

- TA8b1-6 Iterative Multiuser Detection For Non Constant Modulus Constellations
Hedi Laamari, Jean-Claude Belfiore, Ecole Nationale Supérieure des Télécommunications; Nicolas Ibrahim, Wavecom, S.A
- TA8b1-7 Delta-Signed Correlation Method for Noisy Channel Identification
Jussi Järvinen, Visa Koivunen, Helsinki University of Technology
- TA8b1-8 An Improved Channel Estimation for OFDM Based Systems with Transmitter Diversity
Ai Ling Chua, Mehul Motani, National University of Singapore
- TA8b1-9 Short Range Wireless Channel Prediction Using Local Information
Zukang Shen, Jeffrey Andrews, Brian Evans, University of Texas, Austin
- TA8b1-10 Minimum Variance Receiver for Multicarrier CDMA Systems with Space-Time Coding
Wei Sun, Moeness Amin, Villanova University
- TA8b1-11 Multisource time delay estimation with receiver frequency errors
Johan Falk, Swedish Defence Research Agency; Peter Handel, Magnus Jansson, Royal Institute of Technology
- TA8b1-12 Downlink, Chip-Level, MMSE Equalization with Non-uniform Sampling for Multi-Code CDMA Systems
Haichang Sui, Elias Masry, Bhaskar D. Rao, University of California, San Diego; Young Yoon, Ericsson Wireless Communications Inc.
- TA8b1-13 Blind Synchronization of Bandlimited OFDM with Diversity
Patrick, J. Honan, Ufuk Tureli, Stevens Institute of Technology
- TA8b1-14 Correlated MIMO Rayleigh Fading Channels:Capacity and Optimal Signaling
Yingbin Liang, Venugopal Veeravalli, Coordinated Science Lab
- TA8b2-2 Polarimetric Time-Frequency ESPRIT
Baha Obeidat, Yimin Zhang, Moeness Amin, Villanova University
- TA8b2-3 Detection of Short Transients in Colored Noise by Multiresolution Multirate (MRMR) Analysis
John Stevens, U.S. Naval Academy; Albert Kinney, U.S. Naval Security Group Activity Yokosuka, Japan
- TA8b2-4 Improved Estimation of Discrete Probability Density Functions Using Multirate Models
Byung-Jun Yoon, P. P. Vaidyanathan, California Institute of Technology
- TA8b2-5 Near-field inverse coherent imagingproblems: solutions simulations, and applications
Seth Silverstein, Yibin Zheng, University of Virginia
- TA8b2-6 GLRT-Based Detection-Estimation of Uncorrelated Gaussian Sources in Circular Antenna Arrays
Yuri Abramovich, Nicholas Spencer, Cooperative Research Centre for Sensor Signal and Information Processing; Alexei Gorokhov, Philips Research Laboratory
- TA8b2-7 A Simple Approach to the Design of One-Dimensional Sparse Arrays
Sanjit K. Mitra, University of California, Santa Barbara; Mikhail Tchobanov, Moscow Power Engineering Institute; Gordana Jovanovic-Dolecek, National Institute of Astrophysics, Optics and Electronics (INAOE)
- TA8b2-8 Iterative Eigenfilter Method For Designing Optimum Overdecimated Orthonormal FIR Compaction Filter Banks
Andre Tkacenko, P. P. Vaidyanathan, California Institute of Technology
- TA8b2-9 Optimal Filtering with Multirate Observations
Ryan Kuchler, Charles W. Therrien, Naval Postgraduate School
- TA8b2-10 Parallel Detection Fusion for Multisensor Tracking of a Maneuvering Target in Clutter using IMPDA Filtering
Soonho Jeong, Jitendra Tugnait, Auburn University

Track 7 - Signal Processing Algorithms and Applications

Session TA8b2 Multisensor/Multirate Signal Processing

Chair: *Robert Barsanti*

- TA8b2-1 Wavelet-Based Time Delay Estimates for Transient Signals
Robert Barsanti, The Citadel; Murali Tummala, Naval Postgraduate School

Track 1 - Communication Systems and Networks

Session TP1 Ultra Wideband-I

Chair: *Mikko Valkama*

- TP1-1 Frequency domain processing of ultra-wideband signals
Robert Weaver, University of Southern California 1:30 PM
- TP1-2 Ultra Wideband (UWB) Transmitter Location Using Time Difference of Arrival (TDOA) Techniques
Derek Young, Catherine Keller, Daniel Bliss, Keith Forsythe, MIT Lincoln Laboratory 1:55 PM

TP1-3	On the Power Spectrum Density and Parameter Choices of Multi-Carrier UWB Communications <i>Jun Tang, Keshab K. Parhi, University of Minnesota</i>	2:20 PM
TP1-4	System Performance of UWB based Low Rate Wireless Personal Area Network <i>Chin Francois, Institute for Infocomm Research; Wanjun Zhi, Chi Chung Ko, National University of Singapore</i>	2:45 PM
	BREAK	3:10 PM
TP1-5	Unification of Ultra-Wideband Multiple Access Schemes and Comparison in the Presence of Interference <i>Liuqing Yang, Georgios B. Giannakis, University of Minnesota</i>	3:30 PM
TP1-6	A Least Squares Technique for UWB Receiver Template Design Robust to Narrowband Interference <i>Robert Wilson, Robert A. Scholtz, University of Southern California</i>	3:55 PM
TP1-7	A Subspace Approach to Blind Estimation of Ultra-Wideband Channels <i>Zhengyuan Xu, Ping Liu, Jin Tang, University of California, Riverside</i>	4:20 PM
TP1-8	Estimation of channel parameters using iterative least squares approach for W-CDMA and UWB systems <i>Hyuck Kwon, Raja Balakrishnan, Wichita State University</i>	4:45 PM
TP1-9	High-Resolution Channel Estimation Methods for Ultra-Wideband Systems <i>Irena Maravic, Martin Vetterli, Swiss Federal Institute of Technology, Lausanne</i>	5:10 PM

Track 2 - Adaptive Systems and Processing

Session TP2 A European Perspective on Adaptive Filters in Communications

Chair: *Markus Rupp*

TP2-1	Kalman Tracking of Time-Varying Channels in Wireless MIMO-OFDM Systems <i>Dieter Schafhuber, Gerald Matz, Franz Hlawatsch, Vienna University of Technology</i>	1:30 PM
TP2-2	Practical Low Complexity Linear Equalization for Interference Limited MIMO Communication Systems <i>Andreas Burg, ETH-Zurich</i>	1:55 PM
TP2-3	Bayesian Methods for Sparse RLS Adaptive Filters <i>Heinz Koepl, Gernot Kubin, Graz University of Technology; Gerhard Paoli, Infineon Technologies AG</i>	2:20 PM

TA8a-28	Dual-Mode Antenna Selection for Spatial Multiplexing Systems with Linear Receivers <i>Robert Heath, David Love, University of Texas, Austin</i>
TA8a-29	Optical MIMO Transmission Using Q-ary PPM for Atmospheric Channels <i>Stephen Wilson, Maite Brandt-Pearce, Qianling Cao, University of Virginia</i>
TA8a-30	Soft Output Decoding Algorithm for Spacetime Block Codes over Unknown Time varying Channels with Intersymbol interference <i>Sangeetha Somayajula, Kevin Buckley, Richard Perry, Villanova University</i>
TA8a-31	Correlated MIMO Channel Capacity <i>Tharmalingam Ratnarajah, Remi Vaillancourt, University of Ottawa</i>
TA8a-32	On the Gaussian Approximation in the Analysis of Iterative MIMO Processing <i>Yibo Jiang, Ralf Koetter, Andrew Singer, University of Illinois at Urbana-Champaign</i>

Track 7 - Signal Processing Algorithms and Applications

Session TA8b1 Communications Signal Processing

Chair: *Majid Ahmadi*

TA8b1-1	Almost Jitter-Free Feedforward Symbol Timing Recovery for MSK-type Modulations <i>Kai Shi, Erchin Serpedin, Texas A&M University</i>
TA8b1-2	A Single Error Correction Double Burst Error Detection Code <i>Lance Bodnar, VIASAT; Gregory Chapelle, Nokia Mobile Phones</i>
TA8b1-3	Space-Time Adaptive Multistage Receiver for Asynchronous DS-CDMA <i>Chia-Chang Hu, National Chung Cheng University; Irving S. Reed, University of Southern California</i>
TA8b1-4	Approximate Best Linear Unbiased Channel Estimation for Frequency Selective Multipath Channels with Long Delay Spreads <i>Serdar Özen, Mark Fimoff, Christopher Pladdy, Sreenivasa Nerayanuru, Zenith Electronics Corporation; Michael Zoltowski, Purdue University</i>
TA8b1-5	Equalization of CDMA Downlink Channels via Kalman Filtering <i>Hoang Nguyen, University of California, Davis; Jianzhong (Charlie) Zhang, Balaji Raghothaman, Nokia, Inc.</i>

TA8a-15	Space-Time Turbo Equalization for Dual-Polarized Broadband Wireless Systems <i>Mutlu Koca, INRIA</i>	TP2-4	Wideband algorithms versus narrowband algorithms for adaptive filtering in the DFT domain <i>Walter Kellermann, Herbert Buchner, University Erlangen-Nuremberg</i>	2:45 PM
TA8a-16	Fast Maximum Likelihood Decoding of Quasi-orthogonal Codes <i>Lei He, Hongya Ge, New Jersey Institute of Technology</i>		BREAK	3:10 PM
TA8a-17	802.11b Wireless LAN Enhancement Using Space-Time Transmitter Beamforming <i>Seung-Jun Kim, Ronald A. Iltis, University of California, Santa Barbara</i>	TP2-5	Adaptive Chip-Rate Equalisation for TD-CDMA Downlink Receiver <i>Stephan Weiss, University of Southampton; Markus Rupp, Technische Universitaet Wien; Mahmoud Hadeef, Markus Konrad, University of Southampton</i>	3:30 PM
TA8a-18	Space-Time Block Coded Rate-Adaptive Modulation with Uncertain SNR Feedback <i>Youngwook Ko, Cihan Tepedelenioglu, Telecommunications Research Center</i>	TP2-6	Equalization of Time Varying Channels for MC-CDMA via Finite Prolate Spheroidal Wave Functions <i>Thomas Zemen, Siemens Austria; Christoph Mecklenbraeuer, Telecommunications Research Center Vienna</i>	3:55 PM
TA8a-19	A Block-Toeplitz VCMA Equalizer for MIMO-OFDM Systems <i>Traian Abrudan, Marius Sirbu, Visa Koivunen, Helsinki University of Technology</i>	TP2-7	On the relationships between least squares and constant modulus criteria for adaptive filtering <i>Ricardo Suyama, Romis Attux, Joao Romano, FEEC-UNICAMP; Maurice Bellanger, CNAM</i>	4:20 PM
TA8a-20	The Capacity of Bit-Interleaved Space-Time Coded Modulation with Imperfect Channel State Information <i>Yuheng Huang, James Ritecy, University of Washington</i>	TP2-8	Identification of a Nonlinear Power-Amplifier L-N-L Structure for Pre-Distortion Purposes <i>Ernst Aschbacher, Markus Rupp, University of Technology Vienna</i>	4:45 PM
TA8a-21	Approximate Transmit Covariance Optimization of MIMO Systems with Covariance Feedback <i>Cristoff Martin, Bjorn Ottersten, Royal Institute of Technology</i>	TP2-9	The Gauss-Seidel Pseudo Affine Projection Algorithm and its Application for Echo Cancellation <i>Felix Albu, Lake Communications; Anthony Fagan, University College Dublin</i>	5:10 PM
TA8a-22	Generalized Beamforming for MIMO Systems with Limited Transmitter Information <i>Krishna Mukkavilli, Ashutosh Sabharwal, Behnaam Aazhang, Rice University</i>	Track 3 - Array Processing and MIMO		
TA8a-23	Ubiquitous MIMO Digital Array Radar <i>Daniel Rabideau, Massachusetts Institute of Technology, Lincoln Lab</i>	Session TP3 Biological Applications of Signal Processing		
TA8a-24	A Transmitter Design for Coded Systems in the Presence of CSI Errors <i>Francesc Rey, Universitat Politècnica de Catalunya; Meritxell Lamarca, Gregori Vazquez, Univeristat Politècnica de Catalunya</i>	Chair: <i>Alfred Hero</i>		
TA8a-25	Outdoor PCS MIMO Wireless Communication Channel Phenomenology <i>Daniel Bliss, Amanda Chan, MIT Lincoln Laboratory</i>	TP3-1	Single Spin Detection in Magnetic Resonance Force Microscopy <i>Alfred Hero, Chun Yu Yip, University of Michigan; Dan Rugar, IBM Almaden Research Center</i>	1:30 PM
TA8a-26	Optimal transmission strategy for multiple antenna systems with uninformed transmitter and correlation <i>Eduard Jorswieck, Holger Boche, Fraunhofer Institute for Telecommunications, HHI</i>	TP3-2	Face Recognition Using Multi-Modal Images <i>Anuj Srivastava, Xiuwen Liu, Curt Heshner, Florida State University</i>	1:55 PM
TA8a-27	Blind MIMO system identification using PARAFAC decomposition of an output HOS-based tensor <i>Turev Acar, Athina Petropulu, Drexel University</i>	TP3-3	High-Resolution Biosensor Spectral Peak Shift Estimation <i>William Karl, Boston University; Homer Pien, SRU Biosystems</i>	2:20 PM
		TP3-4	Imaging Neural Networks: Improved Confocal Microscopy using Multiscale Reconstruction <i>Robert Nowak, Ben Graf, Rebecca Willett, Rice University</i>	2:45 PM

	BREAK	3:10 PM
TP3-5	Time-Protein Models for Allergic Reactions? A Signal Processing Approach to Allergies <i>Nurgun Erdol, Salvatore Morgera, Oleg Andric, Florida Atlantic University</i>	3:30 PM
TP3-6	Identification of Differentially Expressed Proteins Using MALDI-TOF Mass Spectra <i>Balaji Krishnapuram, Pallavi Pratapa, Xuejun Liao, Qiuhua Liu, Alexander Hartemink, Lawrence Carin, Duke University</i>	3:55 PM
TP3-7	Modeling of Relaxation Effects in Liver NMR Spectroscopy <i>Yang Wu, North Carolina State University; Jeffrey Macdonald, University of North Carolina; Hamid Krim, North Carolina State University</i>	4:20 PM

Track 2 - Adaptive Systems and Processing

Session TP4a The Robust Adaptive Beamformer Bakeoff

Chair: *Michael Zatman*

TP4a-1	Doubly Constrained Robust Capon Beamforming <i>Jian Li, University of Florida; Petre Stoica, Uppsala University; Zhisong Wang, University of Florida</i>	1:30 PM
TP4a-2	A Comparison of Robust Adaptive Beamforming Algorithms <i>James Ward, Lincoln Laboratory; Henry Cox, Orincon Defense; Stephen Kogon, Lincoln Laboratory</i>	1:55 PM
TP4a-3	Robust minimum-variance beamforming <i>Robert Lorenz, Stephen Boyd, Stanford University</i>	2:20 PM
TP4a-4	Robust Adaptive Beamforming Using Worst-Case Performance Optimization <i>Alex Gershman, Zhi-Quan Luo, Shahram Shahbazpanahi, Sergiy Vorobyov, McMaster University</i>	2:45 PM

Track 4 - Speech and Audio Processing

Session TP4b New Tools, Techniques, and Strategies for use in Education

Chair: *Sally Wood*

TP4b-1	Why we need a ‘new systems science’ <i>Edward Lee, University of California, Berkeley</i>	3:30 PM
TP4b-2	Digital Systems and Signal Processing: Creating Connections in the Curriculum <i>Linda DeBrunner, Victor DeBrunner, University of Oklahoma</i>	3:55 PM

TA8a-3	Performance of Iterative Data Detection and Channel Estimation for Single-Antenna and Multiple-Antennas Wireless Communications <i>Stefano Buzzi, Marco Lops, Stefania Sardellitti, University of Cassino</i>
TA8a-4	Interference Cancelling Receivers with Global MMSE-ZF Structure and Local MMSE Operations <i>Ahmet Bastug, Dirk Slock, Eurecom Institute</i>
TA8a-5	Performance Criterion for Space-Time Codes Revisited <i>Mohammad Gharavi-Alkhansari, University of Duisburg-Essen; Alex Gershman, McMaster University</i>
TA8a-6	Analytical Space-Time-Frequency Fading Correlation for Mobile Vector Channels <i>Jiann An Tsai, Industrial Technology Research Institute</i>
TA8a-7	How Bad is Spatially-Greedy Scheduling in Multi-User MIMO Systems? <i>Manish Airy, Sanjay Shakkottai, Robert Heath, University of Texas, Austin</i>
TA8a-8	An Optimal Two Transmit Antenna Space-Time Code and its Stacked Extensions <i>Pranav Dayal, Mahesh Varanasi, University of Colorado</i>
TA8a-9	Channel Aware Scheduling for Multiple Antenna Multiple Access Channels <i>Holger Boche, Eduard Jorswieck, Thomas Haustein, Fraunhofer Institute for Telecommunications, HHI</i>
TA8a-10	Sub-Channel Grouping and Statistical Water-filling for MIMO-OFDM Systems <i>Ying-Chang Liang, Rui Zhang, John M Cioffi, Stanford University</i>
TA8a-11	Virtual Antenna Arrays with Khatri-Rao Space-Time Coding <i>Yu Chang, Yingbo Hua, University of California, Riverside</i>
TA8a-12	Partially Coherent Constellations for Multiple-Antenna Systems <i>Mohammad Jaber Borran, Ashutosh Sabharwal, Behnaam Aazhang, Rice University; Prabodh Varshney, Nokia Mobile Phones</i>
TA8a-13	Differential Space-Time Modulation with APSK Constellation <i>Hongbin Li, Stevens Institute of Technology</i>
TA8a-14	Minimum Variance Linear Receiver for Multi-Access Interference Rejection in a Space-Time Block Code Based Communication System <i>Shahram Shahbazpanahi, University of Duisburg-Essen; Mohammadali Beheshti, McMaster University; Mohammad Gharavi-Alkhansari, University of Duisburg-Essen; Alex Gershman, Kon Max Wong, McMaster University</i>

