31st ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS, AND COMPUTERS
NOV. 2-5, 1997
PACIFIC GROVE, CA

TECHNICAL PROGRAM

SESSION: MA1 NON-LINEAR SIGNAL PROCESSING (Poster)
Chairperson(s): V. John Mathews, University of Utah & Robert Nowak, Michigan State University

MA1-1 "Blind Adaptive Volterra System Identification Using Barrier Function Methods for Constrained Optimisation," Tania Stathaki and Anthony Constantinides, Imperial College

MA1-2 "An Adaptive Predistorter for High Power Amplifiers," Edward Powers and In-Seung Park, The University of Texas at Austin

MA1-3 "Nonlinear Filtering and Equalization in Non-Gaussian Noise Using Radial Basis Function and Related Networks," Inhyok Cha, Lucent Technologies; Saleem Kassam, University of Pennsylvania

MA1-4 " An Extended Kalman Filter for Parallel-Cascade Truncated Volterra Systems," Thomas Panicker and V. John Mathews, University of Utah

MA1-5 "Adaptive Real-Time Equalization and Linearization of Recursive Nonlinear Systems," Walter Frank, Universitat der Bundeswehr Munchen

MA1-6 "Performance Analysis of Nonlinear Adaptive Filter Based on LMS Algorithm," Shue-Lee Chang and Tohunbo Ogunfunmi, Santa Clara University

MA1-7 "Analysis of Execution Time Distributions of a Nonlinear Digital Filter," Hercule Kwan, Trimble Navigation; Edward Powers and Earl Swartzlander, Jr., University of Texas at Austin

MA1-8 "Robust Nonlinear Wavelet Transform Based on Median-Interpolation," David Donoho and Thomas P. Yu, Stanford University

MA1-9 "Methods for Analyzing Certain Poisson Signals and Images in Astronomy Using Haar Wavelets," Eric Kolaczyk, The University of Chicago

MA1-10 "Wavelet-Domain Bayesian Estimation of Poisson Processes," Klaus Timmermann and Robert Nowak, Michigan State University

MA1-11 "Nonstationary Interference Suppression Using Adaptive Overdetermined Frame Representations," Michael Kramer and Douglas Jones, University of Illinois

MA1-12 "An Empirical Wavelet Estimator for Image Denoising," J-C Pesquet and Hamid Krim, MIT

MA1-13 "Simplified Wavelet-Domain Hidden Markov Models Using Contexts," Matthew Crouse, Rice University

MA1-14 "A Numerically-Stable Sliding-Window Estimator and Its Application to Adaptive Filtering," Scott C. Douglas and Jihee Soh, University of Utah

MA1-15 "A Novel Wavelet-Based Generalized Sidelobe Canceller," Yi Chu and Wen-Hsien Fang, National Taiwan Institute of Technology; Shun-Hsyung Chang, National Taiwan Ocean University

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SESSION: MA2 - RESOURCE ALLOCATION IN WIRELESS NETWORKS
Chairperson: David Tse, University of California-Berkeley

MA2-1 "Dynamic Channel Allocation in Wireless Networks," Jean Walrand, Remco Litjens, Bart Preneel, and Jeonghoon Mo, University of California-Berkeley

MA2-2 "Multi-User Demodulated Spread-Spectrum Systems: Effective Interference, Power Control and Capacity," David Tse, University of California-Berkeley; Stephen Hanly, University of Melbourne

MA2-3 "Resource Allocation in CDMA Wireless Networks," Yuming Lu and Robert Brodersen, University of California-Berkeley

MA2-4 "To Be Announced," Nicholas Bambos, Stanford University

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SESSION: MA3 - SPEECH AND AUDIO CODING
Chairperson: Huseyin Abut, San Diego State University

MA3-1 "Wavelet Quantization of Noisy Speech Using Constrained Wiener Filtering," A. Madhukumar, and B. Premkumar, Nanyang Technological University; Huseyin Abut, San

Diego State University

MA3-2 “Robust Speech Coding using Microphone Arrays,” Zhao Li and Michael Hoffman, University of Nebraska-Lincoln

MA3-3 “Perceptual Suppression of Quantization Noise in Low Bitrate Audio Coding,” Yin Hay Lam and Robert Stewart, University of Strathford

