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FORTY-FIRST ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS AND COMPUTERS

November 4 - 7, 2007
Asilomar Hotel and
Conference Grounds

Technical Co-sponsor

IEEE
Signal Processing Society ®

FORTY-FIRST ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS & COMPUTERS

Organized in cooperation with

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Welcome from the General Chairman

Prof. Victor DeBrunner, Florida State University

It is beyond my belief that this is the 41st Annual Asilomar Conference on Signals, Systems, and Computers. It seems only yesterday I smelled the ocean and the pines here for the first time. This is the place where I made the contacts, both personal and professional, that have come to mean so much to me as I moved from student, to assistant professor, to associate professor, to professor, to department chair. This is the constant, the welcoming professional place, which nurtures great work in signal processing. This is the place where Delores Etter gave me a first opportunity, where Richard Duda talked to me about the great things that could happen if only I would just do them. I could listen to Stan White or Sam Stearns and think about what my future could be. I remember Dick Hamming and his jackets. There are so many personal memories of this place, and so many good people. And now I am a part of this place. What a privilege.

The Sydney Parker Memorial Lecture will be given by Sidney Burrus, the Maxfield and Oshman Emeritus Professor of Electrical Engineering at Rice University. I have the pleasure of knowing Sidney for many years – I think I still have some video of me with his lovely wife Mary Lee doing some aboriginal Australian dance. I can't wait to hear his talk about Connexions.

The conference student paper contest has taken a life of its own, and we welcome these new members to the lifelong group that provides the vitality to this Conference. I find it amazing, and sure sign of the future success of this meeting that there are 92 submissions for this contest. I hope that this Conference will always be open and welcome to graduate students and their work.

The success of this year's meeting is due to the efforts of Dr. Maïté Brandt-Pearce from the University of Virginia. She recruited outstanding TACs who in turn recruited outstanding session chairs, who then developed the outstanding program from each of you! She made my job as general chair enjoyable. I want to thank each of these TACs by name: Robert Heath, Earl E. Swartzlander, Jr., Elza Erkip, Dana Brooks, Geir Øien, Jerry D. Gibson, Roy Yates, Stella Batalama, and Hongbin Li. And I thank all of the session chairs and participants (though your names won't fit!). We had over 580 papers (with about 200 invited ones) to use to create the wonderful program for this year's meeting.

Finally, I want the participants to note that without the local support from people such as Sue Netzorg, Monique Fargues, Mike Matthews, Frank Kragh, and Murali Tummala this meeting would not happen. They provide countless hours of service to arrange the meeting locale and food, the proceedings, the announcements, and review contracts and sign checks – the basic stuff of the life of the Conference.

Enjoy Asilomar!

Victor DeBrunner, Florida State University, June 2007

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G. Multi-rate and Digital Signal Processing
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H. Architecture and Implementation
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Student Paper Contest Chair
Jim Schroeder
Harris Corporation
Melbourne, FL

2007 Asilomar Conference Session Schedule

Sunday Afternoon, November 4

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

Monday Morning, November 5

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

10:15 - 12:00 PM MORNING SESSIONS
MA1b Signal Separation
MA2b Genomic Signal Processing
MA3b Analysis of Large Scale Communications Systems
MA4b Challenges and Opportunities in MIMO Communications
MA5b Integrated Algorithm and Architecture Implementation
MA6b Adhoc Network Capacity
MA7b Genomic Data Processing

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

Monday Afternoon, November 5

1:30 - 5:10 PM AFTERNOON SESSIONS
MP1 MIMO Radars
MP2a Registration in Biomedical Imaging
MP2b Image and Video Coding I
MP3 Cross-Layer Optimization in Wireless Resource Allocation
MP4 Multi-User MIMO Communications I
MP5 Computer Arithmetic
MP6 System Theory for Sensor Networks
MP7 Adaptive Signal Processing Using Higher-Order Arrays
MP8a1 Cooperative Communications (Poster)
MP8a2 Precoding for MIMO (Poster)
MP8a3 Image and Video Coding and Processing (Poster)
MP8a4 Topics in Speech, Image, and Signal Processing and Coding (Poster)
MP8b1 Statistical Signal Processing (Poster)
MP8b2 Biomedical and Genomic Signal Processing (Poster)

Monday Evening, November 5

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

2007 Asilomar Conference Session Schedule
(continued)

Tuesday Morning, November 6

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

8:30 AM - 12:10 PM MORNING SESSIONS
TA1 Non-Gaussian and Nonlinear Methods in Statistical Signal Processing
TA2 Spatio-Temporal Processing in Biomedical Imaging
TA3 Recent Advances in Cognitive Radio
TA4 Cooperative Diversity
TA5 Signal Processing for Structural Health Monitoring
TA6 Network Information Theory
TA7 Image and Video Coding II
TA8a1 Architectures (Poster)
TA8a2 Modulation, Detection, and Error Control Coding (Poster)
TA8a3 Interference Handing in Wireless Communications (Poster)
TA8b1 Multirate and Digital Signal Processing (Poster)
TA8b2 Performance Bounds (Poster)
TA8b3 Selected Topics in Wireless Communications (Poster)

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

Tuesday Afternoon, November 6

1:30 - 5:10 PM AFTERNOON SESSIONS
TP1 Underwater Acoustical Array Signal Processing
TP2 Cellular Image Analysis
TP3 Ultra Wideband Communications
TP4a Estimation and Detection
TP4b Array Signal Processing
TP5 Low-Power Methods
TP6a Network Pricing
TP6b Relay Channels
TP7a Speech Coding, Processing and Transport
TP7b Plenoptic Signal Processing
TP8a1 Advances in MIMO Communications (Poster)
TP8a2 MIMO Communication over Frequency Selective Channels (Poster)
TP8a3 Adaptive Systems and Processing (Poster)
TP8b1 Multi-user MIMO Communications II (Poster)
TP8b2 OFDM and Multi-Carrier Communications (Poster)
TP8b3 Estimations, Synchronization, and Equalization (Poster)

Tuesday Evening, November 6

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

2007 Asilomar Conference Session Schedule
(continued)

Wednesday Morning, November 7

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

8:30 AM - 12:10 PM MORNING SESSIONS

WA1a	Source Localization and Imaging
WA1b	Adaptive Radar Signal Processing
WA2a	New Optical Techniques for Cancer Detection and Therapy
WA2b	Signal Processing Techniques in Advanced MR Imaging
WA3a	Wireless Optical Communications
WA3b	Iterative Receiver Processing on Communication Systems
WA4	Feedback in MIMO Systems
WA5a	Programmable and Reconfigurable Architectures
WA5b	SOC Architectures
WA6a	Radar Signal Processing
WA6b	Signal Processing in Cognitive Radio Networks
WA7a	Speech and Audio Coding
WA7b	Wavelet and Filter Bank Methods for Image and Video Processing
WA8a1	Wireless Networks (Poster)
WA8a2	Sensor Networks (Poster)
WA8a3	Radar and Array Signal Processing (Poster)

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

Merril Hall - Sunday, November 4, 2007
Judging starts at 6:30PM

(Listed in paper number order)

"Knowledge-Aided Space-Time Adaptive Processing"
Xumin Zhu, Jian Li, Petre Stoica, and Joseph R. Guerci

"A Deterministic Method for Haplotype Inference"
Kuo-ching Liang and Xiadong Wang, Columbia University

"Rate Estimation Using Forward Adaptive Quantization: H.264 Fast Intra Mode Selection at High Data Rates"
Koohyar Minoo and Truong Q. Nguyen, University of California, San Diego

"Matrix Decomposition Architecture for MIMO Systems: Design and Implementation Trade-Offs"
Christoph Studer, Patrick Blösch, Peter Friedli, and Andreas Burg, ETH Zurich

"Multicarrier Broadcast and Unicast Hybrid Systems"
Hongxiang Li, Bin Liu, and Hui Liu, University of Washington

"Instruction Set Extensions for AES Processing on a Multithreaded Software Defined Radio Platform"
Christipher Jenkins, Suman Mamidi, Michael Schulte, University of Wisconsin-Madison, and John Glossmer, Sandbridge Technologies

"Real-Time MIMO Discrete Multitone Transceiver Testbed"
Alex Olson, Aditya Chopra, Yousof Mortazavi, Ian Wong, and Brian Evans, University of Texas at Austin

2007 Asilomar Conference Session Schedule

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

Monday, November 5

CONFERENCE OPENING AND PLENARY SESSION 8:30 – 9:45 AM

1. Welcome from the General Chairperson:

Prof. Victor E. DeBrunner
Florida State University

2. Session MA1a Distinguished Lecture for the 2007 Asilomar Conference

Prof. C. Sidney Burrus
Rice University

Connexions: A New Technology for Education

Abstract
We educators and researchers in information technology are quick to use the latest theories and techniques in our research but slow to use them in our teaching. Over the past ten or twenty years, the digital computer, internet connectivity, high capacity disc storage, and graphics display along with the powerful software systems for word processing, searching, hypertext linking have begun to challenge the traditional book. This talk describes a new system called Connexions (http://cnx.org/) which uses XML encoding of content with an open access copyright system by Creative Commons to create a radically new information publication system. Information or "content" is organized in modules which are written in an extendable markup language, XML, and put in a publicly available repository. The Creative Commons copyright license allows free access, authoring, revision, printing, and even commercial use. The Connexions repository now has over 4000 modules, 220 collections called courses or books, and users from 157 countries. This system (or something like it) is going to completely change the way we write, read, teach, and learn.

Biography
C. Sidney Burrus received his PhD from Stanford University in 1965 and has been on the faculty at Rice University since then. He was a visiting professor at the University of Erlangen in Germany in 1975 and again in 1980 and was a visiting professor at MIT in 1990. He received a Humboldt Award, a Fulbright Fellowship, and various research awards from the IEEE over the years. He is a Fellow of the IEEE. He received teaching awards from Rice in 1975 etc. was department chair for ten years, and was the Dean of Engineering at Rice for seven years. Currently, he is the Maxfield and Oshman Emeritus Professor of Electrical Engineering. He has published 5 books and over 200 research articles, mostly in digital signal processing, and has been involved with the use of technology for education which resulted in the Connexions Project which started in 1999.

Program of 2007
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Signals, Systems, and Computers

Technical Program Chairman
Maite Brandt-Pearce
University of Virginia

Session MA1b Signal Separation

MA1b-1 Non-cancellation Multistage Kurtosis Maximization with Prewhitening for Blind Source Separation 10:15 AM
Xiang Chen, Tsinghua University; Chong-Yung Chi, Chon-Wa Wong, National Tsing Hua University; Shidong Zhou, Yan Yao, Tsinghua University

MA1b-2 Separating composite signals in multi-probe dynamic biomedical imaging 10:40 AM
Li Chen, Yue Wang, Virginia Tech; Chong-Yung Chi, National Tsing Hua University; Zsolt Szabo, Johns Hopkins University; Peter L. Choyke, National Institutes of Health

MA1b-3 Blind Separation and Equalization Using Novel Hill-Climbing Optimization 11:05 AM
Dongxin Xu, Infoture Inc.; Hsiao-Chun Wu, Louisiana State University

MA1b-4 An Improved L1-Norm Algorithm for Underdetermined Blind Source Separation Using Sparse Representation 11:30 AM
Shuzhong Bai, Ju Liu, Guoxia Sun, Shandong University

MA1b-5 Variable Tap Length Convolutive Blind Source Separation 11:55 AM
Clive Cheong Took, Saeid Sanei, Cardiff University

Session MA2b Genomic Signal Processing

Chair: *P.P. Vaidyanathan & Byung-Jun Yoon*

MA2b-1 Robust Intervention in Probabilistic Boolean Networks 10:15 AM
Ranadip Pal, Aniruddha Datta, Edward Dougherty, Texas A&M University

MA2b-2 Probabilistic Methods for Improving Efficiency of RNA Secondary Structure Prediction Across Multiple Sequences 10:40 AM
Gaurav Sharma, A. Ozgun Harmanci, David Mathews, University of Rochester

MA2b-3 Framework for Identification of Common Variations in Multiple Samples of Human Genome Associated with Behavioral Abnormalities Using Signal Processing Technique and Statistics 11:05 AM
Abdullah Alqallaf, Ahmed Tewfik, University of Minnesota

MA2b-4 Fast Annotation of Noncoding RNA Families with Pseudoknots 11:30 AM
Byung-Jun Yoon, P. P. Vaidyanathan, California Institute of Technology

MA2b-5 A deterministic sequential Monte Carlo method for haplotype inference 11:55 AM
Kuo-ching Liang, Xiaodong Wang, Columbia University

Session MA3b Analysis of Large Scale Communication Systems

Chair: *Ralf R. Müller*

MA3b-1 Asymptotic Capacity of Orthogonal Multi-Level Amplify-and-Forward Relay Networks 10:15 AM
Shu-Ping Yeh, Stanford University; Olivier Leveque, Ecole Polytechnique Federale de Lausanne; John Cioffi, Stanford University

MA3b-2 Asymptotic Spectral Efficiency Analysis of the DS/CDMA Amplify and Forward Relay Channel 10:40 AM
David Gregoratti, Xavier Mestre, CTTC

MA3b-3 On the capacity of asynchronous CDMA systems 11:05 AM
Laura Cottatellucci, Institute Eurecom; Mérouane Debbah, Supelec; Ralf Müller, Norwegian University of Science and Technology (NTNU)

MA3b-4 Free deconvolution for MIMO channel capacity estimation 11:30 AM
Øyvind Ryan, University of Oslo; Mérouane Debbah, Supelec

MA3b-5 Second order statistics of the eigenvalue spectrum of truncated large unitary matrices 11:55 AM
Aris Moustakas, University of Athens; Mérouane Debbah, Supelec

