MIMO Systems: Can the Matching Network Play a Role?"
Yahia Hassan, Armin Wittneben, ETH Zurich, Switzerland

Track C
"On the Convergence Rate of Swap-collide Algorithm for Simple Task Assignment"
Sam Safavi, Usman A. Khan, Tufts University, United States

"Secrecy Outage Analysis of Cognitive Wireless Sensor Networks"
Satyanarayana Vuppala, Jacobs University Bremen, Germany; Weigang Liu, Tharmalingam Ratnarajah, University of Edinburgh, United Kingdom; Giuseppe Abreu, Jacobs University Bremen, Germany

Track D
"Subspace Learning from Extremely Compressed Measurements"
Martin Azizyan, Akshay Krishnamurthy, Aarti Singh, Carnegie Mellon University, United States

"Abstract Algebraic-Geometric Subspace Clustering"
Manolis Tsakiris, Rene Vidal, Johns Hopkins University, United States

Track E
"Calibrating Nested Sensor Arrays with Model Errors"
Keyong Han, Peng Yang, Arye Nehorai, Washington University in St. Louis, United States

Track F
"Whitening 1/f-type Noise in Electroencephalogram Signals for Steady-State Visual Evoked Potential Brain-Computer Interfaces"
Alan Paris, Azadeh Vosoughi, George Atia, University of Central Florida, United States

Track G
"Hybrid Floating-Point Modules with Low Area Overhead on a Fine-Grained Processing Core"
Jon Pimentel, Bevan Baas, University of California, Davis, United States

Track H
"Crowdsourced Study of Subjective Image Quality"
Deepti Ghadiyaram, Alan Bovik, University of Texas at Austin, United States

2014 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 3, 2014

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

1. Welcome from the General Chairperson

Prof. Roger Woods
Queen's University of Belfast

2. Session MA1a Distinguished Lecture for the 2014 Asilomar Conference

Learning Tools for Big Data Analytics

Georgios B. Giannakis
Univ. of Minnesota, USA

Abstract
We live in an era of data deluge. Pervasive sensors collect massive amounts of information on every bit of our lives, churning out enormous streams of raw data in various formats. Mining information from unprecedented volumes of data promises to limit the spread of epidemics and diseases, identify trends in financial markets, learn the dynamics of emergent social-computational systems, and also protect critical infrastructure including the smart grid and the Internet's backbone network. While Big Data can be definitely perceived as a big blessing, big challenges also arise with large-scale datasets. The sheer volume of data makes it often impossible to run analytics using a central processor and storage, and distributed processing with parallelized multi-processors is preferred while the data themselves are stored in the cloud. As many sources continuously generate data in real time, analytics must often be performed "on-the-fly" and without an opportunity to revisit past entries. Due to their disparate origins, massive datasets are noisy, incomplete, prone to outliers, and vulnerable to cyber-attacks. These effects are amplified if the acquisition and transportation cost per datum is driven to a minimum. Overall, Big Data present challenges in which resources such as time, space, and energy, are intertwined in complex ways with data resources. Given these challenges, ample signal processing opportunities arise. This keynote lecture outlines ongoing research in novel models applicable to a wide range of Big Data analytics problems, as well as algorithms to handle the practical challenges, while revealing fundamental limits and insights on the mathematical trade-offs involved.

Biography
Georgios B. Giannakis received his Diploma in Electrical Engineering from the National Technical University of Athens, Greece, 1981. From 1982 to 1986 he was with the University of Southern California, where he received his MSc. in Electrical Engineering (1983), MSc. in Mathematics (1986), and Ph.D. in Electrical Engineering (1986). He became a Fellow of the IEEE in 1997. Since 1999, he has been a Professor with the University of Minnesota where he now holds an ADC Chair in Wireless Telecommunications in the ECE Department, and serves as director of the Digital Technology Center. His general interests span the areas of communications, networking and statistical signal processing – subjects on which he has published more than 370 journal papers, 630 conference papers, 20 book chapters, two edited books and two research monographs (h-index 108). Current research focuses on sparsity and big data analytics, wireless cognitive radios, mobile ad hoc networks, renewable energy, power grid, gene-regulatory, and social networks. He is the (co-) inventor of 22 patents issued, and the (co-) recipient of 8 best paper awards from the IEEE Signal Processing (SP) and Communications Societies, including the G. Marconi Prize Paper Award in Wireless Communications. He also received Technical Achievement Awards from the SP Society (2000), from EURASIP (2005), a Young Faculty Teaching Award, and the G. W. Taylor Award for Distinguished Research from the University of Minnesota. He is a Fellow of EURASIP, and has served the IEEE in a number of posts, including that of a Distinguished Lecturer for the IEEE-SP Society.

Program of the
2014 Asilomar Conference on
Signals, Systems, and Computers

Technical Program Chairman
Prof. Geert Leus
Delft University of Technology

Session MA1b Learning and Optimization for Big Data

MA1b-1 FLEXA: A Fast Parallel Algorithm for Big-Data Optimization 10:15 AM
Francisco Facchinei, Simone Sagratella, University of Rome, Italy; Gesualdo Scutari, University of Buffalo, the State University of New York, United States

MA1b-2 Fast and Robust Bootstrap in Analysing Large Multivariate Datasets 10:40 AM
Shahab Basiri, Esa Ollila, Visa Koivunen, Aalto University, Finland

MA1b-3 Online Manifold Embedding and Reconstruction Using Dictionary Learning 11:05 AM
Konstantinos Slavakis, University of Minnesota, United States

MA1b-4 Adaptive Estimation from Big Data via Censored Stochastic Approximation 11:30 AM
Dimitrios Berberidis, University of Minnesota, Twin Cities, United States; Gang Wang, Beijing Institute of Technology, China; Georgios Giannakis, Vassilis Kekatos, University of Minnesota, Twin Cities, United States

Session MA2b EEG Based Brain Computer Interface

MA2b-1 Decoding the Focus of Auditory Attention from Single-Trial EEG Signals 10:15 AM
Lenny Varghese, Inyong Choi, Siddharth Rajaram, Courtney Pacheco, Barbara Shinn-Cunningham, Boston University, United States

MA2b-2 Auditory Considerations for a Motor Imagery Brain-Computer Interface for Speech Synthesizer Control 10:40 AM
Jonathan Brumberg, Jeremy Burnison, University of Kansas, United States

MA2b-3 Single-Trial Identification of Failed Memory Retrieval 11:05 AM
Eunho Noh, University of California, San Diego, United States; Matthew Mollison, Tim Curran, University of Colorado Boulder, United States; Virginia de Sa, University of California, San Diego, United States

MA2b-4 Utilization of Temporal Trial Dependency in ERP based BCIs 11:30 AM
Umut Orhan, CorTech, LLC, United States; Delia Fernandez-Canellas, Universitat Politècnica de Catalunya, Spain; Murat Akcakaya, Dana H. Brooks, Deniz Erdogmus, Northeastern University, United States

Session MA3b Underwater Wireless Networks

MA3b-1 On the Feasibility of Fully Wireless Remote Control for ROVs 10:15 AM
Federico Favaro, Filippo Campagnaro, Paolo Casari, Michele Zorzi, University of Padova, Italy

MA3b-2 Modeling Realistic Underwater Acoustic Networks using Experimental Data 10:40 AM
Mandar Chitre, Gabriel Chua, National University of Singapore, Singapore

MA3b-3 Scalable Collision-Tolerant Localization in Underwater Acoustic Sensor Networks 11:05 AM
Hamid Ramezani, Geert Leus, Technical University of Delft, Netherlands; Milica Stojanovic, Northeastern University, United States

MA3b-4 New Frontiers in Underwater Acoustic Communications 11:30 AM
Andrew Singer, Thomas Riedl, University of Illinois at Urbana Champaign, United States

Session MA4b Physical Layer Security I

MA4b-1 On Physical Layer Secrecy of Collaborative Compressive Detection 10:15 AM
Bhavya Kailkhura, Thakshila Wimalajeewa, Pramod Varshney, Syracuse University, United States

MA4b-2 Converse Results for Secrecy Generation over Channels 10:40 AM
Himanshu Tyagi, University of California, San Diego, United States; Shun Watanabe, University of Tokushima, Japan

MA4b-3 Robust Transmission over Wiretap Channels with Secret Keys 11:05 AM
Rafael F. Schaefer, H. Vincent Poor, Princeton University, United States

MA4b-4 Secret Key-Private Key Generation for Multiple Terminals 11:30 AM
Huishuai Zhang, Syracuse University, United States; Lifeng Lai, Worcester Polytechnic Institute, United States; Yingbin Liang, Huishuai Zhang, Syracuse University, United States

Session MA5b Image and Video Processing

MA5b-1 Robust Image Recognition by Multi-Kernel Dictionary Learning 10:15 AM
Rituparna Sarkar, Sedat Ozer, Scott Acton, Kevin Skadron, University of Virginia, United States

MA5b-2 Robust Dual-Band MWIR/LWIR Infrared Target Tracking 10:40 AM
Chuong Nguyen, Joseph Havlicek, University of Oklahoma, United States; Guoliang Fan, Oklahoma State University, United States; John Caulfield, Cyan Systems, United States; Marios Pattichis, University of New Mexico, United States

MA5b-3 Crowdsourced Study of Subjective Image Quality 11:05 AM
Deepti Ghadiyaram, Alan Bovik, University of Texas at Austin, United States

MA5b-4 Detecting Coronal Holes for Solar Activity Modeling 11:30 AM
Marios Pattichis, University of New Mexico, United States; Rachel Hock, AFRL/RVBXS Space Vehicles Directorate, United States; Venkatesh Jatla, University of New Mexico, United States; Carl Henney, Charles Arge, AFRL/RVBXS Space Vehicles Directorate, United States

Session MA6b Sparse Estimation and Learning in Multi-Channel and Array Systems

MA6b-1 Characterization of Orthogonal Subspaces for Alias-Free Reconstruction of Damped Complex Exponential Modes in Sparse Arrays 10:15 AM
Pooria Pakrooh, Ali Pezeshki, Louis L. Scharf, Colorado State University, United States

MA6b-2 Exploiting Sparsity during the detection of High-Order QAM Signals in Large Dimension MIMO Systems 10:40 AM
Oleg Tanchuk, Bhaskar Rao, University of California, San Diego, United States

MA6b-3 Structured Sparse Representation with Low-Rank Interference 11:05 AM
Minh Dao, Yuanming Suo, Sang (Peter) Chin, Trac Tran, Johns Hopkins University, United States

MA6b-4 Grid-Less Algorithms for Identifying More Spectral Lines Than Sensors. 11:30 AM
Piya Pal, University of Maryland, College Park, United States; P. P. Vaidyanathan, California Institute of Technology, United States

Session MA7b Architectures for Detection and Decoding

MA7b-1 A Reduced-Complexity Iterative Decoding Scheme for Quasi-Cyclic Low-Density Parity-Check Codes 10:15 AM
Shu Lin, Keke Liu, Juane Li, University of California, Davis, United States

MA7b-2 Efficient Adaptive List Successive Cancellation Decoder for Polar Codes 10:40 AM
Chuan Zhang, National Mobile Communications Research Laboratory, China; Zhongfeng Wang, Broadcom Corporation, United States; Xiaohu You, National Mobile Communications Research Laboratory, China

MA7b-3 Decoder Diversity Architectures for Finite Alphabet Iterative Decoders for LDPC Codes 11:05 AM
Bane Vasic, University of Arizona, United States; David Declercq, Universite de Cergy-Pontoise, France; Shiva Planjery, Codelucida, United States

MA7b-4 Asynchronous Design for Precision-Scaleable Energy-Efficient LDPC Decoder 11:30 AM
Jingwei Xu, Gwan Choi, Texas A&M university, United States

Session MA8b1 Synchronization and Channel Estimation

10:15 AM–11:55 AM

MA8b1-1 Frequency Tracking with Intermittent Wrapped Phase Measurement Using the Rao-Blackwellized Particle Filter
Maryam Eslami Rasekh, Upamanyu Madhow, University of California, Santa Barbara, United States; Raghuraman Mudumbai, University of Iowa, United States

MA8b1-2 Improving IEEE 1588v2 Time Synchronization Performance with Phase Locked Loop
Rico Jahja, Suk-seung Hwang, Goo-Rak Kwon, Jae-young Pyun, Seokjoo Shin, Chosun University, Indonesia

MA8b1-3 Superimposed Pilots based Secure Communications for Multiple Antenna System
Yejian Chen, Bell Laboratories, Alcatel-Lucent, Germany

MA8b1-4 An Improved ESPRIT-Based Blind CFO Estimation Algorithm In OFDM Systems
Yen-Chang Pan, See-May Phoong, Yuan-Pei Lin, National Taiwan University, Taiwan

MA8b1-5 Blind, Low Complexity Estimation of Time and Frequency Offsets in OFDM Systems
Rohan Ramlall, University of California, Irvine, United States

MA8b1-6 Efficient NLOS Optical Wireless Channel Estimation based on Sparse Pulse
Xiaoke Zhang, Chen Gong, Zhengyuan Xu, University of Science and Technology of China, China

MA8b1-7 Channel Estimation and Precoder Design for Millimeter-Wave Communications: The Sparse Way
Philip Schniter, Ohio State University, United States; Akbar Sayeed, Wisconsin, United States

Session MA8b2 Relaying

10:15 AM–11:55 AM

MA8b2-1 Performance Analysis of Fixed Gain MIMO AF Relaying with Co-Channel Interferences
Min Lin, Min Li, PLA University of Science and Technology, China; Wei-Ping Zhu, Concordia University, Canada; Kang An, PLA University of Science and Technology, China

MA8b2-2 On Carrier-Cooperation in Parallel Gaussian MIMO Relay Channels with Partial Decode-and-Forward
Christoph Hellings, Wolfgang Utschick, Technische Universität München, Germany