TA7a-2	Implementation of an LMS Adaptive Filter on an FPGA Employing Multiplexed Multiplier Architecture <i>Daniel Allred, Venkatesh Krishnan, Walter Huang, David Anderson, Georgia Institute of Technology</i>	8:55 AM
TA7a-3	Adaptive Translinear Analog Signal Processing: A Prospectus <i>Eric McDonald, Kofi Odame, Bradley A. Minch, Cornell University</i>	9:20 AM
TA7a-4	Design Analysis of a Distributed Arithmetic Adaptive FIR Filter on an FPGA. <i>Walter Huang, Venkatesh Krishnan, Daniel Allred, HeeJong Yoo, Georgia Institute of Technology</i>	9:45 AM

Track 7 - Signal Processing Algorithms and Applications

Session TA7b Radar & Sonar Signal Processing

Chair: *Armin Doerry*

TA7b-1	Gust Front Detection Using Template Matching on Fused and Multi-resolution Radar Data Sets <i>Victor DeBrunner, Ewa Matusiak, University of Oklahoma</i>	10:30 AM
TA7b-2	A Performance Evaluation of Autoregressive Clutter Mitigation Methods with Over-the-Horizon Radar Data <i>Veena Gadwal, Jeffrey Krolak, Duke University</i>	10:55 AM
TA7b-3	Linearly Constrained Minimum Variance Beamforming with Quadratic Pattern Constraints for Spatially Spread Sources <i>Kristine Bell, George Mason University</i>	11:20 AM
TA7b-4	Digital Signal Processing Applications in High-Performance Synthetic Aperture Radar Processing <i>Armin Doerry, Dale Dubbert, Sandia National Laboratories</i>	11:45 AM

Track 3 - Array Processing and MIMO

Session TA8a MIMO/Space-Time Coding

Chair: *Michael Clark*

TA8a-1	Performance Analysis for Bit-Interleaved Space-Time Coded Modulation with Iterative Decoding <i>Yuheng Huang, James Ritcey, University of Washington</i>
TA8a-2	On the Capacity of MIMO Broadcast Channel with Partial Side Information <i>Masoud Sharif, Babak Hassibi, California Institute of Technology</i>

TP4b-3	DSP Concepts and Experiments in a High School Curriculum <i>Sally L. Wood, Santa Clara University; Geoffrey Orsak, Southern Methodist University</i>	4:20 PM
TP4b-4	Re-discovering Signal Processing: A Configurable Logic Based Approach <i>Chris Dick, Xilinx, Inc.</i>	4:45 PM
TP4b-5	On the use of J-DSP for on-line laboratories in linear systems courses; description and assessment <i>Andreas Spanias, Arizona State University</i>	5:10 PM

Track 5 - Image and Video Processing

Session TP5 Perceptual Models in Image and Video Processing

Chair: *Sheila Hemami*

TP5-1	The role of the visual system's orientation mechanisms in the perception of spatial aliasing <i>Scott Daly, Sharp Laboratories of America</i>	1:30 PM
TP5-2	Picturing Appearance <i>James A. Ferwerda, Cornell University</i>	1:55 PM
TP5-3	The challenge of video quality estimation <i>Andrew B. Watson, NASA Ames Research Center</i>	2:20 PM
TP5-4	Quantifying the visual quality of wavelet-compressed images based on local contrast, visual masking, and global precedence <i>Damon Chandler, Mark A. Masry, Sheila S. Hemami, Cornell University</i>	2:45 PM
	BREAK	3:10 PM
TP5-5	Multi-scale Structural Similarity for Image Quality Assessment <i>Zhou Wang, Eero Simoncelli, New York University; Alan Bovik, University of Texas, Austin</i>	3:30 PM
TP5-6	Blind Quality Assessment of JPEG2000 Compressed Images Using Natural Scene Statistics <i>Hamid Rahim Sheikh, Alan Bovik, Lawrence Cormack, University of Texas, Austin</i>	3:55 PM
TP5-7	Normalized Image Representation for Efficient Coding <i>Jesus Malo, Universitat de Valencia</i>	4:20 PM
TP5-8	Phase and Magnitude Perceptual Sensitivities in Nonredundant Complex Wavelet Representations <i>Michael Wakin, Ramesh Neelamani, Michael Orchard, Richard Baraniuk, Rutgers van Spaendonck, Rice University</i>	4:45 PM

TP5-9 Perceptual tuning of low-level color and texture features for image segmentation
Junqing Chen, Thrasyvoulos Pappas, Northwestern University 5:10 PM

Track 6 - Architectures and Implementations

Session TP6 Computer Arithmetic

Chair: *Earl E. Swartzlander*

TP6-1 Hierarchical Synthesis of complex DSP functions on FPGAs
Ying Yi, Roger Woods, Queen's University Belfast 1:30 PM

TP6-2 Asymmetric and Compressed Logarithmic Number Systems for a Multimedia Coprocessor
Mark Arnold, Lehigh University 1:55 PM

TP6-3 Energy-delay optimization and trade-offs in arithmetic circuits
Vojin Oklobdzija, Bart Zeydel, Hoang Dao, University of California, Davis 2:20 PM

TP6-4 Computer Arithmetic Structures for Quantum Cellular Automata
Konrad Walus, Graham Jullien, Vassil Dimitrov, University of Calgary 2:45 PM

BREAK 3:10 PM

TP6-5 Digit-Recurrence Algorithms for Division and Square Root with Limited Precision Primitives
Milos Ercegovac, University of California, Los Angeles; Jean-Michel Muller, ENS Lyon 3:30 PM

TP6-6 Significance-Based Fast Computation of Double Precision Nonlinear Functions and Error Prediction
Vijay Jain, University of South Florida 3:55 PM

TP6-7 An efficient and scalable radix-4 modular multiplier design using recoding techniques
Alexandre Tenca, Lo'ai Tawalbeh, Oregon State University 4:20 PM

TP6-8 Left-to-Right Squarer with Overlapped LS and MS Parts
Milos Ercegovac, University of California, Los Angeles 4:45 PM

TP6-9 Re-usable CORDIC- based processor for the SoC implementation of SVD systems
Zhaohui Liu, Kevin Dickson, John McCanny, Queen's University Belfast 5:10 PM

TA5-8 Multistage Quantization via Conditional Hierarchical Mapping
Amit Eshet, Meir Feder, Tel-Aviv University 11:45 AM

Track 6 - Architectures and Implementations

Session TA6a VLSI Implementations

Chair: *David Harris*

TA6a-1 Optimized Synthesis of Sum-Of-Products
Reto Zimmermann, David Q. Tran, Synopsys, Inc. 8:30 AM

TA6a-2 Logical Effort of Carry Propagate Adders
David Harris, Harvey Mudd College; Ivan Sutherland, Sun Microsystems 8:55 AM

TA6a-3 Implementation Complexity of Bit Permutation Instructions
Zhijie Shi, Ruby Lee, Princeton University 9:20 AM

TA6a-4 Logical Effort analysis of Register File Architectures
Neil Burgess, Cardiff University 9:45 AM

Track 6 - Architectures and Implementations

Session TA6b FPGA Implementations

Chair: *Chris Dick*

TA6b-1 DSP System Design Using the BEE Hardware Emulation Environment
Chen Chang, Brian Richards, University of California, Berkeley; Bob Brodersen, Berkeley Wireless Research Center 10:30 AM

TA6b-2 An FPGA Based Rapid Prototyping Platform for MIMO Systems
Patrick Murphy, Feifei Lou, Ashu Sabharwal, Patrick Frantz, Rice University 10:55 AM

TA6b-3 User Adaptable Secure Wireless Platform
Peter Athanas, Virginia Tech 11:20 AM

TA6b-4 FPGA Implementation of OFDM Communication Systems
Chris Dick, Xilinx, Inc.; Fred Harris, San Diego State University 11:45 AM

Track 7 - Signal Processing Algorithms and Applications

Session TA7a Adaptive Signal Processing

Chair: *David Anderson*

TA7a-1 An Optimal Threshold for Sidelobe Control in Adaptive Beamforming Using Second-Order Cone Programming
Xiaoli Lu, R. Lynn Kirlin, University of Victoria 8:30 AM

	BREAK	10:10 AM
TA4-5	Reduced Rank Space-Time Adaptive Processing with Quadratic Pattern Constraints for Airborne Radar <i>Kristine Bell, Kathleen Wage, George Mason University</i>	10:30 AM
TA4-6	Adaptive Threat Warning <i>Edward Real, Michael Kotrlík, Melissa Chevalier, BAE SYSTEMS IEWS</i>	10:55 AM
TA4-7	An Approach to Direction Finding Based on a Subspace Perturbation Expansion <i>Richard Vaccaro, Pranab Majumdar, Norman Owsley, University of Rhode Island</i>	11:20 AM

Track 5 - Image and Video Processing

Session TA5 Distributed Methods in Image and Video Coding

Chair: *Kannan Ramchandran*

TA5-1	Wyner-Ziv coding based on TCQ and LDPC codes <i>Yang Yang, Samuel Cheng, Zixiang Xiong, Wei Zhao, Texas A&M University</i>	8:30 AM
TA5-2	Compression of lightfield rendered images using coset codes <i>Ashish Jagmohan, Anshul Sehgal, Narendra Ahuja, University of Illinois, Urbana-Champaign</i>	8:55 AM
TA5-3	On the use of LDPC codes for the general Slepian-Wolf problem <i>Daniel Schonberg, University of California, Berkeley; Sandeep Pradhan, University of Michigan; Kannan Ramchandran, University of California, Berkeley</i>	9:20 AM
TA5-4	Turbo-like codes for distributed joint source-channel coding of correlated senders in multiple access channels <i>Wei Zhong, Ying Zhao, Javier Garcia-Frias, University of Delaware</i>	9:45 AM
	BREAK	10:10 AM
TA5-5	Robust Distributed Video Compression based on Multilevel Coset Codes <i>Jim Chou, Sony Electronics Inc.; Abhik Majumdar, Kannan Ramchandran, University of California, Berkeley</i>	10:30 AM
TA5-6	Transforms for High Rate Distributed Source Coding <i>David Rebollo-Monedero, Anne Aaron, Bernd Girod, Stanford University</i>	10:55 AM
TA5-7	On Wyner-Ziv Networks <i>Michael Gastpar, University of California, Berkeley</i>	11:20 AM

Track 7 - Signal Processing Algorithms and Applications

Session TP7 Energy Efficient DSP Systems

Chair: *Rob Brennan*

TP7-1	The Modular Pipeline Fast Fourier Transform Algorithm and Architecture <i>Ayman El-Khashab, Earl E. Swartzlander, Jr., University of Texas, Austin</i>	1:30 PM
TP7-2	System Design of a Low-Power I/O Link <i>Srinivasa Sridhara, Naresh Shanbhag, University of Illinois, Urbana-Champaign</i>	1:55 PM
TP7-3	Low-complexity and Low-power Adaptive Processing in WOLA Filterbank Systems <i>Robert Brennan, Dspfactory</i>	2:20 PM
TP7-4	Modelling the Weakly Non-Linear Behavior of Fixed Precision Multiplierless ISIC Filters <i>Kamakshi Sivaramakrishnan, Ivan Linscott, Leonard Tyler, Stanford University</i>	2:45 PM
	BREAK	3:10 PM
TP7-5	Signal processing in digital and floating-gate analog circuits, design trade-offs <i>Sunil Kamath, David Anderson, Georgia Institute of Technology</i>	3:30 PM
TP7-6	Power-Delay Optimization with Logical Effort <i>Peter-Michael Seidel, Southern Methodist University</i>	3:55 PM
TP7-7	Improved Power Efficiency of the LC-LMS Equalizer Through Partial Elimination of the Constraint Update <i>Frank Bologna, SPAWAR Systems Center</i>	4:20 PM
TP7-8	Energy-efficient Soft Error-Tolerant Digital Signal Processing <i>Byonghyo Shim, Naresh Shanbhag, University of Illinois, Urbana-Champaign</i>	4:45 PM

Track 5 - Image and Video Processing

Session TP8a1 Image and Video Coding Systems

Chair: *Pamela Cosman*

TP8a1-1	Lossless DNA microarray image compression <i>Naser Faramarzpour, Shahram Shirani, McMaster University</i>
TP8a1-2	Source-optimized irregular repeat accumulate codes with inherent unequal error protection capabilities and their application to image transmission <i>Chingfu Lan, Krishna Narayanan, Zixiang Xiong, Texas A&M University</i>

Track 2 - Adaptive Systems and Processing

Session TA2 Intelligent Hearing Aids

Chair: *Chris Schmitz*

- TA2-1 Dynamic-Range Compression using Digital Frequency Warping 8:30 AM
James Kates, Cirrus Logic, Inc.
- TA2-2 Predicting intelligibility of hearing aid algorithms using the neural articulation index 8:55 AM
Jeff Bondy, Simon Haykin, Ian Bruce, Suzanna Becker, McMaster University
- TA2-3 Acoustic scene analysis using estimated impulse responses 9:20 AM
Erik Larsen, University of Illinois, Urbana-Champaign
- TA2-4 Effect of multiple nonstationary sources on MVDR beamformers 9:45 AM
Michael Lockwood, Douglas L. Jones, Charissa Lansing, William O'Brien, Jr., Bruce Wheeler, Albert Feng, Beckman Institute, University of Illinois
- BREAK 10:10 AM
- TA2-5 Computational Scene Analysis of Cocktail-Party Situations based on Sequential Monte Carlo Methods 10:30 AM
Johannes Nix, Michael Kleinschmidt, Volker Hohmann, Universität Oldenburg
- TA2-6 On The Reduction of Masking Effects on the Target while Preserving Competing Binaural Audio Streams 10:55 AM
Christopher Schmitz, University of Illinois, Urbana-Champaign
- TA2-7 Directional Microphone Arrays for Hearing Aids 11:20 AM
Bernard Widrow, Stanford University
- TA2-8 Loudspeaker Linearization Using Perceptual Distortion Measures 11:45 AM
Khosrow Lashkari, DoCoMo USA Laboratories, Inc.; Nobuhiko Naka, NTT DoCoMo

Track 3 - Array Processing and MIMO

Session TA3 Sonar and Acoustical Array Processing

Chair: *John Tague*

- TA3-1 Widely-Linear Beamforming 8:30 AM
Todd McWhorter, Mission Research Corporation

Track 5 - Image and Video Processing

Session TP8a2 Image Processing & Scene Analysis

Chair: *Brian Evans*

- TP8a2-1 Key Frame Extraction Using MPEG-7 Motion Descriptors
Rajesh Narasimha, Georgia Institute of technology; Andreas Savakis, Raghuvveer Rao, Rochester Institute of Technology; Ricardo De Queiroz, Xerox Corporation
- TP8a2-2 Modulation Domain Texture Retrieval for CBIR in Digital Libraries
Joseph Havlicek, University of Oklahoma; Jinshan Tang, Scott Acton, University of Virginia; Robert Antonucci, Science Systems and Applications, Inc.; Fabrice Ouanjji, University of Oklahoma
- TP8a2-3 Boost SVM Active Learning for Content-Based Image Retrieval
Wei Jiang, Guihua Er, Qionghai Dai, Tsinghua University
- TP8a2-4 Digital watermarking using local contrast-based texture masking
Mark A. Masry, Damon M. Chandler, Sheila S. Hemami, Cornell University
- TP8a2-5 Object detection and tracking using the particle filtering
Jean-Charles Noyer, Mohammed Benjelloun, Patrick Lanvin, ULCO
- TP8a2-6 The use of CNN models and vertical rectification for a direct trigonometric recovery of 3D scene Geometry from a stream of images
Salah Derrouich, Keichiro Izumida, Kenji Murao, Kazuhisa Shiya, Miyazaki University
- TP8a2-7 Texture Characterisation Using a Novel Optimisation Formulation for Two-dimensional Autoregressive Modelling and K-means Algorithm
Sarah Lee, Tania Stathaki, Imperial College London
- TP8a2-8 Image Classification Using Tree-Structured Discriminant Vector Quantization
Kivanc Ozonat, Stanford University
- TP8a2-9 Estimation of Multi-Dimensional Homeomorphisms for Object Recognition in Noisy Environments
Joseph Francos, Rami Hagege, Ben Gurion University; Benjamin Friedlander, University of California, Santa Barbara
- TP8a2-10 An Experimental Study of Object Detection in the Wavelet Domain
Srivatsan Kandadai, Charles Creusere, New Mexico State University
- TP8a2-11 Exploration of Linear Discriminant Analysis for Transform Coding in Distributed Image Classification
Hua Xie, Univeristy of Southern California; Antonio Ortega, University of Southern California

- TP8a2-12 Compact Range ISAR Emulations of Moving SAR Targets: Theory and Experiments
Coy Hawkins, U.S. Army; Seth Silverstein, University of Virginia
- TP8a2-13 A Pixel Mixture and Restoration Method for a Single Color CCD Imager
Ikuko Tsubaki, Kiyoharu Aizawa, University of Tokyo
- TP8a2-14 A Novel Gradient Induced Main Subject Segmentation Algorithm for Digital Still Cameras
Serene Banerjee, Brian Evans, University of Texas, Austin

Track 1 - Communication Systems and Networks

Session TP8b1 Implementation and Performance Bounds

Chair: *Zhengyuan Xu*

- TP8b1-1 Robust Blind Channel Estimation via Subspace Approximation
Zhengyuan Xu, University of California, Riverside
- TP8b1-2 Predicting BPSK Demodulator Performance
Daniel Gisselquist, AF Institute of Technology
- TP8b1-3 Efficient Coherent Detector VLSI Design for Continuous Phase Modulation
Tong Zhang, Jie Wu, Gary Saulnier, Rensselaer Polytechnic Institute
- TP8b1-4 Asymptotic Efficiency of a Blind Maximum Likelihood Sequence Detector
Jill Nelson, Andrew Singer, University of Illinois, Urbana-Champaign
- TP8b1-5 Performance Analysis for Maximal-Ratio Combining in Correlated Generalized Rician Fading
Jay Cheng, Toby Berger, Cornell University
- TP8b1-6 Matched Filter Bounds without Channel Knowledge at the Receiver
Abdelkader Medles, Dirk Slock, Eurecom Institute
- TP8b1-7 Modeling and Mitigation of Jitter in High-Speed Source-Synchronous Inter-Chip Communication Systems
Ganesh Balamurugan, Naresh Shanbhag, University of Illinois, Urbana-Champaign