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SESSION: MA4 - COMMUNICATIONS OVER FADING CHANNELS
Chairperson: James Ritcey, University of Washington

MA4-1 “Statistical Characterization of Ultra-Wide Bandwidth Wireless Indoor Communications Channel," Moe Win and Robert Scholtz, University of Southern California

MA4-2 “Maximum-Likelihood Estimation of OFDM Carrier Frequency Offset for Fading Channels,” Xiaodong Li and James Ritcey, University of Washington

MA4-3 “Optimum Code Rates for Noncoherent MFSK with Errors and Erasures Decoding over Rayleigh Fading Channels,” Adina Matache, Jet Propulsion Laboratory; James Ritcey, University of Washington

MA4-4 “Optimum Codes for FFH/BFSK Receivers with Self-Normalization Combining and Hard Decision Decoding in Fading Channels,” Xenofon Nikalakopoulas, Tri Ha, and R. Clark Robertson, Naval Postgraduate School

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SESSION: MP1 - MOBILE COMMUNICATIONS
Chairperson: Giri Mandyam, Texas Instruments Inc.

MP1-1 “Reduced Rank Transform Domain Adaptive Filtering for High Order Echo Cancellers and Equalizers,” Darel Linebarger, Balaji Raghothaman, Ronald DeGroat, Eric Dowling and Stephen Oh, The University of Texas at Dallas

MP1-2 “Constrained Optimization Methods for Blind Equalization of Multiple FIR Channels,” Michail K. Tsatsanis, Stevens Institute ot Technology

MP1-3 “PSP-based Array Processors for TDMA Cellular Base Stations,” Gent Paparisto and Keith M. Chugg, University of Southern California

MP1-4 “Separation and Equalization of Cochannel GSM Signals,” Yueh Karen Lee and John J. Shyunk, University of California-Santa Barbara

MP1-5 “A Neural Network Approach to Design of Smart Antennas for Wireless Communication Systems,” Yu-Shane Hwu and M.D. Srinath, Southern Methodist University

MP1-6 “SIR Estimation in CDMA Cellular Systems Using Subspace Tracking,” Deepa Ramakrishna Narayan B. Mandayam and Roy Yates, Rutgers University

MP1-7 “A ph/4-shift DQPSK Receiver for TDMA/TDD Systems,” Srinath Hosur, Anand G. Dabak, and Panos E. Papamichalis, Texas Instruments Inc.

MP1-8 “Real Time Speech Enhancement for Wireless Communication Systems,” Neeraj Magotra, Robert Whitman, and Yannuo Yang, University of New Mexico

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SESSION: MP2 - ADVANCED TECHNIQUES FOR WIRELESS COMMUNICATIONS
Chairperson: Muriel Medard, MIT

MP2-1 "A Flexible and Low Complexity Wireless/Wireline Interface,” Dennis Connors and Gregory Pottie, University of California-Los Angeles

MP2-2 “Rate Variable Trellis Codes for Wireless Links,” Rick Wesel and Xueting Liu, University of California-Los Angeles

MP2-3 “Coding and Modulation Trade-offs for Frequency-Selective Fading Channels,” Achilleas Anastasopoulos and Keith Chugg, University of Southern California

MP2-4 “Transmission Energy Allocation for CDMA Applications,” Kenneth Rose, University of California-Santa Barbara

MP2-5 "Bound on Mutual Information for DS-CDMA Spreading Over Independent Fading Channels,” Muriel Medard, MIT - Lincolin Laboratory

MP2-6 “Performance of Ultra-Wideband Time-Shift-Modulated Signals in the Indoor Wireless Impulse Radio Channel," Fernando Ramirez-Mireles, Moe Win, and Robert Scholtz, University of Southern California

MP2-7 “Performance Evaluation of Space-Path Diversity," J-H. Perrin, University of California-San Diego; Soodesh Buljore, J. Zeidler, and L. Milstein, University of California-San Diego

MP2-8 “A Robust Viterbi Algorithm for Symbol Recovery in the 1900MHz PCS Band,” Markus Rupp, Rajeev Krishnamoorthy, and Sayandev Mukherjee, Lucent Technologies

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SESSION: MP3 - COMPRESSION AND SIGNAL PROCESSING APPLICATIONS
Chairperson: Nasir Memon, Northern Illinois University