MA8b2-3 Enhanced Relay Cooperation via Rate Splitting
Ivana Maric, Dennis Hui, Ericsson, United States

MA8b2-4 Alternate versus Simultaneous Relaying in MIMO Cellular Relay Networks: A Degrees of Freedom Study
Aya Salah, Amr El-Keyi, Nile University, Egypt; Mohammed Nafie, Nile University / Cairo University, Egypt

MA8b2-5 Low-Complexity Two-Way AF MIMO Relay Strategy for Wireless Relay Networks
Kanghee Lee, Republic of Korea Air Force, Republic of Korea; Visvakumar Aravinthan, Sunghoon Moon, Wichita State University, United States; Jongbum Ryou, Sungo Kim, Changki Moon, Inha Hyun, Republic of Korea Air Force, Republic of Korea

MA8b2-6 Blind Self-Interference Cancellation for Full-Duplex Relays
Gustavo Gonzalez, Fernando Gregorio, Juan Cousseau, CONICET - Universidad Nacional del Sur, Argentina; Armin Wittneben, ETH Zurich, Switzerland

Session MA8b3 Active Sensing and Target Recognition

10:15 AM–11:55 AM

MA8b3-1 Proximal Constrained Waveform Design Algorithms for Cognitive Radar STAP
Pawan Setlur, Wright State Research Institute, United States; Muralidhar Rangaswamy, Air Force Research Laboratory, United States

MA8b3-2 The Generalized Sinusoidal Frequency Modulated Waveform for High Duty Cycle Active Sonar
David Hague, John Buck, University of Massachusetts Dartmouth, United States

MA8b3-3 Concurrent Exploration of Orthogonal Waveform and Co-Prime Array for Quick and High Resolution Scanning
Shuo Yang, Xin Wang, Xuehong Lin, Stony Brook University, United States

MA8b3-4 On Bayesian Transmit Signal Design using Information Theory
Mir H. Mahmood, NextNav LLC, United States; Mark R. Bell, Purdue University, United States

MA8b3-5 Improved Distributed Automatic Target Recognition Performance by Exploiting Dominant Scatterer Spatial Diversity
John Wilcher, William Melvin, Georgia Tech Research Institute, United States; Aaron Lanterman, Georgia Institute of Technology, United States

MA8b3-6 Semi-Supervised Classification of Terrain Features in Polarimetric SAR Images using H/A/alpha and the General Four-Component Scattering Power Decompositions
Stephen Dauphin, Sandia National Laboratories, United States; Margaret Cheney, Colorado State University, United States; Derek West, Robert Riley, Sandia National Laboratories, United States

MA8b3-7 A Super-Resolving Near-Field Holographic Method for Underwater EM Signature Modeling
Hatim Alqadah, Naval Research Laboratory, United States; Nicolas Valdivia, US Naval Research Laboratory, United States

MA8b3-8 Limitations and Capabilities of the Fractional Spectrogram Analysis Tool for SAR-Based Detection of Multiple Vibrating Targets
Adebello Jelili, Balu Santhanam, Majeed Hayat, University of New Mexico, United States

Session MA8b4 Physiological Signal Processing

10:15 AM–11:55 AM

MA8b4-1 Sample-Based Cross-Frequency Coupling Analysis with CFAR Detection
Charles Creusere, Nathan McRae, Mark Norman, Philip Davis, New Mexico State University, United States

MA8b4-2 Classification of Human Viewers using SVM
Philip Davis, Charles Creusere, Jim Kroger, New Mexico State University, United States

MA8b4-3 Activity Recognition using Statistical Gait Parameters from a Single Accelerometer
Andrew Vaughan, Alessio Medda, Brian Liu, Shean Phelps, Georgia Tech Research Institute, United States

MA8b4-4 Intra-Patient and Inter-Patient Seizure Prediction from Spatial-Temporal EEG Features
Shuoxin Ma, Daniel Bliss, Arizona State University, United States

MA8b4-5 Effective Connectivity in fMRI from Mutual Prediction Approach
Marisel Villafañe-Delgado, Selin Aviyente, Michigan State University, United States

MA8b4-6 Whitening 1/f-type Noise in Electroencephalogram Signals for Steady-State Visual Evoked Potential Brain-Computer Interfaces
Alan Paris, Azadeh Vosoughi, George Atia, University of Central Florida, United States

MA8b4-7 Adaptive Learning of Behavioral Tasks for Patients with Parkinson's Disease Using Signals from Deep Brain Stimulation
Nazanin Zaker, University of Denver, United States; Arindam Dutta, Alexander Maurer, Arizona State University, United States; Jun Zhang, University of Denver, United States; Sara Hanrahan, Adam Hebb, Colorado Neurological Institute, United States; Narayan Kovvali, Antonia Papandreou-Suppappola, Arizona State University, United States

Session MP1a Big Data Analytics

MP1a-1 Universal Sequential Outlier Hypothesis Testing 1:30 PM
Yun Li, Sirin Nitinawarat, Venugopal Veeravalli, University of Illinois at Urbana-Champaign, United States

MP1a-2 Parsimonious Models for Random Variables and Stochastic Processes 1:55 PM
Weiyu Xu, University of Iowa, United States

MP1a-3 Fundamental Limits on Information-Friction Energy of Big-Data Computing 2:20 PM
Majid Mahzoon, Pulkit Grover, Carnegie Mellon University, India

MP1a-4 Quickest Search Over Correlated Sequences 2:45 PM
Ali Tajer, Wayne State University, United States

Session MP1b Tensor-Based Signal Processing

MP1b-1 Memory-Efficient Parallel Computation of Tensor and Matrix Products for Big Tensor Decomposition 3:30 PM
Niranjay Ravindran, Nicholas Sidiropoulos, Shaden Smith, George Karypis, University of Minnesota, United States

MP1b-2 Recent Advances on Tensor Models and their Relevance for Multidimensional Data Processing 3:55 PM
Salah Bourennane, Julien Marot, Ecole Centrale Marseille - Institut Fresnel, France

MP1b-3 Tensor-Based Channel Estimation for Non-Regenerative Two-Way Relaying Networks with Multiple Relays 4:20 PM
Jianshu Zhang, Kristina Naskovska, Martin Haardt, Ilmenau University of Technology, Germany

MP1b-4 Fast Non-Unitary Simultaneous Diagonalization of Third-Order Tensors 4:45 PM
Victor Maurandi, Eric Moreau, University of Toulon, France

Session MP2a Neural Engineering and Signal Processing

MP2a-1 Electroencephalography-based Alzheimer's Disease Diagnosis: Where we are at Now and Where we are Heading 1:30 PM
Tiago Falk, Institut National de la Recherche Scientifique, Canada

MP2a-2 EEG Event Detection Using Big Data 1:55 PM
Iyad Obeid, Amir Harati, Joseph Picone, Temple University, United States

MP2a-3 A Source Localization Approach to Creating a Neural Interface with the Peripheral Nervous System 2:20 PM
Jose Zariffa, Toronto Rehabilitation Institute - University Health Network, Canada

MP2a-4 A Picture is Worth a Thousand Words: Some Examples of the Utility of Biomedical Image Processing in Brain Research 2:45 PM
Negar Memarian, University of California, Los Angeles, United States

Session MP2b Brain Connectomics

MP2b-1 Brain-Network Continua Revealed with Multivariate Performance Metrics. 3:30 PM
Stephen Strother, Baycrest and University of Toronto, Canada

MP2b-2 Learning with Multi-Site fMRI Graph Data 3:55 PM
Gabriel Castrillon, Seyed-Ahmad Ahmadi, Nassir Navab, Technische Universität München, Germany; Jonas Richiardi, Stanford University, United States

MP2b-3 Using Computer Vision to Understand Biological Vision 4:20 PM
Dmitri Chklovskii, Simons Center for Data Analysis, United States

MP2b-4 Dynamic Functional Connectivity: Probing Spontaneous Network Reorganization 4:45 PM
Dimitri Van De Ville, Nora Leonardi, École Polytechnique Fédérale de Lausanne / University of Geneva, Switzerland

Session MP3a Compressed Sensing I

MP3a-1 Tensor Analytic Methods for Single Pixel Video Compressive Sensing 1:30 PM
Zemin Zhang, Shuchin Aeron, Tufts University, United States; Petros Boufounos, Mitsubishi Electric Research Laboratory, United States

MP3a-2 On the Applicability of Matrix Completion on MIMO Radars 1:55 PM
Shunqiao Sun, Athina Petropulu, Rutgers University, United States

MP3a-3 Subspace Learning from Extremely Compressed Measurements 2:20 PM
Martin Azizyan, Akshay Krishnamurthy, Aarti Singh, Carnegie Mellon University, United States

MP3a-4 Analysis of Misfocus Effects in Compressive Optical Imaging 2:45 PM
Wenbing Dang, Ali Pezeshki, Randy Bartels, Colorado State University, United States

Session MP3b Compressed Sensing II

MP3b-1 Filter Design for a Compressive Sensing Delay Estimation Framework 3:30 PM
Misagh Khayambashi, Lee Swindlehurst, University of California, Irvine, United States

MP3b-2 Adaptive Sequential Compressive Detection 3:55 PM
Davood Mardani, George Atia, University of Central Florida, United States

MP3b-3 A Recursive Way for Sparse Reconstruction of Parametric Spaces 4:20 PM
Oguzhan Teke, Bilkent University, Turkey; Ali Cafer Gurbuz, TOBB University of Economics and Technology, Turkey; Orhan Arikan, Bilkent University, Turkey

MP3b-4 Subspace Methods for Recovery of Low Rank & Joint Sparse Matrices 4:45 PM
Sampurna Biswas, Mathews Jacob, Soura Dasgupta, University of Iowa, United States

Session MP4a Underwater Acoustic Communications and Networking

MP4a-1 Experimental Study of Secret Key Generation in Underwater Acoustic Channels 1:30 PM
Yi Huang, University of Connecticut, United States; Lifeng Lai, Worcester Polytechnic Institute, United States; Shengli Zhou, Zhijie Shi, University of Connecticut, United States

MP4a-2 Random Linear Packet Coding for Fading Channels: Joint Power and Rate Control 1:55 PM
Rameez Ahmed, Milica Stojanovic, Northeastern University, United States

MP4a-3 Underwater Acoustic Communications in Great Lakes and in Oceans: What is the Difference? 2:20 PM
Wensheng Sun, Mohsen Jamalabdollahi, Zhaohui Wang, Seyed Zekavat, Michigan Technological University, United States

MP4a-4 Information-Guided Pilot Insertion for Capacity Improvement in OFDM Underwater Acoustic Communications 2:45 PM
Xilin Cheng, Colorado State University, United States; Miaowen Wen, Xiang Cheng, Peking University, China; Liuqing Yang, Colorado State University, United States

Session MP4b Massive MIMO I

MP4b-1 Jsdm and Multi-Cell Networks: Handling Inter-Cell Interference Through Long-Term Antenna Statistics 3:30 PM
Ansuman Adhikary, University of Southern California, United States; Giuseppe Caire, Technical University Berlin, Germany

MP4b-2 Enabling Massive MIMO Systems in the FDD Mode thanks to D2D Communications 3:55 PM
Haifan Yin, Laura Cottatellucci, David Gesbert, Eurecom, France

MP4b-3 Massive MIMO As a Cyber-Weapon 4:20 PM
Erik G. Larsson, Linkoping University, Sweden; Marcus Karlsson, Linköping University, Sweden

MP4b-4 Large Antenna Array and Propagation Environment Interaction 4:45 PM
Xiang Gao, Meifang Zhu, Fredrik Rusek, Fredrik Tufvesson, Ove Edfors, Lund University, Sweden

Session MP5a Smart Grid: Learning and Optimization

MP5a-1 Dynamic Attacks on Power Systems Economic Dispatch 1:30 PM
Jinsub Kim, Lang Tong, Robert Thomas, Cornell University, United States

MP5a-2 Line Outage Detection in Power Transmission Networks Via Message Passing Algorithms 1:55 PM
Jianshu Chen, University of California, Los Angeles, United States; Yue Zhao, Andrea Goldsmith, Stanford University, United States; H. Vincent Poor, Princeton University, United States

MP5a-3 Online Learning Approaches for Dynamic Optimal Power Flow 2:20 PM
Seung-Jun Kim, Georgios Giannakis, University of Minnesota, United States

MP5a-4 Decentralized Primary Frequency Control in Power Networks 2:45 PM
Changhong Zhao, Steven Low, California Institute of Technology, United States

Session MP5b Image and Video Quality

MP5b-1 Image Assisted Upsampling of Depth Map via Nonlocal Similarity 3:30 PM
Wentian Zhou, Xin Li, Daryl Reynolds, West Virginia University, United States

MP5b-2 Joint Source-Channel Rate-Distortion Optimization with Motion Information Sharing for H.264/AVC Video-Plus-Depth Coding 3:55 PM
Yueh-Lun Chang, University of California, San Diego, United States; Yuan Zhang, Communication University of China, China; Pamela Cosman, University of California, San Diego, United States

MP5b-3 Real-Time 3D Rotation Smoothing for Video Stabilization 4:20 PM
Chao Jia, Zeina Sinno, Brian Evans, University of Texas at Austin, United States

MP5b-4 Video De-Interlacing Using Asymmetric Nonlocal-Means Filtering 4:45 PM
Roozbeh Dehghannasiri, Texas A&M University, United States

Session MP6a Array Calibration

MP6a-1 Bilinear Compressed Sensing for Array Self-Calibration 1:30 PM
Benjamin Friedlander, University of California, Santa Cruz, United States; Thomas Strohmer, University of California, Davis, United States