Track 1 - Communication Systems and Networks

Session TP8b2 Networks

Chair: *Daniel Gisselquist*

- TP8b2-1 Connectivity of Sensor Networks with Power Control
Balaji Rengarajan, Jeremy Chen, Sanjay Shakkottai, Theodore Rappaport, University of Texas, Austin
- TP8b2-2 Survivable Fiber Optics Networks (SFON)
Sairam Kanduri, Anna University

- MP8b2-12 Sphere-constrained ML detection for channels with memory
Haris Vikalo, Babak Hassibi, California Institute of Technology; Urbashi Mitra, University of Southern California

Track 1 - Communication Systems and Networks

Session TA1 Modulation and Detection Techniques

Chair: *Wade Lowdermilk*

- TA1-1 OFDM Transmission with Receiver Windowing for Improved Interference Rejection
Mikko Valkama, Tampere University of Technology; Ron Porat; Fred Harris, San Diego State University 8:30 AM
- TA1-2 Advantages and Implementation Considerations of Shaped OFDM Signals
Dragan Vuletic, Signum Concepts; Fred Harris, San Diego State University 8:55 AM
- TA1-3 Frequency-Dependent Modulator Imbalance in Predistortion Linearization Systems: Modeling and Compensation
Lei Ding, Georgia Institute of Technology; Zhengxiang Ma, Dennis Morgan, Mike Zierdt, Bell Labs, Lucent Technologies; G. Tong Zhou, Georgia Institute of Technology 9:20 AM
- TA1-4 Channel Estimation and Equalization for High Speed Mobile OFDM Systems
Heejung Yu, Sok-kyu Lee, ETRI 9:45 AM
- BREAK 10:10 AM
- TA1-5 Time and Frequency Equalization in 802.11a
Oghenekome Oteri, Stanford University; X. Wang, S. A. Mujtaba, Agere Systems; A. Paulraj, Stanford University 10:30 AM
- TA1-6 Blind Bluetooth Interference Detection and Suppression for OFDM Transmission in the ISM Band
Sven Vogeler, Lars Broetje, Karl-Dirk Kammeyer, University of Bremen; Reinhard Rueckriem, Stefan Fechtel, Infineon Technologies AG 10:55 AM
- TA1-7 Channel Shortening Based on Output Cumulants for Multicarrier Modulation Systems
Jeremy Roberson, Zhi Ding, University of California, Davis 11:20 AM
- TA1-8 Optimum Subcarrier Assignment in OFDMA
Zhongren Cao, Stevens Institute of Technology; Pei Liu, Polytechnic University 11:45 AM

Track 2 - Adaptive Systems and Processing

Session MP8b2 Adaptive Technologies for Communication Systems

Chair: *Doug Jones*

- MP8b2-1 Property-Restoral Algorithms for Blind Equalization of OFDM
Douglas L. Jones, University of Illinois, Urbana-Champaign
- MP8b2-2 Time-Varying AR Modeling and Subspace Projection for FM Jammer Suppression
Lichuan Liu, Hongya Ge, New Jersey Institute of Technology
- MP8b2-3 Coefficients - Delay Simultaneous Adaptation for Linear Transversal Equalizers on Nonminimum Phase Channels
Yusuke Tsuda, Jonah Gamba, Tetsuya Shimamura, Saitama University
- MP8b2-4 A Merger of Maximum Noise Fraction Beam Forming and MC-CDMA Systems: Perturbation Analysis in Dispersive Channels
Fatemeh Emdad, Colorado State University; Seyed Alireza Zekavat, Michigan Technological University; Michael Kirby, Colorado State University
- MP8b2-5 Analysis of the Effect of Timing Synchronization Errors on Pilot-aided OFDM Systems
Yasamin Mostofi, Stanford University
- MP8b2-6 Performance Analysis of Adaptive Beamforming for OFDM-CDMA Systems in Ground-Based Communications
Jiann-An Tsai, Industrial Technology Research Institute
- MP8b2-7 Square Contour Algorithm: A New Algorithm for Blind Equalization and Carrier Phase Recovery
Trasapong Thaiupathump, Chiang Mai University; Saleem A. Kassam, University of Pennsylvania
- MP8b2-8 Adaptive IIR Phase Equalizers Based on Evolutionary Algorithms
Sunaina Pi, Kenneth Jenkins, Dean Krusienski, The Pennsylvania State University
- MP8b2-9 Multistage Interference Cancellation Smart Antennas with Initial Weight Vector Substitution
Hsin-Chin Liu, John Doherty, The Pennsylvania State University
- MP8b2-10 Performance Comparison of Adaptive Modulation Schemes for OFDM System Using Cluster
Cho Juphil, Lee Heesoo, ETRI
- MP8b2-11 Convergence Analysis of A Linear Turbo Equalizer
Seok-Jun Lee, Andrew Singer, Coordinated Science Laboratory, UIUC
- TP8b2-3 Support of Packet Video over Ad Hoc Wireless Networks
Yong Pei, University of Miami
- TP8b2-4 Power Efficient Wireless Sensor Networks with Distributed-Transmission-Induced Space Spreading
Xiaohua (Edward) Li, N. Eva Wu, State University of New York at Binghamton
- TP8b2-5 Throughput Analysis for Decentralized Slotted Peer-to-Peer Regular Wireless Networks
Tarik Tabet, Swiss Federal Institute of Technology Lausanne; Raymond Knopp, Eurecom Institute
- TP8b2-6 Detecting Byzantine Faults in Mobile Ad-hoc Networks
Sirisha Medidi, Muralidhar Medidi, Washington State University
- TP8b2-7 QoS Constrained Statistical Resource Reservation for Wireless Networks
Chunpeng Xiao, Raviv Raich, G. Tong Zhou, Georgia Institute of Technology
- TP8b2-8 Optimal puncturing of unreliable bits in hybrid ARQ protocol to enhance network performance
Yeong-Hyeon Kwon, Dong-Jo Park, Mi-Kyung Oh, Korea Advanced Institute of Science and Technology
- TP8b2-9 Stability Analysis of Stochastic Sensor Networks
Shi Chao Zhang, Pak Kin Wong, Daniel Grobe Sachs, Ralf Koetter, Douglas L. Jones, University of Illinois, Urbana-Champaign
- TP8b2-10 Estimation of the Number of Operating Sensors in a Sensor Network
Cristian Budianu, Lang Tong, Cornell University
- TP8b2-11 Cross-Layer Optimization of the Reservation Channel in a Pseudocellular Network: Mobile-Centric Fast Handoffs via Multi-user Detection
Kristoffer Bruvold, Upamanyu Madhow, University of California, Santa Barbara
- TP8b2-12 An Inter-arrival Delay Jitter Model using Multi-Structure Network Delay Characteristics for Packet Networks
Edward Daniel, Chris White, Keith Teague, Oklahoma State University
- TP8b2-13 A Step Toward Ad hoc Networks: Can Relays Really Improve the Performance of Cellular Networks?
Raymond Wang, Donald Cox, Stanford University
- TP8b2-14 Should we break a Wireless Network into Sub-networks?
Amir F. Dana, Masoud Sharif, Babak Hassibi, Michelle Effros, California Institute of Technology
- TP8b2-15 Understanding Ad hoc Networks: How Much an Accurate Physical Layer Model Matters
Raymond Wang, Donald Cox, Stanford University

Track 1 - Communication Systems and Networks

Session WA1a Ultra Wideband-II

Chair: Robert Scholtz

- WA1a-1 Tracking UWB Monocycles in IEEE 802.15 Multi-path channels 8:30 AM
Chee-Cheon Chui, Robert A. Scholtz, University of Southern California
- WA1a-2 Detection and Interference Suppression for Ultra-Wideband Signaling with Analog Processing and One Bit A/D 8:55 AM
Onkar Dabeer, Upamanyu Madhow, University of California, Santa Barbara
- WA1a-3 Blind v.s. Training-based UWB Timing Acquisition with Effective Multipath Capture 9:20 AM
Zhi Tian, Lin Wu, Michigan Technological University
- WA1a-4 Ternary Complementary Sets for Orthogonal Pulse based UWB 9:45 AM
Di Wu, Predrag Spasojevic, Ivan Seskar, WINLAB, Rutgers University

Track 1 - Communication Systems and Networks

Session WA1b EDAC-II

Chair: Todd Moon

- WA1b-1 Bit-level erasure decoding beyond design distance of Reed-Solomon codes over $GF(2^m)$ 10:30 AM
Todd Moon, Scott Budge, Utah State University
- WA1b-2 Design of Interleavers for Multiple Turbo Codes 10:55 AM
Neda Ehtiati, M. Reza Soleymani, Concordia University; Hamid R. Sadjadpour, University of California, Santa Cruz
- WA1b-3 An Optimal Two-Stage Decoding Algorithm for Linear Block Codes 11:20 AM
Xianren Wu, Hamid Sadjadpour, University of California, Santa Cruz
- WA1b-4 Exploiting the Nature of Extrinsic Information in Iterative Decoding 11:45 AM
Yogananda Isukapalli, Sathyanarayan Rao, Villanova University

Track 3 - Array Processing and MIMO

Session WA2 MIMO/Space-Time Coding-II

Chair: Babak Hassibi

- WA2-1 Fully-Diverse Space-Time Codes for Three-Transmit-Antenna Systems 8:30 AM
Yindi Jing, Babak Hassibi, California Institute of Technology

- MP8b1-3 NEXT Cancellers Using FDLMS Filters with Improved Convergence Rate
Rajeev Nongpiur, Dale Shpak, Andreas Antoniou, University of Victoria
- MP8b1-4 New Training Algorithms for Dependently Initialized Multilayer Perceptrons
Walter Delashmit, Lockheed Martin Missiles and Fire Control; Michael Manry, University of Texas, Arlington
- MP8b1-5 Quality of Approximation in the Error Transfer Function Approach of the LMS Adaptive Filters
Jun Han, QuickSilver Technology, Inc; Walter Ku, James Zeidler, University of California, San Diego
- MP8b1-6 ICA based Signature Separation for Time-Varying Radiant Objects
Michael Eaton, Philip Sementilli, Raytheon Company / Discrimination Product Center
- MP8b1-7 Unbiased Bilinear Equation Error System Identification
Bruce Dunne, Grand Valley State University; Geoffrey Williamson, Illinois Institute of Technology
- MP8b1-8 Active Machine Learning using Adaptive Set Estimation
Dale Joachim, Tulane University; John Deller, Michigan State University
- MP8b1-9 Adaptive Projected Subgradient Method and Its Applications to Set Theoretic Adaptive Filtering
Isao Yamada, Nobuhiko Ogura, Tokyo Institute of Technology
- MP8b1-10 Overcoming the Independence Assumption in LMS Filtering
Markus Rupp, TU Wien; Hans Juergen Butterweck, Eindhoven University of Technology
- MP8b1-11 ADAPTIVE FILTER-BANK TREE FOR POWER SPECTRUM ESTIMATION
Sriram Murali, P.P. Vaidyanathan, California Institute of Technology
- MP8b1-12 SVD-Based Important Theorem for Designing Variable Fractional-Delay Filters
Tian-Bo Deng, Toho University
- MP8b1-13 Hybrid Adaptive Beamforming for Multiline Towed Arrays
Henry Cox, Orincon Corporation, International

MP8a2-9 108 Mbps OWSS WLANs: CSMA/CA Throughput and Delay Analysis
Vijay Jain, University of South Florida

Track 4 - Speech and Audio Processing

Session MP8a3 Topics in Speech and Audio Processing and Communications

Chair: *Keith Teague*

MP8a3-1 Alternative Window Designs for the ETSI AMR Speech Coding Standard
Wai Chu, DoCoMo USA Laboratories, Inc.

MP8a3-2 A Novel Transcoding Scheme from EVRC to G.729AB
Pankaj Rabha, Texas Instruments, Inc.

MP8a3-3 Voice Quality Assessment Using Classification Trees
Wei Zha, Wai-Yip Chan, Queen's University

MP8a3-4 Transient Detection of Audio Signals Based on an Adaptive Comb Filter in the Frequency Domain
Mylène Kwong, Roch Lefebvre, Université de Sherbrooke

MP8a3-5 The Influence of Reverberation on Multichannel Equalization: An Experimental Comparison Between Methods
Sunil Bharitkar, Chris Kyriakakis, University of Southern California

MP8a3-6 Robust Speech Recognition in Noisy Backgrounds Based on Teager Energy Operator and Auditory Process
Junhui Zhao, Jingming Kuang, Beijing Institute of Technology

MP8a3-7 A Network Performance Application for Modeling, Simulation, and Characterization of Packet Network Behavior
Chris White, Edward Daniel, Keith Teague, Oklahoma State University

MP8a3-8 Decision Combination in Speech Metadata Extraction
Xiaofan Lin, Hewlett-Packard Laboratories

Track 2 - Adaptive Systems and Processing

Session MP8b1 Advanced Algorithms for Adaptive Signal Processing

Chair: *James Zeidler*

MP8b1-1 LMS Adaptive Filtering with Multirate Observations
Charles W. Therrien, Anthony H. Hawes, Naval Postgraduate School

MP8b1-2 Adaptive Filtering Via Particle Swarm Optimization
Dean Krusienski, W. Kenneth Jenkins, The Pennsylvania State University

WA2-2 Nonlinear Hierarchical Space-Time Block Codes
Jifeng Geng, Urbashi Mitra, University of Southern California

WA2-3 Optimal Downlink Beamforming with Additional Constraints
David Samuelsson, Mats Bengtsson, Bjorn Ottersten, Royal Institute of Technology

WA2-4 Capacity Complying MIMO Channel models
Mérouane Debbah, Ralf Müller, Forschungszentrum Telekommunikation Wien

BREAK 10:10 AM

WA2-5 Ergodic Capacity of Frequency Selective MIMO Burst Channels
Olli Piirainen, Nokia Networks; Markku Juntti, University of Oulu

WA2-6 Augmenting the Training Sequence Part in Semiblind Estimation for MIMO Channels
Abdelkader Medles, Dirk Slock, Eurecom Institute

WA2-7 Design of FIR Precoders and Equalizers for Broadband MIMO Wireless Channels with Power Constraints
Yongfang Guo, Bernard Levy, University of California, Davis

WA2-8 Exact Symbol Error Probability of Space-Time Block Codes
Mohammad Gharavi-Alkhansari, University of Duisburg-Essen; Alex Gershman, McMaster University

Track 3 - Array Processing and MIMO

Session WA3 Array Processing Foundations

Chair: *Todd McWhorter*

WA3-1 Matrix Conjugate Gradients for Generation of High-Resolution Bearing-Time Spectrograms
Michael Zoltowski, Purdue University

WA3-2 Mean Squared Error Threshold Prediction of Adaptive Maximum-Likelihood Techniques
Christ Richmond, MIT Lincoln Laboratory

WA3-3 Statistical Properties of Eigenvector-Based Adaptive Beamformers
Stephen Kogon, MIT Lincoln Laboratory

WA3-4 Hybrid Adaptive beamforming For Multi-line Arrays
Henry Cox, Hung Lai, Kevin Heaney, James Murray, Orincon Defense

	BREAK	10:10 AM
WA3-5	UMP Invariance of the Multi-rank Adaptive Coherence Estimator <i>Shawn Kraut, Queen's University; Louis Scharf, Colorado State University</i>	10:30 AM
WA3-6	Second-Order DOA Estimation from Digitally Modulated Signals <i>Javier Villares, Gregori Vazquez, Polytechnic University of Catalunya (UPC)</i>	10:55 AM
WA3-7	Signal waveform estimation in the presence of uncertainties about the steering vector <i>Olivier Besson, ENSICA; Andrei Monakov, St. Petersburg State University of Aerospace; Christophe Chalus, TESA</i>	11:20 AM
WA3-8	Parameter estimation of wideband chirp signals in sensor arrays through DPT <i>Suwandi Lie, National University of Singapore; A. Rahim Leyman, Y. Huat Chew, Institute for Infocomm Research</i>	11:45 AM

Track 4 - Speech and Audio Processing

Session WA4 Topics in Speech Recognition

Chair: *Robert Nickel*

WA4-1	Optimal Pitch Bases Expansions in Speech Signal Processing <i>Robert Nickel, Sachin Oswal, The Pennsylvania State University</i>	8:30 AM
WA4-2	Robust Speaker Verification in Colored Noise Environment <i>Cesar Medina, Jose Apolinario, Instituto Militar de Engenharia; Abraham Alcaim, Pontificia Universidade Catolica do Rio de Janeiro; Rogerio Alves, Clarity, LCC</i>	8:55 AM
WA4-3	Generalized EM Training of Tied Parameters in Conditionally Gaussian Graphical Model-Based Speech Systems <i>Jeff Bilmes, University of Washington</i>	9:20 AM
WA4-4	Speaker Normalization with the Band-Pass Transform <i>Amro El-Jaroudi, Pierre Dognin, University of Pittsburgh</i>	9:45 AM
	BREAK	10:10 AM
WA4-5	Speech Recognition using Filter-Bank Features <i>Sourabh Ravindran, Cenk Demiroglu, David Anderson, Georgia Institute of Technology</i>	10:30 AM
WA4-6	Robust Noise Estimation applied to different speech estimators <i>Markus Schwab, Hyoung-Gook Kim, Wiryadi Wiryadi, Peter Noll, Technical University Berlin</i>	10:55 AM

MP8a1-11	Chip-Rate Adaptive DFE of Scrambled Downlink CDMA <i>Adam Margetts, Philip Schniter, Ohio State University</i>
MP8a1-12	On Channel Capacity of Parallel Interference Cancellation with Outage Probability in Coded DS-CDMA Systems <i>Husheng Li, Vincent Poor, Princeton University</i>
MP8a1-13	CDMA Signature Sequences with Low Peak-to-Average Ratio via Alternating Minimization <i>Joel Tropp, Inderjit Dhillon, Robert Heath, University of Texas, Austin; Thomas Strohmer, University of California, Davis</i>
MP8a1-14	Combining Techniques for MC-CDMA Systems <i>Zhiqiang Wu, Colorado State University; Xiaoxia Zhang, QUALCOMM Incorporated</i>