MP3-1 “A Compression Algorithm that Preserves NDVI and NDWI Values,” K. Sayood, University of Nebraska - Lincoln

MP3-2 “Encoder Optimization in an Extended H.263 Framework," Jiandong Shen, Pattabiraman Subramanian, and Wai-Yip Chan, Illinois Institute of Technology

MP3-3 “Rate Allocation for SAR Video Phase History Data Compression,” J. Owens, Michael Marcellin, and B. Hunt, University of Arizona

MP3-4 “Affine-invariant Content Based Image Retrieval," M. Swanson, Media Science, Inc.; A. Tewfik, University of Minnesota

MP3-5 “Compression of Procsody for Speech Modification and Synthesis,” Rashid Ansari and Wojciech Durek, University of Illinois at Chicago

MP3-6 "Lapped Nonlinear Interpolative Vector Quantization and Image Super-Resolution,” David Sheppard, Kannan Panchapakesan, Ali Bilgin, Bobby Hunt, and Michael Marcellin, University of Arizona

MP3-7 “Computation-Distortion Characteristics of JPEG Encoding,”
Vivek Goyal, University of California, Berkeley; Martin Vetterli, Ecole Polytechnique Federale de Lausanne, Switzerland

MP3-8 “On the Relevance of the Regularity Constraint in Subband Image Coding,”
Ilangko Balasingham, Norwegian University of Science and Technology; Tor A. Ramstad, Norwegian University of Science and Technology

MP3-9 “Application of Bezier Functions to the Post-Processing Enhancement of Decompressed Images,” Glen Langdon and Joceli Mayer, University of California - Santa Cruz

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SESSION: MP4 - RADAR AND SONAR I
Chairperson: G.T. Zhou & Douglas Williams, Georgia Tech

MP4-1"On Frequency Estimation of Exponential Signals with Time-Varying Amplitude via Polar Decomposition,” Olivier Besson, ENSICA, and P. Stoica, Uppsala University

MP4-2 "Parameter Estimation of Hybrid Hyperbolic FM and Polynomial Phase Signals Using the Multi-Lag High-Order Ambiguity Function,” Fulvio Gini, University of Pisa; Georgios Giannakis, University of Virginia

MP4-3 “Coherent Adaptive Radar Detection in Non-Gaussian Sea Clutter," A. Farina, System Analysis & Scientific Group; Fulvio Gini and M. Greco, University of Pisa; K. Sangston, Georgia Tech

MP4-4 “Motion Compensation and Target Classification Based on Parametric Modeling of the Instantaneous Frequency of Echoes Backscattered from Rigid Bodies,” Sergio Barbarossa and Anna Scaglione, University of Rome - La Sapienza

MP4-5 “Phase Coding for the Resolution of Range Ambiguities in Doppler Weather Radar," Dusan Zrnic, NOAA; M Sachidananda, Indian Institute of Technology

MP4-6 “Estimates of Wind Velocity and Backscatter Signal Intensity from Doppler Lidar Returns,” R. Michael Hardesty, NOAA; Barry Rye, University of Colorado

MP4-7 “Sensor Gain and Phase Estimation,” Qi Cheng, The Northern Territory University; Yingbo Hua, University of Melbourne

MP4-8 “Mainbeam Jammer Suppression Using Jammer Multipath Returns,” Stephen Kogon, E. Jeff Holder, and Douglas Williams, MIT - Lincoln Laboratory

MP4-9 “The Velocity SAR - A Conceptual Radar System for Ocean Imaging,” Benjamin Friedlander, UC-Davis & Signal Processing Technology; Boaz Porat, Technion, Israel Institute of Technology

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SESSION: MP5 - BIOMETRIC IDENTIFICATION
Chairperson: James Wayman, San Jose State University

MP5-1"A Generalized Biometric Identification System Model," James Wayman, San Jose State University

MP5-2 "Allowing Good Imposters to Test," John Colombi, J. Scott Reider, and Joseph Campbell, US Department of Defense

MP5-3 “A Survey of Facial Recognition Algorithms and Testing Results,” William Barrett, San Jose State University

MP5-4 “Biometric Recognition Based on Bio-Signal Imputs,” R. Benjamin Knapp and Zhigang Jiang, San Jose State University