MP6a-2 Calibrating Nested Sensor Arrays with Model Errors 1:55 PM
Keyong Han, Peng Yang, Arye Nehorai, Washington University in St. Louis, United States

MP6a-3 A New Method for DOA Estimation in the Presence of Unknown Mutual Coupling of an Antenna Array 2:20 PM
Eric Wei-Jhong Ding, Borching Su, National Taiwan University, Taiwan

MP6a-4 An Angular Sampling Theorem for the Usable Frequency Range of Antenna Array Calibration Measurements 2:45 PM
Chung-Cheng Ho, Scott Douglas, Southern Methodist University, United States

Session MP6b Wireless Localization

MP6b-1 Direct Localization of Emitters Using Widely Spaced Sensors in Multipath Environments 3:30 PM
Nil Garcia, New Jersey Institute of Technology, United States; Marco Lops, Universita degli Studi di Cassino, Italy; Martial Coulon, University of Toulouse, France; Alexander Haimovich, New Jersey Institute of Technology, United States; Jason Dabin, Space and Naval Warfare Systems Command - Systems Center Pacific, United States

MP6b-2 Millimeter-Wave Personal Radars for 3D Environment Mapping 3:55 PM
Anna Guerra, Francesco Guidi, Davide Dardari, University of Bologna, Italy

MP6b-3 Simultaneous Tracking and RSS Model Calibration by Robust Filtering 4:20 PM
Juan Manuel Castro-Arvizu, Universitat Politècnica de Catalunya, Spain; Jordi Vilà-Valls, Pau Closas, Centre Tecnològic de Telecomunicacions de Catalunya, Spain; Juan Fernández-Rubio, Universitat Politècnica de Catalunya, Spain

MP6b-4 Proximity Detection with RFID in the Internet of Things 4:45 PM
Miodrag Bolic, Majed Rostamian, University of Ottawa, United States; Petar Djuric, Stony Brook University, United States

Session MP7a Resource-aware and Domain-specific Computing

MP7a-1 Partial Expansion of Dataflow Graphs for Resource-Aware Scheduling of Multicore Signal Processing Systems 1:30 PM
George Zaki, IGI Technologies, United States; William Plishker, Shuvra Bhattacharyya, University of Maryland, College Park, United States; Frank Fruth, Texas Instruments, United States

MP7a-2 Performance Analysis of Weakly-Consistent Scenario-Aware Dataflow Graphs 1:55 PM
Marc Geilen, TU Eindhoven, Netherlands; Joachim Falk, University of Erlangen-Nuremberg, Germany; Christian Haubelt, Universität Rostock, Germany; Twan Basten, TU Eindhoven, Netherlands; Bart Theelen, TNO-ESI, Netherlands; Sander Stuijk, TU Eindhoven, Netherlands

MP7a-3 Application-driven Reconfiguration of Shared Resources for Timing Predictability of MPSoC Platforms 2:20 PM
Deepak Gangadharan, Ericles Sousa, Vahid Lari, Frank Hannig, Juergen Teich, University of Erlangen-Nuremberg, Germany

MP7a-4 Accelerating the Dynamic Time Warping Distance Measure using Logarithmic Arithmetic 2:45 PM
Joseph Tarango, University of California, Riverside / Intel, United States; Eamonn Keogh, Philip Brisk, University of California, Riverside, United States

Session MP7b Detection and Estimation for Networked Data

MP7b-1 Detecting Convoys in Networks of Short-Range Sensors 3:30 PM
Sean Lawlor, Michael Rabbat, McGill University, Canada

MP7b-2 Distributed SPRT for Gaussian Binary Hypothesis Testing: Performance Analysis and Fundamental Trade-offs 3:55 PM
Anit Sahu, Soummya Kar, Carnegie Mellon University, United States

MP7b-3 Denoising of Network Graphs using Topology Diffusion 4:20 PM
Mohammad Aghagolzadeh, Hayder Radha, Michigan State University, United States

MP7b-4 Optimal Hypothesis Testing with Combinatorial Structure: Applications in Graph Detection 4:45 PM
Yue M. Lu, Harvard University, United States

Session MP8a1 Network Resource Allocation and Localization

1:30 PM–3:10 PM

MP8a1-1 Optimal Scheduling Policies and the Performance of the CDF Scheduling
PhuongBang Nguyen, Bhaskar Rao, University of California, San Diego, United States

MP8a1-2 Joint Interference and User Association Optimization in Cellular Wireless Networks
Changkyu Kim, Russell Ford, Sundeep Rangan, New York University, Polytechnic School of Engineering, United States

MP8a1-3 Throughput Maximization in Wireless Powered Communication Networks with Energy Saving
Rui Wang, Donald Brown, Worcester Polytechnic Institute, United States

MP8a1-4 Optimal Flow Bifurcation in Networks with Dual Base Station Connectivity and Non-ideal Backhaul
Amitav Mukherjee, Hitachi America, Ltd., United States

MP8a1-5 Joint Sequential Target State Estimation and Clock Synchronization in Wireless Sensor Networks
Jichuan Li, Arye Nehorai, Washington University in St. Louis, United States

MP8a1-6 High-Accuracy Vehicle Position Estimation Using a Cooperative Algorithm with Anchors and Probe Vehicles
Ramez L. Gerges, First Responder System Testbed (FiRST), United States; John J. Shynk, University of California, Santa Barbara, United States

MP8a1-7 Statistical Scheduling of Economic Dispatch and Energy Reserves of Hybrid Power Systems with High Renewable Energy Penetration
Yi Gu, Huaiguang Jiang, University of Denver, United States; Yingchen Zhang, National Renewable Energy Laboratory, United States; David Wenzhong Gao, University of Denver, United States

MP8a1-8 Packet Loss and Route Loss Mitigation for Video in Mobile Ad-hoc Networks
Yiting Liao, Jerry Gibson, University of California, Santa Barbara, United States

Session MP8a2 Bioinformatics and Medical Imaging

1:30 PM–3:10 PM

MP8a2-1 Comparison and Integration of Genomic Profiles Predict Brain Cancer Survival and Drug Targets
Katherine Aiello, Orly Alter, University of Utah, United States

MP8a2-2 Tensor GSVD for Comparison of Two Large-Scale Multidimensional Datasets
Theodore Schomay, Orly Alter, University of Utah, United States

MP8a2-3 An Efficient ADMM-based Sparse Reconstruction Strategy for Multi-Level Sampled MRI
Joshua Trzasko, Eric Borisch, Paul Weavers, Armando Manduca, Phillip Young, Stephen Riederer, Mayo Clinic, United States

MP8a2-4 Multiscale Functional Networks in Human Resting State Functional MRI
Jacob Billings, Emory University, United States; Alessio Medda, Georgia Tech Research Institute, United States; Shella Keilholz, Georgia Institute of Technology / Emory University, United States

MP8a2-5 Piecewise Linear Slope Estimation
Atul Ingle, William Sethares, Tomy Varghese, James Bucklew, University of Wisconsin-Madison, United States

MP8a2-6 Fast Magnetic Resonance Parametric Imaging via Model-Based Low-Rank Matrix Factorization
Parisa Amiri Eliasi, New York University, Polytechnic School of Engineering, United States; Li Feng, Ricardo Otazo, New York University, School of Medicine, United States; Sundeep Rangan, New York University, Polytechnic School of Engineering, United States

MP8a2-7 A Signal Model for Forensic DNA Mixtures
Ullrich Mönich, Massachusetts Institute of Technology, United States; Catherine Grgicak, Boston University, United States; Viveck Cadambe, Yonglin Wu, Massachusetts Institute of Technology, United States; Genevieve Wellner, Boston University, United States; Ken Duffy, National University of Ireland Maynooth, Ireland; Muriel Médard, Massachusetts Institute of Technology, United States

Session MP8a3 Source Separation and Array Processing

1:30 PM–3:10 PM

MP8a3-1 Forward - Backward Greedy Algorithms for Signal Demixing
Nikhil Rao, Parikshit Shah, Stephen Wright, University of Wisconsin, United States

MP8a3-2 An Extended Family of Bounded Component Analysis Algorithms
Huseyin Atahan Inan, Alper Tunga Erdogan, Koc University, Turkey

MP8a3-3 Source Separation in Noisy and Reverberant Environment using Miniature Microphone Array
Shuo Li, Milutin Stanacevic, Stony Brook University, United States

MP8a3-4 Competitive Algorithm Blending for Enhanced Source Separation
Keith Gilbert, Karen Payton, University of Massachusetts Dartmouth, United States

MP8a3-5 Design of Coprime DFT Arrays and Filter Banks
Chun-Lin Liu, P. P. Vaidyanathan, California Institute of Technology, United States

MP8a3-6 The Differential Geometry of Asymptotically Efficient Subspace Estimation
Thomas Palka, Raytheon, United States; Richard Vaccaro, University of Rhode Island, United States

MP8a3-7 Effects of Network Topology on the Conditional Distributions of Surrogated Generalized Coherence Estimates
Lauren Crider, Douglas Cochran, Arizona State University, United States

MP8a3-8 Maximum Energy Sequential Matrix Diagonalisation for Parahermitian Matrices
Jamie Corr, Keith Thompson, Stephan Weiss, University of Strathclyde, United Kingdom; John McWhirter, Cardiff University, United Kingdom; Ian Proudler, Loughbourgh University, United Kingdom

Session MP8a4 Digital Communications

1:30 PM–3:10 PM

MP8a4-1 High-throughput DOCSIS Upstream QC-LDPC Decoder
Bei Yin, Michael Wu, Rice University, United States; Christopher Dick, Xilinx Incorporated, United States; Joseph R. Cavallaro, Rice University, United States

MP8a4-2 On the Performance of LDPC and Turbo Decoder Architectures with Unreliable Memories
Joao Andrade, Instituto de Telecomunicações, Universidade de Coimbra, Portugal; Aida Vosoughi, Guohui Wang, Rice University, United States; Georgios Karakonstantis, Andreas Burg, Telecommunication Circuits Lab, EPFL, Switzerland; Gabriel Falcao, Vitor Silva, Instituto de Telecomunicações, Universidade de Coimbra, Portugal; Joseph R. Cavallaro, Rice University, United States

MP8a4-3 Successive Cancellation List Polar Decoder using Log-likelihood Ratios
Bo Yuan, Keshab K. Parhi, University of Minnesota, Twin Cities, United States

MP8a4-4 60 GHz Synthetic Aperture Radar for Short-Range Imaging: Theory and Experiments
Babak Mamandipoor, University of California, Santa Barbara, United States; Greg Malysa, Amin Arbabian, Stanford University, United States; Upamanyu Madhow, University of California, Santa Barbara, United States; Karam Noujeim, Anritsu Co., United States

MP8a4-5 A Systematic Procedure for Deriving Block-Parallel, Power Efficient, Digital Filter Architectures for High-Speed Data Conversion
Paraskevas Argyropoulos, Hanoch Lev-Ari, Northeastern University, United States

MP8a4-6 Distributed Synchronization of a Testbed Network with USRP N200 Radio Boards
Gilberto Berardinelli, Jakob L. Buthler, Fernando M. L. Tavares, Oscar Tonelli, Dereje A. Wassie, Farhood Hakhamaneshi, Troels B. Sørensen, Preben Mogensen, Aalborg University, Denmark

MP8a4-7 Design Study of a Short-Range Airborne UAV Radar for Human Monitoring
Sevgi Zubeyde Gurbuz, TOBB University of Economics and Technology, Turkey; Muhsin Alperen Bolucek, Tunahan Kirilmaz, TUALCOM Communication and RF Technologies, Turkey; Unver Kaynak, TOBB University of Economics and Technology, Turkey

MP8a4-8 Max-Min Fairness in Compact MU-MIMO Systems: Can the Matching Network Play a Role?
Yahia Hassan, Armin Wittneben, ETH Zurich, Switzerland

Session MP8a5 Image and Speech Processing

1:30 PM–3:10 PM

MP8a5-1 Large Margin Nearest Neighborhood Metric Learning for I-Vector Based Speaker Verification
Waquar Ahmad, Harish Karnick, Rajesh M Hegde, Indian Institute of Technology Kanpur, India

MP8a5-2 Acoustic Echo and Noise Cancellation using Kalman Filter in a Modified GSC Framework
Subhash Tanan, Karan Nathwani, Ayush Jain, Rajesh M Hegde, Indian Institute of Technology Kanpur, India; Ruchi Rani, Abhijit Tripathy, Samsung R&D Institute India Delhi, India

MP8a5-3 Paper Texture Classification via Multi-Scale Restricted Boltzman Machines
Arash Sangari, William Sethares, University of Wisconsin-Madison, United States

MP8a5-4 Regularized Logistic Regression Based classification for Infrared Images
Golrokh Mirzaei, Mohsin M. Jamali, University of Toledo, United States; Jeremy Ross, Peter Gorsevski, Verner Bingman, Bowling Green State University, United States

MP8a5-5 Localizing Near and Far Field Acoustic Sources with Distributed Microphone Arrays
Martin Weiss Hansen, Jesper Rindom Jensen, Mads Græsbøll Christensen, Aalborg University, Denmark

MP8a5-6 Graph Wavelet Transform: Application to Image Segmentation
Alp Ozdemir, Selin Aviyente, Michigan State University, United States

MP8a5-7 Histogram Transform Model Using MFCC Features for Text-Independent Speaker Identification
Hong Yu, Zhanyu Ma, Beijing University of Posts and Telecommunications, China; Minyue Li, Jun Guo, Google, Inc., Sweden

Session TA1a High Dimensional and Large Volume Data

TA1a-1 Tensor Restricted Isomety Property for Multilinear Sparse System of Genomic Interactions 8:15 AM
Alexandra Fry, Carmeliza Navasca, University of Alabama at Birmingham, United States