Session MA4b Challenges and Opportunities in MIMO Communication

Chair: *Angel Lozano*

MA4b-1 Network MIMO: Overcoming Intercell Interference in Indoor Wireless Systems 10:15 AM
Gerard Foschini, Howard Huang, Angel Lozano, Laurence Mailaender, Reinaldo Valenzuela, Sivarama Valenzuela, Bell Labs (Alcatel-Lucent)

MA4b-2 Decision Feedback Based Transceiver Optimization for MIMO Inter-Symbol Interference Channels 10:40 AM
Yi Jiang, NextWave Broadband; Mahesh Varanasi, University of Colorado, Boulder; Daniel Palomar, Hong Kong University of Science and Technology

MA4b-3 Capacity Scaling of Multiuser MIMO with Limited Feedback in a Multicell Environment 11:05 AM
Lars Thiele, Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institut; Malte Schellmann, Technical University of Berlin; Wolfgang Zirwas, Nokia Siemens Networks GmbH & Co. KG; Volker Jungnickel, Technical University of Berlin

MA4b-4 Partial CSI designs for distributed space-time codes in wireless relay networks 11:30 AM
Mari Kobayashi, Supérieure d'Electricité (Supélec); Xavier Mestre, Centre Tecnològic de Telecomunicacions de Catalunya

MA4b-5 MIMO Precoding and Power Control based on 1-bit Feedback 11:55 AM
Filippo Merli, University of Modena and Reggio Emilia; Xiaodong Wang, Columbia University; Giorgio Vitetta, University of Modena and Reggio Emilia

Session MA5b Integrated Algorithm and Architecture Implementation

Chair: *Brian Evans*

MA5b-1 Jointly Optimized Software Radios for Low Power 4G Cellular Systems 10:15 AM
Brian Kelley, Freescale Wireless Messaging Advanced Technology

MA5b-2 Digital Video Broadcast Transceiver Deployment to Xilinx FPGAs using LabVIEW 10:40 AM
John Ammerman, Newton Petersen, Hugo A. Andrade, National Instruments Corporation

MA5b-3 Model-based mapping for nonrigid image registration 11:05 AM
Yashwanth Hemaraj, University of Maryland; Mainak Sen, Cisco Systems, Inc.; William Plishker, University of Maryland; Raj Shekhar, University of Maryland Medicine; Shuvra Bhattacharyya, University of Maryland

MA5b-4 Real-Time MIMO Discrete Multitone Transceiver Testbed 11:30 AM
Alex Olson, Aditya Chopra, Yousof Mortazavi, Ian Wong, Brian Evans, University of Texas at Austin

Session MA6b Adhoc Network Capacity

Chair: *Jeff Andrews & Martin Haenggi*

MA6b-1 Degrees of Freedom for Wireless Ad-hoc Networks 10:15 AM
Syed Jafar, University of California, Irvine

MA6b-2 Space-time trade-offs in MIMO communication 10:40 AM
Massimo Franceschetti, University of California, San Diego; Anna Martini, Andrea Massa, University of Trento

MA6b-3 Dynamic Connectivity and Information Propagation in Multihop ALOHA Networks 11:05 AM
Radha Krishna Ganti, Martin Haenggi, University of Notre Dame

MA6b-4 Energy-Limited vs. Interference-Limited Ad Hoc Network Capacity 11:30 AM
Nihar Jindal, University of Minnesota; Steven Weber, Drexel University; Jeffrey Andrews, University of Texas at Austin

MA6b-5 Optimal Throughput-Delay Tradeoff in Mammalian Ad Hoc Networks 11:55 AM
Rajiv Agarwal, John Cioffi, Stanford University

Session MA7b Genomic Data Processing

Chair: *Xiadong Wang*

MA7b-1 Combining Literature-Based Mammalian Protein Interaction and Signaling Networks, Graph Theory, and Multivariate Experiments to Predict Novel Components and Pathways 10:15 AM
Avi Ma'ayan, Mount Sinai School of Medicine

MA7b-2 S-system model estimation using stochastic approximation Monte Carlo 10:40 AM
Faming Liang, Jianhua Huang, Texas A&M University

MA7b-3 Processing single-cell single-molecule genomic information: New methods for new data 11:05 AM
Michael Samoilov, Adam Arkin, University of California, Berkeley / Lawrence Berkeley National Laboratory

MA7b-4 Bits and Bases: An analysis of Genetic Information Paradigms 11:30 AM
Elebeoba May, Sandia National Laboratories

MA7b-5 Signal processing for real-time DNA microarrays 11:55 AM
Haris Vikalo, Babak Hassibi, California Institute of Technology; Arjang Hassibi, University of Texas at Austin

Session MP1 MIMO Radars

Chair: *Jian Li & Petre Stoica*

MP1-1 Parameter Estimation and Number Detection of MIMO Radar Targets 1:30 PM
Luzhou Xu, University of Florida; Petre Stoica, Uppsala University; Jian Li, University of Florida

MP1-2 Signal Covariance Matrix Optimization for Transmit Beamforming in MIMO Radars 1:55 PM
Tuomas Aittomäki, Visa Koivunen, Helsinki University of Technology

MP1-3 Space reversal methods for MIMO radars 2:20 PM
Joseph Tabrikian, Ben-Gurion University of the Negev

MP1-4 On Data-Adaptive Waveform Design for MIMO Radar 2:45 PM
Benjamin Friedlander, University of California, Santa Cruz

BREAK 3:10 PM

MP1-5 A Design Method for MIMO Radar Frequency Hopping Codes 3:30 PM
Chun-Yang Chen, P. P. Vaidyanathan, California Institute of Technology

MP1-6 Coverage in radar networks 3:55 PM
Pier Francesco Sammartino, Christoper Baker, University College London

MP1-7 Slow-Time MIMO STAP with Improved Power Efficiency 4:20 PM
Vito Mecca, Jeffrey Krolik, Duke University

MP1-8 GMTI MIMO Radar: System And Waveform Optimization 4:45 PM
Daniel Bliss, Keith Forsythe, MIT Lincoln Laboratory

Session MP2a Registration in Biomedical Imaging

Chair: *Gustavo Rohde*

MP2a-1 Computational Functional Anatomy 1:30 PM
Anqi Qiu, Michael Miller, Johns Hopkins University

MP2a-2 Multiframe Registration of Aliased X-Ray Images 1:55 PM
Dirk Robinson, Ricoh Innovations; Sina Farsiu, Duke University; Peyman Milanfar, University of California, Santa Cruz

MP2a-3 Sampling and Reconstruction for Biomedical Image Registration 2:20 PM
Gustavo Rohde, Carnegie Mellon University; Dennis Healy Jr., University of Maryland; Akram Aldroubi, Vanderbilt University

MP2a-4 Locating Brain Tumor from MR Imagery Using Symmetry 2:45 PM
Nilanjan Ray, Baidya Saha, Matthew Brown, University of Alberta

Session MP2b Image and Video Coding I

MP2b-1 Inter-layer motion vector interpolation for low-complexity and very low bitrate scalable video coding 3:30 PM
Min Li, University of California, San Diego; Preethi Chandrasekhar, Gokce Dane, Qualcomm Inc; Truong Nguyen, University of California, San Diego

MP2b-2 Rate Estimation Using Forward Adaptive Quantization: H.264 Fast Intra Mode Selection at High Data Rates 3:55 PM
Koohyar Minoo, Truong Nguyen, University of California, San Diego

MP2b-3 An Adaptive Block Size Phase Correlation Motion Estimation Using Smart Multireference Frames Selection in Frequency Domain 4:20 PM
Yasser Ismail, Mohamed Elgamel, Magdy Bayoumi, The Center for Advanced Computer Studies (CACS)

MP2b-4 Multiple Description Image Coding Based on Multi-Stage Vector Quantization 4:45 PM
Tomas Andersson, Mikael Skoglund, Royal Institute of Technology (KTH)

Session MP3 Cross-Layer Optimization in Wireless Resource Allocation

Chair: *Randall Berry*

MP3-1 On estimation and resource allocation in wireless networks 1:30 PM
Tara Javidi, University of California, San Diego

MP3-2 Spectrum Allocation, Power Control, Routing, and Congestion Control for Wireless Networks with Duplexing Constraints 1:55 PM
Yufang Xi, Edmund Yeh, Yale University

MP3-3 Channel Aware Distributed Scheduling for Ad-Hoc Communications with Capture 2:20 PM
Weiyan Ge, Junshan Zhang, Arizona State University; Jeffrey E. Wieselthier, Naval Research Laboratory

MP3-4 Joint Scheduling and Resource Allocation in OFDM Systems: Algorithms and Performance for the Uplink 2:45 PM
Jianwei Huang, Chinese University of Hong Kong; Vijay Subramanian, Hamilton Institute; Randall Berry, Northwestern University; Rajeev Agrawal, Motorola

BREAK 3:10 PM

MP3-5 Utility Maximization in Multiple Access Channels. 3:30 PM
Ali ParandehGheibi, Asuman Ozdaglar, Muriel Medard, Atilla Eryilmaz, Massachusetts Institute of Technology

MP3-6 Cross-Layer Optimized Iterative Receivers for OFDM ARQ with Carrier Frequency Offset 3:55 PM
Thomas Ketseoglou, California State Polytechnic University, Pomona

MP3-7 Fairness vs. Efficiency: Comparison of Game Theoretic Criteria for OFDMA Scheduling 4:20 PM
Andreas Ibing, Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institut; Holger Boche, Technical University of Berlin / Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut; Fraunhofer German-Sino Lab for Mobile Communications

MP3-8 Persistent Resource Allocation in OFDMA Networks for Real-Time and Non-Real Time Traffic 4:45 PM
Vinay Majjigi, Rajiv Agarwal, John Cioffi, Stanford University

Session MP4 Multi-User MIMO Communications I

Chair: *Nihar Jindal*

MP4-1 On the Required Accuracy of Transmitter Channel State Information in Multiple Antenna Broadcast Channels 1:30 PM
Shlomo Shamai (Shitz), Technion; Giuseppe Caire, University of Southern California; Nihar Jindal, University of Minnesota

MP4-2 Uplink SDMA with Limited Feedback 1:55 PM
Kaibin Huang, Jeffrey Andrews, Robert Heath, University of Texas at Austin

MP4-3 Rank-Independent Codebook Design from a Quaternary Alphabet 2:20 PM
Bishwarup Mondal, Motorola; Timothy Thomas, Motorola Labs; Mark Harrison

MP4-4 Antenna Combining and Codebook Design for MIMO Broadcast Channels with Limited Feedback — 2:45 PM
Matteo Trivellato, University of Padova; Howard Huang, Federico Boccardi, Alcatel-Lucent

BREAK — 3:10 PM

MP4-5 On optimization of multiuser systems using interference calculus — 3:30 PM
Gerhard Wunder, Thomas Michel, Heinrich-Hertz-Institut Berlin

MP4-6 Jointly Optimized Downlink Multiuser MIMO OFDM Precoding System — 3:55 PM
Kyeong Jin Kim, Nokia Inc.; Jianzhong Zhang, Samsung Telecom America

MP4-7 Efficient MSE Balancing for the Multi-User MIMO Downlink — 4:20 PM
Raphael Hunger, Michael Joham, Wolfgang Utschick, Technische Universitaet Muenchen

MP4-8 Robust MAC MIMO Transceiver Design with Partial CSIT and CSIR — 4:45 PM
Xi Zhang, Royal Institute of Technology (KTH); Daniel Palomar, Hong Kong University of Science and Technology; Björn Ottersten, Royal Institute of Technology (KTH)

Session MP5 Computer Arithmetic

Chair: *Milos Ercegovac*

MP5-1 Floating-Point Fused Multiply-Add Architectures — 1:30 PM
Eric Quinnell, AMD; Earl Swartzlander, University of Texas at Austin; Carl Lemonds, AMD

MP5-2 On Digit-by-Digit Methods for Computing Certain Functions — 1:55 PM
Milos D. Ercegovac, University of California, Los Angeles

MP5-3 Computing Integer Powers in Floating-Point Arithmetic — 2:20 PM
Peter Kornerup, Southern Danish University; Vincent Lefevre, Jean-Michel Muller, ENS Lyon

MP5-4 Performance Impact when Using Denormalized Numbers in Basic Floating-point Operations — 2:45 PM
Alex Tenca, Kyung-Nam Han, David Tran, Synopsys, Inc.

BREAK — 3:10 PM

MP5-5 A Binary Integer Decimal-based Multiplier for Decimal Floating Point Arithmetic — 3:30 PM
Charles Tsen, University of Wisconsin; Sonya Gonzales Navarro, University of Malaga; Michael Schulte, University of Wisconsin

MP5-6 A Residue Approach of the Finite Fields Arithmetics — 3:55 PM
Jean-Claude Bajard, University of Montpellier

MP5-7 Retiming the ARM VFP-11 Divide and Square Root Architecture — 4:20 PM
Neil Burgess, Icera Inc.

MP5-8 Using Half-Adders to Speed Up Floating-Point Critical Paths — 4:45 PM
David Lutz, Chris N. Hinds, ARM Inc.