Track 1 - Communication Systems and Networks

Session MP8a2 OFDM and Multicarrier

Chair: *Jim Schroeder*

MP8a2-1	Receivers for Multi-mode Channels <i>Gary Hutchins, Naval Postgraduate School; Robert Elliott, University of Calgary; Dave Sworder, University of California, San Diego; John Boyd, Cubic Defense Applications, Inc.</i>
MP8a2-2	Theory and Design of Multipulse Multicarrier Systems for Wireless Communications <i>Manfred Hartmann, Gerald Matz, Dieter Schafhuber, Vienna University of Technology</i>
MP8a2-3	Comparison of Error Probability for OFDM and SC-FDE <i>Yeesoo Han, Heon Huh, James. V. Krogmeier, Purdue University</i>
MP8a2-4	Iterative Equalization for Single-Carrier Cyclic-Prefix in Doubly-Dispersive Channels <i>Philip Schniter, Ohio State University</i>
MP8a2-5	Adaptive Beamforming for Interference Rejection in an OFDM System <i>Vishwanath Venkataraman, Richard Cagley, John Shynk, University of California, Santa Barbara</i>
MP8a2-6	A Merger of OFDM and Smart Antenna Beam Pattern Scanning (BPS): Achieving Directionality and Transmit Diversity <i>Peh Keong Teh, Seyed Alireza Zekavat, Michigan Technological University</i>
MP8a2-7	Downlink Dynamic Resource Allocation for Multi-cell OFDMA System <i>Guoqing Li, Hui Liu, University of Washington</i>
MP8a2-8	Throughput of IEEE 802.11e <i>Todor Cooklev, Xintong Li, San Francisco State University</i>

MP7-8 Signal Processing for a Biologically-Inspired Vision System using Biomimetic Sensors and Eigenspace Object Models 4:45 PM
Cameron Wright, Steven Barrett, University of Wyoming; Daniel Pack, Michael Wilcox, U.S. Air Force Academy

Track 1 - Communication Systems and Networks

Session MP8a1 CDMA-II

Chair: *Paul Cota*

MP8a1-1 Log-Concavity of SIR and Characterization of Feasible SIR Region for CDMA Channels
Holger Boche, Slawomir Stanczak, Fraunhofer Institute for Telecommunications, HHI

MP8a1-2 A common access channel distributed queueing MAC protocol for wireless slotted CDMA networks
Xin Wang, Jitendra Tugnait, Auburn University

MP8a1-3 Block Coded Modulation for the QS-CDMA System
Kyeong Jin Kim, Nokia Research Center

MP8a1-4 Transmitter Adaptation of DS-CDMA Signals in Multipath Channels
Paul Cota, University of Texas, San Antonio

MP8a1-5 Using Multistage Interference Cancellation Smart Antennas in Wideband CDMA Uplink
Hsin-Chin Liu, John Doherty, The Pennsylvania State University

MP8a1-6 Decorrelating code-timing estimation for CDMA systems with long codes and bandlimited chip waveforms
Rensheng Wang, Hongbin Li, Stevens Institute of Technology

MP8a1-7 Iterative Joint Data Detection and Channel Estimation of DS/CDMA Signals in Multipath Fading Using the SAGE Algorithm
Alexander Kocian, Bin Hu, Preben Soerensen, Christian Rom, Bernard Fleury, Aalborg University; Erik Poulsen, RTX Telecom A/S

MP8a1-8 Complex Block Codes with Low Cross-Correlation Spectrum for S-CDMA Systems
Panayiotis Papadimitriou, Texas A&M University / Nokia Mobile Phones; Costas Georgiades, Texas A&M University

MP8a1-9 Improvements in Equalization of Multiuser CDMA Systems: Oversampling and Nonuniqueness
Bojan Vrcelj, P. P. Vaidyanathan, California Institute of Technology

MP8a1-10 Inter-vendor spectrum sharing in DS-CDMA and MC-CDMA systems
Ali Pezeshk, Seyed Alireza Zekavat, Michigan Technological University

WA4-7 Speech watermarking with objective fidelity and robustness criteria 11:20 AM
Aparna R. Gurijala, J. R. Deller, Jr., Michigan State University

WA4-8 Rayleigh fading channel model versus AWGN channel model in audio watermarking 11:45 AM
Nedeljko Cvejc, Tapio Seppänen, University of Oulu

Track 5 - Image and Video Processing

Session WA5 Inverse Problems in Imaging

Chair: *William Karl*

WA5-1 Direct Reconstruction of Kinetic Parameter Images from Dynamic PET Data 8:30 AM
Mustafa Kamasak, Charles A. Bouman, Purdue University; Evan Morris, Indiana University; Ken D. Sauer, University of Notre Dame

WA5-2 Region of Interest Cone Beam Tomography with Prior CT Data 8:55 AM
Krishnakumar Ramamurthi, Jerry Prince, Johns Hopkins University

WA5-3 Reconstruction from digital holograms by statistical methods 9:20 AM
Saowapak Sotthivirat, Jeffrey Fessler, University of Michigan

WA5-4 Accurate and Fast Discrete Polar Fourier Transform 9:45 AM
Michael Elad, Stanford University; Amir Averbuch, Tel-Aviv University; Moshe Israeli, Technion; David Donoho, Stanford University; Ronald Coifman, Yale University

BREAK 10:10 AM

WA5-5 Bias-Minimizing Filters for Gradient-Based Motion Estimation 10:30 AM
Dirk Robinson, University of California, Santa Cruz

WA5-6 A Semi-Definite Programming Approach to Estimating Distributed Sources 10:55 AM
Venkatesh Saligrama, William Karl, Boston University

WA5-7 Tracking Rolling Leukocytes with Motion Gradient Vector Flow 11:20 AM
Nilanjan Ray, Scott Acton, University of Virginia

WA5-8 DCT based computation of 2D Cepstrum and its Application for Visual Echo Detection 11:45 AM
Amjad Awawdeh, Guoliang Fan, Oklahoma State University

Track 5 - Image and Video Processing

Session WA6a Still Image Coding

Chair: *Martin Boliek*

- WA6a-1 Iterative Joint Source/Channel Decoding for JPEG2000 8:30 AM
Lingling Pu, Zhenyu Wu, Ali Bilgin, Michael W. Marcellin, Bane V. Vasic, University of Arizona
- WA6a-2 A Nonlinear Image Representation In Wavelet Domain Using Complex Signals With Single Quadrant Spectrum 8:55 AM
Hasan Ates, Princeton University; Michael Orchard, Rice University
- WA6a-3 Document Image Coding and JPM 9:20 AM
Robert Buckley, Xerox Corporation
- WA6a-4 Beyond compression: a survey of functionality derived from still image coding 9:45 AM
Martin Boliek, Ricoh Innovations, Inc.

Track 5 - Image and Video Processing

Session WA6b Image De-noising

Chair: *Onur Guleryuz*

- WA6b-1 Data and Rate Adaptive Quantization for Joint Image Denoising and Compression 10:30 AM
Nikhil Gupta, Eugene Plotkin, M. N. S. Swamy, Concordia University
- WA6b-2 The Contourlet Transform for Image De-noising Using Cycle Spinning 10:55 AM
Ramin Eslami, Hayder Radha, Michigan State University
- WA6b-3 Three-dimensional Speckle Reducing Anisotropic Diffusion 11:20 AM
Yongjian Yu, Scott Acton, University of Virginia
- WA6b-4 Weighted Overcomplete Denoising 11:45 AM
Onur Guleryuz, Epson Palo Alto Laboratory

Track 7 - Signal Processing Algorithms and Applications

Session WA7a Multimedia Signal Processing

Chair: *Darnell Moore*

- WA7a-1 JPEG2000 for handheld applications 8:30 AM
Darnell Moore, Texas Instruments, Inc.
- WA7a-2 Bayesian Networks in Multimodal Speech Recognition and Speaker Identification 8:55 AM
Ara Nefian, Intel Corporation

- MP6b-3 Dual-Field Multiplier Architectures for Cryptographic Applications 4:20 PM
Cetin Kaya Koc, Oregon State University; ErKay Savas, Sabanci University; Alexandre Tenca, Oregon State University

- MP6b-4 Fast Montgomery Modular Multiplication and RSA Cryptographic Processor Architectures 4:45 PM
Ciaran McIvor, Máire McLoone, John McCanny, Queen's University Belfast; Alan Daly, William Marnane, University College Cork

Track 7 - Signal Processing Algorithms and Applications

Session MP7 Biomedical Signal Processing

Chair: *Neeraj Magotra*

- MP7-1 Capturing signal activity and spatial distribution of neurons in a sub-millimeter³ volume 1:30 PM
David J. Anderson, University of Michigan; Karim G. Oweiss, Michigan State University

- MP7-2 Programmable Ultra-low Power Digital Signal Processing (DSP) Systems Solution 1:55 PM
Neeraj Magotra, Texas Instruments, Inc.

- MP7-3 Signal Processing Strategies and Clinical Outcomes for Gain and Waveform Compression in Hearing Aids. 2:20 PM
Julius L. Goldstein, Metin Oz, Peter H. Gilchrist, Hearing Emulations, LLC; Michael Valente, Washington University Medical Center

- MP7-4 Categorisation of Panic Disorder by Time-Frequency Methods 2:45 PM
Hubert Dietl, Stephan Weiss, University of Southampton

BREAK 3:10 PM

- MP7-5 Implementation of Hearing Aid Signal Processing Algorithms on the TI DHP-100 Platform 3:30 PM
Roger D. Chamberlain, BECS Technology, Inc.; Julius L. Goldstein, Hearing Emulations, LLC; Darko Ivanovich, BECS Technology, Inc.

- MP7-6 Applications for modeling of intelligibility of sensorineural hearing loss 3:55 PM
Jeff Bondy, Suzanna Becker, Ian Bruce, Simon Haykin, McMaster University

- MP7-7 Computational Scene Analysis of Cocktail-Party Situations based on Sequential Monte Carlo Methods 4:20 PM
Johannes Nix, Michael Kleinschmidt, Volker Hohmann, Universität Oldenburg

	BREAK	3:10 PM
MP5-5	Entropic graphs for learning manifolds <i>Alfred Hero, University of Michigan</i>	3:30 PM
MP5-6	Multiscale methods in signal detection <i>Xiaoming Huo, Georgia Institute of Technology</i>	3:55 PM
MP5-7	Optimal Tilings and Best Basis Search in Large Dictionaries. <i>Ilya Pollak, Purdue University; Minh Do, University of Illinois, Urbana-Champaign; Charles A. Bouman, Purdue University</i>	4:20 PM
MP5-8	A New Interpretation of Translation Invariant Image Denoising <i>Gang Hua, Michael T. Orchard, Rice University</i>	4:45 PM

Track 6 - Architectures and Implementations

Session MP6a Multimedia Processing

Chair: *Ruby Lee*

MP6a-1	Automated Generation of Configurable Media Processors <i>Suman Mamidi, Murugappan Senthilvelan, Shankar Krithivasan, Michael Schulte, University of Wisconsin-Madison</i>	1:30 PM
MP6a-2	Design and delay estimates of media-enhanced VLSI adders <i>Neil Burgess, Cardiff University</i>	1:55 PM
MP6a-3	Micro-Architecture Issues of Predicated Execution <i>Zhengkong Wang, Ruby Lee, Princeton University</i>	2:20 PM
MP6a-4	Accelerating Floating-Point 3D Graphics for Vector Microprocessors <i>David Lutz, Chris Hinds, ARM Ltd.</i>	2:45 PM

Track 6 - Architectures and Implementations

Session MP6b Security Processing

Chair: *Ruby Lee*

MP6b-1	Media Processors and Digital Video Surveillance <i>Ben Cutler, Pacific Technology Partners, LLC; Woobin Lee, Pixierion, Inc.</i>	3:30 PM
MP6b-2	Scoping Security Issues for Interactive Grids <i>Jeffrey Dwoskin, Princeton University; Sujoy Basu, Vanish Talwar, Raj Kumar, Fred Kitson, Hewlett-Packard Laboratories; Ruby Lee, Princeton University</i>	3:55 PM

WA7a-3	Multimedia Sensor Networks for ISR Applications <i>James DeBardelaben, Daniel Decicco, Johns Hopkins Applied Physics Laboratory</i>	9:20 AM
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WA7a-4	Boosted Audio-Visual HMM for Speech Reading <i>Pei Yin, Irfan Essa, Jim Rehg, Georgia Institute of Technology</i>	9:45 AM
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Track 7 - Signal Processing Algorithms and Applications

Session WA7b Co-operative Analog-Digital Signal Processing

Chair: *Paul Hasler*

WA7b-1	On delay structures for the analog adaptive filters with long filter taps <i>Heejong Yoo, David Anderson, Paul Hasler, CSIP / Georgia Institute of Technology</i>	10:30 AM
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WA7b-2	Low-Power Speech Processing based upon Floating-Gate Circuits <i>Paul Smith, David Graham, Paul Hasler, Georgia Institute of Technology</i>	10:55 AM
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WA7b-3	A Supervised Neural Network Layer of Continuously Adapting, Analog Floating-Gate Nodes <i>Jeff Dugger, Venkatesh Srinivasan, Paul Hasler, Georgia Institute of Technology</i>	11:20 AM
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WA7b-4	Highly Linear, Wide-Dynamic-Range Multiple-Input Translinear Element Networks <i>Kofi Odame, Eric McDonald, Bradley A. Minch, Cornell University</i>	11:45 AM
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Track 7 - Signal Processing Algorithms and Applications

Session WA8a1 Applied Signal Processing

Chair: *Linda DeBrunner*

WA8a1-1	Design of Canonical Signed Digit IIR Filters Using Genetic Algorithm <i>Li Liang, Majid Ahmadi, Maher Sid-Ahmed, University of Windsor</i>
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WA8a1-2	Factorizations of Two Families of Two-dimensional IIR Paraunitary Matrices <i>Farshid Delgousha, Faramarz Fekri, Georgia Institute of Technology</i>
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WA8a1-3	Active Nonlinear Noise Control with Certain Non-Linearities in the Secondary Path <i>Victor DeBrunner, Dayong Zhou, University of Oklahoma</i>
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- WA8a1-4 A Secure and Efficient Fingerprint Verification System for Embedded Systems
Shenglin Yang, Kazuo Sakiyama, Ingrid M. Verbauwhede, University of California, Los Angeles
- WA8a1-5 Classification of Cancerous Cells Images using Clustered Fuzzy-Neural Machine Techniques
Ephraim Nwoye, University of Newcastle upon Tyne
- WA8a1-6 Automated Worm Tracking and Classification
Wei Geng, Pamela Cosman, William Schafer, University of California, San Diego
- WA8a1-7 Fully Integrated Low Power Phase-Locked Loop for Various Inputs in Sensor Network Applications
Jianhua Gan, Cirrus Logic, Inc.
- WA8a1-8 Frequency-Domain Adaptive Filtering -- A Set-Membership Approach
Li Guo, Anthony Ekpenyong, Yih-Fang Huang, University of Notre Dame
- WA8a1-9 Decomposition of a Bandpass Signal
Ramdas Kumaresan, University of Rhode Island
- WA8a1-10 Chemical/Biological Round Discrimination using Acoustic, Seismic, and Imaging Data
Monique Fargues, Naval Postgraduate School; Chris Reiff, U.S. Army Research Laboratory; Bruce Nelson, Geo-Centers Incorporated; David Gonski, U.S. Army Research Laboratory; Amnon Birenzviqe, Edgewood Chemical Biological Center
- WA8a1-11 A Numerical Optimization Approach for Color Correction in Forensic DNA Genotyping
Sameh El-Difrawy, Dan Ehrlich, Whitehead Institute for Biomedical Research
- WA8a1-12 Subspace Learning in Generalized Gaussian Noise
Mukund Desai, Rami Mangoubi, Draper Laboratory MS77

Track 7 - Signal Processing Algorithms and Applications

Session WA8a2 Applied Adaptive Signal Processing

Chair: *Neeraj Magotra*

- WA8a2-1 Signal Extraction in Multi-signal/Noisy Environments Using Profile Hidden Markov Models
Keith Mathias, Northrop Grumman
- WA8a2-2 Singular Random Signals
Picinbono Bernard, Supélec
- WA8a2-3 Parameter estimation for reduced-rank multivariate linear regressions in the presence of correlated noise
Karl Werner, Magnus Jansson, Royal Institute of Technology (KTH)

- MP4-4 Speech Coding for Mobile Ad Hoc Networks 2:45 PM
Hui Dong, Ian Chakeres, Jerry Gibson, Elizabeth Belding-Royer, Upamanyu Madhow, Allen Gersho, University of California, Santa Barbara
- BREAK 3:10 PM
- MP4-5 A Wideband Differential Coding Algorithm 3:30 PM
Khalid Sayood, Eric Psota, Jarrod Hartman, Michael Hoffman, University of Nebraska
- MP4-6 Circular Linear Prediction Modeling for Speech Coding Applications 3:55 PM
Ali Ertan, Thomas Barnwell, Georgia Institute of Technology
- MP4-7 Mitigating the effects of channel noise in source compression with reduced rank processing 4:20 PM
Hanna E. Witzgall, William C. Ogle, J. Scott Goldstein, Science Applications International Corp.
- MP4-8 An RLS-LMS Algorithm for Lossless Audio Coding 4:45 PM
Rongshan Yu, Institute for Infocomm Research; Chi Chung Ko, National University of Singapore; Susanto Rahardja, Xiao Lin, Institute for Infocomm Research

Track 5 - Image and Video Processing

Session MP5 Mathematical Models in Image Processing

Chair: *Rob Nowak*

- MP5-1 Semi-Parametric Skew Distributions in Shape Representation 1:30 PM
Hamid Krim, Sajjad Baloch, North Carolina State University
- MP5-2 Maximum-likelihood methods for reconstructing an image in a region-of-interest for transmission tomography 1:55 PM
Donald L. Snyder, Joseph A. O'Sullivan, Ryan Murphy, Bruce R. Whiting, David G. Politte, Washington University; Jeffrey F. Williamson, Virginia Commonwealth University
- MP5-3 A New U+V Model for Image Representation and Analysis using the Elliptic Boundary Value Problems and Local Fourier Analysis 2:20 PM
Naoki Saito, Jucheng Zhao, University of California, Davis
- MP5-4 Cloud Detection over Ice/Snow surface from Satellite images 2:45 PM
Tao Shi, Bin Yu, University of California, Berkeley; Amy Braverman, California Institute of Technology; Eugene Clothiaux, The Pennsylvania State University