TA1a-2 Analysis of a Separable STAP Algorithm for Very Large Arrays 8:40 AM
Jie Chen, Feng Jiang, A. Lee Swindlehurst, University of California, Irvine, United States

TA1a-3 Spatial-Temporal Characterization of Synchrophasor Measurement Systems - A Big Data Approach for Smart Grid System Situational Awareness 9:05 AM
Huaiguang Jiang, University of Denver, United States; Lei Huang, Electric Power Research Institute, China Southern Power Grid, China; Jun Zhang, University of Denver, United States; Yingchen Zhang, National Renewable Energy Laboratory, United States; David Wenzhong Gao, University of Denver, United States

TA1a-4 Performance Analysis of the Tucker HOSVD for Extracting Low-Rank Structure from Multiple Signal-Plus-Noise Matrices 9:30 AM
Himanshu Nayar, Rajesh Nadakuditi, University of Michigan, Ann Arbor, United States

Session TA1b Big Data Signal Processing

TA1b-1 A Comparison of Clustering and Missing Data Methods for Health Sciences 10:15 AM
Ran Zhao, Claremont Graduate University, United States; Deanna Needell, Claremont McKenna College, United States; Christopher Johansen, Jerry Grenard, Claremont Graduate University, United States

TA1b-2 Discovery of Principles of Nature from Matrix and Tensor Modeling of Large-Scale Molecular Biological Data 10:40 AM
Orly Alter, University of Utah, United States

TA1b-3 Big Data Clustering Using Random Sampling and Consensus 11:05 AM
Panagiotis Traganitis, Konstantinos Slavakis, Georgios Giannakis, University of Minnesota, United States

TA1b-4 Classification of Streaming Big Data with Misses 11:30 AM
Fatemeh Sheikholeslami, Morteza Mardani, Georgios Giannakis, University of Minnesota, United States

Session TA2a Neural Spike Train Analysis

TA2a-1 Neural Spike Train Denoising by Point Process Re-weighted Iterative Smoothing 8:15 AM
Demba Ba, Massachusetts Institute of Technology, United States; Behtash Babadi, University of Maryland, College Park, United States; Emery Brown, Massachusetts Institute of Technology / Harvard University, United States

TA2a-2 Neurally Inspired Objective Function for Subspace Tracking and Online Feature Learning 8:40 AM
Dmitri Chklovskii, Simons Center for Data Analysis, United States

TA2a-3 Tracking Influence in Dynamic Neural Networks 9:05 AM
Rebecca Willett, University of Wisconsin-Madison, United States; Eric Hall, Duke University, United States

TA2a-4 A Design and Implementation Framework for Unsupervised High-resolution Recursive Filters in Neuromotor Prosthesis Applications 9:30 AM
Islam Badreldin, Karim Oweiss, Michigan State University, United States

Session TA2b Dynamic Brain Functional Connectivity

TA2b-1 Functional Connectivity Differences in Brain Networks: Contributions of Shared and Unshared Variance 10:15 AM
Michael Cole, Rutgers University, United States; Grega Repovs?, University of Ljubljana, United States; Alan Anticevic, Yale University, United States

TA2b-2 Beyond Brain Maps: Functional Connectivity versus Task-Based Activations in Mental State Prediction 10:40 AM
Irina Rish, IBM T. J. Watson Research Center, United States

TA2b-3 Approaches for Capturing Dynamic Connectivity States in fMRI data 11:05 AM
Vince Calhoun, University of New Mexico, United States

TA2b-4 Characterizing whole Brain Modulatory Interactions in Resting-State 11:30 AM
Bharat Biswal, New Jersey Institute of Technology, United States

Session TA3a Distributed Optimization over Networks

TA3a-1 The ADMM Algorithm for Distributed Averaging: Convergence Rates and Optimal Parameter Selection 8:15 AM
Euhanna Ghadimi, Andr´e Teixeira, Royal Institute of Technology-KTH, Sweden; Michael Rabbat, McGill University, Canada; Mikael Johansson, Royal Institute of Technology-KTH, Sweden

TA3a-2 Performance Analysis of Multitask Diffusion Adaptation Over Asynchronous Networks 8:40 AM
Roula Nassif, Cédric Richard, André Ferrari, Université de Nice Sophia-Antipolis, France; Ali H. Sayed, University of California, Los Angeles, France

TA3a-3 On the Convergence of an Alternating Direction Penalty Method for Nonconvex Problems 9:05 AM
Sindri Magnússon, P. Chathuranga Weeraddana, KTH Royal Institute of Technology, Sweden; Michael Rabbat, McGill University, Canada; Carlo Fischione, KTH Royal Institute of Technology, Sweden

TA3a-4 Decentralized Regression with Asynchronous Sub-Nyquist Sampling 9:30 AM
Hoi To Wai, Anna Scaglione, University of California, Davis, United States

Session TA3b Latest Coding Advances

TA3b-1 Joint Space-Time Code Designs for Multiple Access Channels 10:15 AM
Tianyi Xu, InterDigital Communications, Inc., United States; Xiang-Gen Xia, University of Delaware, United States

TA3b-2 Quantized Distributed Reception Techniques for MIMO Wireless Systems 10:40 AM
Junil Choi, David Love, Purdue University, United States

TA3b-3 Generalized Spatial Modulation for Large-Scale MIMO Systems: Analysis and Detection 11:05 AM
Theagarajan Lakshmi Narasimhan, Patchava Raviteja, Ananthanarayanan Chockalingam, Indian Institute of Science, India

TA3b-4 Bandwidth Analysis of Low-Complexity Decoupling Networks for Multiple Coupled Antennas 11:30 AM
Ding Nie, Bertrand Hochwald, University of Notre Dame, United States

Session TA4a Enhanced MIMO for LTE-A and 5G Systems

TA4a-1 3D Channel Models for Elevation Beamforming and FD-MIMO in LTE-A and 5G 8:15 AM
Jianzhong (Charlie) Zhang, Yang Li, Young-Han Nam, Samsung, United States

TA4a-2 Advanced Antenna Solutions for 5G Wireless Access 8:40 AM
Erik Dahlman, Stefan Parkvall, David Astely, Hugo Tullberg, Ericsson, Sweden

TA4a-3 Multi-Layer Precoding for Full-Dimensional MIMO Systems 9:05 AM
Ahmed Alkhateeb, University of Texas at Austin, United States; Geert Leus, Delft University of Technology, Netherlands; Robert W. Heath Jr., University of Texas at Austin, United States

TA4a-4 Massive MIMO for mmWave systems 9:30 AM
Frederick Vook, Timothy Thomas, Nokia Solutions and Networks, United States

Session TA4b Cognitive Radio I

TA4b-1 Statistically Coordinated Precoding for the MISO Cognitive Radio Channel 10:15 AM
Paul de Kerret, Miltiades Filippou, David Gesbert, Eurecom, France

TA4b-2 Simultaneous Detection and Estimation based Spectrum Sharing in Cognitive Radio Networks 10:40 AM
Jyoti Mansukhani, Priyadip Ray, Indian Institute of Technology Kharagpur, India; Pramod Varshney, Syracuse University, United States

TA4b-3 Interference-Temperature Limit for Cognitive Radio Networks with MIMO Primary Users 11:05 AM
Cristian Lameiro, University of Cantabria, Spain; Wolfgang Utschick, Technische Universität München, Germany; Ignacio Santamaria, University of Cantabria, Spain

TA4b-4 Competitive Dynamic Pricing under Demand Uncertainty 11:30 AM
Yixuan Zhai, Qing Zhao, University of California, Davis, United States

Session TA5a Recent Advances in Speech Coding

TA5a-1 The Shannon Backward Channel and Voice Codec Design 8:15 AM
Jerry Gibson, University of California, Santa Barbara, United States

TA5a-2 Performance Enhanced Scalable Wideband Speech Coding for IP Networks 8:40 AM
Tokunbo Ogunfunmi, Koji Seto, Santa Clara University, United States

TA5a-3 Adaptive Control of Applying Band-Width for Post Filter of Speech Coder Depending on Pitch Frequency 9:05 AM
Hironobu Chiba, Univ. of Tsukuba, Japan; Yutaka Kamamoto, Takehiro Moriya, Noboru Harada, Nippon Telegraph and Telephone Corp., Japan; Shigeki Miyabe, Takeshi Yamada, Shoji Makino, Univ. of Tsukuba, Japan

TA5a-4 Classification of Sonorant Consonants Utilizing Empirical Mode Decomposition 9:30 AM
Ashkan Ashrafi, San Diego State University, United States; Stanley Wenndt, Air Force Research Laboratory, United States

Session TA5b Historic Photographic Paper Identification via Textural Similarity Assessment

TA5b-1 Automated Surface Texture Classification of Photographic Print Media 10:15 AM
Paul Messier, Paul Messier LLC, United States; Richard Johnson, Cornell University, United States

TA5b-2 Eigentextures: An SVD Approach to Automated Paper Classification 10:40 AM
William Sethares, Atul Ingle, Tomas Krc, University of Wisconsin, United States; Sally Wood, Santa Clara University, United States

TA5b-3 Texture Classification via Area-Scale Analysis of Raking Light Images 11:05 AM
Andrew G. Klein, Anh Do, Christopher Brown, Worcester Polytechnic Institute, United States; Philip Klausmeyer, WAM, United States

TA5b-4 Hyperbolic Wavelet Transform for Historic Photographic Paper Classification Challenge 11:30 AM
Stephane Roux, Patrice Abry, ENS Lyon, France; Herwig Wendt, ENSHEEIT-IRIT, France; Stephane Jaffard, Paris Est University, France

Session TA6a Compressive Methods in Radar

TA6a-1 Sparse Arrays, MIMO, and Compressive Sensing for GMTI Radar 8:15 AM
Haley Kim, Alexander Haimovich, New Jersey Institute of Technology, United States

TA6a-2 Efficient Linear Time-Varying System Identification Using Chirp Waveforms 8:40 AM
Andrew Harms, Duke University, United States; Waheed Bajwa, Rutgers University, United States; Robert Calderbank, Duke University, United States

TA6a-3 Robust Multipath Exploitation Radar Imaging in Urban Sensing Based on Bayesian Compressive Sensing 9:05 AM
Qisong Wu, Yimin Zhang, Moeness Amin, Fauzia Ahmad, Villanova University, United States

TA6a-4 Joint Sparse and Low-rank Model for Radio-Frequency Interference Suppression in Ultra-wideband Radar Applications 9:30 AM
Lam Nguyen, Army Research Laboratory, United States; Minh Dao, Trac Tran, Johns Hopkins University, United States

Session TA6b Statistical Inference in Smart Grids

TA6b-1 Revisiting Cyclo-Stationary Random Signal Analysis for Modeling Renewable Power 10:15 AM
Masood Parvania, University of California, Davis, United States; Francesco Verde, Universita' Federico II di Napoli, Italy; Anna Scaglione, University of California, Davis, United States; Donatella Darsena, Giacinto Gelli, Universita' Federico II di Napoli, Italy

TA6b-2 Integrating PMU-data-driven and Physics-based Analytics for Power Systems Operations 10:40 AM
Yang Chen, Le Xie, P. R. Kumar, Texas A&M University, United States

TA6b-3 Sensor Placement for Real-Time Dynamic State Estimation in Power Systems: A Structural Systems Approach 11:05 AM
Pedro Rocha, University of Porto, Portugal; Sergio Pequito, Carnegie Mellon University, United States; Pedro Aguiar, Paula Rocha, University of Porto, Portugal; Soummya Kar, Carnegie Mellon University, United States

TA6b-4 Dynamic Joint Outage Identification and State Estimation in Power Systems 11:30 AM
Yue Zhao, Stanford University, United States; Jianshu Chen, University of California, Los Angeles, United States; Andrea Goldsmith, Stanford University, United States; H. Vincent Poor, Princeton University, United States

Session TA7a Computer Arithmetic I

TA7a-1 Ultra-Light Weight Hardware Accelerator Circuits for Data Encryption in Wearable Systems 8:15 AM
Sanu Mathew, Sudhir Satpathy, Vikram Suresh, Ram Krishnamurthy, Intel Corporation, United States

TA7a-2 Arithmetic Operations in the Heterogeneous System Architecture 8:40 AM
Michael Schulte, AMD Research, United States

TA7a-3 Low Latency is Low Energy 9:05 AM
David Lutz, Neil Burgess, ARM, United States

TA7a-4 Optimizing DSP Circuits by a New Family of Arithmetic Operators 9:30 AM
Javier Hormigo, Julio Villalba, Universidad de Malaga, Spain

Session TA7b MIMO Sensing

TA7b-1 Bi-Static MIMO Radar Operations for Range-Folded Clutter Mitigation 10:15 AM
Yuri Abramovich, WR Systems Ltd., United States; Gordon Frazer, DSTO, Australia; Geoffrey San Antonio, Naval Research Laboratory, United States; Ben Johnson, Colorado School of Mines, United States

TA7b-2 Large Phased Array Antenna Calibration Using Radar Clutter and MIMO 10:40 AM
Matthew Brown, Mitch Mirkin, Dan Rabideau, MIT Lincoln Laboratory, United States

TA7b-3 High Resolution Imaging for MIMO Forward Looking Ground Penetrating Radar 11:05 AM
Jian Li, Ode Ojowu, Luzhou Xu, University of Florida, United States; John Anderson, Howard University, United States; Lam Nguyen, Army Research Laboratory, United States

TA7b-4 Structure Health Monitoring Exploiting Mimo Ultrasonic Sensing and Group Sparse Bayesian Learning 11:30 AM
Qisong Wu, Yimin Zhang, Moeness Amin, Andrew Golato, Sridhar Santhanam, Fauzia Ahmad, Villanova University, United States