Session MP6 System Theory for Sensor Networks

Chair: *Venu Veerevalli*

MP6-1 Information-Driven Sensor Planning with Local Topology Knowledge — 1:30 PM
John W. Fisher III, Jason L. Williams, Massachusetts Institute of Technology

MP6-2 Sampling and Reconstruction of Polyhedra Observed in Noise — 1:55 PM
Mingbo Zhao, Sergio Servetto, Cornell University

MP6-3 Separation Theorems and Partial Orderings for Sensor Network Problems — 2:20 PM
Michael Gastpar, University of California, Berkeley

MP6-4 The Nose of a Bloodhound: Target Chasing Aided by a Static Sensor Network — 2:45 PM
Oliver Kosut, Lang Tong, Cornell University

BREAK — 3:10 PM

MP6-5 Decentralized Detection with Correlated Observations — 3:30 PM
Jayakrishnan Unnikrishnan, Venugopal Veeravalli, University of Illinois at Urbana-Champaign

MP6-6 Consensus-Based Distributed Recursive Least-Squares Estimation in Ad Hoc Wireless Sensor Networks — 3:55 PM
Ioannis Schizas, Gonzalo Mateos, Georgios Giannakis, University of Minnesota

MP6-7 Diffuse Field Estimation with Asynchronous Sensor Networks — 4:20 PM
Sriram Narayanan, Douglas L. Jones, University of Illinois at Urbana-Champaign

MP6-8 Recent Progress on a 60-GHz Imaging Sensor Network — 4:45 PM
Munkyo Seo, Bharath Ananthasubramaniam, Upamanyu Madhow, Mark J. W. Rodwell, University of California, Santa Barbara

Session MP7 Adaptive Signal Processing Using Higher-Order Arrays

Chair: *Martin Haardt*

MP7-1 Block Component Model Based Blind DS-CDMA Receivers — 1:30 PM
Dimitri Nion, Lieven De Lathauwer, ETIS CNRS UMR 8051

MP7-2 Canonical Decomposition of scalp EEG in epileptic seizure localisation 1:55 PM
Maarten De Vos, Katholieke Universiteit Leuven; Lieven De Lathauwer, CNRS-ENSEA-ETIS; Sabine Van Huffel, Wim Van Paesschen, Katholieke Universiteit Leuven

MP7-3 Enhanced Model Order Estimation Using Higher-Order Arrays 2:20 PM
Joao Paulo C. L. da Costa, Martin Haardt, Florian Roemer, Giovanni Del Galdo, Ilmenau University of Technology

MP7-4 Joint Diagonalization of Third Order Complex Symmetric Tensors and Application to Blind Separation of Non-Circular Sources 2:45 PM
Eric Moreau, LSEET, University of Toulon

BREAK 3:10 PM

MP7-5 Set-Theoretic Reduced-Rank Adaptive Filtering by Adaptive Projected Subgradient Method 3:30 PM
Masahiro Yukawa, RIKEN; Rodrigo de Lamare, University of York; Isao Yamada, Tokyo Institute of Technology

MP7-6 Efficient Algorithms for Computing the Capon and APES Filters 3:55 PM
Erik Gudmundson, Uppsala University; Andreas Jakobsson, Karlstad University

MP7-7 Fast RLS algorithm using dichotomous coordinate descent iterations 4:20 PM
Yuriy V. Zakharov, University of York; George White, QinetiQ; Jie Liu, University of York

MP7-8 Long angle-of-arrival estimation in the presence of specular and diffuse multipath 4:45 PM
Simon Haykin, McMaster University

Session MP8a1 Cooperative Communications

MP8a1-1 Auction-Theoretic Partner Selection in Cooperative Diversity Wireless Networks
Amitav Mukherjee, Hyuck Kwon, Wichita State University

MP8a1-2 Multi-Cell Cooperative Transmission
Younsun Kim, Hui Liu, University of Washington

MP8a1-3 Joint Beamforming and Power Adaptation for MIMO Broadcasting Relays with QoS Constraints
Rui Zhang, Chin Choy Chai, Ying Chang Liang, Institute for Infocomm Research

MP8a1-4 Dynamic Resource Allocation For The Broadband Relay Channel
Kagan Bakanoglu, Deniz Gunduz, Elza Erkip, Polytechnic University

Session MP8a2 Precoding for MIMO

MP8a2-1 Pre-Coding for Rapidly Time Varying MIMO Communication Channels
Meriam Rezk, Benjamin Friedlander, University of California, Santa Cruz

MP8a2-2 Space-Time Spreading MIMO System Using Canonical Precoding Tensor Model
André de Almeida, Gérard Favier, I3S Laboratory; João Cesar Mota, Wireless Telecom Research Group (GTEL)

MP8a2-3 Precoder Design for V-BLAST Schemes Based on Pre-Whitening Detector
Lingyang Song, Are Hjørungnes, Pradeepa Yahampath, Manav R. Bhatnagar, University of Oslo

MP8a2-4 Precoding of Differential OSTBC in Arbitrarily Correlated MIMO Channels
Manav R. Bhatnagar, Are Hjørungnes, Lingyang Song, University of Oslo

Session MP8a3 Image and Video Coding and Processing

MP8a3-1 Automatic region of interest determination in music videos
Wonjun Kim, Changick Kim, Information and Communications University

MP8a3-2 Ground Color Customization of Soccer Videos
Ilkoo Ahn, Changick Kim, Information and Communications University

MP8a3-3 Adaptive thresholding for motion detection in a CMOS image sensor
Arnaud Verdant, CEA; Antoine Dupret, Hervé Mathias, Université Paris Sud; Patrick Villard, CEA

MP8a3-4 Statistical modeling and ML parameter estimation of complex SAR imagery
Michael Davis, Patrick Bidigare, General Dynamics - Advanced Information Systems

MP8a3-5 Improving Robustness of Image Quality Measurement with Degradation Classification and Machine Learning
Tiago H. Falk, Yingchun Guo, Wai-Yip (Geoffrey) Chan, Queen's University

MP8a3-6 Fast implementation of a l_infinity-l_1 penalized sparse representations algorithm: Applications in image coding.
Jean Jacques Fuchs, IRISA / Univ. de Rennes 1; Christine Guillemot, IRISA / INRIA

MP8a3-7 Contourlet based Image Denoising Using Improved Thresholding Neural Network
Sayed Mohammad Ebrahim Sahraeian, Farrokh Marvasti, Sharif University of Technology

MP8a3-8 Denoising noisy images with noise
Hao Chen, Pramod Varshney, Syracuse University; James Michels, JHM Technologies LLC

MP8a3-9 A Comparison of Some State of the Art Image Denoising Methods
Hae Jong Seo, Priyam Chatterjee, Hiroyuki Takeda, Peyman Milanfar, University of California, Santa Cruz

Session MP8a4 Topics in Speech, Image, and Signal Processing and Coding

MP8a4-1 Perceptual Pre-weighting and Post-inverse weighting for Speech Coding
Niranjan Shetty, Jerry Gibson, University of California, Santa Barbara

MP8a4-2 Epsilon entropy of piecewise polynomial functions and tree partitioning algorithm
Arian Maleki, Stanford University

MP8a4-3 Flexible Quantization of Audio and Speech Based on the Autoregressive Model
Alexey Ozerov, W. Bastiaan Kleijn, Royal Institute of Technology (KTH)

MP8a4-4 Wiener filter for isotropic signal fields
Raman Arora, University of Wisconsin-Madison; Harish Parthasarathy, Netaji Subhas Institute of Technology

MP8a4-5 Using Phoneme Segmentation in Conjunction with Missing Feature Approaches for Noise Robust Speech Recognition
Arash Mohammadi, Farshad Almasganj, Aboozar Taherkhani, Farnoosh Naderkhani, Amirkabir University of Technology

MP8a4-6 Unaligned training for voice conversion based on a local-nonlinear principal component analysis approach
Behrooz Makki, Seyed Ali Seyedsalehi, Mona Noori Hosseini, Amirkabir University of Technology; Nasser Sadati, Sharif University of Technology

MP8a4-7 Rate-adaptive turbo-syndrome scheme for Slepian-Wolf Coding
Aline Roumy, Khaled Lajnef, Christine Guillemot, IRISA-INRIA

MP8a4-8 Biorthogonal Matrix Dirty Paper Code for Information Hiding
Xin Xu, Martin Tomlinson, Marcel Ambroze, Mohammed Ahmed, University of Plymouth

MP8a4-9 The Cyclic Matching Pursuit and Its Application to Audio Modeling and Coding
Mads Christensen, Søren Holdt Jensen, Aalborg University

MP8a4-10 Constrained Monotone Regression and Outlier Detection for Searching Occlusion Objects
Dong SIk Kim, Hankuk University of Foreign Studies; Kiryung Lee, University of Illinois at Urbana-Champaign

MP8a4-11 Optimal Bit Layering for Scalable Audio Compression Using Objective Audio Quality Metrics
Srivatsan Kandadai, Charles Creusere, New Mexico State University

MP8a4-12 Feature Frame Watermarking
Hedley Morris, Imad Muhi El-Ddin, Claremont Graduate University

MP8a4-13 View Morphing using Linear Prediction of Sub-Space Features
Abhijit Mahalanobis, Lockheed Martin, MFC; Philip Berkowitz, Mubarak Shah, University of Central Florida; Richard Sims, U.S. Army

Session MP8b1 Statistical Signal Processing

MP8b1-1 Low-Complexity Carrier Frequency Offset Estimation For Frequency-Selective Channels
Jeffrey D. Klein, ATK Mission Research

MP8b1-2 Correlation coefficients for complex random vectors
Peter J. Schreier, University of Newcastle

MP8b1-3 Stochastic Incremental Gradient Descent for Estimation in Sensor Networks
S.Ram Srinivasan, Angelia Nedich, Venugopal Veeravalli, University of Illinois at Urbana-Champaign

MP8b1-4 Estimating the mode of a phase distribution
Barry Quinn, Macquarie University

MP8b1-5 An Efficient Dimensional Reduction of the Blocking Matrix for the Multistage Wiener Filter
Junichiro Suzuki, Yoshikazu Shoji, Masahiro Tanabe, Toshiba Corporation; Hiroyoshi Yamada, Yoshio Yamaguchi, Niigata University

MP8b1-6 Signal estimation based on mutual information maximization
Gustavo Rohde, Carnegie Mellon University; Jonathan Nichols, Frank Bucholtz, Joseph V. Michalowicz, Naval Research Laboratory

MP8b1-7 Moment-Based SNR Estimation for SIMO Wireless Communication Systems Using Arbitrary QAM
Alex Stéphenne, Ericsson Canada Inc.; Faouzi Bellili, Sofiène Affes, INRS-ÉMT

MP8b1-8 A Distributed Approach to Beamforming in a Wireless Sensor Network
Nikolaos Papalexidis, Owens Walker, Charalampos Gkionis, Murali Tummala, John McEachen, Naval Postgraduate School

MP8b1-9 Model Distribution For Distributed Kalman Filters: A Graph Theoretic Approach
Usman Khan, José M. F. Moura, Carnegie Mellon University

MP8b1-10 Blind MIMO channel identification using cumulant tensor decomposition
Carlos Estêvão Fernandes, Gérard Favier, University of Nice Sophia Antipolis; João Cesar Mota, Federal University of Ceará

MP8b1-11 Further Results on Performance Analysis for Compressive Sensing Using Expander Graphs
Weiyu Xu, Babak Hassibi, California Institute of Technology

MP8b1-12 Blind Source Separation with a Time-Varying Mixing Matrix
Marcus DeYoung, Brian Evans, University of Texas at Austin

MP8b1-13 Fundamental Frequency Estimation using the Shift-Invariance Property
Mads Christensen, Aalborg University; Andreas Jakobsson, Karlstad University; Søren Holdt Jensen, Aalborg University

MP8b1-14 Efficient estimation of the parameters in a sum of complex sinusoids in complex autoregressive noise
Barry Quinn, Macquarie University

MP8b1-15 A Modulation Code-Based Blind Receiver for Memoryless Multiuser Volterra Channels
Carlos Alexandre Rolim Fernandes, Gérard Favier, I3S Laboratory; João Cesar Moura Mota, GTEL Laboratory

MP8b1-16 Distributed Iteratively Quantized Kalman Filtering for Wireless Sensor Networks
Eric J. Msechu, Alejandro Ribeiro, Stergios I. Roumeliotis, Georgios Giannakis, University of Minnesota

MP8b1-17 Sinusoidal Order Estimation using the Subspace Orthogonality and Shift-Invariance Properties
Mads Christensen, Aalborg University; Andreas Jakobsson, Karlstad University; Søren Holdt Jensen, Aalborg University

MP8b1-18 Phase Noise Mitigation in Channel Parameter Estimation for TDM Switched MIMO Channel Sounding
Attaphongse Taparugssanagorn, Centre for Wireless Communications / University of Oulu; Xuefeng Yin, Aalborg university; Juha Ylitalo, Elektrobit; Bernard Fleury, Aalborg university

MP8b1-19 Separation of One-dimensional Waves - a Stochastic Systems Approach
Peter Nauclér, Torsten Söderström, Uppsala University

MP8b1-20 Tracking of MIMO Propagation Parameters under Spatio-Temporal Scattering Model
Jussi Salmi, Andreas Richter, Visa Koivunen, Helsinki University of Technology

MP8b1-21 Propagator Method and Triangular Factorization for Source Bearing Estimation
Nizar Tayem, Mort Naraghi-Pour, Louisiana State University

MP8b1-22 Efficient Line Search Method for Riemannian Optimization under Unitary Matrix Constraint
Traian Abrudan, Jan Eriksson, Visa Koivunen, Helsinki University of Technology

MP8b1-23 Distributed Consensus Algorithms in Sensor Networks With Communication Channel Noise
Soummya Kar, José M. F. Moura, Carnegie Mellon University

MP8b1-24 On Side-Informed Coding of Noisy Sensor Observations
Chao Yu, Gaurav Sharma, University of Rochester

MP8b1-25 Blind Separation of In-Building Acoustic Signals for Urban Sensing Using Distributed Sensors
Mohamed Sahmoudi, Moeness Amin, Yimin Zhang, Villanova University

MP8b1-26 Fundamental limit of sample eigenvalue based detection of signals in colored noise using relatively few samples
Raj Rao Nadakuditi, Massachusetts Institute of Technology; Jack Silverstein, North Carolina State University

Session MP8b2 Biomedical and Genomic Signal Processing

MP8b2-1 On recovery of sparse signals in compressed DNA microarrays
Haris Vikalo, Farzad Parvaresh, Babak Hassibi, California Institute of Technology

MP8b2-2 Nonlinear Signal Processing for Voice Disorder Detection by Using Modified GP Algorithm and Surrogate Data Analysis
Aboozar Taherkhani, Seyyed Ali Seyyedsalehi, Arash Mohammadi, Mohammad Hasan Moradi, Amirkabir University of Technology