MP3-2	On Antenna Selection with Maximum Ratio Transmission <i>Chandra Murthy, Bhaskar D. Rao, University of California, San Diego</i>	1:55 PM
MP3-3	A Performance Bound for Prediction of a Multipath MIMO Channel <i>Thomas Svantesson, A. Lee Swindlehurst, Brigham Young University</i>	2:20 PM
MP3-4	Cooperative Synchronization and Channel Estimation in Wireless Sensor Networks <i>Mi-Kyung Oh, Korea Advanced Institute of Science and Technology; Xiaoli Ma, Georgios B. Giannakis, University of Minnesota; Dong-Jo Park, Korea Advanced Institute of Science and Technology</i>	2:45 PM
	BREAK	3:10 PM
MP3-5	Field test results for space-time coding <i>Parul Gupta, Weijun Zhu, Michael Fitz, University of California, Los Angeles</i>	3:30 PM
MP3-6	Signal Detection for MIMO-ISI Channels: A Unitary Linear Recovery Approach <i>Yunnan Wu, Sun-Yuan Kung, Princeton University</i>	3:55 PM
MP3-7	Timing Estimation in Multiple Antenna Systems over Rayleigh Flat Fading Channels <i>Yong Liu, Ashish Pandharipande, Tan Wong, University of Florida</i>	4:20 PM
MP3-8	Some asymptotic capacity results for MIMO wireless with and without channel knowledge at the transmitter <i>Mai Vu, Arogyaswami Paulraj, Stanford University</i>	4:45 PM

Track 4 - Speech and Audio Processing

Session MP4 Narrowband/Wideband Speech and Audio Coding

Chair: Jerry Gibson

MP4-1	Quantifying Perceptual Distortion in Scalably Compressed MPEG Audio <i>Charles Creusere, New Mexico State University</i>	1:30 PM
MP4-2	Wideband Speech Coding for CDMA2000® Systems <i>Sassan Ahmadi, Nokia, Inc.; Milan Jelinek, University of Sherbrooke; Redwan Salami, VoiceAge, Corp.; S. Craig Greer, Nokia, Inc.</i>	1:55 PM
MP4-3	Voice Transmission Over All-IP Tandem Links <i>Bo Wei, Southern Methodist University; Jerry Gibson, University of California, Santa Barbara</i>	2:20 PM

WA8a2-4	A Neural Network Approach for Pre-Classification in Musical Chords Recognition <i>Thierry Gagnon, Steeve Larouche, Roch Lefebvre, University of Sherbrooke</i>
WA8a2-5	New Combinatorial Methods for the Improvement of the Convergence Speed and the Tracking Abilities of the Fast Stable RLS Adaptive Algorithm <i>Mohamed Djendi, Ahmed Benallal, Abderazak Guessoum, University of BLIDA; Daoued Berkani, Ecole polytechnique d'Alger</i>
WA8a2-6	A Least Squares Design for a Time Domain Equalizer <i>Prem Ramaswamy, Signia-IDT</i>
WA8a2-7	On the estimation of correlated noise statistics in a class of state-space models <i>Mihai Enescu, Helsinki University of Technology</i>
WA8a2-8	Improved Integer Transforms for Lossless Audio Coding <i>Ralf Geiger, Yoshikazu Yokotani, Gerald Schuller, Fraunhofer IIS AEMT</i>
WA8a2-9	Softening the Multiscale Product Method for Adaptive Noise Reduction <i>Jun Ge, Gagan Mirchandani, University of Vermont</i>
WA8a2-10	High-Resolution M-Channel, Two-Dimensional Lattice Linear Prediction Algorithm <i>Lawrence Marple, Jr., Oregon State University; Claudio Marino, Orincon Defense</i>

Track 6 - Architectures and Implementations

Session WA8b1 Application Oriented Processing

Chair: Neil Burgess

WA8b1-1	Interleaved Cyclic Redundancy Check (CRC) Code <i>Jun Jin Kong, Keshab K. Parhi, University of Minnesota</i>
WA8b1-2	Multiuser detector (MUD) for integration in 3G receivers <i>Humberto Campanella, Jorge Navas, Carlos Varela, Universidad del Norte</i>
WA8b1-3	A High-Throughput VLSI Architecture for Linear Turbo Equalization <i>Seok-Jun Lee, Naresh Shanbhag, Coordinated Science Laboratory, UIUC</i>
WA8b1-4	Speed-Area Trade-off for 10 to 100 Gbits/s Throughput AES Processor <i>Alireza Hodjat, Ingrid M. Verbauwhede, University of California, Los Angeles</i>
WA8b1-5	Low Power and High Speed Novel Architecture for EBCOT Block in JPEG2000 System <i>Ramy Aly, Magdy Bayoumi, University of Louisiana at Lafayette; Bertrand Zavidovique, University of Paris-Sud</i>

- WA8b1-6 Novel CSD-Based Digital Heterodyne Circuit
Michael Soderstrand, Grace Cho, Oklahoma State University
- WA8b1-7 Programmable Code Generator for Software Defined Radio
David Perels, Reinhard Bischoff, Jonas Biveroni, Markus Bruehwiler, Andreas Burg, Norbert Felber, Wolfgang Fichtner, Swiss Federal Institute of Technology Zurich
- WA8b1-8 Efficient Implementation of a rake receiver on the TMS320C64x
Daniel Menard, ENSSAT - Rennes I University; Michel Guillon, Philippe Quemerais, Olivier Sentieys, ENSSAT
- WA8b1-9 Energy Tradeoffs for DSP-based Implementation of IntDCT
Andrea Molino, Fabrizio Vacca, Politecnico di Torino; Truong Nguyen, University of California, San Diego
- WA8b1-10 Scalable FPGA Architectures for LMMSE-based SIMO Chip Equalizer in HSDPA Downlink
Yuanbin Guo, Dennis McCain, Jianzhong (Charlie) Zhang, Nokia Research Center; Joseph Cavallaro, Rice University
- WA8b1-11 DNA Microarray Image Compression by Pipeline Architecture
Shadrokh Samavi, Shahram Shirani, Nader Karimi, Naser Faramarzpour, McMaster University
- WA8b1-12 Efficient Third-Order Volterra Filter Computation in the Time Domain
Konstantina Karagianni, Vassilis Paliouras, University of Patras
- WA8b1-13 A Parallel Programmable Energy-Efficient Architecture For Computationally-Intensive DSP Systems
Bevan Baas, University of California, Davis
- WA8b1-14 Hardware Implementation of a Feedforward Neural Network Using FPGAs.
Serkan Ünsal, Aydogan Savran, Ege University

Track 6 - Architectures and Implementations

Session WA8b2 Numerical Processing

Chair: *James Stine*

- WA8b2-1 Multiplier Architectures for Media Processing
Shankar Krithivasan, Michael Schulte, University of Wisconsin-Madison
- WA8b2-2 Some Results on Taylor-series Function Approximation on FPGA
Barry Lee, University of Wales, Cardiff; Neil Burgess, University of Wales, Cardiff.

Track 2 - Adaptive Systems and Processing

Session MP2 Applications of Adaptive Filtering in Communication Systems

Chair: *Balu Santhanam*

- MP2-1 Multi-Antenna Adaptive Modulation with Transmit-Beamforming based on Bandwidth-Constrained Feedback
Pengfei Xia, Shengli Zhou, Georgios B. Giannakis, University of Minnesota 1:30 PM
- MP2-2 A Blind Interference Canceler for GPS Signals Based on the Constant Modulus Array
Suk-seung Hwang, Richard Cagley, John Shynk, University of California, Santa Barbara 1:55 PM
- MP2-3 Natural Gradient Blind Deconvolution and Equalization Using Causal FIR Filters
Scott Douglas, Southern Methodist University; Hiroshi Sawada, Shoji Makino, NTT Corporation 2:20 PM
- MP2-4 Adaptive Linear Prediction Based Frequency Tracking and CPM demodulation
Balu Santhanam, Malay Gupta, University of New Mexico 2:45 PM
- BREAK 3:10 PM
- MP2-5 A Comparison of the Adaptive Frequency Domain Filters with the Constant Modulus Algorithm in Digital Communications
Gerard Coudu, University of California; Samuel D. Stearns, University of New Mexico; Monique Fargues, Naval Postgraduate School 3:30 PM
- MP2-6 Machine Learning Based CDMA Power Control
Judd Rohwer, Sandia National Laboratories; Chaouki Abdallah, University of New Mexico 3:55 PM
- MP2-7 Using Queue Statistics in Beamforming for ALOHA
Vidyut Naware, Lang Tong, Cornell University 4:20 PM
- MP2-8 Speckle Reduction of SAR Imagery using Multiple-Pass Adaptive Filtering
Robert Ives, Delores Etter, Thad Welch, U.S. Naval Academy 4:45 PM

Track 3 - Array Processing and MIMO

Session MP3 Array Processing for Wireless Communications

Chair: *Brian Sadler*

- MP3-1 Analysis of SDMA Uplink Capacity
Zhi-Quan (Tom) Luo, University of Minnesota; Wai-Yin Shum, McMaster University; Gongyun Zhao, National University of Singapore 1:30 PM

Track 1 - Communication Systems and Networks

Session MP1a CDMA-I

Chair: *Pranish Sinha*

- MP1a-1 Improved Rake Finger Time-Tracking for DS-CDMA Systems 1:30 PM
Fred Harris, San Diego State University; Pranesh Sinha, Texas Instruments, Inc.
- MP1a-2 Enhanced Per-Carrier Processing for MC-CDMA Downlink 1:55 PM
Mikko Valkama, Tobias Hidalgo Stütz, Markku Renfors, Tampere University of Technology
- MP1a-3 Linear Complexity Multiuser Detection using Joint Successive Interference Cancellation 2:20 PM
Ananya Sen Gupta, Andrew Singer, University of Illinois, Urbana-Champaign
- MP1a-4 Linear Hybrid Interference Cancellation for DS/CDMA Signals 2:45 PM
Richard Cagley, John Shynk, University of California, Santa Barbara

Track 1 - Communication Systems and Networks

Session MP1b Synchronization

Chair: *Fred Harris*

- MP1b-1 Optimization of Delay Tracking Loops for Binary Modulated Systems 3:30 PM
Meng-hsuan Chung, Robert A. Scholtz, University of Southern California
- MP1b-2 Asymptotic Performance Analysis of a Blind Algorithm for Signal Parameter Estimation 3:55 PM
Valentina De Angelis, Luciano Izzo, Antonio Napolitano, Mario Tanda, Università di Napoli Federico II
- MP1b-3 Analytical and Experimental studies on carrier frequency offset estimation algorithms for OFDM systems 4:20 PM
Uf Tureli, Krishna Madhavan Pillai, Stevens Institute of Technology
- MP1b-4 Blind Symbol Timing and Frequency Offset Estimation 4:45 PM
Mario Tanda, Università di Napoli Federico II

- WA8b2-3 Accurate Motion Capture at High Rotational Rates Using the CORDIC Algorithm
Jeanette Arrigo, Paul Chau, University of California, San Diego
- WA8b2-4 Characterization of the Quantization Properties of Similarity-Related DSP Structures by Means of Interval Simulations
Juan A. Lopez-Martin, Gabriel Caffarena, Carlos Carreras, Octavio Nieto-Taladriz, Universidad Politecnica Madrid
- WA8b2-5 A Taxonomy of Parallel Prefix Networks
David Harris, Harvey Mudd College / Sun Microsystems Labs
- WA8b2-6 Improving Euclidean Division and Modular Reduction for some Classes of Divisors
Jean-Claude Bajard, LIRMM, Université Montpellier 2; Laurent Imbert, CNRS, LIRMM; Thomas Plantard, Thomas Plantard, LIRMM, Université Montpellier 2
- WA8b2-7 The Quiet State - a new approach to low-power multiplier design
Nikos Mallios, Neil Burgess, Cardiff University
- WA8b2-8 A VHDL Library of LNS Operators
Jérémy Detrey, Florent de Dinechin, École Normale Supérieure de Lyon
- WA8b2-9 Multiplierless Implementations of Adaptive FIR Filters
Yunhua Wang, Linda DeBrunner, Victor DeBrunner, Monte Tull, University of Oklahoma
- WA8b2-10 Direct digital frequency synthesis using piece-wise polynomial approximation
Waqas Akram, Cirrus Logic, Inc.; Earl E. Swartzlander, University of Texas, Austin
- WA8b2-11 A Combined Interval and Floating-Point Comparator
Chris Kaas, James Stine, Illinois Institute of Technology
- WA8b2-12 Comparing RNS Scaling Techniques
Braden Phillips, University of Adelaide

AUTHOR LIST

NAME	SESSION	NAME	SESSION
Aaron, Anne	TA5	Bastug, Ahmet	TA8a
Aazhang, Behnaam	TA8a	Basu, Sujoy	MP6b
Aazhang, Behnaam	TA8a	Baxter, P. D.	MA6b
Abdallah, Chaouki	MP2	Bayoumi, Magdy	WA8b1
Abramovich, Yuri	TA8b2	Becker, Suzanna	MP7
Abrudan, Traian	TA8a	Becker, Suzanna	TA2
Acar, Turev	TA8a	Beheshti, Mohammadali	TA8a
Acton, Scott	TP8a2	Belding-Royer, Elizabeth	MP4
Acton, Scott	WA5	Belfiore, Jean-Claude	TA8b1
Acton, Scott	WA6b	Bell, Kristine	TA4
Ahmadi, Majid	WA8a1	Bell, Kristine	TA7b
Ahmadi, Sassan	MP4	Bellanger, Maurice	TP2
Ahuja, Narendra	TA5	Benallal, Ahmed	WA8a2
Airy, Manish	TA8a	Bengtsson, Mats	WA2
Aizawa, Kiyoharu	TP8a2	Benitez, Ana	MA5b
Akram, Waqas	WA8b2	Benjelloun, Mohammed	TP8a2
Alam, Hassan	MA5b	Berenguer, Inaki	MA2b
Alam, Mubashir	TA3	Berger, Toby	TP8b1
Albu, Felix	TP2	Berkani, Daoued	WA8a2
Alcaim, Abraham	WA4	Berkner, Kathrin	MA5b
Allred, Daniel	TA7a	Bernard, Picinbono	WA8a2
Allred, Daniel	TA7a	Bernardini, Riccardo	TP8a1
Alves, Rogerio	WA4	Besson, Olivier	WA3
Aly, Ramy	WA8b1	Bharitkar, Sunil	MP8a3
Amin, Moeness	TA8b1	Bhatt, Tejas	MA7b
Amin, Moeness	TA8b2	Bilgin, Ali	WA6a
Anderson, David	TA7a	Bilmes, Jeff	WA4
Anderson, David	TP7	Birenzvige, Amnon	WA8a1
Anderson, David	WA4	Bischoff, Reinhard	WA8b1
Anderson, David	WA7b	Biveroni, Jonas	WA8b1
Anderson, David J.	MP7	Bliss, Daniel	MA3b
Andrews, Jeffrey	TA8b1	Bliss, Daniel	TA8a
Andric, Oleg	TP3	Bliss, Daniel	TP1
Antoniou, Andreas	MP8b1	Boche, Holger	MP8a1
Antonucci, Robert	TP8a2	Boche, Holger	TA8a
Apolinario, Jose	WA4	Boche, Holger	TA8a
Arnold, Mark	TP6	Bodnar, Lance	TA8b1
Arrigo, Jeanette	WA8b2	Boliek, Martin	WA6a
Aschbacher, Ernst	TP2	Bologna, Frank	TP7
Ates, Hasan	WA6a	Bondy, Jeff	MP7
Athanas, Peter	TA6b	Bondy, Jeff	TA2
Attux, Romis	TP2	Borran, Mohammad Jaber	TA8a
Averbuch, Amir	WA5	Bouman, Charles A.	MP5
Awawdeh, Amjad	WA5	Bouman, Charles A.	WA5
Baas, Bevan	WA8b1	Bovik, Alan	TP5
Bajard, Jean-Claude	WA8b2	Bovik, Alan	TP5
Balakrishnan, Raja	TP1	Boyd, John	MP8a2
Balamurugan, Ganesh	TP8b1	Boyd, Stephen	TP4a
Baloch, Sajjad	MP5	Brandt-Pearce, Maite	TA8a
Banerjee, Serene	TP8a2	Braverman, Amy	MP5
Baraniuk, Richard	TP5	Brennan, Robert	TP7
Barnwell, Thomas	MP4	Breuel, Thomas	MA5b
Barrett, Steven	MP7	Brodersen, Bob	TA6b
Barsanti, Robert	TA8b2	Broetje, Lars	TA1

MA5b-5 Resolution-sensitive document image analysis 11:55 AM
for document repurposing
Kathrin Berkner, Edward L. Schwartz, Ricoh Innovations, Inc.