MP5-5 “A Hidden Markov Model Fingerprint Classifier," Andrew Senior, IBM T.J.Watson Research Center

MP5-6 “Texture Classification Using wavelet Frame Decompositions,” Alan Van Nevel, Naval Air Warfare Center, Weapons Divison

MP5-7 “A Fingerprint Classification Technique Using Directional Images,” Meltem Ballan, Dept. of Electronics and Communications Engineering, Yildiz; Fatma Sakarya, The University of Texas at Austin; Erman Gercek, Dept. of Electronics and Communications Engineering, Yildiz

MP5-8 “Computation of view angle in face images,” Jie Zhou, Yanda Li, and Shuo Sheng, Tsinghua University

MP5-9 “Automatic Detection and Extraction of Perceptually Significant Visual Features,” John Black and Lina Karam, Arizona State University

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SESSION: MP6 - TWO-DIMENSIONAL ADAPTIVE SIGNAL PROCESSING

Chairperson: W. Kenneth Jenkins, University of Illinois

MP6-1"Adaptive Noise Cancellation for Digital Images Degraded by Space Invariant Blurs,” Tom Costell and Wasfy Mikhael, University of Central Florida

MP6-2 “Two-Dimensioal Lattice Adaptive Filters,” Mohammed Najim, Universite de Bordeaux I

MP6-3 “Performance of 3-D Speaker Localization Using a Small Array of Microphones,” Ti Sheng Chang and Alan Willson, Jr., University of California-Los Angeles

MP6-4 "Projection Algorithms for Two-Dimensional Adaptive Filtering,” Robert Soni and W.Kenneth Jenkins, University of Illinois

MP6-5 “Texture Classification Based on Bidimensional Cumulants Lattice Fast Adaptive AR Filter and Multilayer Neural Network," V. Businac, LESTER; M. Sayadi, University of Tunis

MP6-6 “Locally Adaptive Orientation Wiener with Local Noise Estimate,” Yolanda Prieto, Mototola, Inc.; Claude Lindquist, University of Miami

MP6-7 “Two-Dimensional Linear MMSE for Page-Oriented Optical Memories,” Keith Chugg, University of Southern California; Mark Neifeld, The University of Arizona

MP6-8 “Convergence Analysis of Two-Dimensional LMS FIR Filters,”
Maha Shadaydeh and Masayuki Kawamata, Tohoku University

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SESSION: MP7 - IMAGE/VIDEOCOMPRESSION AND TRANSMISSION, AND PROTOCOL ISSUES FOR THE INTERNET

Chairperson: Nadar Moayeri, Hewlett-Packard Laboratories

MP7-1"Scalable Codec Architectures for Internet Video-on-Demand,” Bernd Girod, Niko Faerber, and Uwe Horn, University of Erlangen-Nuremberg

MP7-2 “Coding Methods for Progressive Image/Video Transmission,” Amir Said, Iterated Systems

MP7-3 “Embedded Image Coding Using Optimized Significance Tree Quantization,” Geoffrey Davis and Sumit Chawla, Dartmouth College

MP7-4 “On Fast Microscopic Browsing of MPEG Compressed Video," Boon-Lock Yeo, IBM T.J. Watson Research Center

MP7-5 “Improved Image Transmission over the Internet through Packet Combining and Error Concealmen,t" Nader Moayeri, Hewlett-Packard Laboratories

MP7-6 "Advances in Overlapped Block Motion Compensation,” Bo Tao and Michael Orchard, Princeton University

MP7-7 “Rate Control of H.263 for Low Bit Rate Visual Communication,” Hwangjun Song, Signal and Image Processing Institute; C.-C. Jay Kuo, University of Southern California

MP7-8 “A Scalable Wavelet Video Coder for Hybrid Communication Channels,” Sung Yoon, Sathyanarayan Rao, and Kumar Chellapilla, Villanova University

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SESSION: MP8a - FPGAs AND APPLICATIONS (Poster)

Chairperson: Roger Woods, Queen’s University

MP8a-1"Reconfigurable Computing Systems: Examples from Around the World,” S. Casselman, Virtual Computing Corporation

MP8a-2 "Visualising Reconfigurable Libraries for FPGAs,” Wayne Luk and Scott Guo, Imperial College