MP8b2-3 Feature-Based Classification of Surface EMG Signal for a Multifunctional Myoelectric Hand
Daryoosh Bineshian, Amirkabir University of Technology; Mohammad Reza Bineshian, Tehran University of Medical Sciences; Seyed Mohammad Ebrahim Mousavi, University of Social Welfare and Rehabilitation Sciences; Mohammad Hasan Moradi, Amirkabir University of Technology

MP8b2-4 3D Spectrum Analysis of DNA Sequence: Application to C elegans Genome
Afef Elloumi Oueslati, ENIT; Zied Lachiri, Insat; Noureddine Ellouze, ENIT

Session TA1 Non-Gaussian and Nonlinear Methods in Statistical Signal Processing

Chair: *Pramod K. Varshney*

TA1-1 Noise Enhanced Signal Detection and Estimation 8:30 AM
Hao Chen, Pramod Varshney, Syracuse University; James Michels, JHM Technologies

TA1-2 Weak Signal Estimation in Unknown Chaotic Clutter using Coupled Synchronization 8:55 AM
Ajeesh P. Kurian, Henry Leung, University of Calgary

TA1-3 Performance Analysis of the NAMF Test in Heterogeneous Non-Gaussian Radar Clutter Scenarios 9:20 AM
Muralidhar Rangaswamy, Freeman Lin, Air Force Research Laboratory

TA1-4 A new approach to cost-reference particle filtering 9:45 AM
Petar M. Djuric, Zejie Zhang, Monica F. Bugallo, Stony Brook University

BREAK 10:10 AM

TA1-5 Joint state monitoring and fault detection using distributed particle filtering 10:30 AM
Qi Cheng, Oklahoma State University; Pramod Varshney, Syracuse University

TA1-6 Particle Filter with Efficient Importance Sampling and Mode Tracking (PF-EIS-MT) and its Application to Landmark Shape Tracking 10:55 AM
Namrata Vaswani, Samarjit Das, Iowa State University

TA1-7 A Bayesian Framework for Abundance Estimation in Hyperspectral Cubes using Markov Random Fields 11:20 AM
Todd Moon, Jacob Gunther, Matthew Stites, Utah State University; Gustavious Williams, Brigham Young University

TA1-8 A robust detector for impulsive noise environment 11:45 AM
Tonu Trump, Tallinn Technical University

Session TA2 Spatio-Temporal Processing in Biomedical Imaging

Chair: *Yongyi Yang*

TA2-1 Murine Spatiotemporal Cardiac Segmentation 8:30 AM
Andrew Gilliam, Scott T. Acton, University of Virginia

TA2-2 Multimodal Imaging of Myocardial Infarction in Mice 8:55 AM
Brent A. French, Frederick H. Epstein, John A. Hossack, Stuart S. Berr, Christopher M. Kramer, University of Virginia

TA2-3 An AM-FM model for Motion Estimation in Atherosclerotic Plaque Videos 9:20 AM
Victor Murray, Sergio E. Murillo, Marios S. Pattichis, University of New Mexico; Christos P. Loizou, Intercollege; Costantinos S Pattichis, Efthyvoulos Kyriacou, University of Cyprus; Andrew Nicolaides, University of Cyprus / Vascular Screening and Diagnostic Center

TA2-4 Spatio-temporal approaches to inverse electrocardiography 9:45 AM
Dana Brooks, Andrew Keely, Northeastern University; Alireza Ghodrati, Draeger Medical; Gilead Tadmor, Northeastern University; Rob MacLeod, University of Utah

BREAK 10:10 AM

TA2-5 Reconstruction of gated cardiac SPECT using DFT basis 10:30 AM
Yongyi Yang, Xiaofeng Niu, Mingwu Jin, Illinois Institute of Technology

TA2-6 Non-Iterative MAP Reconstruction for Non-Cartesian MRI Acquisition Sequences 10:55 AM
Hasib Siddiqui, Charles Bouman, Thomas Talavage, Purdue University

TA2-7 Surface ECG reconstruction from intracardiac EGM: a PCA-vectocardiogarm method 11:20 AM
Amar Kachenoura, Anissa Bourguiba, Fabienne Porée, Alfredo Hernandez, Guy Carrault, INSERM, U642, Rennes

Session TA3 Recent Advances in Cognitive Radio

Chair: *Erik G. Larsson*

TA3-1 Spectrum Opportunity Detection: How Good Is Listen-Before-Talk? 8:30 AM
Qing Zhao, University of California, Davis

TA3-2 Censoring for Collaborative Spectrum Sensing in Cognitive Radios 8:55 AM
Jarmo Lunden, Visa Koivunen, Helsinki University of Technology; Anu Huttunen, Nokia Research Center; H. Vincent Poor, Princeton University

TA3-3 Sensor-Network-Aided Cognitive Radio: On the Optimal Receiver for Estimate-and-Forward Protocols applied to the Relay Channel 9:20 AM
Ragnar Thobaben, Erik G. Larsson, Royal Institute of Technology (KTH)

TA3-4 Cognitive radio Research and Implementation Challenges 9:45 AM
Aawatif Menouni Hayar, Eurecom Institute

BREAK 10:10 AM

TA3-5 Stability analysis of a cognitive multiple access channel with primary QoS constraints 10:30 AM
Jonathan Gambini, New Jersey Institute of Technology / Politecnico di Milano; Osvaldo Simeone, Yeheskel Bar-Ness, New Jersey Institute of Technology; Umberto Spagnolini, Politecnico di Milano

TA3-6 Distributed Transmit Power Allocation for Relay-Assisted Cognitive-Radio Systems 10:55 AM
Jan Mietzner, Lutz Lampe, Robert Schober, University of British Columbia

TA3-7 A price based dynamic spectrum allocation scheme 11:20 AM
Joydeep Acharya, Roy Yates, WINLAB, Rutgers University

Session TA4 Cooperative Diversity

Chair: *J. Nicholas Laneman*

TA4-1 On Achievable Rates for Interference Relay Channel with Interference Cancellation 8:30 AM
Onur Sahin, Elza Erkip, Polytechnic University

TA4-2 Feedback-induced Cooperation 8:55 AM
Debashis Dash, Ashutosh Sabharwal, Rice University

TA4-3 DMT achieving Distributed Space Time Codes for the MIMO Multiple Access Channel 9:20 AM
Jean-Claude Belfiore, Maya Badr, Sheng Yang, ENST; Ghaya Rekaya-Ben Othman, ENST Paris

TA4-4 Cooperative Multiple Access in Interference-Limited Wireless Networks 9:45 AM
Ozgur Oyman, Intel; Feng Xue, Intel Research

BREAK 10:10 AM

TA4-5 Cooperative Transmission of Correlated Gaussian Sources 10:30 AM
Ozgu Alay, Elza Erkip, Yao Wang, Polytechnic University

TA4-6 Distributed Decoding in Cooperative Communications 10:55 AM
Marjan Karkooti, Joseph R. Cavallaro, Rice University

TA4-7 Distributed Multiuser Cooperative Network with Heterogenous Relay Clusters 11:20 AM
Celal Esli, Armin Wittneben, ETH Zurich

TA4-8 Energy Efficient Relaying Games in Cooperative Wireless Transmission Systems 11:45 AM
Jie Yang, Donald Brown, Worcester Polytechnic Institute

Session TA5 Signal Processing for Structural Health Monitoring

Chair: *Antonia Papandreou-Suppappola & Doug Cochran*

TA5-1 Signal Processing Issues Related to Structural Health Monitoring 8:30 AM
Mark Derriso, Air Force Research Laboratory; Steven E. Olson, University of Dayton Research Institute; Jose A. Montes de Oca, Martin P. DeSimio, ATK Mission Systems

TA5-2 Applications of Signal Processing to Structural Health Monitoring 8:55 AM
Charles R. Farrar, Matthew T. Bement, Gyuhae Park, Los Alamos National Laboratory

TA5-3 Damage Classification for Structural Health Monitoring Using Time-Frequency Feature Extraction and Continuous Hidden Markov Models 9:20 AM
Wenfan Zhou, Debejyo Chakraborty, Narayan Kovvali, Antonia Papandreou-Suppappola, Douglas Cochran, Aditi Chattopadhyay, Arizona State University

TA5-4 Optimal Sub-band Beamforming with Frequency Masking for Localized Detection of Damage in Structural Health Monitoring 9:45 AM
Alessio Medda, Victor DeBrunner, Florida State University

BREAK 10:10 AM

TA5-5 Time-Frequency Based Feature Extraction and Classification for Fault Diagnosis in Electric Drives 10:30 AM
Selin Aviyente, Sajjad Zaidi, Elias Strangas, Michigan State University

TA5-6 Comparison of Outlier Detection Algorithms of In-Flight Rotorcraft Vibration Signals 10:55 AM
Santanu Das, Arizona State University; Ashok Srivastava, NASA Ames Research Center

TA5-7 An Inductive Reasoning Approach for Fuzzy Damage Recognition Using Wavelet Energy 11:20 AM
Mahmoud Reda Taha, Department of Civil Engineering

Session TA6 Network Information Theory

Chair: *Aylin Yener*

TA6-1 On the duality of MIMO MAC and BC with AF relays 8:30 AM
Krishna Gomadam, Syed Jafar, University of California, Irvine

TA6-2 On dependence balance bounds for two-way channels 8:55 AM
Ravi Tandon, Sennur Ulukus, University of Maryland

TA6-3 The Scaling of the Broadcast Capacity of Extended Wireless Networks with Cooperative Relays 9:20 AM
Birsen Sirkeci-Mergen, Michael Gastpar, University of California, Berkeley

TA6-4 Capacity of a class of MIMO Cognitive Radios 9:45 AM
Sriram Sridharan, Sriram Vishwanath, University of Texas at Austin

BREAK 10:10 AM

TA6-5 Utility Maximization in Multiple Access Channels. 10:30 AM
Ali ParandehGheibi, Asuman Ozdaglar, Muriel Medard, Atilla Eryilmaz, Massachusetts Institute of Technology

TA6-6 Rate Equivocation Region of a Class of Relay Channels with Orthogonal Components 10:55 AM
Xiang He, Aylin Yener, Pennsylvania State University

TA6-7 An Achievable Rate Region for the Interference Channel with a Cognitive Transmitter 11:20 AM
Ivana Maric, Andrea Goldsmith, Stanford University; Gerhard Kramer, Bell Labs (Alcatel-Lucent); Shlomo Shamai (Shitz), Technion

TA6-8 Wire-Tap Channel With Two-Sided State Information 11:45 AM
Wei Liu, Biao Chen, Syracuse University

Session TA7 Image and Video Coding II

Chair: *Michael Marcellin & Ali Bilgin*

TA7-1 Security of Compressing Encrypted Sources 8:30 AM
Goce Jakimoski, K. P. Subbalakshmi, Stevens Institute of Technology

TA7-2 Channel Coding for Scalable Multimedia in a 2-D Time-Frequency Block of an OFDM System 8:55 AM
Yee Sin Chan, Verizon Wireless; Pamela Cosman, Laurence Milstein, University of California, San Diego

TA7-3 Distance quantization method for fast nearest neighbor search computations with applications to motion estimation 9:20 AM
Hye-Yeon Cheong, Antonio Ortega, University of Southern California

TA7-4 802.11 WLAN Video Multicast Based on Temporal Scalable H.264 9:45 AM
Zhengye Liu, Polytechnic University; Zhenyu Wu, Hang Liu, Mingquan Wu, Alan Stein, THOMSON

BREAK 10:10 AM

TA7-5 JPEG2000: Quality Scalability and Windows of Interest Transmission 10:30 AM
Joan Serra-Sagrista, Francesc Auli-Llinas, Universitat Autonoma Barcelona

TA7-6 Multiple description image coding using regions of interest 10:55 AM
Marcus Nystrom, Lund University; Jerry Gibson, University of California, Santa Barbara; John B. Anderson, Lund University

TA7-7 Multistage Lattice Vector Quantization for Hyperspectral Image Compression 11:20 AM
Ying Liu, William Pearlman, Rensselaer Polytechnic Institute

TA7-8 Rate Distortion Optimized Vector SPIHT for Wavelet Image Coding 11:45 AM
Yongqing Liang, Scott Budge, Utah State University

Session TA8a1 Architectures

Chair: *Graham Jullien*

TA8a1-1 Application-Specific Instruction Set Processor Implementation of List Sphere Detector
Juho Antikainen, University of Oulu; Perttu Salmela, Tampere University of Technology; Olli Silvén, Markku Juntti, University of Oulu; Jarmo Takala, Tampere University of Technology; Markus Myllylä, University of Oulu

TA8a1-2 Distributed Phased Arrays With Wireless Beamforming
David Jenn, Yong Loke, Mathew Tong, Eng Choon Yeo, Robert Broadston, Naval Postgraduate School

TA8a1-3 A Handheld Texel Camera for Acquiring Near-Instantaneous 3D Images
Brandon Boldt, Scott Budge, Utah State University

TA8a1-4 Efficient Mutliplierless Polyphase FIR Filter based on New Distributed Arithmetic Architecture
Jose Tecpanecatl-Xihuitl, Ruth Aguilar-Ponce, Magdy Bayoumi, University of Louisiana at Lafayette

TA8a1-5 Instruction Set Extensions for AES Processing on a Multithreaded Software Defined Radio Platform
Christipher Jenkins, Suman Mamidi, Michael Schulte, University of Wisconsin-Madison; John Glossner, Sandbridge Technologies

TA8a1-6 Combined radix-10 and radix-16 division unit
Tomas Lang, University of California, Irvine; Alberto Nannarelli, Technical university of Denmark

TA8a1-7 A Comparative Analysis of Data-Driven Architectural Techniques for Low-Power Array Multipliers
Vasily Moshnyaga, Fukuoka University