Track 6 - Architectures and Implementations

Session MA6b DSP Implementations

Chair: *Ken Lever*

MA6b-1 Logarithmic number system and 10:15 AM
floating-point implementations of a well-
conditioned RLS estimation algorithm on FPGA
Barry Lee, Ken Lever, University of Wales, Cardiff

MA6b-2 Finite precision implementation of LDPC 10:40 AM
coded M-ary modulation over wireless channels
Manyuan Shen, Huaning Niu, Hui Liu, James Ritcey, University of Washington

MA6b-3 Restoration of double-impulse sampled 11:05 AM
signals at one-half the Nyquist rate
Jim Schroeder, Sanjeev Naguleswaran, Mark Rice, DSpace Pty Ltd; Steve Collins, University of Iowa

MA6b-4 Blind Signal Separation of Convolutional 11:30 AM
Mixtures
John McWhirter, P. D. Baxter, QinetiQ Ltd

Track 7 - Signal Processing Algorithms and Applications

Session MA7b Future Wireless Receivers

Chair: *Gri Mandyam*

MA7b-1 Linear-Aided Decision-Feedback 10:15 AM
Equalization for the CDMA Downlink
Laurence Mailaender, Lucent Technologies, Bell Labs; John Proakis, Northeastern University

MA7b-2 An Efficient Sub-carrier and Rate Allocation 10:40 AM
Scheme for M-QAM Modulated Uplink OFDMA
Transmission
Sushanta Das, University of Texas, Dallas; Giridhar Mandyam, Nokia Research Center; Mohammad Saquib, University of Texas, Dallas

MA7b-3 Efficient Linear Equalization for High Data 11:05 AM
Rate Downlink CDMA Signaling
Jianzhong (Charlie) Zhang, Tejas Bhatt, Giridhar Mandyam, Nokia Research Center

MA7b-4 Performance Analysis and Constituent Code 11:30 AM
Design for Space-Time Turbo Coded Modulation
over Fading Channels
Djordje Tujkovic, University of Oulu

MA3b-2	Multiresolution GMTI Radar <i>Joseph Guerci, Allan Steinhardt, Defense Advanced Research Projects Agency (DARPA)</i>	10:40 AM
MA3b-3	Multiple-Input Multiple-Output (MIMO) Radar and Imaging: Degree of Freedom and Resolution <i>Daniel Bliss, MIT Lincoln Laboratory</i>	11:05 AM
MA3b-4	Joint Space-Time Interpolation for Bistatic STAP <i>Vijay Varadarajan, Jeffrey Krolik, Duke University</i>	11:30 AM

Track 1 - Communication Systems and Networks

Session MA4b EDAC-I

Chair: Naresh Shangbhag

MA4b-1	Performance Evaluation of One-way Communication using Block Codes <i>Hyeon-Cheol Lee, Tae Sik Kim, KARI (Korea Aerospace Research Institute)</i>	10:15 AM
MA4b-2	Efficient Encoding of Cycle Codes: A Graphical Approach <i>Jin Lu, Jose M. F. Moura, Haotian Zhang, Carnegie Mellon University</i>	10:40 AM
MA4b-3	Effective ARQ Protocols Using Adaptive Modulation and Symbol Mapping Diversity <i>Harvind Samra, Zhi Ding, University of California, Davis</i>	11:05 AM
MA4b-4	Accelerating the Convergence of Message Passing on Loopy Graphs Using Eigenmessages <i>Todd Moon, Jake Gunther, Ojas Chauhan, Utah State University</i>	11:30 AM

Track 5 - Image and Video Processing

Session MA5b Document Image Processing

Chair: Katrin Berkner

MA5b-1	Reflowable Document Images <i>Thomas Breuel, Palo Alto Research Center</i>	10:15 AM
MA5b-2	Conversion of PDF Documents into HTML: A Case Study of Document Image Analysis <i>Fuad Rahman, Hassan Alam, BCL Technologies, Inc.</i>	10:40 AM
MA5b-3	Extraction, Description and Application of Multimedia Using MPEG-7 <i>Ana Benitez, Shih-Fu Chang, Columbia University</i>	11:05 AM
MA5b-4	Linking Presentation Documents using Image Analysis <i>Berna Erol, Jonathan J. Hull, Ricoh Innovations - California Research Center</i>	11:30 AM

NAME	SESSION	NAME	SESSION
Bruce, Ian	MP7	Clothiaux, Eugene	MP5
Bruce, Ian	TA2	Coifman, Ronald	WA5
Bruehwiler, Markus	WA8b1	Collins, Steve	MA6b
Bruvold, Kristoffer	TP8b2	Cooklev, Todor	MP8a2
Buchner, Herbert	TP2	Cormack, Lawrence	TP5
Buckley, Kevin	TA8a	Coskun, Orhan	MA2b
Buckley, Robert	WA6a	Cosman, Pamela	TP8a1
Budge, Scott	WA1b	Cosman, Pamela	TP8a1
Budianu, Cristian	TP8b2	Cosman, Pamela	WA8a1
Burg, Andreas	TP2	Cotae, Paul	MP8a1
Burg, Andreas	WA8b1	Coutu, Gerard	MP2
Burgess, Neil	MP6a	Cox, Donald	TP8b2
Burgess, Neil	TA6a	Cox, Donald	TP8b2
Burgess, Neil	WA8b2	Cox, Henry	MP8b1
Burgess, Neil	WA8b2	Cox, Henry	TP4a
Butterweck, Hans Juergen	MP8b1	Cox, Henry	WA3
Buzzi, Stefano	TA8a	Creusere, Charles	MP4
Caffarena, Gabriel	WA8b2	Creusere, Charles	TP8a2
Cagley, Richard	MP1a	Cutler, Ben	MP6b
Cagley, Richard	MP2	Cvejic, Nedeljko	WA4
Cagley, Richard	MP8a2	Dabeer, Onkar	WA1a
Campanella, Humberto	WA8b1	Dai, Qionghai	TP8a2
Cao, Qianling	TA8a	Daly, Alan	MP6b
Cao, Zhongren	TA1	Daly, Scott	TP5
Carin, Lawrence	TP3	Dane, Gokce	TP8a1
Carreras, Carlos	WA8b2	Daniel, Edward	MP8a3
Cavallaro, Joseph	WA8b1	Daniel, Edward	TP8b2
Chakeres, Ian	MP4	Dao, Hoang	TP6
Chalus, Christophe	WA3	Das, Sushanta	MA7b
Chamberlain, Roger D.	MP7	Dayal, Pranav	TA8a
Chan, Amanda	TA8a	De Angelis, Valentina	MP1b
Chan, Wai-Yip	MP8a3	de Dinechin, Florent	WA8b2
Chandler, Damon	TP5	De Queiroz, Ricardo	TP8a2
Chandler, Damon M.	TP8a2	DeBardelaben, James	WA7a
Chang, Chen	TA6b	Debbah, Mérouane	WA2
Chang, Shih-Fu	MA5b	DeBrunner, Linda	TP4b
Chang, Yu	TA8a	DeBrunner, Linda	WA8b2
Chapelle, Gregory	TA8b1	DeBrunner, Victor	TA7b
Chau, Paul	TA3	DeBrunner, Victor	TP4b
Chau, Paul	WA8b2	DeBrunner, Victor	WA8a1
Chauhan, Ojas	MA4b	DeBrunner, Victor	WA8b2
Chellappa, Vijay	TP8a1	Decicco, Daniel	WA7a
Chen, Jeremy	TP8b2	Delashmit, Walter	MP8b1
Chen, Junqing	TP5	Delgosha, Farshid	WA8a1
Cheng, Jay	TP8b1	Deller, John	MP8b1
Cheng, Samuel	TA5	Deller, Jr., J. R.	WA4
Chevalier, Melissa	TA4	Demiroglu, Cenk	WA4
Chew, Y. Huat	WA3	Deng, Tian-Bo	MP8b1
Cho, Grace	WA8b1	Derrouich, Salah	TP8a2
Chou, Jim	TA5	Desai, Mukund	WA8a1
Chu, Wai	MP8a3	Detrey, Jérémie	WA8b2
Chua, Ai Ling	TA8b1	Dey, Sujit	TP8a1
Chugg, Keith	MA2b	Dhillon, Inderjit	MP8a1
Chui, Chee-Cheon	WA1a	Dick, Chris	TA6b
Chung, Meng-hsuan	MP1b	Dick, Chris	TP4b
Cioffi, John M	TA8a	Dickson, Kevin	TP6

NAME	SESSION	NAME	SESSION
Dietl, Hubert	MP7	Feder, Meir	TA5
Dimitrov, Vassil	TP6	Fehn, Christoph	TP8a1
Ding, Lei	TA1	Fekri, Faramarz	WA8a1
Ding, Zhi	MA4b	Felber, Norbert	WA8b1
Ding, Zhi	TA1	Feng, Albert	TA2
Djendi, Mohamed	WA8a2	Ferwerda, James A.	TP5
Do, Minh	MP5	Fessler, Jeffrey	WA5
Doerry, Armin	TA7b	Fichtner, Wolfgang	WA8b1
Dognin, Pierre	WA4	Fimoff, Mark	TA8b1
Doherty, John	MP8a1	Fitz, Michael	MP3
Doherty, John	MP8b2	Fleury, Bernard	MP8a1
Dong, Hui	MP4	Forsythe, Keith	TP1
Donoho, David	WA5	Francois, Chin	TP1
Douglas, Scott	MP2	Francois, Joseph	TP8a2
Dubbert, Dale	TA7b	Frantz, Patrick	TA6b
Dugger, Jeff	WA7b	Friedlander, Benjamin	TA3
Dunne, Bruce	MP8b1	Friedlander, Benjamin	TP8a2
Durigon, Marco	TP8a1	Gadwal, Veena	TA7b
Dwoskin, Jeffrey	MP6b	Gagnon, Thierry	WA8a2
Eaton, Michael	MP8b1	Gamba, Jonah	MP8b2
Effros, Michelle	TP8b2	Gan, Jianhua	WA8a1
Ehrlich, Dan	WA8a1	Garcia-Frias, Javier	TA5
Ehtiati, Neda	WA1b	Gastpar, Michael	TA5
Ekmekeci, Sila	TP8a1	Ge, Hongya	MP8b2
Ekpenyong, Anthony	WA8a1	Ge, Hongya	TA8a
Elad, Michael	WA5	Ge, Jun	WA8a2
El-Difrawy, Sameh	WA8a1	Geiger, Ralf	WA8a2
El-Jaroudi, Amro	WA4	Geng, Jifeng	WA2
El-Khashab, Ayman	TP7	Geng, Wei	WA8a1
Elliott, Robert	MP8a2	Georgiades, Costas	MP8a1
Emdad, Fatemeh	MP8b2	Georgiou, Panayiotis	TA3
Enescu, Mihai	WA8a2	Gershman, Alex	TA8a
Er, Guihua	TP8a2	Gershman, Alex	TA8a
Ercegovic, Milos	TP6	Gershman, Alex	TP4a
Ercegovic, Milos	TP6	Gershman, Alex	WA2
Erdol, Nurgun	MA1	Gersho, Allen	MP4
Erdol, Nurgun	TP3	Gharavi-Alkhansari, Mohammad	TA8a
Erol, Berna	MA5b	Gharavi-Alkhansari, Mohammad	TA8a
Ertan, Ali	MP4	Gharavi-Alkhansari, Mohammad	WA2
Eshet, Amit	TA5	Giannakis, Georgios B.	MP2
Eslami, Ramin	TP8a1	Giannakis, Georgios B.	MP3
Eslami, Ramin	WA6b	Giannakis, Georgios B.	TP1
Essa, Irfan	WA7a	Gibson, Jerry	MP4
Etter, Delores	MP2	Gibson, Jerry	MP4
Evans, Brian	MA2b	Gilchrist, Peter H.	MP7
Evans, Brian	TA8b1	Girod, Bernd	TA5
Evans, Brian	TP8a2	Gisselquist, Daniel	TP8b1
F. Dana, Amir	TP8b2	Goldstein, J. Scott	MP4
Fagan, Anthony	TP2	Goldstein, Julius L.	MP7
Falk, Johan	TA8b1	Goldstein, Julius L.	MP7
Fan, Guoliang	WA5	Gonski, David	WA8a1
Faramarzpour, Naser	TP8a1	Gorokhov, Alexei	TA8b2
Faramarzpour, Naser	WA8b1	Graf, Ben	TP3
Fargues, Monique	MP2	Graham, David	WA7b
Fargues, Monique	WA8a1	Greer, S. Craig	MP4
Fechtel, Stefan	TA1	Guerci, Joseph	MA3b

Track 1 - Communication Systems and Networks

Session MA1b Signal Representations and Spectral Analysis Techniques

Chair: *Ralph Hippenstiel*

MA1b-1	Information content based signal characterization and classification	10:15 AM
	<i>Shubha Kadambe, Qin Jiang, HRL Laboratories, LLC</i>	
MA1b-2	Signal processing models for discrete-time self-similar and multifractal processes	10:40 AM
	<i>Raghuvveer Rao, Rochester Institute of Technology</i>	
MA1b-3	Time-frequency Analysis in Search of an Acoustic Signature of a Wake Vortex	11:05 AM
	<i>Nurgun Erdol, Florida Atlantic University</i>	
MA1b-4	Spectral Sharing Across 2G-3G Systems	11:30 AM
	<i>Marco Michelini, Università degli Studi di Firenze; Samer Hijazi, Carl Nassar, Zhiqiang Wu, Colorado State University</i>	

Track 2 - Adaptive Systems and Processing

Session MA2b Adaptive Communication Systems

Chair: *Aylin Yener*

MA2b-1	Adaptive MIMO Antenna Selection	10:15 AM
	<i>Inaki Berenguer, Xiaodong Wang, Columbia University; Vikram Krishnamurthy, University of British Columbia</i>	
MA2b-2	Baud Rate Timing Recovery and Slicer Threshold Estimation for Adaptive Dispersion Compensation of Fiber Optical Channels	10:40 AM
	<i>Orhan Coskun, Santel Networks; Keith Chugg, University of Southern California</i>	
MA2b-3	Joint Space-Time Interference Cancellation and Channel Shortening	11:05 AM
	<i>Roopsha Samanta, Robert Heath, Brian Evans, University of Texas, Austin</i>	
MA2b-4	Further Results on Adaptive Cell Sectorization with Multiuser Detection	11:30 AM
	<i>Changyoon Oh, Aylin Yener, The Pennsylvania State University</i>	

Track 3 - Array Processing and MIMO

Session MA3b Radar Array Processing

Chair: *Edward Baranoski*

MA3b-1	A Structured Least-Squares Approach to Blind Channel Identification and Equalization	10:15 AM
	<i>Jacob Gunther, Todd Moon, Utah State University</i>	

**Program of 2003
Asilomar Conference
on
Signals, Systems, and Computers**

**Technical Program Chairman
Prof. Michael Schulte
University of Wisconsin-Madison**

NAME	SESSION	NAME	SESSION
Guessoum, Abderazak	WA8a2	Hlawatsch, Franz	TP2
Guitton, Michel	WA8b1	Hodjat, Alireza	WA8b1
Guleryuz, Onur	TP8a1	Hoffman, Michael	MP4
Guleryuz, Onur	WA6b	Hohmann, Volker	MP7
Gunther, Jacob	MA3b	Hohmann, Volker	TA2
Gunther, Jake	MA4b	Honan, Patrick, J.	TA8b1
Guo, Li	WA8a1	Hu, Bin	MP8a1
Guo, Yongfang	WA2	Hu, Chia-Chang	TA8b1
Guo, Yuanbin	WA8b1	Hua, Gang	MP5
Gupta, Malay	MP2	Hua, Yingbo	TA8a
Gupta, Nikhil	WA6b	Huang, Walter	TA7a
Gupta, Parul	MP3	Huang, Walter	TA7a
Gurijala, Aparna R.	WA4	Huang, Yih-Fang	WA8a1
Hadef, Mahmoud	TP2	Huang, Yuheng	TA8a
Hagege, Rami	TP8a2	Huang, Yuheng	TA8a
Han, Jun	MP8b1	Huh, Heon	MP8a2
Han, Yeesoo	MP8a2	Hull, Jonathan J.	MA5b
Handel, Peter	TA8b1	Huo, Xiaoming	MP5
Hanssen, Alfred	TA3	Hutchins, Gary	MP8a2
Harris, David	TA6a	Hwang, Suk-seung	MP2
Harris, David	WA8b2	Ibrahim, Nicolas	TA8b1
Harris, Fred	MP1a	Iltis, Ronald A.	TA8a
Harris, Fred	TA1	Imbert, Laurent	WA8b2
Harris, Fred	TA1	Israeli, Moshe	WA5
Harris, Fred	TA6b	Isukapalli, Yogananda	WA1b
Hartemink, Alexander	TP3	Ivanovich, Darko	MP7
Hartman, Jarrod	MP4	Ives, Robert	MP2
Hartmann, Manfred	MP8a2	Izumida, Keichiro	TP8a2
Hasler, Paul	WA7b	Izzo, Luciano	MP1b
Hasler, Paul	WA7b	Jagmohan, Ashish	TA5
Hasler, Paul	WA7b	Jain, Vijay	MP8a2
Hassibi, Babak	MP8b2	Jain, Vijay	TP6
Hassibi, Babak	TA8a	Jansson, Magnus	TA8b1
Hassibi, Babak	TP8b2	Jansson, Magnus	WA8a2
Hassibi, Babak	WA2	Järvinen, Jussi	TA8b1
Haustein, Thomas	TA8a	Jelinek, Milan	MP4
Havlicek, Joseph	TP8a2	Jenkins, Kenneth	MP8b2
Hawes, Anthony H.	MP8b1	Jenkins, W. Kenneth	MP8b1
Hawkins, Coy	TP8a2	Jeong, Soonho	TA8b2
Haykin, Simon	MP7	Jiang, Jing	TP8a1
Haykin, Simon	TA2	Jiang, Qin	MA1
He, Lei	TA8a	Jiang, Wei	TP8a2
Heaney, Kevin	WA3	Jiang, Yibo	TA8a
Heath, Robert	MA2b	Jin, Yuanwei	TA3
Heath, Robert	MP8a1	Jing, Yindi	WA2
Heath, Robert	TA8a	Joachim, Dale	MP8b1
Heath, Robert	TA8a	Jones, Douglas L.	MP8b2
Heesoo, Lee	MP8b2	Jones, Douglas L.	TA2
Hemami, Sheila S.	TP5	Jones, Douglas L.	TP8b2
Hemami, Sheila S.	TP8a2	Jorswieck, Eduard	TA8a
Hero, Alfred	MP5	Jorswieck, Eduard	TA8a
Hero, Alfred	TP3	Jovanovic-Dolecek, Gordana	TA8b2
Hesher, Curt	TP3	Jullien, Graham	TP6
Hidalgo Stitz, Tobias	MP1a	Juntti, Markku	WA2
Hijazi, Samer	MA1	Juphil, Cho	MP8b2
Hinds, Chris	MP6a	Kaas, Chris	WA8b2