MP8a-3 “Practical Experiences with the SPARXIL Co-Processor," Andreas Koch, Technische Universit at Braunschweig

MP8a-4 “FLEX 10K Optimization of Reed-Solomon Codecs,” Dave Greenfield, Altera Corporation; Doug Ridge, Integrated Silicon Systems

MP8a-5 “Image Compression Algorithms Using Re-Configurable Logic" J. Heron, D. Trainor, and R. Woods, The Queens University of Belfast

MP8a-6 “Optimization of Digital Signal Processing Functions in FPGA Devices,” Roman Iwanczuk, Xilinx

MP8a-7 “Evolving Sorting Networks Using Genetic Programming and the Rapidly Reconfigurable Xilinx 6216 Field-Programmable Gate Arrays,” John Koza and Forrest Bennett, III, Stanford University; Jeffrey Hutchings and Stephen Bade, Convergent Design, L.L.C.; Martin Keane, Marting Kean, Inc.; David Andre, University of California-Berkeley

MP8a-8 “Fault Simulation With PLDs,” William Gallagher, Hawkins Yao, and Earl Swartzlander, University of Texas at Austin

MP8a-9 “An Architecture for Blind Multiuser Detection,” R. Nunna, Stevens Institute of Technology

MP8a-10 “Polyphase Filter Architectures for MPEG Audio Using Fast IDCT," Chen-Wei Shih and Nam Ling, Santa Clara University

MP8a-11 "A 900 MHz Analog Multiplier for Fully Integrated TLC Systems,” Franco Maloberti and M. Stramesi, University of Pavia

MP8a-12 “A Motion Estimation Architecture Based on Band Matching,” Sausan Yazji, Bertrand Zavidovique, and Magdy Bayoumi, University of Southwestern Louisiana

MP8a-13 “VLSI Design and Implementation of an Improved Squaring Circuit by Combinational Logic," Hoda Abdel-Aty-Zohdy and Ahmad Hiasat, Oakland University

MP8a-14 “Asics Using Neural-Networks Pattern-Recognition for Chemical-Sensors,” Hoda Abdel-Aty-Zohdy, Oakland University

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SESSION: MP8b - NON-GAUSSIAN SIGNAL PROCESSING (Poster)
Chairperson: B. Sadler, ARL, and A. Petropulu,Drexel University

MP8b-1"The Bootstrap: A Tool for Signal Processing,” A. Zoubir, Queensland University of Technology

MP8b-2 “Signal Processing in Non-Gaussian Noise Using Mixture Distributions and the EM Algorithm" Richard Kozick, Bucknell University; Rick Blum, Lehigh University; Brian Sadler, Army Research Laboratory

MP8b-3 “Data Analysis for Stable Distributions,” John Nolan, The American University

MP8b-4 "A Physically-Based Impulsive Noise Model for Array Observations,” Keith McDonald and Rick Blum, Lehigh University

MP8b-5 “Sampling Issues in Fourier Analytic vs. Number Theoretic Methods in Parameter Estimation,” Stephen Casey, The American University

MP8b-6 “The Robustness of Virtual-ESPRIT Against Model Errors,” Tsung-Hsien Liu and Jerry Mendel, University of Southern California

MP8b-7 “System Reconstruction from Selected HOS Regions,” Haralambos Pozidis and Athina Petropulu, Drexel University

MP8b-8 “Communication in Alpha-Stable Impulsive Interference,” George Tsihrintzis, University of Virginia

MP8b-9 "Optimal Linear Estimation for Non Gaussian Signals and Additive Noise," Craig Sims, West Virginia University; Lang Tong, University of Connecticut

MP8b-10 "A Neural Network Approach to Weak Transient Signal Detection in Non-Gaussian Noise," Li-Kang Yen and Jose Principe, University of Flordia

MP8b-11 “Adaptive Blind Deconvolution of MIMO Channels using Higher-Order Statistics," Jitendra K. Tugnait, Auburn University

MP8b-12 “Equation Error Closed-Loop System Identification Using Cyclic Sprectral Analysis," C. Tontiruttananon and Jitendra K. Tugnait, Auburn University

MP8b-13 “Lower Bounds on the Estimation of Harmonics in Colored Noise," Mounir Ghogho, ENSEEIHT-GAPSE; Anathram Swami, Army Research Lab