TA8a1-8 Iterative Radix-8 Multiplier Structure Based on a Novel Real-time CSD Recoding
Yunhua Wang, University of Oklahoma; Linda DeBrunner, Florida State University; Joseph Havlicek, Dayong Zhou, University of Oklahoma

TA8a1-9 A solution for memory collision in semi-parallel FPGA-based LDPC decoder design
Radivoje Zarubica, Stephen Wilson, University of Virginia

TA8a1-10 Hardware implementation of an Echo-Canceller for DVB-T On-Channel Repeaters
Paolo Altamura, Gian Carlo Cardarilli, University of Rome; Andrea Del Re, Skytechnology S.r.l.; Marco Re, University of Rome

TA8a1-11 High Throughput Sphere Decoding Using Staggered Decoding Schedule
Pankaj Bhagawat, Texas A&M University; Chunjie Duan, Mitsubishi Electric Research Lab-Cambridge; Gwan Choi, Texas A&M University

TA8a1-12 On Performance and Complexity of Sphere Decoding
Chester Park, Samsung Advanced Institute of Technology; Sin-Chong Park, Information and Communications University

TA8a1-13 An algorithm for factoring very high degree polynomials with random coeficients
C. Sidney Burrus, James Fox, Gary Sitton, Sven Treitel, Rice University

TA8a1-14 Design of Low-Pass Tunable Complex Heterodyne Filters
Michael Soderstrand, Univesity of California

Session TA8a2 Modulation, Detection, and Error Control Coding

TA8a2-1 Analytical Bit Error Rate Calculation for BICM(-ID) Assuming Imperfect CSI
Susanne Godtmann, I-Wei Lai, RWTH Aachen University; Tzi-Dar Chiueh, National Taiwan University; Gerd Ascheid, Heinrich Meyr, RWTH Aachen University

TA8a2-2 Hyper Phase Shift Keying (HPSK) Modulation
James Caldwell, Murali Tummala, Naval Post-Graduate School

TA8a2-3 Fast Near-Optimal Noncoherent Sequence Detection for Block Transmission over Doubly Dispersive Channels
Sungjun Hwang, Philip Schniter, The Ohio State University

TA8a2-4 Data-Dependent Superimposed Training for Noncoherent Channels
Jingnong Yang, Stanford University; Douglas B. Williams, Georgia Institute of Technology; John Cioffi, Stanford University

TA8a2-5 Space-Time Serial Concatenated Turbo Coded Modulation
Daniel Liu, Michael Fitz, University of California, Los Angeles

TA8a2-6 Expanding Window Fountain Codes for Unequal Error Protection
Dino Sejdinovic, University of Bristol; Dejan Vukobratovic, University of Novi Sad; Angela Doufexi, University of Bristol; Vojin Senk, University of Novi Sad; Robert J. Piechocki, University of Bristol

TA8a2-7 Analog Source-Channel Codes Based on Orthogonal Polynomials
Niklas Wernersson, Mikael Skoglund, Royal Institute of Technology (KTH); Tor Ramstad, Norwegian University of Science and Technology (NTNU)

TA8a2-8 Space-Time Coding versus Repetition Coding for Free-Space Optical Communication
Majid Safari, Murat Uysal, University of Waterloo

TA8a2-9 Architecture and Algorithm for a Stochastic Soft-output MIMO Detector
Kiarash Amiri, Predrag Radosavljevic, Joseph R. Cavallaro, Rice University

Session TA8a3 Interference Handling in Wireless Communications

TA8a3-1 Interference Suppression in Wireless Cellular Networks through Picocells
Yifan Liang, Stanford University; Reinaldo Valenzuela, Gerard Foschini, Dmitry Chizhik, Bell Labs (Alcatel-Lucent); Andrea Goldsmith, Stanford University

TA8a3-2 Interference Avoidance With Limited Feedback
Dimitrie Popescu, Sirisha Koduri, Old Dominion University

TA8a3-3 Extrinsic Information Transfer in Cellular MC-CDMA for Inter-Cell Interference Cancellation
Simon Plass, Stephan Sand, German Aerospace Center (DLR)

TA8a3-4 Low-Complexity Variable Step-Size Mechanism for Code-Constrained Constant Modulus Stochastic Gradient Algorithms applied to CDMA Interference Suppression
Yunlong Cai, Rodrigo de Lamare, University of York

TA8a3-5 Gradient Descent Interference Avoidance for Uplink CDMA Systems with Multipath
Dimitrie Popescu, Danda Rawat, Old Dominion University

TA8a3-6 The Simple Near-Optimal Pairing Scheme of Superposition Coding in Downlink DS-CDMA Multi-path Channel
Seungyeon Eom, Janghoon Yang, Dong Ku Kim, Yonsei University

TA8a3-7 An Ultra Wideband Transmitted Reference Scheme Gaining from Intersymbol Interference
Florian Troesch, Armin Wittneben, ETH Zurich

TA8a3-8 Joint Adaptive Modulation, Diversity Combining, and Power Control for Downlink Transmission in Two-cell Wireless Networks
Anders Gjendemsjo, Norwegian University of Science and Technology (NTNU); Hong-Chuan Yang, University of Victoria; Geir Egil Oien, Norwegian University of Science and Technology (NTNU); Mohamed-Slim Alouini, Texas A&M University at Qatar

Session TA8b1 Multirate and Digital Signal Processing

TA8b1-1 A Generalized Lapped Transform with Unequal Length Filters Based on First-Order Linear-Phase Filter Banks
Taichi Yoshida, Yuichi Tanaka, Masaaki Ikehara, Keio University

TA8b1-2 Design and Implementation of Discrete-Time Filters for Efficient Rate-Conversion Systems
Thomas Baran, Alan Oppenheim, Massachusetts Institute of Technology

TA8b1-3 Frequency domain properties of locally stationary improper second order stochastic processes
Patrik Wahlberg, Peter J. Schreier, University of Newcastle

TA8b1-4 On the Design of Sparse Half-Band Like FIR Filters
Oscar Gustafsson, Linköping University; Linda DeBrunner, Victor DeBrunner, Florida State University; Håkan Johansson, Linköping University

TA8b1-5 Sampling Based on Local Bandwidth
Dennis Wei, Alan Oppenheim, Massachusetts Institute of Technology

TA8b1-6 Signal Adapted Filter Bank Design Using Markov Parameters
Peter Vouras, Trac Tran, Johns Hopkins University

TA8b1-7 A Simple Proof of the Alternation Theorem
P. P. Vaidyanathan, California Institute of Technology; Truong Nguyen, University of California, San Diego

TA8b1-8 Three-dimensional cone FIR filters design using the McClellan transform
Guergana Mollova, Wolfgang Mecklenbräuker, Vienna University of Technology

TA8b1-9 Design of FIR LS Hilbert transformers through fullband differentiators
Guergana Mollova, Vienna University of Technology

TA8b1-10 Signal Segmentation and Dark Energy in Sparse Atomic Approximations
Bob L. Sturm, John J. Shynk, University of California, Santa Barbara; Laurent Daudet, Universite Pierre et Marie Curie (Paris 6)

TA8b1-11 Reconstruction Convergence of an Impulse-doublet Sampled Random Processes
Jim Schroeder, Harris Corporation; Muralidhar Rangaswamy, Air Force Research Laboratory; Bob Kubichek, University of Wyoming

TA8b1-12 A Novel Spectral Estimation Method By Using Periodic Nonuniform Sampling
Dongdong Qu, Andrzej Tarczynski, University of Westminster

TA8b1-13 Implementation Considerations and Performance Comparison of Variable Bandwidth FIR Filter and Phase Equalized IIR Filter
fredric harris, San Diego State University

TA8b1-14 Spectrum analysis at the output of a nonlinear power amplifier with multicarrier signals
Emmanuel Cottais, Yide Wang, Bruno Feuvrie, IREENA

TA8b1-15 Implementing Recursive Filters with Large Ratio of Sample Rate to Bandwidth
fredric harris, San Diego State University; Wade Lowdermilk, BAE systems

TA8b1-16 High-Performance Low-Cost DFE Using IFIR Filters
Chen Meng, Jamal Tuqan, University of California, Davis

TA8b1-17 Diversity in Shallow Water Environments Using Blind Time-Frequency Separation Techniques
Bertrand Gottin, GIPSA-LAB; Jun Zhang, Antonia Papandreou-Suppappola, Arizona State University; Cornel Ioana, GIPSA-LAB

TA8b1-18 Fixed-Rate Fine-Resolution Quantization for Detection: Asymptotic Divergence Loss with Respect to Optimal Likelihood Ratio Quantizers
Michael Lexa, Don Johnson, Rice University

TA8b1-19 Nonnegative Basis Learning via Alternating Convex Programming
Argyris Zymnis, Seung-Jean Kim, Joelle Skaf, Mario Parente, Stephen Boyd, Stanford University

Session TA8b2 Performance Bounds

TA8b2-1 Multiuser Diversity in the Interference Limited Regime
Stephanie Pereira, Arogyaswami Paulraj, George Papanicolaou, Stanford University

TA8b2-2 On the Network Outage Probability with a Common SIR Requirement
Slawomir Stanczak, Fraunhofer German-Sino Lab for Mobile Communications; Holger Boche, Marcin Wiczanowski, Technical University of Berlin

TA8b2-3 Impact of User Mobility and Asymmetry on Multiuser Scheduler Performance
Pengcheng Zhan, Brigham Young University; Ramesh Annavajjala, ArrayComm LLC; A. Lee Swindlehurst, Brigham Young University

TA8b2-4 Multicarrier Broadcast and Unicast Hybrid Systems
Hongxiang Li, Bin Liu, Hui Liu, University of Washington

TA8b2-5 Prediction with Worst-case Constraints
Dror Baron, Menta Capital LLC; Ananya Sen Gupta, IEEE Member; Andrew Singer, University of Illinois at Urbana-Champaign

Session TA8b3 Selected Topics in Wireless Communications

TA8b3-1 Varying Power Integer Codes for CDMA Communications
Radha Poluri, Ali Akansu, New Jersey Institute of Technology

TA8b3-2 Near-Far Resistance of Multirate CDMA Communications Systems
Xiaodong Yue, Songlin Tian, University of Central Missouri

TA8b3-3 Minimum Analog-Digital Quantization Resolution Requirements for Digital Communications Systems
Gareth Middleton, Behnaam Aazhang, Rice University

TA8b3-4 Comparison of Multimedia Transport Schemes over Markovian Wireless Channels
Syed Ali Khayam, Hayder Radha, Michigan State University

TA8b3-5 A novel stochastic model and fast generation method for Nakagami fading channels
James Ritcey, Chantri Polprasert, University of Washington

TA8b3-6 Simplified Eigenvalues Distributions of 2 x 2 Complex Noncentral Wishart
Mohamad Charafeddine, Arogyaswami Paulraj, Stanford University

TA8b3-7 MIMO Systems with Arbitrary Antenna Array Architectures: Channel Modeling, Capacity and Low-Complexity Signaling
Vasanthan Raghavan, Ada Poon, Venu Veeravalli, University of Illinois at Urbana-Champaign

TA8b3-8 A Tractable Robust Optimization Approach to Downlink Beamforming in Wireless Communications
Almir Mutapcic, Seung-Jean Kim, Stephen Boyd, Stanford University

Session TP1 Underwater Acoustic Array Signal Processing

Chair: *Hongya Ge*

TP1-1 Performance of line arrays of vector and higher order sensors 1:30 PM
Henry Cox, Hung Lai, Lockheed Martin Corporation

TP1-2 On the use of energy concentrating beamformers and filters for improved estimation of angular extent (active sonar classification) 1:55 PM
Ashwin Sarma, Naval Undersea Warfare Center; Donald Tufts, University of Rhode Island; William Comeau, Naval Undersea Warfare Center

TP1-3 Multitaper Array Processing 2:20 PM
Kathleen Wage, George Mason University

TP1-4 Robust Adaptive Beamforming of Volumetric Arrays 2:45 PM
Ivars P. Kirsteins, Naval Undersea Warfare Center; Hongya Ge, New Jersey Institute of Technology

BREAK 3:10 PM

TP1-5 A Frequency-Domain Multi-Band Matched-Filter Approach to Passive Diver Detection 3:30 PM
Kil Woo Chung, Hongbin Li, Alexander Sutin, Stevnes Institute of Technology

TP1-6 Array Manifold Geometry and Sparse Array Design Optimization 3:55 PM
Neil Malloy, Multisensor Science LLC

TP1-7 Cramer-Rao Lower Bound for DOA Estimation Using Vector and Higher-Order Sensor Arrays 4:20 PM
Hung Lai, Lockheed Martin Corporation; Kristine Bell, George Mason University

TP1-8 Improved consistent estimation in Krylov subspaces 4:45 PM
Francisco Rubio, Xavier Mestre, CTTC

Session TP2 Cellular Image Analysis

Chair: *Scott Acton*

TP2-1 Detection of linear structures in biological images 1:30 PM
Sylvain Berlemont, Institut Pasteur / Genomic Vision S.A.; Aaron Bensimon, Genomic Vision S.A.; Jean-Christophe Olivo-Marin, Institut Pasteur

TP2-2 Breaking resolution limits: advances and challenges in single molecule microscopy 1:55 PM
Sripad Ram, University of Texas Southwestern Medical Center; Jerry Chao, Prashant Prabhat, Anish Abraham, University of Texas at Dallas; E. Sally Ward, University of Texas Southwestern Medical Center; Raimund Ober, University of Texas at Dallas

TP2-3 Validation of in vivo Leukocyte Velocity Estimates Via Modeling and Simulation 2:20 PM
Philip Morrow, Kurt Saetzler, University of Ulster

TP2-4 Using μ-PIV to interrogate the endothelial surface layer in arterioles in vivo 2:45 PM
Michele Savery, Edward Damiano, Boston University

BREAK 3:10 PM

TP2-5 Shear field around adherent leukocytes as measured by Micro-PTV 3:30 PM
John Pickard, Klaus Ley, University of Virginia