Session TA8a1 Channel Estimation and MIMO Feedback

8:15 AM–9:55 AM

TA8a1-1 Channel Estimation in Millimeter Wave MIMO Systems with One-Bit Quantization
Jianhua Mo, University of Texas at Austin, United States; Philip Schniter, Ohio State University, United States; Robert W. Heath Jr., University of Texas at Austin, United States

TA8a1-2 Maximum-Likelihood Joint Channel Estimation and Data Detection for Space Time Block Coded MIMO Systems
Haider Alshamary, Weiyu Xu, University of Iowa, United States

TA8a1-3 Cramer-Rao Bound for Blind Channel Estimation in Cyclic Prefixed MIMO-OFDM Systems With Few Received Symbols
Borching Su, Kai-Han Tseng, National Taiwan University, Taiwan

TA8a1-4 Efficient MIMO Sparse Channel Estimation Using LTE Sounding Reference Signal
Jeng-Kuang Hwang, Jen-Hao Liu, Chien-Min Chen, Chuan-Shun Lin, Yuan Ze University, Taiwan

TA8a1-5 Impact of Received Signal on Self-interference Channel Estimation and Achievable Rates in In-band Full-duplex Transceivers
Dani Korpi, Lauri Anttila, Mikko Valkama, Tampere University of Technology, Finland

TA8a1-6 MIMO Nullforming with RVQ Limited Feedback and Channel Estimation Errors
D. Richard Brown III, Worcester Polytechnic Institute, United States; David Love, Purdue University, United States

TA8a1-7 Limited Feedback in OFDM Systems for Combating ISI/ICI Caused by Insufficient Cyclic Prefix Length
Erich Zoechmann, Stefan Pratschner, Stefan Schwarz, Markus Rupp, Vienna University of Technology, Austria

TA8a1-8 Frugal Channel Tracking for Transmit Beamforming
Omar Mehanna, Nicholas Sidiropoulos, University of Minnesota, United States

Session TA8a2 Image Processing I

8:15 AM–9:55 AM

TA8a2-1 Second Order Model Deviations of Local Gabor Features for Texture Classification
David Picard, Inbar Fijalkow, ETIS - UMR 8051 / ENSEA, Université Cergy-Pontoise, CNRS, France

TA8a2-2 Weighted Boundary Matching Error Concealment for HEVC Using Block Partition Decisions
Yan-Tsung Peng, Pamela Cosman, University of California, San Diego, United States

TA8a2-3 Reducing the Latency and Improving the Resolution of Vector Quantization with Anamorphic Stretch Transform
Haochen Yuan, Mohammad H. Asghari, Bahram Jalali, University of California, Los Angeles, United States

TA8a2-4 Supervised Facial Recognition based on Multiresolution Analysis with Radon Transform
Ahmed Aldhahab, George Atia, Wasfy Mikhael, University of Central Florida, United States

TA8a2-5 On Compensating Unknown Pixel Behaviors for Image Sensors with Embedded Processing
William Guicquero, Michele Benetti, Arnaud Peizerat, Antoine Dupret, Commissariat à l'énergie atomique et aux énergies alternatives, France; Pierre Vandergheynst, École Polytechnique Fédérale de Lausanne, Switzerland

TA8a2-6 Representative Selection for Big Data via Sparse Graph and Geodesic Grassmann Manifold Distance
Chinh Dang, Hayder Radha, Michigan State University, United States

TA8a2-7 A Generic Particle Filtering Approach for Multiple Polyhedral Object Tracking in a Distributed Active Sensor Network
Benoit Fortin, Regis Lherbier, Jea-Charles Noyer, Univ. Littoral Cote d'Opale, France

TA8a2-8 Spatial Domain Synthetic Scene Statistics
Debarati Kundu, Brian Evans, University of Texas at Austin, United States

Session TA8a3 Signal Processing for Communications

8:15 AM–9:55 AM

TA8a3-1 Energy-Efficient Secure Communications in MISO-SE Systems
Alessio Zappone, Pin-Hsun Lin, Eduard A. Jorswieck, TU Dresden, Germany

TA8a3-2 Distinguishing BFSK from QAM and PSK by Sampling Once per Symbol
Mohammad Bari, Milos Doroslovacki, George Washington University, United States

TA8a3-3 Quadratic Program Solution of Communication Links Under Jamming
Koorosh Firouzbakht, Guevara Noubir, Masoud Salehi, Northeastern University, United States

TA8a3-4 An Iterative Soft Decision Based Adaptive K-best Decoder Without SNR Estimation
Mehnaz Rahman, Ehsan Rohani, Gwan Choi, Texas A&M University, United States

TA8a3-5 MMSE Scaling Enhances Performance in Practical Lattice Codes
Nuwan Ferdinand, University of Oulu, Finland; Matthew Nokleby, Duke University, United States; Brian Kurkoski, Japan Advanced Institute of Science and Technology, Japan; Behnaam Aazhang, Rice University, United States

TA8a3-6 RLS-Based Frequency-domain DFE for Uplink SC-FDMA
Naveed Iqbal, Azzedine Zerguine, King Fahd University of Petroleum and Minerals, Saudi Arabia; Naofal Al-Dhahir, University of Texas at Dallas, United States

TA8a3-7 Reduced-State Cyclic Viterbi Receiver for Localized SC-FDMA Uplink System
Jeng-Kuang Hwang, Jeng-Da Li, Yu-Chang Hsu, Chuan-Shun Lin, Yuan-Ze University, Taiwan

TA8a3-8 Energy Detection Using Very Large Antenna Array Receivers
Alex Oliveras Martinez, Elisabeth De Carvalho, Petar Popovski, Gert Frølund Pedersen, Aalborg University, Denmark

Session TA8a4 Adaptive Filtering

8:15 AM–9:55 AM

TA8a4-1 On Component-Wise Conditionally Unbiased Linear Bayesian Estimation
Mario Huemer, Oliver Lang, Johannes Kepler University Linz, Austria

TA8a4-2 Performance of Proportionate-type NLMS Algorithm with Gain Allocation Proportional to the Mean Square Weight Deviation
Kevin Wagner, Naval Research Laboratory, United States; Milos Doroslovacki, George Washington University, United States

TA8a4-3 Predictive Sensor Selection for Navigation in Constrained Environments
Markus Fröhle, Ali A. Zaidi, Erik Ström, Henk Wymeersch, Chalmers University of Technology, Sweden

TA8a4-4 An Efficient Least Mean Squares Algorithm based on q-Gradient
Ubaid Al-Saggaf, Mohammad Moinuddin, King Abdulaziz University, Saudi Arabia; Azzedine Zerguine, King Fahd University of Petroleum and Minerals, Saudi Arabia

TA8a4-5 Optimal Step Size Control for Acoustic Echo Cancellation
Khosrow Lashkari, Seth Suppappola, Cirrus Logic, United States

TA8a4-6 Stochastic Gradient Algorithm Based on an Improved Higher Order Exponentiated Error Cost Function
Umair bin Mansoor, Syed Asad, Azzedine Zerguine, King Fahd University of Petroleum and Minerals, Saudi Arabia

TA8a4-7 Spectral Multiscale Coverage with the Feature Aided CPHD Tracker
Ramona Georgescu, Shuo Zhang, Amit Surana, Alberto Speranzon, Ozgur Erdinc, United Technologies Research Center, United States

TA8a4-8 Adaptive Sampling with Sensor Selection for Target Tracking in Wireless Sensor Networks
Abdulkadir Kose, Engin Masazade, Yeditepe University, Turkey

Session TA8b1 Multiuser and Cellular Systems

10:15 AM–11:55 AM

TA8b1-1 Average Sum MSE Minimization in the Multi-User Downlink With Multiple Power Constraints
Andreas Gründinger, Michael Joham, Technische Universität München, Germany; Jose Pablo Gonzalez Coma, Luis Castedo, University of A Coruna, Spain; Wolfgang Utschick, Technische Universität München, Germany

TA8b1-2 Hierarchical Precoding for Ultra-Dense Heterogeneous Networks
Lars Thiele, Martin Kurras, Fraunhofer Institute for Telecommunications Heinrich Hertz Institute, Germany

TA8b1-3 Detection using Block QR Decomposition for MIMO HetNets
Robin Thomas, Raymond Knopp, Eurecom, France; Sunil (B.T.) Maharaj, University of Pretoria, South Africa

TA8b1-4 On Performance Prediction for Multiuser Detection Enabled Systems in Packet Based Asynchronous Gaussian Multiple Access Channels
Prabahan Basu, MIT Lincoln Laboratory, United States

TA8b1-5 Decentralized Target Rate Optimization for MU-MIMO Leakage Based Precoding
Tim Rüegg, Marc Kuhn, Armin Wittneben, ETH Zurich, Switzerland

TA8b1-6 Leveraging Interference for Increasing Throughput and Reliability of Commercial Wireless Small Cells
Rachel Learned, Michael Pitaro, Matthew Ho, Massachusetts Institute of Technology, United States

TA8b1-7 Throughput Analysis of LTE and WiFi in Unlicensed Band
Abhijeet Bhorkar, Christian Ibars Casas, Pingping Zong, Intel Corporation, United States

TA8b1-8 Multi-User Detection for xDSL with Partial Cooperation Among Multiple Operators
Syed Hassan Raza Naqvi, Umberto Spagnolini, Politecnico di Milano, Italy

Session TA8b2 Computer Arithmetic II

10:15 AM–11:55 AM

TA8b2-1 Improved Non-restoring Square Root Algorithm with Dual Path Calculation
Kihwan Jun, Earl Swartzlander, University of Texas at Austin, Republic of Korea

TA8b2-2 Merged Residue Number System Generation
Michael Sullivan, Earl Swartzlander, University of Texas at Austin, United States

TA8b2-3 Partial Product Generation and Addition for Multiplication in FPGAs With 6-Input LUTs
George Walters, Penn State Erie, The Behrend College, United States

TA8b2-4 Low-Power Radix-4 Quotient Generator
Milos Ercegovac, University of California, Los Angeles, United States

TA8b2-5 Memristor Based Adders
Divya Mahajan, Matheen Musaddiq, Earl Swartzlander, University of Texas at Austin, United States

TA8b2-6 Canonic Real-Valued FFT Structures
Megha Parhi, Yingjie Lao, Keshab K. Parhi, University of Minnesota, Twin Cities, United States

TA8b2-7 A High Throughput and Low Power Radix-4 FFT Architecture
Soumak Mookherjee, Linda S. DeBrunner, Victor DeBrunner, Florida State University, United States

TA8b2-8 A Domain Splitting Algorithm for the Mathematical Functions Code Generator
Olga Kupriianova, Christoph Lauter, UPMC, LIP6, PEQUAN team, France

Session TA8b3 Array Processing Methods

10:15 AM–11:55 AM

TA8b3-1 Array Self Calibration with Large Initial Errors
Benjamin Friedlander, University of California, Santa Cruz, United States

TA8b3-2 Maximum Likelihood Estimation for Geolocation in the Presence of Multipath
Benjamin Friedlander, University of California, Santa Cruz, United States

TA8b3-3 Enhanced Location Detection Algorithms Based on Time of Arrival Trilateration
Sajina Pradhan, Jae-young Pyun, Goo-Rak Kwon, Seokjoo Shin, Suk-seung Hwang, Chosun University, Republic of Korea

TA8b3-4 Designing Radio Interferometric Positioning Systems for Indoor Localizations in Millimeter Wave Bands
Marie Shinotsuka, Georgia Institute of Technology, United States; Yiyin Wang, Shanghai Jiao Tong University, China; Xiaoli Ma, G. Tong Zhou, Georgia Institute of Technology, United States

TA8b3-5 Indoor Sound Source Localization and Number Estimation Using Infinite Gaussian Mixture Model
Longji Sun, Qi Cheng, Oklahoma State University, United States

TA8b3-6 On the Structural Nature of Cooperation in Distributed Network Localization
Alireza Ghods, Stefano Severi, Giuseppe Abreu, Jacobs University Bremen, Germany; Samuel Van de Velde, Ghent University, Belgium

TA8b3-7 Enabling Distributed Detection with Dependent Sensors
Brian Proulx, Junshan Zhang, Douglas Cochran, Arizona State University, United States

TA8b3-8 Active Sonar Transmission Strategies in the Presence of Strong Direct Blast
Luzhou Xu, Jian Li, Akshay Jain, University of Florida, United States

Session TA8b4 Compressed Sensing III

10:15 AM–11:55 AM

TA8b4-1 Super-resolution Line Spectrum Estimation with Block Priors
Kumar Vijay Mishra, Myung Cho, Anton Kruger, Weiyu Xu, University of Iowa, United States

TA8b4-2 Robust Line Spectral Estimation
Gongguo Tang, Colorado School of Mines, United States; Parikshit Shah, Badri Bhaskar, University of Wisconsin-Madison, United States; Benjamin Recht, University of California, Berkeley, United States

TA8b4-3 Complexity Reduction in Compressive Sensing using Hirschman Uncertainty Structured Random Matrices
Peng Xi, Victor DeBrunner, Florida State University, United States

TA8b4-4 A Sparse Approach for Estimation of Amplitude Modulated Sinusoids
Stefan Ingi Adalbjörnsson, Johan Swärd, Andreas Jakobsson, Ted Kronvall, Lund University, Sweden

TA8b4-5 Sparsity Order Estimation for Single Snapshot Compressed Sensing
Florian Roemer, Anastasia Lavrenko, Giovanni Del Galdo, Thomas Hotz, Technische Universitaet Ilmenau, Germany; Orhan Arikan, Bilkent University, Turkey; Reiner Thomae, Technische Universitaet Ilmenau, Germany

TA8b4-6 Streaming Signal Recovery Using Sparse Bayesian Learning
Uditha Wijewardhana, Marian Codreanu, Centre for Wireless Communications, Finland