NAME	SESSION	NAME	SESSION
Kadambe, Shubha	MA1	Krusiensi, Dean	MP8b1
Kamasak, Mustafa	WA5	Krusiensi, Dean	MP8b2
Kamath, Sunil	TP7	Ku, Walter	MP8b1
Kammeyer, Karl-Dirk	TA1	Kuang, Jingming	MP8a3
Kandadai, Srivatsan	TP8a2	Kubin, Gernot	TP2
Kanduri, Sairam	TP8b2	Kuchler, Ryan	TA8b2
Karagianni, Konstantina	WA8b1	Kumar, Raj	MP6b
Karimi, Nader	WA8b1	Kumaresan, Ramdas	WA8a1
Karl, William	TP3	Kung, Sun-Yuan	MP3
Karl, William	WA5	Kwon, Hyuck	TP1
Kassam, Saleem A.	MP8b2	Kwon, Yeong-Hyeon	TP8b2
Kates, James	TA2	Kwong, Mylène	MP8a3
Keller, Catherine	TP1	Kyriakakis, Chris	MP8a3
Kellermann, Walter	TP2	Kyriakakis, Chris	TA3
Kim, Hyoung-Gook	WA4	Laamari, Hedi	TA8b1
Kim, Kyeong Jin	MP8a1	Lai , Hung	WA3
Kim, Seung-Jun	TA8a	Lamarca, Meritxell	TA8a
Kim, Tae Sik	MA4b	Lan, Chingfu	TP8a1
Kinney, Albert	TA8b2	Lansing, Charissa	TA2
Kirby, Michael	MP8b2	Lanvin, Patrick	TP8a2
Kirlin, R. Lynn	TA7a	Larouche, Steeve	WA8a2
Kirsteins, Ivars	TA4	Larsen, Erik	TA2
Kitson, Fred	MP6b	Larsen, Yngvar	TA3
Kleinschmidt, Michael	MP7	Lashkari, Khosrow	TA2
Kleinschmidt, Michael	TA2	Lee, Barry	MA6b
Knopp, Raymond	TP8b2	Lee, Barry	WA8b2
Ko, Chi Chung	MP4	Lee, Edward	TP4b
Ko, Chi Chung	TP1	Lee, Hyeon-Cheol	MA4b
Ko, Youngwook	TA8a	Lee, Ruby	MP6a
Koc, Cetin Kaya	MP6b	Lee, Ruby	MP6b
Koca, Mutlu	TA8a	Lee, Ruby	TA6a
Kocian, Alexander	MP8a1	Lee, Sarah	TP8a2
Koeppl, Heinz	TP2	Lee, Seok-Jun	MP8b2
Koetter, Ralf	TA8a	Lee, Seok-Jun	WA8b1
Koetter, Ralf	TP8b2	Lee, Sok-kyu	TA1
Kogon, Stephen	TP4a	Lee, Woobin	MP6b
Kogon, Stephen	WA3	Lefebvre, Roch	MP8a3
Koivunen, Visa	TA8a	Lefebvre, Roch	WA8a2
Koivunen, Visa	TA8b1	Leontaris, Athanasios	TP8a1
Kong, Jun Jin	WA8b1	Lever, Ken	MA6b
Konrad, Markus	TP2	Levy, Bernard	WA2
Kotrlík, Michael	TA4	Leyman, A. Rahim	WA3
Kraut, Shawn	TA3	Li, Guoqing	MP8a2
Kraut, Shawn	WA3	Li, Hongbin	MP8a1
Krim, Hamid	MP5	Li, Hongbin	TA8a
Krim, Hamid	TP3	Li, Husheng	MP8a1
Krishnamurthy, Vikram	MA2b	Li, Jian	TP4a
Krishnan, Venkatesh	TA7a	Li, Xiaohua (Edward)	TP8b2
Krishnan, Venkatesh	TA7a	Li, Xintong	MP8a2
Krishnapuram, Balaji	TP3	Liang, Li	WA8a1
Krithivasan, Shankar	MP6a	Liang, Yingbin	TA8b1
Krithivasan, Shankar	WA8b2	Liang, Ying-Chang	TA8a
Krogmeier, James. V.	MP8a2	Liao, Xuejun	TP3
Krolik, Jeffrey	MA3b	Lie, Suwandi	WA3
Krolik, Jeffrey	TA3	Lin, Xiao	MP4
Krolik, Jeffrey	TA7b	Lin, Xiaofan	MP8a3

He has been carrying out research on adaptive signal processing for sensor arrays since 1980. This has been applied to a wide variety of systems ranging from radar, sonar and communications to medical diagnostic techniques such as ECG and EEG. He has recently been working on techniques for broadband adaptive beamforming and blind signal separation.

Prof. McWhirter is currently a Senior Fellow in the Advanced Signal Processing Group at QinetiQ, a visiting professor in Electrical Engineering at the Queen's University of Belfast and also at the University of Wales in Cardiff. He was elected as a Fellow of the Royal Academy of Engineering in 1996 and the Royal Society in 1999. He has been serving as President of the Institute of Mathematics and its Applications (IMA) since January 2002.

2. Session MA1a Sidney Parker Memorial Lecture for the
2003 Asilomar Conference

Prof. J. G. McWhirter, FRS, FREng

QinetiQ, Ltd.
Malvern Technology Centre
Malvern, England

Developments in Sensor Array Signal Processing

Abstract

In this talk I will focus on the topic of sensor array signal processing since that has been my main area of research over the years. I will start with a brief historical overview into the development of algorithms and architectures for adaptive beamforming. This is an important technique which has found application in numerous areas ranging from radar and sonar to mobile communications and hearing aids.

I will then go on to discuss some recent developments and current trends. In particular, I want to draw attention to an important trend from adaptive beamforming to blind signal separation, from principal component analysis (PCA) to independent component analysis (ICA) and from second order statistics (SOS) to higher order statistics (HOS). I would like to point out the convergence which I see between this area and that of artificial neural networks.

Blind signal separation is a relatively new technique which has already found application in several areas including digital communications and medical diagnostics (ECG and EEG). I will describe some of the progress that has already been made in the context of instantaneous mixing and then discuss the challenge of extending the technique to convolutive mixtures.

Professional Biography

John McWhirter gained a First Class Honours degree in Mathematics (1970) and a Ph.D. in Theoretical Physics (1973) from the Queen's University of Belfast. Since then he has worked as a research scientist at the Royal Signals and Radar Establishment in Malvern. This subsequently became part of the Defence Evaluation and Research Agency and, most recently, QinetiQ, Ltd.

NAME	SESSION	NAME	SESSION
Linscott, Ivan	TP7	Matz, Gerald	TP2
Liu, Hsin-Chin	MP8a1	McCain, Dennis	WA8b1
Liu, Hsin-Chin	MP8b2	McCanny, John	MP6b
Liu, Hui	MA6b	McCanny, John	TP6
Liu, Hui	MP8a2	McClellan, James	TA3
Liu, Lichuan	MP8b2	McDonald, Eric	TA7a
Liu, Pei	TA1	McDonald, Eric	WA7b
Liu, Ping	TP1	McIvor, Ciaran	MP6b
Liu, Qiuhua	TP3	McLoone, Máire	MP6b
Liu, Xiuwen	TP3	McWhirter, John	MA6b
Liu, Yong	MP3	McWhorter, Todd	TA3
Liu, Zhaohui	TP6	Mecklenbraeucker, Christoph	TP2
Lockwood, Michael	TA2	Medidi, Muralidhar	TP8b2
Lopez-Martin, Juan A.	WA8b2	Medidi, Sirisha	TP8b2
Lops, Marco	TA8a	Medina, Cesar	WA4
Lorenz, Robert	TP4a	Medles, Abdelkader	TP8b1
Lou, Feifei	TA6b	Medles, Abdelkader	WA2
Love, David	TA8a	Memon, Nasir	TP8a1
Lu, Jin	MA4b	Menard, Daniel	WA8b1
Lu, Xiaoli	TA7a	Michelini, Marco	MA1
Luo, Zhi-Quan	TP4a	Michstein, Laurence	TP8a1
Luo, Zhi-Quan (Tom)	MP3	Minch, Bradley A.	TA7a
Lutz, David	MP6a	Minch, Bradley A.	WA7b
Ma, Xiaoli	MP3	Mirchandani, Gagan	WA8a2
Ma, Zhengxiang	TA1	Mitra, Sanjit K.	TA8b2
Macdonald, Jeffrey	TP3	Mitra, Urbashi	MP8b2
Madhavan Pillai, Krishna	MP1b	Mitra, Urbashi	WA2
Madhow, Upamanyu	MP4	Molino, Andrea	WA8b1
Madhow, Upamanyu	TP8b2	Monakov, Andrei	WA3
Madhow, Upamanyu	WA1a	Moon, Todd	MA3b
Magotra, Neeraj	MP7	Moon, Todd	MA4b
Mailaender, Laurence	MA7b	Moon, Todd	WA1b
Majumdar, Abhik	TA5	Moore, Darnell	WA7a
Majumdar, Pranab	TA4	Morgan, Dennis	TA1
Makino, Shoji	MP2	Morgera, Salvatore	TP3
Mallios, Nikos	WA8b2	Morris, Evan	WA5
Malo, Jesus	TP5	Mostofi, Yasamin	MP8b2
Mamidi, Suman	MP6a	Motani, Mehul	TA8b1
Mandyam, Giridhar	MA7b	Moura, Jose M. F.	MA4b
Mandyam, Giridhar	MA7b	Mujtaba, S. A.	TA1
Mangoubi, Rami	WA8a1	Mukkavilli, Krishna	TA8a
Manry, Michael	MP8b1	Muller, Jean-Michel	TP6
Maravic, Irena	TP1	Müller, Ralf	WA2
Marcellin, Michael W.	WA6a	Murali, Sriram	MP8b1
Margetts, Adam	MP8a1	Murao, Kenji	TP8a2
Marino, Claudio	TA3	Murphy, Patrick	TA6b
Marino, Claudio	WA8a2	Murphy, Ryan	MP5
Marnane, William	MP6b	Murray, James	WA3
Marple, Jr., Lawrence	WA8a2	Murthy, Chandra	MP3
Martin, Cristoff	TA8a	Naguleswaran, Sanjeev	MA6b
Masry, Elias	TA8b1	Naka, Nobuhiko	TA2
Masry, Mark A.	TP5	Napolitano, Antonio	MP1b
Masry, Mark A.	TP8a2	Narasimha, Rajesh	TP8a2
Mathias, Keith	WA8a2	Narayanan, Krishna	TP8a1
Matusiak, Ewa	TA7b	Nassar, Carl	MA1
Matz, Gerald	MP8a2	Navas, Jorge	WA8b1

NAME	SESSION	NAME	SESSION
Naware, Vidyut	MP2	Paulraj, A.	TA1
Neelamani, Ramesh	TP5	Paulraj, Arogyaswami	MP3
Nefian, Ara	WA7a	Pei, Yong	TP8b2
Nelson, Bruce	WA8a1	Perels, David	WA8b1
Nelson, Jill	TP8b1	Perry, Richard	TA8a
Nerayanuru, Sreenivasa	TA8b1	Peterson, J. Michael	TA3
Nguyen, Hoang	TA8b1	Petropulu, Athina	TA8a
Nguyen, Truong	TP8a1	Pezeshk, Ali	MP8a1
Nguyen, Truong	WA8b1	Phillips, Braden	WA8b2
Nickel, Robert	WA4	Pi, Sunaina	MP8b2
Nieto-Taladriz, Octavio	WA8b2	Pien, Homer	TP3
Niu, Huaning	MA6b	Piirainen, Olli	WA2
Nix, Johannes	MP7	Pladdy, Christopher	TA8b1
Nix, Johannes	TA2	Plantard, Thomas	WA8b2
Noll, Peter	WA4	Plantard, Thomas	WA8b2
Nongpiur, Rajeev	MP8b1	Plotkin, Eugene	WA6b
Nowak, Robert	TP3	Politte, David G.	MP5
Noyer, Jean-Charles	TP8a2	Pollak, Ilya	MP5
Nwoye, Ephraim	WA8a1	Poor, Vincent	MP8a1
O'Brien, Jr., William	TA2	Porat, Ron	TA1
O'Sullivan, Joseph A.	MP5	Poulsen, Erik	MP8a1
Obeidat, Baha	TA8b2	Pradhan, Sandeep	TA5
Odame, Kofi	TA7a	Pratapa, Pallavi	TP3
Odame, Kofi	WA7b	Prince, Jerry	WA5
Ogle, William C.	MP4	Proakis, John	MA7b
Ogura, Nobuhiko	MP8b1	Psota, Eric	MP4
Oh, Changyoon	MA2b	Pu, Lingling	WA6a
Oh, Mi-Kyung	MP3	Quemerais, Philippe	WA8b1
Oh, Mi-Kyung	TP8b2	Rabha, Pankaj	MP8a3
Oklobdzija, Vojin	TP6	Rabideau, Daniel	TA8a
Orchard, Michael	TP5	Radha, Hayder	TP8a1
Orchard, Michael	WA6a	Radha, Hayder	WA6b
Orchard, Michael T.	MP5	Radhakrishnan, Regunathan	TP8a1
Orsak, Geoffrey	TP4b	Raghothaman, Balaji	TA8b1
Ortega, Antonio	TP8a2	Rahardja, Susanto	MP4
Oswal, Sachin	WA4	Rahman, Fuad	MA5b
Oteri, Oghenekome	TA1	Raich, Raviv	TP8b2
Ottersten, Bjorn	TA8a	Ramamurthi, Krishnakumar	WA5
Ottersten, Bjorn	WA2	Ramaswamy, Prem	WA8a2
Quandji, Fabrice	TP8a2	Ramchandran, Kannan	TA5
Oweiss, Karim G.	MP7	Ramchandran, Kannan	TA5
Owsley, Norman	TA3	Rangaswamy, Muralidhar	TA4
Owsley, Norman	TA4	Rao, Bhaskar D.	MP3
Oz, Metin	MP7	Rao, Bhaskar D.	TA8b1
Özen, Serdar	TA8b1	Rao, Raghuvveer	MA1
Ozonat, Kivanc	TP8a2	Rao, Raghuvveer	TP8a2
Pack, Daniel	MP7	Rao, Sathyanarayan	WA1b
Paliouras, Vassilis	WA8b1	Rappaport, Theodore	TP8b2
Pandharipande, Ashish	MP3	Ratnakar, Viresh	TP8a1
Paoli, Gerhard	TP2	Ratnarajah, Tharmalingam	TA8a
Papadimitriou, Panayiotis	MP8a1	Ravindran, Sourabh	WA4
Pappas, Thrasyvoulos	TP5	Ray, Nilanjan	WA5
Parhi, Keshab K.	TP1	Real, Edward	TA4
Parhi, Keshab K.	WA8b1	Rebollo-Monedero, David	TA5
Park, Dong-Jo	MP3	Reed, Irving S.	TA8b1
Park, Dong-Jo	TP8b2	Rehg, Jim	WA7a

2003 Asilomar Conference Session Schedule (continued)

Wednesday Morning, November 12

7:30 - 9:00 AM Breakfast – Crocker Dining Hall

8:00 AM - 12:00 PM Registration

8:30 AM - 12:10 PM MORNING SESSIONS

WA1a	Ultra Wideband – II	Robert Scholtz
WA1b	EDAC – II	Todd Moon
WA2	MIMO/Space-Time Coding – II	Babak Hassibi
WA3	Array Processing Foundations	Todd McWhorter
WA4	Topics in Speech Recognition	Robert Nickel
WA5	Inverse Problems in Imaging	William Karl
WA6a	Still Image Coding	Martin Boliek
WA6b	Image De-noising	Onur Guleyuz
WA7a	Multimedia Signal Processing	Darnell Moore
WA7b	Co-operative Analog-Digital Signal Processing	Paul Hasler
WA8a1	Applied Signal Processing (Poster)	Linda DeBrunner
WA8a2	Applied Adaptive Signal Processing (Poster)	Neeraj Magotra
WA8b1	Application Oriented Processing (Poster)	Neil Burgess
WA8b2	Numerical Processing (Poster)	James Stine

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

2003 Asilomar Conference Session Schedule

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

Monday, November 10

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

1. Welcome from the General Chairperson:

Prof. Graham Jullien
University of Calgary

2003 Asilomar Conference Session Schedule

(continued)

Tuesday Morning, November 11

7:30 - 9:00 AM Breakfast – Crocker Dining Hall

8:00 AM - 17:00 PM Registration

8:30 AM - 12:10 PM MORNING SESSIONS

TA1	Modulation and Detection Techniques	Wade Lowdermilk
TA2	Intelligent Hearing Aids	Chris Schmitz
TA3	Sonar and Acoustical Array Processing	John Tague
TA4	Low Rank Signal Processing Methods with Applications	Rangaswamy Muralidhar & Ivors P. Kirsteins
TA5	Distributed Methods in Image and Video Coding	Kannan Ramchandran
TA6a	VLSI Implementations	David Harris
TA6b	FPGA Implementations	Chris Dick
TA7a	Adaptive Signal Processing	David Anderson
TA7b	Radar & Sonar Signal Processing	Armin Doerry
TA8a	MIMO/Space-Time Coding (Poster)	Michael Clark
TA8b1	Communications Signal Processing (Poster)	Majid Ahmadi
TA8b2	Multisensor/Multirate Signal Processing (Poster)	Robert Barsanti

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

Tuesday Afternoon, November 11

1:30 - 5:10 PM AFTERNOON SESSIONS

TP1	Ultra Wideband – I	Mikko Valkama
TP2	A European Perspective on Adaptive Filters in Communications	Markus Rupp
TP3	Biological Applications of Signal Processing	Alfred Hero
TP4a	The Robust Adaptive Beamformer Bakeoff	Michael Zatman
TP4b	New Tools, Techniques, and Strategies for use in Education	Sally Wood
TP5	Perceptual Models in Image and Video Processing	Sheila Hemami
TP6	Computer Arithmetic	Earl E. Swartzlander
TP7	Energy Efficient DSP Systems	Rob Brennan
TP8a1	Image and Video Coding Systems (Poster)	Pamela Cosman
TP8a2	Image Processing & Scene Analysis (Poster)	Brian Evans
TP8b1	Implementation and Performance Bounds (Poster)	Zhengyuan Xu
TP8b2	Networks (Poster)	Daniel Gisselquist