TP2-6 HDR-Microscopy of Cell Specimens: Imaging and Image Analysis 3:55 PM
Andre Bell, Dietrich Meyer-Ebrecht, RWTH Aachen University; Alfred Boecking, Heinrich-Heine University Duesseldorf; Til Aach, RWTH Aachen University

TP2-7 Extracting Dynamic Microtubule Features from Image Sequences 4:20 PM
Alphan Altinok, B. S. Manjunath, Kenneth Rose, University of California, Santa Barbara

TP2-8 Geometric and Signal Processing for In Silico Models of Cell Synapses from Electron Microscopy 4:45 PM
Chandrajit Bajaj, University of Texas at Austin

Session TP3 Ultra-Wideband Communications

Chair: *Ahmed Tewfik*

TP3-1 The Effect of Timing Error upon UWB System Capacity 1:30 PM
Wenyi Zhang, Urbashi Mitra, University of Southern California

TP3-2 High-Speed and Low-Power UWB Transceiver Design 1:55 PM
Won Namgoong, University of Texas at Dallas

TP3-3 The search for good digitally generated Impulse-like UWB signals. 2:20 PM
Terry Lewis, Robert Scholtz, University of Southern California / Raytheon

TP3-4 Adaptive Overlap-and-Add Techniques for MB-OFDM Systems 2:45 PM
Anuj Batra, Deric Waters, Srinivas Lingam, Tarkesh Pande, Texas Instruments

BREAK 3:10 PM

TP3-5 High Speed Frequency Hopping Using Injection Locked RF Front-ends 3:30 PM
Narasimha Lanka, Ramesh Harjani, University of Minnesota

TP3-6 Balanced binary sequences for UWB OFDM 3:55 PM
Syed Faisal Shah, Ahmed Tewfik, University of Minnesota

TP3-7 Clustering of Wireless Sensors based on Ultra-Wideband Geo-Regioning 4:20 PM
Christoph Steiner, Armin Wittneben, ETH Zurich

TP3-8 Lower Bound on Time-Delay Estimation Error of UWB Signals 4:45 PM
Hicham Anouar, Aawatif Menouni Hayar, Raymond Knopp, Christian Bonnet, Institut Eurecom

Session TP4a Estimation and Detection

Chair: *Aleksandar Dogandzic*

TP4a-1 Signal Power Estimation Via Vector and Matrix Approaches 1:30 PM
Lin Du, Jian Li, University of Florida; Petre Stoica, Uppsala University

TP4a-2 Distributed Detection of Information Flows with Side-Information 1:55 PM
Ting He, Lang Tong, Cornell University

TP4a-3 Two-Dimensional Mixed Autoregressive Models for Space-Time Adaptive Processing 2:20 PM
Yuri Abramovich, Defence Science and Technology Organisation; Ben Johnson, RLM Management Pty Ltd / University of South Australia; Nicholas Spencer, Adelaide Research & Innovation Pty. Ltd. (ARI)

TP4a-4 Distributed Adaptive Quantization for Wireless Sensor Networks 2:45 PM
Jun Fang, Hongbin Li, Stevens Institute of Technology

Session TP4b Array Signal Processing

Chair: *Andreas Jakobsson*

TP4b-1 A Polynomial EVD Algorithm for Broadband Array Signal Processing 3:30 PM
Joanne Foster, Cardiff University; John McWhirter, Paul Baxter, Tom Cooper, Soydan Redif, QinetiQ; Jonathon Chambers, Cardiff University

TP4b-2 Eigenanalysis of Subspace Decompositions for Robust Adaptive Beamforming 3:55 PM
Louis Scharf, Colorado State University; Ali Pezeshki, Princeton University; Barry Van Veen, University of Wisconsin-Madison

TP4b-3 On the Energy-Efficiency of cooperative MIMO in Nakagami fading Wireless Sensor Networks 4:20 PM
Erik Björnemo, Anders Ahlén, Mathias Johansson, Uppsala University

TP4b-4 Robust Multi-Sensor Detection of Polymorphic NQR Signals 4:45 PM
Naveed Razzaq Butt, Andreas Jakobsson, Karlstad University

Session TP5 Low Power Methods

Chair: *W. K. Jenkins*

TP5-1 Sensor-Networks-Inspired Low-Power Robust PN Code Acquisition 1:30 PM
Sriram Narayanan, Girish V. Varatkar, Douglas L. Jones, Naresh R. Shanbhag, University of Illinois at Urbana-Champaign

TP5-2 Variation-Aware Low-Power Buffer Design 1:55 PM
Chrysostomos Nicopoulos, Aditya Yanamandra, Suresh Srinivasan, Vijaykrishnan Narayanan, Mary Jane Irwin, The Pennsylvania State University

TP5-3 Reducing Complexity of FIR Filter Implementations for Low Power Applications 2:20 PM
Linda DeBrunner, Florida State University

TP5-4 Residue Number System for Low Power DSP Applications 2:45 PM
Gian Carlo Cardarilli, University of Rome Tor Vergata; Alberto Nannarelli, Technical University of Denmark; Marco Re, University of Rome Tor Vergata

BREAK 3:10 PM

TP5-5 Low Power Adaptive Filters Based on a Combination of Genetic Optimization and Residue Number System Coding 3:30 PM
Chandra Rhadakrishnan, The Pennsylvania State University; Dean Krusienski, North Florida State University; Kenneth Jenkins, The Pennsylvania State University

TP5-6 Hybrid Multiple Constant Multiplication Implementation for FIR Filters in FPGA Devices 3:55 PM
Charles D. Howard, Linda DeBrunner, Victor DeBrunner, Florida State University

TP5-7 Impact of RNS Coding Overhead on FIR Filters Performance 4:20 PM
Gian Carlo Cardarilli, Andrea Del Re, University of Rome Tor Vergata; Alberto Nannarelli, Technical University of Denmark; Marco Re, University of Rome Tor Vergata

TP5-8 An RNS-Enhanced Microprocessor Implementation of Public Key Cryptography 4:45 PM
Zhining Lim, Braden Phillips, University of Adelaide

Session TP6a Network Pricing

Chair: *John Musacchio*

TP6a-1 Economic Consequences of Weak Network Neutrality 1:30 PM
Jean Walrand, University of California, Berkeley; John Musacchio, University of California, Santa Cruz; Galina Schwartz, University of California, Berkeley

TP6a-2 A randomized scheduler for interference-limited networks 1:55 PM
Atilla Eryilmaz, Asuman Ozdaglar, Massachusetts Institute of Technology; Peter Marbach, University of Toronto

TP6a-3 The Price of Simplicity 2:20 PM
Srinivas Shakkottai, Stanford Univeresity; Daron Acemoglu, Asuman Ozdaglar, Massachusetts Institute of Technology; Rayadurgam Srikant, University of Illinois at Urbana-Champaign

TP6a-4 Incentive Compatible QoS Design for 802.11e Networks 2:45 PM
Jennifer Price, Pavan Nuggehalli, Tara Javidi, University of California, San Diego

Session TP6b Relay Channels

TP6b-1 Forward Decoding over a Relay Channel 3:30 PM
Sibi Raj Bhaskaran, EPFL

TP6b-2 Dimension Expansion Relaying for Slow Fading Channels based on Hybrid Digital-Analog Source-Channel Coding 3:55 PM
Sha Yao, Mikael Skoglund, Royal Institute of Technology (KTH)

TP6b-3 Achievable rates for the restricted half-duplex two-way relay channel 4:20 PM
Clemens Schnurr, Fraunhofer German-Sino Lab for Mobile Communications; Tobias J. Oechtering, Technical University of Berlin; Slawomir Stanczak, Fraunhofer German-Sino Lab for Mobile Communications

TP6b-4 The Capacity of One-way Cooperative Multicast Channels with Finite-Rate Feedback 4:45 PM
Youjian Liu, University of Colorado, Boulder

Session TP7a Speech Coding, Processing and Transport

Chair: *Sean Ramprashad*

TP7a-1 Steganographic Wideband Telephony using Narrowband Speech Codecs 1:30 PM
Peter Vary, Bernd Geiser, RWTH Aachen University

TP7a-2 Classification-based techniques for improving the robustness of CELP coders 1:55 PM
Milan Jelinek, Roch Lefebvre, Vaclav Eksler, Catherine Lemyre, Université de Sherbrooke

TP7a-3 Least Significant Bit Coding of Speech 2:20 PM
W. Bastiaan Kleijn, Minyue Li, Royal Institute of Technology (KTH)

TP7a-4 Perceptual Bit-Patterns based on Partial-Order Allocation Schemes with application to Subband Speech and Audio Coding 2:45 PM
Sean Ramprashad, DoCoMo USA Labs; Soo Hyun Bae, Georgia Institute of Technology

Session TP7b Plenoptic Signal Processing

Chair: *Dan Lelescu*

TP7b-1 Shared Interactive Image/Video and their Meeting Applications 3:30 PM
Qiong Liu, Don Kimber, Eleanor Rieffel, Francine Chen, FX Palo Alto Lab

TP7b-2 Comparison of 3D data formats and coding algorithms for free viewpoint video 3:55 PM
Aljoscha Smolic, Philipp Merkle, Karsten Mueller, Thomas Wiegand, Fraunhofer HHI

TP7b-3 Multi-view video compression for multi-view 3D displays 4:20 PM
Matthias Zwicker, University of California, San Diego

TP7b-4 Experiential Signal Processing (ESP) and Experiential Telecommunications (ET) 4:45 PM
Jerry Gibson, University of California, Santa Barbara

Session TP8a1 Advances in MIMO Communications

TP8a1-1 Communications through Time-Varying Subspace Channels
Benjamin Friedlander, University of California, Santa Cruz

TP8a1-2 Multichannel Adaptive Interference Suppression and Desired Signal Equalization for Sparse Arrays
Paul Fiore, Andrew McKellips, Keith Forsythe, MIT Lincoln Laboratory

TP8a1-3 A Selective Decision-Feedback Detector for Space-Time Block Code with Combined Diversity and Spatial Multiplexing
Shouxing Qu, Research In Motion Limited

TP8a1-4 A Comparison of MIMO and Phased Array Radar with the Application of MUSIC
Dave Wilcox, Mathini Sellathurai, Tharmalingam Ratnarajah, Queen's University Belfast

TP8a1-5 On the Performance of Lattice Reduction Schemes for MIMO Data Detection
Dirk Wuebben, University of Bremen; Dominik Seethaler, Vienna University of Technology

TP8a1-6 Performance Degradation of Viterbi Decoding in the Presence of Discrete Distributed Interference
Xueyuan Zhao, Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI)

TP8a1-7 MIMO Mobile Terminal Tracking Using Bayesian Probability Estimation
Konstantinos Papakonstantinou, Eurecom Institute; Merouane Debbah, Supelec; Dirk Slock, Eurecom Institute

TP8a1-8 On the performance of the Golden code in BICM-MIMO and IEEE 802.11n cases
Lina Mroueh, Motorola Labs - ENST Paris; Stéphanie Rouquette-Léveil, Motorola Labs; Ghaya Rekaya-Ben Othman, Jean-Claude Belfiore, ENST Paris

TP8a1-9 Extended Uniform Channel Decomposition for MIMO Communications with Intersymbol Interference
Yi Jiang, NextWave Broadband; Mahesh Varanasi, University of Colorado, Boulder

TP8a1-10 Lattice Reduction Aided Detection with Reduced Complexity for Time-Correlated MIMO Channel
Chan-ho An, Janghoon Yang, Seung-hoon Jang, Dong Ku Kim, Yonsei University

TP8a1-11 The effect of LLR clipping to the complexity of list sphere detector algorithms
Markus Myllylä, Juho Antikainen, Markku Juntti, Centre for Wireless Communications; Joseph R. Cavallaro, Rice University

TP8a1-12 Experimental Validation of Maximum Entropy-based MIMO Channel Models
Raul de Lacerda, Eurecom; Maxime Guillaud, FTW; Leonardo Sampaio, Eurecom; Merouane Debbah, Supelec

TP8a1-13 Copula Models for Wireless Fading and their Impact on Wireless Diversity Combining
James Ritcey, University of Washington

TP8a1-14 Out-sphere decoder for non-coherent ML SIMO detection and its expected complexity
Mihailo Stojnic, Babak Hassibi, California Institute of Technology

TP8a1-15 Maximizing mutual information in general MIMO fading channels under rank constraint
Harish Venkatachari, Qualcomm Inc; Mahesh Varanasi, University of Colorado, Boulder

Session TP8a2 MIMO Communication over Frequency Selective Channels

TP8a2-1 An Iterative Receiver for Joint Detection, Decoding, and Channel Estimation in Turbo Coded MIMO OFDM
Jari Ylioinas, Markku Juntti, Centre for Wireless Communication

TP8a2-2 Adaptive Bit Loading for OFDM Systems with Imperfect Channel State Information
Stephan Sand, Armin Dammann, German Aerospace Center (DLR); Carlo Mutti, ETH Zürich

TP8a2-3 A Practical Approach for Weighted Rate Sum Maximization in MIMO-OFDM Broadcast Channels
Mari Kobayashi, Supelec; Giuseppe Caire, University of Southern California

TP8a2-4 Optimal Noncoherent MIMO-OFDM Constellations at Low SNR
Shivratna Srinivasan, Mahesh Varanasi, University of Colorado, Boulder

TP8a2-5 Adaptive Multiband Space-Time UWB Scheme with OFDM-Based Channel Models
Jiqun Qi, Cao Lei, University of Mississippi

TP8a2-6 Interference Cancellation and Space-Time Block Codes in Frequency Selective Multiple-Access Channels
Debasish Chowdhury, Qualcomm Inc

TP8a2-7 Robust Minmax Equalization of Imperfectly Known Frequency Selective MIMO Channels
Nikola Vucic, Fraunhofer HHI; Holger Boche, TU Berlin

TP8a2-8 A Design of Precoding and Equalisation for Broadband MIMO Systems
Chi Hieu Ta, Stephan Weiss, University of Strathclyde