TA8b4-7 Compressed Change Detection for Structural Health Monitoring
Omid Sarayanibafghi, George Atia, Masoud Malekzadeh, Necati Catbas, University of Central Florida, United States

TA8b4-8 A Sparse Semi-Parametric Chirp Estimator
Johan Swärd, Johan Brynolfsson, Andreas Jakobsson, Maria Hansson-Sandsten, Lund University, Sweden

Session TP1a Covariance Mining

TP1a-1 Abstract Algebraic-Geometric Subspace Clustering 1:30 PM
Manolis Tsakiris, Rene Vidal, Johns Hopkins University, United States

TP1a-2 Minimum Variance Portfolio Optimization with Robust Shrinkage Covariance Estimation 1:55 PM
Liusha Yang, Hong Kong University of Science and Technology, Hong Kong SAR of China; Romain Couillet, Supelec, France; Matthew McKay, Hong Kong University of Science and Technology, Hong Kong SAR of China

TP1a-3 Greedy Algorithms in Convex Optimization on Banach Spaces 2:20 PM
Vladimir Temlyakov, University of South Carolina, United States

TP1a-4 Greedy Algorithms for Learning Graphical Models 2:45 PM
Ali Jalali, Christopher Johnson, Pradeep Ravikumar, University of Texas at Austin, United States

Session TP1b Large-Scale Learning and Optimization

TP1b-1 Distributed Adaptive Sparsity-Imposing Canonical Correlations 3:30 PM
Jia Chen, Ioannis Schizas, University of Texas at Arlington, United States

TP1b-2 Game-Theoretic Learning In A Distributed-Information Setting: Distributed Convergence To Mean-Centric Equilibria 3:55 PM
Brian Swenson, Soummya Kar, Carnegie Mellon University, United States; Joao Xavier, Instituto Superior Tecnico, Portugal

TP1b-3 Network Newton 4:20 PM
Aryan Mokhtari, Alejandro Ribeiro, University of Pennsylvania, United States

TP1b-4 Communication-Computation Tradeoffs in Decentralized Stochastic Optimization 4:45 PM
Konstantinos Tsianos, Michael Rabbat, McGill University, Canada

Session TP2a Bioinformatics and DNA Computing

TP2a-1 On the Capacity of String-Duplication Systems and Genomic Duplication 1:30 PM
Farzad Farnoud, California Institute of Technology, United States; Moshe Schwartz, Ben-Gurion University of the Negev, Israel; Jehoshua Bruck, California Institute of Technology, United States

TP2a-2 Intrinsic Universality and the Computational Power of Self-Assembly 1:55 PM
Damien Woods, California Institute of Technology, United States

TP2a-3 Hybrid Rank Aggregation for Gene Prioritization 2:20 PM
Minji Kim, Farzad Farnoud, Olgica Milenkovic, University of Illinois at Urbana-Champaign, United States

TP2a-4 Rate-Independent Computation in Chemical Reaction Networks 2:45 PM
David Doty, California Institute of Technology, United States

Session TP2b Echo Cancellation

TP2b-1 Echo Cancellation for Bone Conduction Transducers 3:30 PM
Mohammad Behgam, Steven L. Grant, Missouri University of Science and Technology, United States

TP2b-2 Uncertainty Modeling in Acoustic Echo Control 3:55 PM
Gerald Enzner, Rainer Martin, Ruhr-University Bochum, Germany; Peter Vary, RWTH Aachen University, Germany

TP2b-3 A Kalman Filter for Stereophonic Acoustic Echo Cancellation 4:20 PM
Constantin Paleologu, University Politehnica of Bucharest, Romania; Jacob Benesty, University of Quebec, Canada; Steven L. Grant, Missouri University of Science and Technology, United States; Silviu Ciochina, University Politehnica of Bucharest, Romania

TP2b-4 Study and Design of Differential Microphone Array Beamforming 4:45 PM
Jingdong Chen, Northwestern Polytechnical University, China; Jacob Benesty, INRS-EMT, University of Quebec, Canada

Session TP3a Machine Learning

TP3a-1 Consensus Inference with Multilayer Graphs for Multi-modal Data 1:30 PM
Karthikeyan Natesan Ramamurthy, IBM T. J. Watson Research Center, United States; Jayaraman J. Thiagarajan, Lawrence Livermore National Laboratory, United States; Rahul Sridhar, Premnishanth Kothandaraman, Ramanathan Nachiappan, SSN College of Engineering, India

TP3a-2 Energy Price Matrix Factorization 1:55 PM
Vassilis Kekatos, University of Minnesota, United States

TP3a-3 A New Reduction Scheme for Gaussian Sum Filters 2:20 PM
Leila Pishdad, Fabrice Labeau, McGill University, Canada

TP3a-4 Exploring Upper Bounds on the Number of Distinguishable Classes 2:45 PM
Catherine Keller, MIT Lincoln Laboratory, United States; Gary Whipple, Laboratory for Telecommunication Sciences, United States

Session TP3b Sparse Signal Recovery

TP3b-1 Compression Schemes for Time-Varying Sparse Signals 3:30 PM
Sundeep Prabhakar Chepuri, Geert Leus, Delft University of Technology, Netherlands

TP3b-2 A Fast Algorithm for Sparse Generalized Eigenvalue Problem 3:55 PM
Junxiao Song, Prabhu Babu, Daniel Palomar, Hong Kong University of Science and Technology, Hong Kong SAR of China

TP3b-3 Bootstrapped Sparse Bayesian Learning for Sparse Signal Recovery 4:20 PM
Ritwik Giri, Bhaskar Rao, University of California, San Diego, United States

TP3b-4 A Fast Proximal Gradient Algorithm for Reconstructing Nonnegative Signals with Sparse Transform Coefficients 4:45 PM
Renliang Gu, Aleksandar Dogandžic, Iowa State University, United States

Session TP4a Optical Communications

TP4a-1 Fifth-Order Volterra Series Based Nonlinear Equalizer for Long-Haul High Data Rate Optical Fiber Communications 1:30 PM
Abdelkerim Amari, Philippe Ciblat, Yves Jaouen, Telecom ParisTech, France

TP4a-2 Improving the Ultraviolet Scattering Channel Via Beam Reshaping 1:55 PM
Difan Zou, Shang-Bin Li, Zhengyuan Xu, School of Information Science and Technology, and Optical Wireless Communication and Network Center, China

TP4a-3 Correlation Study on the SIMO Channel Output of NLOS Optical Wireless Communications 2:20 PM
Boyang Huang, Chen Gong, Zhengyuan Xu, University of Science and Technology of China, China

TP4a-4 An Improved Performance Decoding Technique for Asymmetrically and Symmetrically Clipped Optical (ASCO)-OFDM 2:45 PM
Nan Wu, Yeheskel Bar-Ness, New Jersey Institute of Technology, United States

Session TP4b Energy Harvesting Wireless Communications

TP4b-1 On the Capacity of the Energy Harvesting Channel with Energy Transfer 3:30 PM
Aylin Yener, Pennsylvania State University, United States

TP4b-2 Renewables Powered Mobile Cloud Offloading 3:55 PM
Kaibin Huang, University of Hong Kong, Hong Kong SAR of China

TP4b-3 Sum-rate Analysis for Systems with Wireless Energy Transfer 4:20 PM
Rania Morsi, Derrick Wing Kwan Ng, Robert Schober, Friedrich-Alexander University of Erlangen-Nuremberg, Germany

TP4b-4 Network Information and Energy Flow 4:45 PM
Sennur Ulukus, University of Maryland, United States

Session TP5a Speech Enhancement

TP5a-1 Noise Power Spectral Density Matrix Estimation Based on Improved IMCRA 1:30 PM
Qipeng Gong, Benoit Champagne, Peter Kabal, McGill University, Canada

TP5a-2 BI-CosampSE: Block Identification based Compressive Sampling Matching Pursuit for Speech Enhancement 1:55 PM
Dalei Wu, Nanjing University of Posts and Telecommunications, China; Wei-Ping Zhu, M.N.S. Swamy, Concordia university, Canada

TP5a-3 Pitch Estimation for Non-Stationary Speech 2:20 PM
Mads Græsbøll Christensen, Jesper Rindom Jensen, Aalborg University, Denmark

TP5a-4 Estimating the Noncircularity of Latent Components within Complex-Valued Subband Mixtures with Applications to Speech Processing 2:45 PM
Greg Okopal, Scott Wisdom, Les Atlas, University of Washington, United States

Session TP5b Full Duplex MIMO Radio

TP5b-1 Non-Linear Distortion Cancellation in Full Digital Domain for Full Duplex Radios 3:30 PM
Yang-Seok Choi, Feng Xue, Roya Doostnejad, Shilpa Talwar, Intel Corporation, United States

TP5b-2 Blind Digital Tuning for Interference Cancellation in Full-Duplex Radio 3:55 PM
Yingbo Hua, University of California, Riverside, United States

TP5b-3 On In-Band Full-Duplex MIMO Radios with Transmit and Receive Antenna Reuse 4:20 PM
Daniel Bliss, Yu Rong, Arizona State University, United States

TP5b-4 MIMO Broadcast Channel with Continuous Feedback using Full-duplex Radios 4:45 PM
Xu Du, Rice University, United States; Christopher Dick, Xilinx Incorporated, United States; Ashutosh Sabharwal, Rice University, United States

Session TP6a Passive and Multistatic Radars

TP6a-1 Passive Multistatic Radar Based on Long-term Evolution Signals 1:30 PM
Sandeep Gogineni, Wright State Research Institute, United States; Muralidhar Rangaswamy, Wright Patterson Air Force Base - AFRL, United States; Arye Nehorai, Washington University in St. Louis, United States

TP6a-2 A Correlation-Based Signal Detection Algorithm in Passive Radar with DVB-T2 Emitter 1:55 PM
Guolong Cui, Hongbin Li, Stevens Institute of Technology, United States; Braham Himed, Air Force Research Laboratory, United States

TP6a-3 Improving Multistatic MIMO Radar Performance in Data-Limited Scenarios 2:20 PM
Tariq Qureshi, Muralidhar Rangaswamy, Air Force Research Laboratory, United States; Kristine Bell, Metron Inc., United States

TP6a-4 Market based Sensor Mobility Management for Target Localization 2:45 PM
Nianxia Cao, Swastik Brahma, Pramod Varshney, Syracuse University, United States

Session TP6b Many-Core Platforms

TP6b-1 Towards Modeling and Analyzing Performance of LTE Base Station Software 3:30 PM
Konstantin Popov, SICS, Sweden; Mats Brorsson, KTH Royal Institute of Technology, Sweden

TP6b-2 REPLICA T7-16-128 - A 2048-threaded 16-core 7-FU Chained VLIW Chip Multiprocessor 3:55 PM
Martti Forsell, Jussi Roivainen, VTT, Finland

TP6b-3 Improving Image Quality by SSIM Based Increase of Run-Length Zeros in GPGPU JPEG Encoding 4:20 PM
Stefan Petersson, Håkan Grahn, Blekinge Institute of Technology, Sweden

TP6b-4 Kickstarting High-Performing Energy-Efficient Manycore Architectures with Epiphany 4:45 PM
Tomas Nordström, Zain ul-Abdin, Halmstad University, Sweden; Andreas Olofsson, Adapteva, United States

Session TP7a Design Methodologies for Signal Processing

TP7a-1 Finding Fast Action Selectors for Dataflow Actors 1:30 PM
Gustav Cedersjö, Jörn W. Janneck, Jonas Skeppstedt, Lund University, Sweden

TP7a-2 Automatic Generation of Application Specific FPGA Multicore Accelerators 1:55 PM
Pascal Schleuniger, Andreas Hindborg, Nicklas Bo Jensen, Maxwell Walter, Laust Brock-Nannestad, Lars Bonnichsen, Christian W. Probst, Sven Karlsson, Technical University of Denmark, Denmark

TP7a-3 Dataflow Toolset for Soft-Core Processors on FPGA for Image Processing Applications 2:20 PM
Burak Bardak, Fahad Manzoor Siddiqui, Roger Woods, Queen's University Belfast, United Kingdom

TP7a-4 An Enhanced and Embedded GNU Radio Flow 2:45 PM
Ryan Marlow, Peter Athanas, Virginia Polytechnic Institute and State University, United States

Session TP7b Optical Wireless Communications

TP7b-1 Multiuser MISO Indoor Visible Light Communications 3:30 PM
Jie Lian, Mohammad Noshad, Maite Brandt-Pearce, University of Virginia, United States

TP7b-2 Optical Spatial Modulation OFDM using Micro LEDs 3:55 PM
Muhammad Ijaz, Dobroslav Tsonev, Abdelhamid Younis, University of Edinburgh, United Kingdom; Jonathan J. D. McKendry, Erdan Gu, Martin Dawson, University of Strathclyde, United Kingdom; Harald Haas, University of Edinburgh, United Kingdom

TP7b-3 Adaptation of OFDM under Visible Light Communications and Illumination Constraints 4:20 PM
Thomas Little, Hany Elgala, Boston University, United States

TP7b-4 Hybrid Dimmable Visible Light -with Infra-Red Optical Wireless Communications 4:45 PM
Andrew Burton, Z Ghassemlooy, Edward Bently, Hoa LeMinh, Northumbria University, United Kingdom; S K Laiw, National Taiwan University of Science and Technology, Taiwan; Chung Ghiu Lee, Chosun University, Republic of Korea

Session TP8a1 Cognitive Radio II

1:30 PM–3:10 PM

TP8a1-1 Characterization of Outage Performance for Cognitive Relay Networks with Mixed Fading
Efthymios Stathakis, Lars K. Rasmussen, Mikael Skoglund, Royal Institute of Technology (KTH), Sweden

TP8a1-2 Restless Multi-Armed Bandits under Time-Varying Activation Constraints
Kobi Cohen, Qing Zhao, Anna Scaglione, University of California, Davis, United States