Tuesday Evening, November 11

8:00 - 10:00 PM Bon Fire

NAME	SESSION	NAME	SESSION
Reiff, Chris	WA8a1	Scholtz, Robert A.	WA1a
Renfors, Markku	MP1a	Schonberg, Daniel	TA5
Rengarajan, Balaji	TP8b2	Schroeder, Jim	MA6b
Rey, Francesc	TA8a	Schuller, Gerald	WA8a2
Rice, Mark	MA6b	Schulte, Michael	MP6a
Richards, Brian	TA6b	Schulte, Michael	WA8b2
Richmond, Christ	WA3	Schwab, Markus	WA4
Rinaldo, Roberto	TP8a1	Schwartz, Edward L.	MA5b
Ritcey, James	MA6b	Scott, Waymond	TA3
Ritcey, James	TA8a	Sehgal, Anshul	TA5
Ritcey, James	TA8a	Seidel, Peter-Michael	TP7
Roberson, Jeremy	TA1	Sementilli, Philip	MP8b1
Robinson, Dirk	WA5	Sen Gupta, Ananya	MP1a
Rohwer, Judd	MP2	Senthilvelan, Murugappan	MP6a
Rom, Christian	MP8a1	Sentieys, Olivier	WA8b1
Romano, Joao	TP2	Seppänen, Tapio	WA4
Rueckriem, Reinhard	TA1	Serpedin, Erchin	TA8b1
Rugar, Dan	TP3	Seskar, Ivan	WA1a
Rupp, Markus	MP8b1	Shahbazpanahi, Shahram	TA8a
Rupp, Markus	TP2	Shahbazpanahi, Shahram	TP4a
Rupp, Markus	TP2	Shakkottai, Sanjay	TA8a
Sabharwal, Ashu	TA6b	Shakkottai, Sanjay	TP8b2
Sabharwal, Ashutosh	TA8a	Shanbhag, Naresh	TP7
Sabharwal, Ashutosh	TA8a	Shanbhag, Naresh	TP7
Sachs, Daniel Grobe	TP8b2	Shanbhag, Naresh	TP8b1
Sadjadpour, Hamid	WA1b	Shanbhag, Naresh	WA8b1
Sadjadpour, Hamid R.	WA1b	Sharif, Masoud	TA8a
Sadjadpour, Xianren	WA1b	Sharif, Masoud	TP8b2
Saito, Naoki	MP5	Sheikh, Hamid Rahim	TP5
Sakiyama, Kazuo	WA8a1	Shen, Manyuan	MA6b
Salami, Redwan	MP4	Shen, Yushi	TP8a1
Saligrama, Venkatesh	WA5	Shen, Zukang	TA8b1
Samanta, Roopsha	MA2b	Shi, Kai	TA8b1
Samavi, Shadrokh	WA8b1	Shi, Tao	MP5
Samra, Harvind	MA4b	Shi, Zhijie	TA6a
Samuelsson, David	WA2	Shiuya, Kazuhisa	TP8a2
Santhanam, Balu	MP2	Shim, Byonghyo	TP7
Saquist, Mohammad	MA7b	Shimamura, Tetsuya	MP8b2
Sardellitti, Stefania	TA8a	Shirani, Shahram	TP8a1
Sauer, Ken D.	WA5	Shirani, Shahram	WA8b1
Saulnier, Gary	TP8b1	Shpak, Dale	MP8b1
Savakis, Andreas	TP8a2	Shum, Wai-Yin	MP3
Savas, Erkey	MP6b	Shynk, John	MP1a
Savran, Aydogan	WA8b1	Shynk, John	MP2
Sawada, Hiroshi	MP2	Shynk, John	MP8a2
Sayood, Khalid	MP4	Sid-Ahmed, Maher	WA8a1
Schafer, William	WA8a1	Sikora, Thomas	TP8a1
Schaffhuber, Dieter	MP8a2	Silverstein, Seth	TA8b2
Schaffhuber, Dieter	TP2	Silverstein, Seth	TP8a2
Scharf, Louis	TA4	Simoncelli, Eero	TP5
Scharf, Louis	WA3	Singer, Andrew	MP1a
Schmitz, Christopher	TA2	Singer, Andrew	MP8b2
Schniter, Philip	MP8a1	Singer, Andrew	TA8a
Schniter, Philip	MP8a2	Singer, Andrew	TP8b1
Scholtz, Robert A.	MP1b	Sinha, Pranesh	MP1a
Scholtz, Robert A.	TP1	Sirbu, Marius	TA8a

NAME	SESSION	NAME	SESSION
Sivaramakrishnan, Kamakshi	TP7	Therrien, Charles W.	TA8b2
Skoglund, Mikael	TP8a1	Tian, Zhi	WA1a
Skölleremo, Tomas	TP8a1	Tkacenko, Andre	TA8b2
Slock, Dirk	TA8a	Tong, Lang	MP2
Slock, Dirk	TP8b1	Tong, Lang	TP8b2
Slock, Dirk	WA2	Toolan, Timothy	TA4
Smith, Paul	WA7b	Tran, David Q.	TA6a
Snyder, Donald L.	MP5	Tropp, Joel	MP8a1
Soderstrand, Michael	WA8b1	Tsai, Jiann An	TA8a
Soerensen, Preben	MP8a1	Tsai, Jiann-An	MP8b2
Soleymani, M. Reza	WA1b	Tsubaki, Ikuko	TP8a2
Somayajula, Sangeetha	TA8a	Tsuda, Yusuke	MP8b2
Sotthivirat, Saowapak	WA5	Tufts, Donald	TA4
Spanias, Andreas	TP4b	Tugnait, Jitendra	MP8a1
Spasojevic, Predrag	WA1a	Tugnait, Jitendra	TA8b2
Spencer, Nicholas	TA8b2	Tujkovic, Djordje	MA7b
Sridhara, Srinivasa	TP7	Tull, Monte	WA8b2
Srinivasan, Venkatesh	WA7b	Tummala, Murali	TA8b2
Srivastava, Anuj	TP3	Tureli, Uf	MP1b
Stanczak, Slawomir	MP8a1	Tureli, Ufuk	TA8b1
Stathaki, Tania	TP8a2	Tyler, Leonard	TP7
Stearns, Samuel D.	MP2	Ünsal, Serkan	WA8b1
Steinhardt, Allan	MA3b	Vacca, Fabrizio	WA8b1
Stevens, John	TA8b2	Vaccaro, Richard	TA4
Stine, James	WA8b2	Vaidyanathan, P. P.	MP8a1
Stoica, Petre	TP4a	Vaidyanathan, P. P.	TA8b2
Strohmer, Thomas	MP8a1	Vaidyanathan, P. P.	TA8b2
Sui, Haichang	TA8b1	Vaidyanathan, P.P.	MP8b1
Sun, Wei	TA8b1	Vaillancourt, Remi	TA8a
Sutherland, Ivan	TA6a	Valente, Michael	MP7
Suyama, Ricardo	TP2	Valkama, Mikko	MP1a
Svantesson, Thomas	MP3	Valkama, Mikko	TA1
Swamy, M. N. S.	WA6b	van Spaendonck, Rutger	TP5
Swartzlander, Earl E.	WA8b2	Varadarajan, Vijay	MA3b
Swartzlander, Jr., Earl E.	TP7	Varanasi, Mahesh	TA8a
Swindlehurst, A. Lee	MP3	Varela, Carlos	WA8b1
Sworder, Dave	MP8a2	Varshney, Prabodh	TA8a
Tabet, Tarik	TP8b2	Vasic, Bane V.	WA6a
Tague, John	TA3	Vazquez, Gregori	TA8a
Talwar, Vanish	MP6b	Vazquez, Gregori	WA3
Tanda, Mario	MP1b	Veeravalli, Venugopal	TA8b1
Tanda, Mario	MP1b	Venkataraman, Vishwanath	MP8a2
Tang, Jin	TP1	Verbauwhede, Ingrid M.	WA8a1
Tang, Jinshan	TP8a2	Verbauwhede, Ingrid M.	WA8b1
Tang, Jun	TP1	Vetterli, Martin	TP1
Tawalbeh, Lo'ai	TP6	Vikalo, Haris	MP8b2
Taylor, Clark	TP8a1	Villares, Javier	WA3
Tchobanou, Mikhail	TA8b2	Vogeler, Sven	TA1
Teague, Keith	MP8a3	Vorobyov, Sergiy	TP4a
Teague, Keith	TP8b2	Vroclj, Bojan	MP8a1
Teh, Peh Keong	MP8a2	Vu, Mai	MP3
Tenca, Alexandre	MP6b	Vuletic, Dragan	TA1
Tenca, Alexandre	TP6	Wage, Kathleen	TA4
Tepedelenioglu, Cihan	TA8a	Wakin, Michael	TP5
Thaiupathump, Trasapong	MP8b2	Walus, Konrad	TP6
Therrien, Charles W.	MP8b1	Wang, Raymond	TP8b2

2003 Asilomar Conference Session Schedule

Sunday Afternoon, November 9

2:00 - 7:00 PM	Registration – Main Lodge
7:00 - 9:00 PM	Welcoming Reception and Student Paper Contest Poster Session at Asilomar

Monday Morning, November 10

7:30 - 9:00 AM	Breakfast – Crocker Dining Hall
8:00 AM - 6:00 PM	Registration
8:15 - 9:45 AM	MA 1a Conference Opening and Plenary Session
9:45 - 10:15 AM	Coffee Social

10:15 - 12:00 PM MORNING SESSIONS

MA1b	Signal Representations and Spectral Analysis Techniques	Ralph Hippenstiel
MA2b	Adaptive Communication Systems	Aylin Yener
MA3b	Radar Array Processing	Edward Baranoski
MA4b	EDAC – I	Naresh Shanbhag
MA5b	Document Image Processing	Katrin Berkner
MA6b	DSP Implementations	Ken Lever
MA7b	Future Wireless Receivers	Gri Mandyam

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

Monday Afternoon, November 10

1:30 - 5:10 PM	AFTERNOON SESSIONS	
MP1a	CDMA – I	Pranish Sinha
MP1b	Synchronization	Fred Harris
MP2	Applications of Adaptive Filtering in Communication Systems	Balu Santhanam
MP3	Array Processing for Wireless Communications	Brian Sadler
MP4	Narrowband/Wideband Speech and Audio Coding	Jerry Gibson
MP5	Mathematical Models in Image Processing	Rob Nowak
MP6a	Multimedia Processing	Ruby Lee
MP6b	Security Processing	Ruby Lee
MP7	Biomedical Signal Processing	Neeraj Magotra
MP8a1	CDMA – II (Poster)	Paul Cotae
MP8a2	OFDM and Multicarrier (Poster)	Jim Schroeder
MP8a3	Topics in Speech and Audio Processing and Communications (Poster)	Keith Teague
MP8b1	Advanced Algorithms for Adaptive Signal Processing (Poster)	James Zeidler
MP8b2	Adaptive Technologies for Communication Systems (Poster)	Doug Jones

Monday Evening, November 10

6:30 - 9:30 PM	Conference Cocktail/Social – Merrill Hall
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2003 Asilomar Technical Program Committee

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Prof. Michael Schulte
University of Wisconsin, Madison

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C. Array Processing and MIMO

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E. Image and Video Processing

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Dr. Neil Burgess

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G. Signal Proc. Algorithms and Appl.

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NAME	SESSION	NAME	SESSION
Wang, Raymond	TP8b2	Yang, Shenglin	WA8a1
Wang, Rensheng	MP8a1	Yang, Yang	TA5
Wang, X.	TA1	Yeh, Joseph	TP8a1
Wang, Xiaodong	MA2b	Yener, Aylin	MA2b
Wang, Xin	MP8a1	Yi, Ying	TP6
Wang, Yunhua	WA8b2	Yin, Pei	WA7a
Wang, Zhenghong	MP6a	Yip, Chun Yu	TP3
Wang, Zhisong	TP4a	Yokotani, Yoshikazu	WA8a2
Wang, Zhou	TP5	Yoo, HeeJong	TA7a
Ward, James	TP4a	Yoo, Heejong	WA7b
Watson, Andrew B.	TP5	Yoon, Byung-Jun	TA8b2
Wawrzynnek, John	TP8a1	Yoon, Young	TA8b1
Weaver, Robert	TP1	Young, Derek	TP1
Wei, Bo	MP4	Yu, Bin	MP5
Weiss, Stephan	MP7	Yu, Heejung	TA1
Weiss, Stephan	TP2	Yu, Rongshan	MP4
Welch, Thad	MP2	Yu, Yongjian	WA6b
Werner, Karl	WA8a2	Zavidovique, Bertrand	WA8b1
Wheeler, Bruce	TA2	Zeidler, James	MP8b1
White, Chris	MP8a3	Zekavat, Seyed Alireza	MP8a1
White, Chris	TP8b2	Zekavat, Seyed Alireza	MP8a2
Whiting, Bruce R.	MP5	Zekavat, Seyed Alireza	MP8b2
Widrow, Bernard	TA2	Zemen, Thomas	TP2
Wilcox, Michael	MP7	Zeydel, Bart	TP6
Willett, Rebecca	TP3	Zha, Wei	MP8a3
Williamson, Geoffrey	MP8b1	Zhang, Haotian	MA4b
Williamson, Jeffrey F.	MP5	Zhang, Jianzhong (Charlie)	MA7b
Wilson, Robert	TP1	Zhang, Jianzhong (Charlie)	TA8b1
Wilson, Stephen	TA8a	Zhang, Jianzhong (Charlie)	WA8b1
Wiryadi, Wiryadi	WA4	Zhang, Rui	TA8a
Witzgall, Hanna E.	MP4	Zhang, Shi Chao	TP8b2
Wong, Kon Max	TA8a	Zhang, Tong	TP8b1
Wong, Pak Kin	TP8b2	Zhang, Xiaoxia	MP8a1
Wong, Tan	MP3	Zhang, Yimin	TA8b2
Wood, Sally L.	TP4b	Zhao, Gongyun	MP3
Woods, Roger	TP6	Zhao, Jucheng	MP5
Wright, Cameron	MP7	Zhao, Junhui	MP8a3
Wu, Di	WA1a	Zhao, Wei	TA5
Wu, Jie	TP8b1	Zhao, Ying	TA5
Wu, Lin	WA1a	Zheng, Yibin	TA8b2
Wu, N. Eva	TP8b2	Zhi, Wanjun	TP1
Wu, Yang	TP3	Zhong, Wei	TA5
Wu, Yunnan	MP3	Zhou, Dayong	WA8a1
Wu, Zhenyu	WA6a	Zhou, G. Tong	TA1
Wu, Zhiqiang	MA1	Zhou, G. Tong	TP8b2
Wu, Zhiqiang	MP8a1	Zhou, Shengli	MP2
Xia, Pengfei	MP2	Zhu, Weijun	MP3
Xiao, Chunpeng	TP8b2	Zierdt, Mike	TA1
Xie, Hua	TP8a2	Zimmermann, Reto	TA6a
Xiong, Zixiang	TA5	Zoltowski, Michael	TA8b1
Xiong, Zixiang	TP8a1	Zoltowski, Michael	WA3
Xiong, Zixiang	TP8a1		
Xu, Zhengyuan	TP1		
Xu, Zhengyuan	TP8b1		
Yamada, Isao	MP8b1		
Yang, Liuqing	TP1		

Notes

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Welcome from the General Chairman

Graham A. Jullien, University of Calgary

It is my great pleasure to welcome you to the Thirty-Seventh Asilomar Conference on Signals, Systems and Computers. This conference is, to many of us who keep returning, a special event of the year. The conference grounds are truly a place for reflection and the conference itself has a unique atmosphere and format. For those of you who are attending the conference for the first time, I trust that the experience will be as special for you as it was for me many years ago. Here you have the chance to meet the top researchers in our field, but in a relaxed and friendly environment. For those who are returning, I am sure that the conference this year will be as invigorating as the conferences you have attended in previous years.

For the opening Sydney Parker Memorial Lecture, we are fortunate to have a keynote address by Prof. J. G. McWhirter, FRS, FREng, who will talk about developments in sensor array processing, a topic that has been of considerable interest to Asilomar attendees over many years. Prof. McWhirter has worked as a research scientist at the Royal Signals and Radar Establishment in Malvern, UK, since 1973, and his pioneering research is well-known to many of us. He will bring new insights to this research area along with examples to application areas as diverse as digital communications and medical diagnostics.

We received a record number of paper submissions to the 2003 conference, which is particularly heartening considering the general reduction in travel over the past two years. This year has also seen the maturing of the automated electronic submission system, and I would particularly like to thank Mike Matthews and Lance Cotton for their sterling work in getting the system up and running in time for the paper submissions. This year will also see the return of the student paper contest, and this is being organized by Mike Soderstrand and Scott Acton.

My special thanks, however, are reserved for the Program Chair, Mike Schulte, of the University of Wisconsin, who has done an outstanding job in organizing this year's program of 44 lecture sessions and 16 poster sessions. He assembled a first class team of technical area chairs and they have provided reviewing and organizational skills along with over 170 invited papers from experts in their technical areas. The most demanding job in organizing a technical conference is that of the Program Chair, and Mike has spent countless hours in putting together a program that will appeal to all attendees, whether from the academic world or industry. I would also like to thank the many other people, including the conference steering committee, the conference administrative committee and the faculty and staff of the Naval Postgraduate School, who dedicate themselves, year after year, to organizing this special conference.

Graham Jullien
University of Calgary, July 2003

**THIRTY-SEVENTH
ASILOMAR CONFERENCE ON
SIGNALS, SYSTEMS & COMPUTERS**

Organized in cooperation with

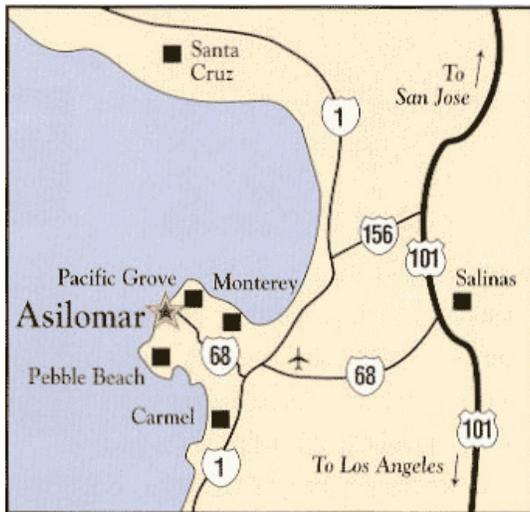
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CONFERENCE COMMITTEE



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