Session TP8a3 Adaptive Systems and Processing

TP8a3-1 Detecting Instability Potentials in Regularization for Fast Affine Projection Algorithms
Heping Ding, National Research Council

TP8a3-2 Maximum a Posteriori based Adaptive Algorithms
Dong-Yan Huang, Institute fro Infocomm Research

TP8a3-3 Robust Notch Filtering by Combining Adaptation in Both Time and Frequency
Minh Ta, Victor DeBrunner, Florida State University

TP8a3-4 Adapting an Optical Equalizer without Regressor Access
Andrew Klein, Benjamin Evans, C. Richard Johnson, Jr., Cornell University; Glenn Collins, Michael Larimore, Jeffrey Harp, John Treichler, Applied Signal Technology

TP8a3-5 Self Localization Method for Mobile Sensor in Navigation Applications
Sangjin Hong, Stony Brook University

TP8a3-6 A Downlink DS-CDMA Equaliser with Virtual Users Approach
Mahmoud Hadef, Queen Mary University of London; Adel Daas, Stephan Weiss, University of Strathclyde

TP8a3-7 Sensor Network Management Through Fitness Function Design In Multi-Objective Optimization
Lisa Osadciw, Kalyan Veeramachaneni, Syracuse University

TP8a3-8 Optimal Beamforming with Mobile Robots
Laura Koch, Raviraj Adve, Bruce Francis, University of Toronto

Session TP8b1 Multi-User MIMO Communications II

TP8b1-1 Enhanced SVD-Based Transmit Pre-Processing for Multi-User MIMO Wireless Systems with Imperfect CSIT
Amitav Mukherjee, Hyuck Kwon, Wichita State University

TP8b1-2 Stream Control for Interfering MIMO Links with Linear MMSE Receivers
Sudhanshu Gaur, Mary Ann Ingram, Georgia Institute of Technology

TP8b1-3 Coordinated Multi-cell MIMO Systems with Cellular Block Diagonalization
Jun Zhang, University of Texas at Austin; Runhua Chen, Texas Instruments Incorporated; Jeffrey Andrews, Robert Heath, University of Texas at Austin

TP8b1-4 Orthogonal Multi–beam Techniques for Multi-user Diversity and Multiplexing Gain in Packet-based Wireless Systems
Dong-Chan Oh, Yong-Hwan Lee, Seoul National University

TP8b1-5 Throughput and Rate Region for Quasi-Static Multiple Access Channels with Channel Estimation Errors
Madhan Jaganathan, Ravi Narasimhan, University of California, Santa Cruz

TP8b1-6 Achievable Rate Region for Downlink Beamforming in the Presence of Interference
Xiaohu Shang, Biao Chen, Syracuse University

TP8b1-7 Decentralized Dynamic Channel Allocation for MIMO systems
Peter von Wrycza, Mats Bengtsson, Björn Ottersten, Royal Institute of Technology (KTH)

TP8b1-8 Multiple Antenna Interference Cancellation for M-PSK Signals Using the SAGE Algorithm
Romain Henri Joseph Piton, Motorola A/S; Ingmar Land, University of South Australia; Bin Hu, Bernard Henri Fleury, Aalborg University

TP8b1-9 Space-Time Channel Shortening Based Spatial Multiplexing Schemes for Multiusers with Multipath Channels
Vimal Sharma, Sangarapillai Lambotharan, Loughborough University

TP8b1-10 Resource Allocation in Uplink Multi-carrier MIMO systems for Low-complexity Transceivers
Sumanth Jagannathan, Chan Soo Hwang, John Cioffi, Stanford University

Session TP8b2 OFDM and Multicarrier Communications

TP8b2-1 Universal linear precoding for widely-linear equalization in OFDM systems
Donatella Darsena, Università di Napoli Parthenope; Giacinto Gelli, Francesco Verde, Università di Napoli Federico II

TP8b2-2 Dynamic scheduling and power allocation for Multi-cell Capacity Optimization in Downlink OFDM Networks
Luca Venturino, Università degli Studi di Cassino; Narayan Prasad, NEC Labs America; Xiaodong Wang, Columbia University

TP8b2-3 ARQ with Subcarrier Assignment for OFDM Systems
Chin Keong Ho, Institute for Infocomm Research; Hongming Yang, Eindhoven University of Technology; Ashish Pandharipande, Philips Research Laboratories; Jan W. M. Bergmans, Eindhoven University of Technology

TP8b2-4 Iterative Decoding, Offset and Channel Estimation for OFDM using the Unscented Kalman Filter
Taehyuk Kang, Ronald Iltis, University of California, Santa Barbara

TP8b2-5 PAPR Reduction in OFDM Systems by Successive Random Sign Negation
Shouxing Qu, Farzaneh Kohandani, Jim Womack, Research In Motion Limited

TP8b2-6 Robust Peak-to-Average Ratio Reduction in OFDM with Adaptive Clipping Control
Kitaek Bae, Edward Powers, University of Texas at Austin

TP8b2-7 An SDP Approach for PAPR Reduction in OFDM Systems Using Partial Transmit Sequences
Ahmad Rushdi, Chen Meng, Jamal Tuqan, University of California, Davis

TP8b2-8 PAPR Reduction in Trigonometric-Based OFDM Systems
Ahmad Rushdi, Jamal Tuqan, University of California, Davis

TP8b2-9 Tone Selection for PAR Reduction via Tone Reservation in Uplink OFDMA
Brian Krongold, University of Melbourne

TP8b2-10 Near ML Detection of Nonlinearly Distorted OFDM Signals
Dimitris Papailiopoulos, George Karystinos, Technical University of Crete

Session TP8b3 Estimation, Synchronization, and Equalization

TP8b3-1 A Semi-Blind Pilot-Assisted Channel Estimation Algorithm in Cyclic Prefix Systems
Borching Su, P. P. Vaidyanathan, California Institute of Technology

TP8b3-2 Efficient Clock Synchronization in Wireless Sensor Networks
Qasim Chaudhari, Yi Zhou, Erchin Serpedin, Texas A&M University

TP8b3-3 Pulse-coupled distributed PLLs in heterogeneous wireless networks
Osvaldo Simeone, New Jersey Institute of Technology; Gesualdo Scutari, University of Rome

TP8b3-4 Cramer-Rao Bounds and Performance Analysis of a Low-Complexity Algorithm for Burst Mode Synchronization
Jake Gunther, Todd Moon, Utah State University

TP8b3-5 Time-Slotted Round-Trip Carrier Synchronization
Ipek Ozil, Donald Brown, Worcester Polytechnic Institute

TP8b3-6 OFDM Carrier Synchronization in the presence of Nonlinear High Power Amplifier
Amaresh Malipatil, Hao Zhou, Yih-Fang Huang, University of Notre Dame

TP8b3-7 Preamble Design for Joint Estimation of Frequency Offset and I/Q Imbalance in Direct Conversion OFDM system
Jonghun Park, Yusung Lee, Hyuncheol Park, Information and Communications University

TP8b3-8 Preamble-based Symbol Timing Estimation for Wireless OFDM Systems
Manik Gadhiok, Joseph R. Cavallaro, Rice University

TP8b3-9 Iterative B-spline Estimator Using Superimposed Training in Doubly-Selective Fading Channels
Junruo Zhang, Yuriy V. Zakharov, University of York

Session WA1a Source Localization and Imaging

Chair: *Yimin Zhang*

WA1a-1 DOA Estimation for UWB Time Hopping Impulse Radio Multiple Access System 8:30 AM
Joni Polili Lie, Nanyang Technological University; Chong Meng Samson See, DSO National Laboratories; Boon Poh Ng, Nanyang Technological University

WA1a-2 Some new techniques of localization of spatially distributed sources 8:55 AM
Yide Wang, Ahmed Zoubir, IREENA/Polytech'Nantes

WA1a-3 Time Reversal Synthetic Aperture Radar Imaging in Multipath 9:20 AM
Yuanwei Jin, José M. F. Moura, Carnegie Mellon University; Michael T. Mulford, Raytheon Corporation; Nicholas O'Donoughue, Carnegie Mellon University; Alphonso A. Samuel, Raytheon Corporation

WA1a-4 A Novel Approach for Moving Multi-Target Localization Using Dual Frequency Radars and Time-Frequency Distributions 9:45 AM
Yimin Zhang, Moeness Amin, Fauzia Ahmad, Villanova University

Session WA1b Adaptive Radar Signal Processing

Chair: *Braham Himed*

WA1b-1 A Modulation Based Approach to Wideband-STAP 10:30 AM
Ke Yong Li, C & P Technologies, Inc.; Unnikrishna Pillai, Polytechnic University; Peter Zulch, Michael Callahan, Air Force Research Laboratory

WA1b-2 Knowledge-Aided Space-Time Adaptive Processing 10:55 AM
Xumin Zhu, Jian Li, University of Florida; Petre Stoica, Uppsala University; Joseph Guerci, SAIC

WA1b-3 Multi-Channel and Two-Dimensional Fast Parametric Algorithms and Performance for Adaptive Radar 11:20 AM
Larry Marple, Oregon State University; Muralidhar Rangaswamy, Phil (Cpt.) Corbell, Air Force Research Laboratory

WA1b-4 Doppler resilience, Reed-Muller Codes, and Complementary Waveforms 11:45 AM
Sofia Suvorova, Stephen Howard, Bill Moran, Robert Calderbank, Ali Pezeshki, University of Melbourne

BREAK 10:10 AM

WA1b-5 A Notion of Diversity Order in Distributed Radar Networks 12:10 PM
Rani Daher, Raviraj Adve, University of Toronto; Michael Wicks, Air Force Research Laboratory

Session WA2a New Optical Techniques for Cancer Detection and Therapy

Chair: *Brian Helmke*

WA2a-1 Estimation of Cell Statistics on a Cell Manifold for High Content Screening with Automated Cell Segmentation 8:30 AM
Saurav Basu, Scott T. Acton, University of Virginia

WA2a-2 High-Resolution Optical Tracking to Identify Adhesive Events in Vitro 8:55 AM
Brian Schmidt, Christoper Paschall, William Guilford, Michael Lawrence, University of Virginia

WA2a-3 Quantum dot as potential energy mediator for Radiation therapy 9:20 AM
Wensha Yang, Brian Helmke, Paul Read, Jun Mi, Ke Sheng, Stan Benedict, James Larner, University of Virginia

WA2a-4 Biological applications of carbon nanotubes 9:45 AM
Hongjie Dai, Stanford University

Session WA2b Signal Processing Techniques in Advanced MR Imaging

Chair: *Wm. Scott Hoge*

WA2b-1 Fast Regularized Parallel Imaging in an MR Image-Guided Therapy Application 10:30 AM
W. Scott Hoge, Renxin Chu, Ferenc Jolesz, Brigham and Women's Hospital; Eigil Samset, University of Oslo

WA2b-2 Strategies for parallel spatiotemporal constrained reconstruction of dynamic MRI 10:55 AM
Edward Dibella, Ganesh Adluru, Eugene Kholmovski, University of Utah

WA2b-3 Joint Estimation of Coil Sensitivity and Image in Parallel Magnetic Resonance Imaging 11:20 AM
Leslie Ying, Jinhua Sheng, University of Wisconsin-Milwaukee

WA2b-4 A Bayesian Framework For The Reconstruction of Accelerated MRI Using Graph Cuts 11:45 AM
Ashish Raj, University of California, San Francisco; Gurmeet Singh, Ramin Zabih, Cornell University

BREAK 10:10 AM

WA2b-5 Reconstruction of MRI Data Using Sparse Matrix Inverses 12:10 PM
Alexey Samsonov, Walter Block, Aaron Field, University of Wisconsin

Session WA3a Wireless Optical Communications

Chair: *Maïté Brandt-Pearce*

WA3a-1 Coding and Signal Processing for Free Space Optical MIMO Communications Using Optical Amplification 8:30 AM
Maite Brandt-Pearce, Qianling Cao, University of Virginia

WA3a-2 Relay-Assisted Free-Space Optical Communication 8:55 AM
Majid Safari, Murat Uysal, University of Waterloo

WA3a-3 Adaptive Optical Wireless OFDM System with Controlled Asymmetric Clipping 9:20 AM
Jelena Grubor, Volker Jungnickel, Klaus-Dieter Langer, Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institut

WA3a-4 LDPC-Coded Optical Communication over the Atmospheric Turbulence Channel 9:45 AM
Ivan Djordjevic, University of Arizona

Session WA3b Iterative Receiver Processing in Communication Systems

Chair: *Luc Vandendorpe*

WA3b-1 Iterative carrier synchronization techniques in transmission systems protected by a powerful error-correcting code 10:30 AM
Nele Noels, Marc Moeneclaey, Ghent University

WA3b-2 Gradient Decoding Revisited 10:55 AM
Phillip Regalia, Catholic University of America

WA3b-3 Predictions on turbo-decoding performance for adaptive channel coding 11:20 AM
Harold H. Sneessens, Xavier Jaspar, Cédric Herzet, Luc Vandendorpe, Université catholique de Louvain

WA3b-4 Improved iterative decoding of LDPC codes with linear complexity 11:45 AM
Giuseppe Caire, Sang Kim, Universoity of Southern California

Session WA4 Feedback in MIMO Systems

Chair: *Kiran Mukkavilli & Ashutosh Sabharwal*

WA4-1 Performance Analysis of Finite Rate Feedback MISO Systems in the Presence of Estimation Errors and Delay 8:30 AM
Yogananda Isukapalli, Bhaskar Rao, University of California, San Diego

WA4-2 Capacity Theorems for Channels with Designable Feedback 8:55 AM
Youjian Liu, University of Colorado, Boulder

WA4-3 Two-Way Fading Channels: Training Protocol and Diversity-Multiplexing Performance 9:20 AM
Christopher Steger, Ashutosh Sabharwal, Rice University

WA4-4 Design and Analysis of Two-Way Limited Feedback Beamforming Systems 9:45 AM
Chun Kin Au Yeung, David Love, Purdue University

BREAK 10:10 AM

WA4-5 Rate and Power Adaptation Over Slow Fading Channels With Noisy Quantized Feedback 10:30 AM
Siavash Ekbatani, Farzad Etemadi, Hamid Jafarkhani, University of California, Irvine

WA4-6 Transmit Beamforming with Reduced Feedback Information in OFDM Based Wireless Systems 10:55 AM
Seung-Hyeon Yang, Jae-Yun Ko, Yong-Hwan Lee, Seoul National University

WA4-7 Optimized CSI Feedback for Robust THP Design 11:20 AM
Paula Castro, University of A Coruna; Michael Joham, TU Munich; Luis Castedo, University of A Coruna; Wolfgang Utschick, TU Munich

WA4-8 A Score-Based Scheduler for Spatial Transmission Mode Selection 11:45 AM
Malte Schellmann, Technical University of Berlin; Lars Thiele, Volker Jungnickel, Fraunhofer Institute for Telecommunications - Heinrich-Hertz-Institut; Thomas Haustein, Nokia Siemens Networks

Session WA5a Programmable and Reconfigurable Architectures

Chair: *Joseph Cavallaro*

WA5a-1 FPGA Realization of Peak-to-Average Power Ratio Reduction Techniques for OFDM Wireless Systems 8:30 AM
Chris Dick, Xilinx Inc.