TP8a1-3 On the Optimal Relay Design for Multi-Antenna Cognitive Two-Way AF Relay Networks
Maksym Girnyk, KTH Royal Institute of Technology, Sweden; Mikko Vehkaperä, Sergiy Vorobyov, Aalto University, Finland

TP8a1-4 Network Aware Spectrum Efficiency Metric for Heterogeneous and Dynamic Radio Environments
Aditya Padaki, Ravi Tandon, Jeffrey Reed, Virginia Polytechnic Institute and State University, United States

TP8a1-5 A Unified Framework for Robust Cooperative Spectrum Sensing
Qi Cheng, Eric Chan-Tin, Oklahoma State University, United States

TP8a1-6 Receiver Configuration and Testbed Development for Underwater Cognitive Channelization
George Sklivanitis, Emrecan Demirors, Stella N. Batalama, Tommaso Melodia, Dimitris A. Pados, State University of New York at Buffalo, United States

TP8a1-7 Estimation of Subspace Occupancy
Kaitlyn Beaudet, Douglas Cochran, Arizona State University, United States

TP8a1-8 Performance Analysis: DF Cognitive Network with Transceiver Imperfections
Dang Khoa Nguyen, Kyushu Institute of Technology, Japan; Tu Thanh Lam, Post and Telecommunications Institute of Technology, Viet Nam; Hiroshi Ochi, Kyushu Institute of Technology, Japan

Session TP8a2 Signal Processing Methods

1:30 PM–3:10 PM

TP8a2-1 Blind Equalization Based On Blind Separation with Toeplitz Constraint
Zhengwei Wu, Saleem Kassam, University of Pennsylvania, United States

TP8a2-2 Piecewise-Constant Recovery via Spike-and-Slab Approximate Message-Passing using a Scalarwise Denoiser
Jaewook Kang, Heung-No Lee, Kiseon Kim, Gwangju Institute of Science and Technology (GIST), Republic of Korea

TP8a2-3 Resource Allocation Optimization for Distributed Vector Estimation with Digital Transmission
Alireza Sani, Azadeh Vosoughi, University of Central Florida, United States

TP8a2-4 Exploiting the Cramér-Rao Bound for Optimised Sampling and Quantisation of FRI Signals
Andre Angierski, Volker Kuehn, University of Rostock, Germany

TP8a2-5 Adaptive Waveform for Integrated Detection and Identification of Moving Extended Target
Jo-Yen Nieh, Ric Romero, Naval Postgraduate School, United States

TP8a2-6 Channel Gain Cartography Via Low Rank and Sparsity
Donghoon Lee, Seung-Jun Kim, University of Minnesota, United States

TP8a2-7 Bayesian Cramér-Rao Bound for Distributed Estimation of Correlated Data with Non-linear Observation Model
Mojtaba Shirazi, Azadeh Vosoughi, University of Central Florida, United States

TP8a2-8 Multirate Processing Using Nested Sampling
Peter Vouras, Naval Research Laboratory, United States

Session TP8a3 Image Processing II

1:30 PM–3:10 PM

TP8a3-1 Smoothed Rank Approximation Algorithms for Matrix Completion
Mohammed Al-Qizwini, Hayder Radha, Michigan State University, United States

TP8a3-2 Visibility Prediction of Flicker Distortions on Naturalistic Videos
Lark Kwon Choi, Lawrence Cormack, Alan Bovik, University of Texas at Austin, United States

TP8a3-3 Image Compression via Wavelets and Row Compression
Mary HudachekBuswell, Michael Stewart, Saied Belkasim, Georgia State University, United States

TP8a3-4 Low Complexity Dimensionality Reduction for Hyperspectral Images
Seda Senay, Hector Erives, New Mexico Institute of Mining and Technology, United States

TP8a3-5 Improving Image Clustering using Sparse Text and the Wisdom of the Crowds
Anna Ma, Claremont Graduate University, United States; Arjuna Flenner, Naval Air Warfare Center, United States; Deanna Needell, Claremont McKenna College, United States; Allon Percus, Claremont Graduate University, United States

TP8a3-6 Color Image Watermarking Using Quaternion Wavelets
Lahouari Ghouti, King Fahd University of Petroleum and Minerals, Saudi Arabia

TP8a3-7 Immersion Ultrasonic Array Imaging Using a New Array Spatial Signature in Different Imaging Algorithms
Nasim Moallemi, Shahram Shahbazpanahi, University of Ontario Institute of technology, Canada

TP8a3-8 A Proof on the Invariance of the Hirschman Uncertainty to the Rényi Entropy Parameter and an Observation on its Relevance in the Image Texture Classification Problem
Kirandeep Ghuman, Victor DeBrunner, Florida State University, United States

Session TP8a4 Sensor and Wireless Networks

1:30 PM–3:10 PM

TP8a4-1 Design of Orthogonal Golomb Rulers with Applications in Wireless Localization.
Omotayo Oshiga, Giuseppe Abreu, Jacobs University Bremen, Germany

TP8a4-2 Secrecy Outage Analysis of Cognitive Wireless Sensor Networks
Satyanarayana Vuppala, Jacobs University Bremen, Germany; Weigang Liu, Tharmalingam Ratnarajah, University of Edinburgh, United Kingdom; Giuseppe Abreu, Jacobs University Bremen, Germany

TP8a4-3 On the Convergence Rate of Swap-Collide Algorithm for Simple Task Assignment
Sam Safavi, Usman A. Khan, Tufts University, United States

TP8a4-4 On the Impact of Low-Rank Interference on Distributed Multi-Agent Optimization
Chenguang Xi, Usman A. Khan, Tufts University, United States

TP8a4-5 Multipath-Aided Cooperative Network Localization Using Convex Optimization
Hassan Naseri, Mario Pereira da Costa, Visa Koivunen, Aalto University, Finland

TP8a4-6 Mobile Sensor Mapping via Semi-Definite Programming
Giuseppe Destino, Davide Macagnano, University of Oulu, Finland

TP8a4-7 Indoor Node Localization using Geometric Dilution of Precision in Ad-Hoc Sensor Networks
Sudhir Kumar, Rajesh M. Hegde, Indian Institute of Technology Kanpur, India

TP8a4-8 Efficient Consensus Synchronization via Implicit Acknowledgment
Andrew G. Klein, D. Richard Brown III, Worcester Polytechnic Institute, United States

Session TP8b1 Topics in Communication Systems

3:30 PM–5:10 PM

TP8b1-1 Performance Analysis of a MMSE Turbo Equalizer with LDPC in a FTN Channel with Application to Digital Video Broadcast
Ghassan Maalouli, Brian A. Banister, Comtech EF Data, United States

TP8b1-2 Characteristics of Optical Scattering and Turbulence Communication Channels
Weihao Liu, Zhengyuan Xu, University of Science and Technology of China, China

TP8b1-3 Comparison of SNR and Peak-SNR (PSNR) Performance Measures and Signals for Peak-limited Two-Dimensional (2D) Pixelated Optical Wireless Communication
Eyal Katz, Yeheskel Bar-Ness, New Jersey Institute of Technology, United States

TP8b1-4 I.I.D. Stochastic Analysis of PWM Signals
Noyan Sevuktekin, Andrew Singer, University of Illinois at Urbana-Champaign, United States

TP8b1-5 Statistical Data Correction for Unreliable Memories
Christoph Roth, ETH-Zurich, Switzerland; Christoph Struder, Cornell University, United States; Georgios Karakonstantis, Andreas Burg, École Polytechnique Fédérale de Lausanne, Switzerland

TP8b1-6 Sonar Data Compression using Non-Uniform Quantization and Noise Shaping
Lok Wong, Gregory Allen, Brian Evans, University of Texas at Austin, United States

TP8b1-7 Multilevel Coding for Non-Orthogonal Broadcast
Stephan Pfletschinger, Monica Navarro, Centre Tecnologic de Telecomunicacions de Catalunya, Spain; Christian Ibars, Intel Corporation, United States

TP8b1-8 Dynamic Target Identification and Classification Based on Resonance Topography Grouping
Ananya Sen Gupta, Daniel Schupp, University of Iowa, United States; Ivars Kirsteins, Naval Undersea Warfare Center, United States

Session TP8b2 Relays, Cognitive, Cooperative, and Heterogeneous Networks

3:30 PM–5:10 PM

TP8b2-1 A Distributed Algorithm for Energy Saving in Nomadic Relaying Networks
Zhe Ren, BMW Group Research and Technology, Germany; Mahdy Shabeeb, Munich University of Technology, Germany; Slawomir Stanczak, Fraunhofer Institute for Telecommunications Heinrich Hertz Institute, Germany; Peter Fertl, BMW Group Research and Technology, Germany

TP8b2-2 Instantaneous Relaying for the 3-Way Relay Channel with Circular Message Exchanges
Bho Matthiesen, Eduard A. Jorswieck, Technische Universität Dresden, Germany

TP8b2-3 On the Performance of Hybrid Satellite-Terrestrial Cooperative Networks with Interferences
Min Lin, PLA University of Science and Technology, China; Jian Ouyang, Nanjing University of Posts and Telecommunications, China; Zhu Wei-Ping, Concordia University, Canada

TP8b2-4 An Online Parallel Algorithm for Spectrum Sensing in Cognitive Radio Networks
Yang Yang, Technische Universitaet Darmstadt, Germany; Mengyi Zhang, Chinese University of Hong Kong, Hong Kong SAR of China; Marius Pesavento, Technische Universitaet Darmstadt, Germany; Daniel Palomar, Hong Kong University of Science and Technology, Hong Kong SAR of China

TP8b2-5 On the Spatial Spectral Efficiency of ITLinQ
Ratheesh Mungara, Universitat Pompeu Fabra, Spain; Xinchen Zhang, University of Texas at Austin, United States; Angel Lozano, Universitat Pompeu Fabra, Spain; Robert W. Heath Jr., University of Texas at Austin, United States

TP8b2-6 Time and Frequency Self-Synchronization in Dense Cooperative Networks
Maria Antonieta Alvarez, Bahar Azari, Umberto Spagnolini, Politecnico di Milano, Italy

TP8b2-7 Effect of Cluster Rotation Speed in Coordinated Heterogeneous MIMO Cellular Networks with Proportionally Fair User Scheduling
Hakimeh Purmehdi, Robert Elliott, Witold Krzymien, University of Alberta, Canada; Jordan Melzer, TELUS Communications, Canada

TP8b2-8 Relay Selection for AF Wireless Relay Networks in Adverse Communication Environments
Kanghee Lee, Republic of Korea Air Force, Republic of Korea; Visvakumar Aravinthan, Sunghoon Moon, Wichita State University, United States; Jongbum Ryou, Changki Moon, Inha Hyun, Republic of Korea Air Force, Republic of Korea; Sun Jo, Defense Acquisition Program Administrtion of ROK, Republic of Korea

Session TP8b3 Signal Processing Architectures

3:30 PM–5:10 PM

TP8b3-1 Hybrid Floating-Point Modules with Low Area Overhead on a Fine-Grained Processing Core
Jon Pimentel, Bevan Baas, University of California, Davis, United States

TP8b3-2 Scalable Hardware-Based Power Management for Many-Core Systems
Bin Liu, Brent Bohnenstiehl, Bevan Baas, University of California, Davis, United States

TP8b3-3 Optimized FPGA Based Implementation of Discrete Wavelet Transform
Amin Jarrah, Mohsin M. Jamali, University of Toledo, United States

TP8b3-4 Mapping and Scheduling of Dataflow Graphs - A Systematic Map
Usman Mazhar Mirza, Mehmet Ali Arslan, Gustav Cedersjö, Sardar Muhammad Sulaman, Jörn W. Janneck, Lund University, Sweden

TP8b3-5 Dataflow Machines
Jörn W. Janneck, Gustav Cedersjö, Lund University, Sweden; Endri Bezati, Simone Casale Brunet, École Polytechnique Fédérale de Lausanne, Switzerland

TP8b3-6 Replacement Techniques for Improving Performance in Sub-Block Caches
Oluleye Olorode, Mehrdad Nourani, University of Texas at Dallas, United States

TP8b3-7 Dynamic Reconfiguration of FPGA-based Multi-Processor Arrays
James Glenn-Anderson, Supercomputer Systems, Inc., United States

TP8b3-8 Coprime Processing for the Elba Island Sonar Data Set
Vaibhav Chavali, Kathleen Wage, George Mason University, United States; John Buck, University of Massachusetts Dartmouth, United States

Session TP8b4 Signal Processing Theory and Applications

3:30 PM–5:10 PM

TP8b4-1 Prediction of a Bed-Exit Motion: Multi-Modal Sensing Approach and Incorporation of Biomechanical Knowledge
Jun Hao, Xiaoxiao Dai, Amy Stroder, Jun Zhang, Bradley Davidson, Mohammad Mahoor, University of Denver, United States; Neil McClure, OKT Enterprises, United States

TP8b4-2 Ultra-Wideband Radar based Human Body Landmark Detection and Tracking with Biomedical Constraints for Human Motion Measuring
Xiaoxiao Dai, Zhichong Zhou, Jun Zhang, Bradley Davidson, University of Denver, United States

TP8b4-3 Separation of Interleaved Markov Chains
Ariana Minot, Yue Lu, Harvard University, United States

TP8b4-4 Ramanujan Subspaces and Digital Signal Processing
P. P. Vaidyanathan, California Institute of Technology, United States

TP8b4-5 Asynchronous Discrete-time Signal Processing with Molecular Reactions
Sayed Ahmad Salehi, Marc Riedel, Keshab K. Parhi, University of Minnesota, United States

TP8b4-6 Sequential Prediction of Individual Sequences in the Presence of Computational Errors
Mehmet Donmez, Andrew Singer, University of Illinois at Urbana Champaign, United States

TP8b4-7 A Scalable Feature Learning and Tag Prediction Framework for Natural Environment Sounds
Prasanna Sattigeri, Arizona State University, United States; Jayaraman Thiagarajan, Lawrence Livermore National Laboratory, United States; Mohit Shah, Arizona State University, United States; Karthikeyan Ramamurthy, IBM Research, United States; Andreas Spanias, Arizona State University, United States

TP8b4-8 Extending Coherence for Optimal Detection of Nonstationary Harmonic Signals
Scott Wisdom, University of Washington, United States; James Pitton, Applied Physics Laboratory and University of Washington, United States; Les Atlas, University of Washington, United States

Session WA1a MIMO Design for mmWave Systems

WA1a-1 A Tractable Model for Rate in Noise Limited mmWave Cellular Networks 8:15 AM
Sarabjot Singh, Mandar Kulkarni, Jeffrey Andrews, University of Texas at Austin, United States

WA1a-2 MIMO Designs for mmWave Wireless LAN Systems 8:40 AM
Sridhar Rajagopal, Samsung Research America, United States

WA1a-3 Analysis of Millimeter Wave Cellular Networks with Overlaid Microwave Base Stations 9:05 AM
Tianyang Bai, Robert W. Heath Jr., University of Texas at Austin, United States

WA1a-4 Increasing Coverage Beyond Microwave Frequencies Using Beamforming 9:30 AM
Vip Desai, Philippe Sartori, Weimin Xiao, Anthony Soong, Huawei Technologies Co., Ltd., United States

Session WA1b Massive MIMO II

WA1b-1 A Multistage Linear Receiver Approach for MMSE Detection in Massive MIMO 10:15 AM
Ting Li, Sujeet Patole, Murat Torlak, University of Texas at Dallas, United States

WA1b-2 Beamforming-Based Spatial Precoding in FDD Massive MIMO Systems 10:40 AM
Ming-Fu Tang, Meng-Ying Lee, Borching Su, National Taiwan University, Taiwan; Chia-Pang Yen, Industrial Technology Research Institute, Taiwan

WA1b-3 Asymmetric Distributed Space Frequency Coded Cooperative Network for Large Scale MIMO 11:05 AM
Bhagyashri Honrao, Chirag Warty, Shikha Nema, SNDT University, India

Session WA2a 5G and Energy Efficient Cellular Networks

WA2a-1 Traffic Aware Offloading for BS Sleeping in Heterogeneous Networks 8:15 AM
Shan Zhang, Sheng Zhou, Zhisheng Niu, Tsinghua University, China

WA2a-2 A Survey on 5G New Waveform: From Energy Efficiency Aspects 8:40 AM
Shunqing Zhang, Xiuqiang Xu, Yiqun Wu, Lei Lu, Yan Chen, Huawei Technologies Co., Ltd., China

WA2a-3 Evolution of LTE and new Radio Access Technologies for FRA (Future Radio Access) 9:05 AM
Hidetoshi Kayama, Huiling Jiang, DOCOMO Beijing Communications Laboratories Co. Ltd., China

WA2a-4 A Novel Cell-Interference Model and Performance Analysis of the Future Wireless Networks 9:30 AM
Jinkang Zhu, Haibao Ren, University of Science and Technology of China, China

Session WA2b Mobile Health

WA2b-1 On Outlier Detection in R-R Intervals from ECG Data Collected in the Natural Field Environment 10:15 AM
Rummana Bari, Santosh Kumar, University of Memphis, United States

WA2b-2 Patient-Centric On-Body Sensor Localization in Smart Health Systems 10:40 AM
Ramyar Saeedi, Hassan Ghasemzadeh, Washington State University, United States

WA2b-3 Making Sense of Personal Data in Clinical Settings 11:05 AM
Harinath Garudadri, University of California, San Diego, United States

Session WA3a Sparse Learning and Estimation

WA3a-1 Sparse Bayesian Learning Using Approximate Message Passing 8:15 AM
Maher Al-Shoukairi, Bhaskar Rao, University of California, San Diego, United States

WA3a-2 Hierarchical Bayesian Approach for Jointly-Sparse Solution of Multiple-Measurement Vectors 8:40 AM
Mohammad Shekaramiz, Todd K. Moon, Jacob H. Gunther, Information Dynamics Laboratory / Utah State University, United States

WA3a-3 Dictionary Approaches For Identifying Periodicities in Data 9:05 AM
Srikanth Venkata Tenneti, P. P Vaidyanathan, California Institute of Technology, United States

WA3a-4 An Asymptotic Maximum Likelihood Estimator for the Period of a Cyclostationary Process 9:30 AM
David Ramírez, Peter J. Schreier, University of Paderborn, Germany; Javier Vía, Ignacio Santamaría, University of Cantabria, Spain; Louis L. Scharf, Colorado State University, United States

Session WA3b Advances in Statistical Learning

WA3b-1 Quasicontinuous State Hidden Markov Models Incorporating State Histories 10:15 AM
Todd K. Moon, Jacob H. Gunther, Utah State University, United States

WA3b-2 A Classification Centric Quantizer for Efficient Encoding of Predictive Feature Errors 10:40 AM
Scott Deeann Chen, Pierre Moulin, University of Illinois at Urbana-Champaign, United States

WA3b-3 Time-Varying Stochastic Multi-Armed Bandit 11:05 AM
Sattar Vakili, Qing Zhao, Yuan Zhou, University of California, Davis, United States

Session WA4a Physical Layer Security II

WA4a-1 Investigation of Secure Wireless Regions Using Configurable Beamforming on WARP platform 8:15 AM
Yuanrui Zhang, Queen's University Belfast, United Kingdom; Bei Yin, Rice University, United States; Roger Woods, Queen's University Belfast, United Kingdom; Joseph R. Cavallaro, Rice University, United States; Alan Marshall, University of Liverpool, United Kingdom; Youngwook Ko, Queen's University Belfast, United Kingdom

WA4a-2 Wiretap-Channels with Constrained Active Attacks 8:40 AM
Carsten Rudolf Janda, Christian Scheunert, Eduard A. Jorswieck, Dresden University of Technology, Germany

WA4a-3 Secrecy Rate Maximization for Information and Energy Transfer in MIMO Beamforming Networks 9:05 AM
Jens Steinwandt, Ilmenau University of Technology, Germany; Sergiy Vorobyov, Aalto University, Finland; Martin Haardt, Ilmenau University of Technology, Germany

WA4a-4 Everlasting Secrecy in Disadvantaged Wireless Environments against Sophisticated Eavesdroppers 9:30 AM
Azadeh Sheikholeslami, Dennis Goeckel, Hossein Pishronik, UMASS-Amherst, United States

Session WA4b Coding and Decoding

WA4b-1 Noisy Belief Propagation Decoder 10:15 AM
Chu-Hsiang Huang, Yao Li, Lara Dolecek, University of California, Los Angeles, United States

WA4b-2 A Low-Complexity Improved Successive Cancellation Decoder for Polar Codes 10:40 AM
Orion Afisiadis, Alexios Balatsoukas-Stimming, Andreas Burg, École Polytechnique Fédérale de Lausanne, Switzerland

WA4b-3 Differential Trellis Coded Modulation with State Dependent Mappings 11:05 AM
Ruey-Yi Wei, National Central University, Taiwan; James Ritcey, University of Washington, United States

Session WA5a Information Processing for Social and Sensor Networks

WA5a-1 Fourier Transform for Signals on Dynamic Graphs 8:15 AM
Arash Golibagh Mahyari, Selin Aviyente, Michigan State University, United States

WA5a-2 Anomalous Subgraph Detection in Publication Networks: Leveraging Truth 8:40 AM
Nadya Bliss, Manfred Laubichler, Arizona State University, United States

WA5a-3 Identifying Congestion in Software-Defined Networks 9:05 AM
Thomas Parker, Jamie Johnson, Murali Tummala, John McEachen, James Scrofani, Naval Postgraduate School, United States

WA5a-4 Vulnerability of CPS inference to DoS attacks 9:30 AM
Mohammadreza Doostmohammadian, Usman A. Khan, Tufts University, United States

Session WA5b Document Processing and Synchronization

WA5b-1 Synchronizing Ordinal Data over Noisy Channels 10:15 AM
Han Mao Kiah, Lili Su, Olgica Milenkovic, University of Illinois at Urbana-Champaign, United States

WA5b-2 Efficient Synchronization of Files in Distributed Storage Systems 10:40 AM
Salim El Rouayheb, Illinois Institute of Technology, United States; Sreechakra Goparaju, Princeton University, United States; Han Mao Kiah, Olgica Milenkovic, University of Illinois at Urbana-Champaign, United States

WA5b-3 Efficient File Synchronization: Extensions and Simulations 11:05 AM
Clayton Schoeny, Nicolas Bitouze, Frederic Sala, Lara Dolecek, University of California, Los Angeles, United States

Session WA6a Adaptive Signal Design and Analysis

WA6a-1 Eigen-Basis Analysis of Expected Cumulative Modulus for Constrained Signal Design 8:15 AM
Aaron Jones, Air Force Research Laboratory, United States; Brian Rigling, Wright State University, United States; Muralidhar Rangaswamy, Air Force Research Laboratory, United States

WA6a-2 Characterization of Information in Phase of Radar Range Profiles 8:40 AM
Linda Moore, Air Force Research Laboratory / University of Dayton, United States; Brian Rigling, Wright State University, United States; Robert Penno, University of Dayton, United States

WA6a-3 Radar Tracking Waveform Design in Continuous Space and Optimization Selection Using Differential Evolution 9:05 AM
Antonia Papandreou-Suppappola, Bryan Paul, Daniel Bliss, Arizona State University, United States

WA6a-4 Reduced Rank Adaptive Filtering in Impulsive Noise Environments 9:30 AM
Hamza Soury, King Abdullah University of Science and Technology (KAUST), Saudi Arabia; Karim Abed-Meraim, Polytech Orleans, France; Mohamed-Slim Alouini, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Session WA6b Distributed Detection and Optimization

WA6b-1 Distributed Detection for Wireless Sensor Networks with Fusion Center under Correlated Noise 10:15 AM
Alireza S. Behbahani, Ahmed M. Eltawil, Hamid Jafarkhani, University of California, Irvine, United States

WA6b-2 Distributed Asynchronous Time-Varying Constrained Optimization 10:40 AM
Andrea Simonetto, Geert Leus, Delft University of Technology, Netherlands

WA6b-3 M-ary Distributed Detection in the Presence of Channel Estimation Error 11:05 AM
Zahra Hajibabaei, Azadeh Vosoughi, University of Central Florida, United States

Session WA7a Implementation of Wireless Systems

WA7a-1 Field-Order Based Hardware Cost Analysis of Non-Binary LDPC Decoders 8:15 AM
Yuta Toriyama, Behzad Amiri, Lara Dolecek, Dejan Markovic, University of California, Los Angeles, United States

WA7a-2 Algorithm and Architecture for Hybrid Decoding of Polar Codes 8:40 AM
Bo Yuan, Keshab K. Parhi, University of Minnesota, Twin Cities, United States

WA7a-3 A Signal Processing Approach Towards Ultra-Low Power Transceiver Design 9:05 AM
Vijay Venkateswaran, Pawel Rulikowski, Howard Huang, Bell Labs, Ireland

WA7a-4 A High Performance GPU-based Software-defined Basestation 9:30 AM
Kaipeng Li, Michael Wu, Guohui Wang, Joseph R. Cavallaro, Rice University, United States

Session WA7b Video Coding Architecture and Design

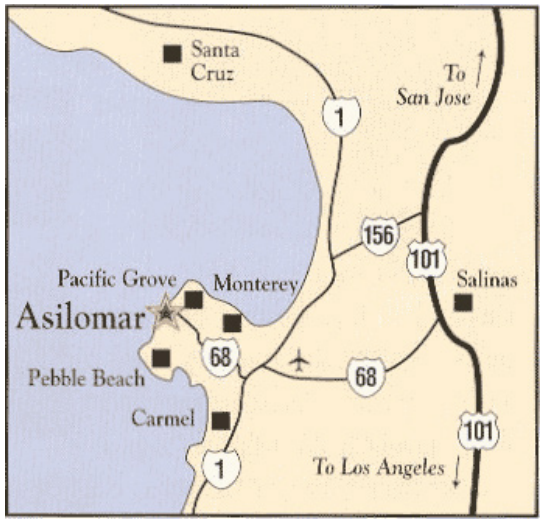
WA7b-1 Development and Optimization of High Level Dataflow Programs: the HEVC Decoder Design Case 10:15 AM
Khaled Jerbi, INSA of Rennes / IETR, France; Daniele Renzi, Damien De Saint-Jorre, École Polytechnique Fédérale de Lausanne, Switzerland; Hervé Yviquel, INSA of Rennes / IETR, France; Claudio Alberti, École Polytechnique Fédérale de Lausanne, Switzerland; Mickaël Raulet, INSA of Rennes / IETR, France; Marco Mattavelli, École Polytechnique Fédérale de Lausanne, Switzerland

WA7b-2 A Low-Power Hybrid Video Recording System with H.264/AVC and Light-Weight Compression 10:40 AM
Hyun Kim, Seoul National University, Republic of Korea; Chae Eun Rhee, Inha University, Republic of Korea; Hyuk-Jae Lee, Seoul National University, Republic of Korea

WA7b-3 Design of View Synthesis Prediction in 3D-HEVC via Algorithmic Complexity Analysis 11:05 AM
Gwo Giun (Chris) Lee, Bo-Syun Li, Chun-Fu Chen, National Cheng Kung University, Taiwan

Author List

Notes


Santa Cruz
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101
Salinas
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Asilomar
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Pebble Beach
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