WA5a-2 Scalable Architecture of MIMO Multi-carrier CDMA System on Programmable Logic 8:55 AM
Yuanbin Guo, Nokia Siemens Networks

WA5a-3 Design Space Exploration for Real-Time Reconfigurable Computing 9:20 AM
Martin Holzer, Bastian Knerr, Markus Rupp, Vienna University of Technology

WA5a-4 Matrix Decomposition Architecture for MIMO Systems: Design and Implementation Trade-offs 9:45 AM
Christoph Studer, Patrick Blösch, Peter Friedli, Andreas Burg, ETH Zurich

BREAK 10:10 AM

WA5a-5 A Software Defined Radio Reconfigurable Testbed for Cognitive Radio using BEE2 10:30 AM
Susan Mellers, Hayden So, Brian Richards, Robert W. Brodersen, University of California, Berkeley

Session WA5b SOC Architectures

Chair: *Neil Burgess*

WA5b-1 Using Secret-Protecting SP architecture in SOCs 10:30 AM
Ruby Lee, Jeffrey Dwoskin, Michael Wang, Princeton University

WA5b-2 A programmable SOC processor for image detection applications 10:55 AM
Mahesh Kumarasamy, Roger Woods, Queen's University Belfast

WA5b-3 A Combined Pipelined and Microcoded Floating-Point Solution for Multimedia Targeted to Mobile SoC Applications 11:20 AM
Chris N. Hinds, David R. Lutz, ARM Inc.

WA5b-4 A Fault-Tolerant Complex FIR Filter for SoC Communication Technologies 11:45 AM
Ian Steiner, Graham Jullien, ATIPS Laboratories

Session WA6a Radar Signal Processing

Chair: *Michael Wicks*

WA6a-1 RF Tomography 8:30 AM
Michael Wicks, Air Force Research Laboratory

WA6a-2 Knowledge-Aided, Physics-Based Signal Processing For Next-Generation Radar 8:55 AM
William L. Melvin, Gregory Showman, Georgia Tech Research Institute

WA6a-3 Auxiliary-Vector RADAR on MCARM data 9:20 AM
Dimitris Pados, State University of New York at Buffalo; George Karystinos, Technical University of Crete; Stella Batalama, State University of New York at Buffalo; John Matyjas, Air Force Research Laboratory, IFGC

WA6a-4 A Net Track Solution to Pose-Angular Tracking of Maneuvering Targets in Clutter with HRR Radar 9:45 AM
Chun Yang, Sigtem Technology, Inc.; Erik Blasch, Air Force Research Laboratory; Wendy Garber, Riohard Mitchell, ATK Mission Research

Session WA6b Signal Processing in Cognitive Radio Networks

Chair: *Stella Batalama*

WA6b-1 Throughput Enhancing Cooperative Spectrum Sensing Strategies for Cognitive Radios 10:30 AM
Kyounghwan Lee, Aylin Yener, Pennsylvania State University

WA6b-2 Training Sequence Design for Wireless Cognitive Communication Systems in Frequency-Selective Fading 10:55 AM
Peter Parker, Patrick Mitran, Harvard University; Daniel Bliss, MIT Lincoln Laboratory; Vahid Tarokh, Harvard University

WA6b-3 Cognitive Medium Access in WLAN Bands: A Real-Time Testbed 11:20 AM
Stefan Geirhofer, John Z. Sun, Lang Tong, Cornell University; Brian M. Sadler, Army Research Laboratory

WA6b-4 Distributed spatio-temporal spectrum sensing: An experimental study 11:45 AM
Chandrasekharan Raman, Janani Kalyanam, Ivan Seskar, Narayan Mandayam, WINLAB, Rutgers University

BREAK 10:10 AM

WA6b-5 Distributed and Collaborative Primary Signal Feature Estimation for Cognitive Radios under Communication Constraints 12:10 PM
Yan Li, Zhenlei Shen, Shalinee Kishore, Lehigh University; Aylin Yener, Pennsylvania State University

Session WA7a Speech and Audio Coding

Chair: *Andreas Spanias*

WA7a-1 Rate-Distortion Optimal Modeling and Quantization Using a Perceptually Relevant Distortion Measure 8:30 AM
W. Bastiaan Kleijn, Royal Institute of Technology (KTH); Richard Heusdens, Delft University of Technology

WA7a-2 A Reduced Rate Ultra Low Delay Audio Coder using VQ 8:55 AM
Stefan Wabnik, Gerald Schuller, Fraunhofer IDMT

WA7a-3 Perceptual Audio Coding - A History and Timeline 9:20 AM
James Johnston, Microsoft Corporation

WA7a-4 Packet Loss Concealment for Predictive Speech Coding Based on Extrapolation of Speech Waveform 9:45 AM
Juin-Hwey Chen, Broadcom Corporation

Session WA7b Wavelet and Filter Bank Methods for Image and Video Processing

Chair: *Bryan Usevitch*

WA7b-1 Directional Filter Banks for Wavelet Decomposition of Images Based on the Radon Transform 10:30 AM
Ricardo von Borries, Cristiano Jacques Miosso, Cristhian Potes, University of Texas at El Paso

WA7b-2 Separable, Complex, Biorthogonal, Two-channel, Perfect Reconstruction Filter Banks and Wavelets 10:55 AM
Bryan Usevitch, University of Texas at El Paso

WA7b-3 Lifting-based Compression of Images in Bayer Array Format 11:20 AM
Jesus Enriquez, Jose Gerardo Rosiles, Sergio Cabrera, University of Texas at El Paso

WA7b-4 Equivalence of symmetric pre-extension and lifting step extension in the JPEG 2000 standard 11:45 AM
Christopher Brislawn, Los Alamos National Lab

BREAK 10:10 AM

WA7b-5 Curvature Scale Space Application to Distorted Object Recognition and Classification 12:10 PM
Natan Jacobson, Truong Nguyen, University of California, San Diego; Frank Crosby, Naval Surface Warfare Center - Panama City

Session WA8a1 Wireless Networks

WA8a1-1 Decentralized Random Parity Forwarding in Multi-Source Wireless Relay Networks
Sang Wu Kim, Iowa State University

WA8a1-2 Optimal Power Allocation for Cooperative Beamforming in Wireless Ad Hoc Networks
Sharon Betz, Princeton University; Athina Petropulu, Drexel University; H. Vincent Poor, Princeton University

WA8a1-3 A Reliability Study of RFID Technology in a Fading Channel
Weilian Su, Kyle M Beilke, Tri T. Ha, Naval Postgraduate School

WA8a1-4 Closed Form Throughput of a Slotted ALOHA Network Using LMMSE Receiver
Hemabh Shekhar, Mary Ann Ingram, ArrayComm

Session WA8a2 Sensor Networks

WA8a2-1 Distributed Estimation with Channel Estimation Error over Orthogonal Fading Channels
Habib Senol, Kadir Has University; Cihan Tepedelenlioglu, Arizona State University

WA8a2-2 Asymptotic Analysis of Distributed Estimation over Fading Multiple Access Channels
Cihan Tepedelenlioglu, Mahesh Banavar, Andreas Spanias, Arizona State University

WA8a2-3 Multi-Hop Progressive Decentralized Estimation of Deterministic Vector in Wireless Sensor Networks
Yi Huang, Yingbo Hua, University of California, Riverside

WA8a2-4 Hypothesis Testing and Iterative WLS Minimization for WSN Localization under LOS/NLOS Conditions
Giuseppe Destino, Davide Macagano, Giuseppe Abreu, University of Oulu

WA8a2-5 Distributed Detection for Wireless Sensor Networks with a Hybrid Serial-Parallel Configuration
Pu Wang, Hongbin Li, Stevens Institute of Technology

WA8a2-6 Power Efficient Distributed Estimation in a Bandlimited Wireless Sensor Network
Thakshila Wimalajeewa, Sudharman K. Jayaweera, University of New Mexico

Session WA8a3 Radar and Array Signal Processing

WA8a3-1 Multibeam Amplitude Comparison Problems for MIMO Radar's Angle Measurement
Qian He, Zishu He, University of Electronic Science and Technology of China

WA8a3-2 Waveform Design for MIMO Radar with Space-Time Constraints
Benjamin Friedlander, University of California, Santa Cruz

WA8a3-3 Robust Phase-Only Nulling for Adaptive and Non-adaptive Phased Arrays
Donald Day, Johns Hopkins University

WA8a3-4 Matched detector and estimator with signature uncertainty.
Jean Jacques Fuchs, IRISA / Univ. de Rennes 1

WA8a3-5 Derivation and analysis of an adaptive detector with enhanced mismatched signals rejection capabilities
Francesco Bandiera, Università del Salento; Olivier Besson, ENSICA; Danilo Orlando, Giuseppe Ricci, Università del Salento

WA8a3-6 Morphological Component Analysis and STAP
Hedley Morris, Monica De Pass, Claremont Graduate University

WA8a3-7 Wavefront Adaptive Raymode Processing for Over-the-Horizon HF Radar Clutter Mitigation
Oguz Kazanci, Igal Bilik, Jeffrey Krolik, Duke University

WA8a3-8 Effect of Bandwidth on Wideband-STAP Performance
Unnikrishna Pillai, Polytechnic University; Ke Yong Li, C & P Technologies, Inc.; Joseph Guerci, Guerci Consulting

WA8a3-9 Comparison of Radar-Based Human Detection Techniques
Sevgi Zubeyde Gurbuz, William L. Melvin, Douglas B. Williams, Georgia Institute of Technology

WA8a3-10 Time Reversal Transmission in MIMO Radar
Yuanwei Jin, José M. F. Moura, Carnegie Mellon University

WA8a3-11 Coherent Change Detection Statistics for Multiple Polarization SAR Images
Rajesh Sharma, Northrop Grumman Corporation

WA8a3-12 Cramér-Rao Bound and Maximum Likelihood Estimation of Covariance Matrices with Non-Homogeneous Snapshots
Olivier Besson, Stéphanie Bidon, ENSICA; Jean-Yves Tourneret, IRIT/ENSEEIHT

WA8a3-13 A Closed Form Expression For The Number Of Costas Arrays of Arbitrary Order
Bill Correll, Jr, General Dynamics

WA8a3-14 Sparsity Constraint on DOA Estimation with Uncalibrated Antenna Array
Ying Zhang, Qun Wan, Anming Huang, University of Electronic Science and Technology of China

WA8a3-15 Compressive Sensing for GPR Imaging
Ali Cafer Gurbuz, James H. McClellan, Waymond R. Scott, Georgia Institute of Technology

WA8a3-16 A Graph-Theoretic Approach for Constraining Floor Plan Estimation from Radar Measurements
Jeffrey Krolik, Granger Hickman, Duke University

WA8a3-17 Decentralized Collaborative Uplink Beamforming With Robustness Against Channel Mismatches
Amr El-Keyi, Benoit Champagne, McGill University

WA8a3-18 Semi-Blind Adaptive Beamforming for Cyclostationary Signals: A Kalman Filtering Approach
Amr El-Keyi, Benoit Champagne, McGill University

WA8a3-19 A Novel Constrained Adaptive Algorithm Using the Conjugate Gradient Method for Smart Antennas
Lei Wang, Rodrigo de Lamare, University of York

WA8a3-20 On the Detection of Footsteps Based on Acoustic and Seismic Sensing
Satish Iyengar, Pramod Varshney, Syracuse University

WA8a3-21 Signatures of Walking Humans from Passive and Active Acoustic Data using Time-Varying Vector Autoregressions
Jingdong Chen, Melanie Rudoy, Charles Rohrs, Massachusetts Institute of Technology

Author List

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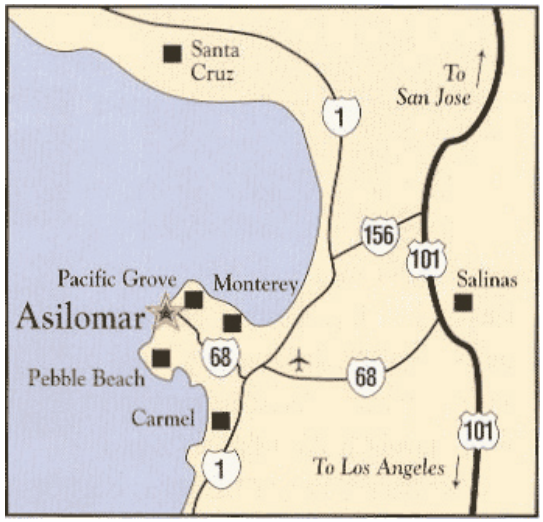
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