MP8b-14 “Cramer-Rao Bounds for Coupled Harmonics in Noise," Anathram Swami, Army Research Lab; Mounir Ghogho, ENSEEIHT-GAPSE

MP8b-15 “New Time-Frequency Representations: Higher Order Warped Wigner Distributions," Robin L. Murray, Antonia Papandreou-Suppappola, and G. Faye Boudreaux-Bartels, University of Rhode Island

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SESSION: MN1 - COMMUNICATION SYSTEMS (Poster)
Chairperson: Akbar Sayed, University of Wisconsin

MN1-1 “Blind Channel Estimation in CDMA Systems with Aperiodic Spreading Sequences,” Murat Torlak, Brian Evans, and Guanghan Xu, University of Texas at Austin

MN1-2 "Blind Optimal MMSE Receiver for Asynchronous CDMA in the Presence of Multipath," Irfan Ghauri and Dirk Slock, Eurecom Institute

MN1-3 “A High Efficiency Carrier Estimator for OFDM Communications,” Ufuk Tureli and Hui Liu, University of Virginia

MN1-4 “An Analytic Solution to Joint Carrier Offset and Channel Estimation in CDMA Communications,” Kemin Li and Hui Liu, University of Virginia

MN1-5 Moved to TA8b

MN1-6 “Open Loop Adaptive Filtering for Interference Excision in Spread Spectrum Systems,” Chenshu Wang and Moeness Amin, Villanova University; Alan Lindsey, Rome Laboratory

MN1-7 “A Decoupled WLS Approach to DS-CDMA Multiuser Detection,” Anders Ranheim and Per Pelin, Chalmers University of Technology

MN1-8 “Near Optimal Detection of Complex Signals with Unknown Parameters,” Grant Hanson, Naval Air Warfare Center; Ronald Iltis, University of California-Santa Barbara

MN1-9 “Performance evaluation of the CFAR burst detection schemes for TDMA bursts with constant modulus modulation format" In-Kyung Kim, Hughes Network Systems

MN1-10 "Radio Networks for Video Conferencing,” C.-H. Lee, Naval Postgraduate School

MN1-11 “Recursive Fourier Transforms for Interference Suppression in PN Spread spectrum Communications,” Moeness Amin and Xuemei Ouyang, Villanova University; Alan Lindsey, Rome Laboratory

MN1-12 “DMT Equalizer Training in the Presence of Colored Noise,” Igor Djokovic, Pairgain Technologies, Inc.

MN1-13 “Blind Equalization Using Cost Function Matched to the Signal Constellation,” Sergio Barbarossa and Annas Scaglione, University of Rome - La Sapienza

MN1-14 “Finite-Length Equalization for FFT-Based Multicarrier Systems - An Error-Whitening Viewpoint" Mark Webster, Harris GCSD; Rick Roberts, Harris Semiconductor

MN1-15 “High Dimensional Circular Trellis Coded Modulation,” Yung-Cheng Lo and Jeffrey Dill, Ohio University; Alan Lindsey, Rome Laboratory; Changlin Chen, Ohio University

MN1-16 “A Blind Intersymbol Interference Cancellation Method for Multiple Input Systems with Channel Diversity" Jie Zhu, and Xi-Ren Cao, The Hong Kong University of Science and Technology; Zhi Ding, Auburn University

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SESSION: TA1 - NETWORK ACCESS TECHNOLOGIES
Chairperson: Debajyati Pal, Amati Communications Corporation

TA1-1 "VDSL: Pushing the Subscriber Loop to its (?) Limit," John A. Bingham, Amati Communications Corporation

TA1-2 “A Multi-bit-rate Carrierless AM/FM (CAP) Transceiver for use in Symmetric and Asymmetric Digital Subscriber Line (xDSL) Systems,” D. Amrany, E. Langberg, and M. Sorbara, GlobeSpan Technologies

TA1-3 “Achievable Rates vs. Operating Characteristics of Local Loop Transmission: HDSL, HDSL2, ADSL and VDSL," George Zimmerman, PairGain Technologies

TA1-4 “Controlling Clipping Probability in DMT Transmission,” Alan Gatherer and Mike Polley, Texas Instruments

TA1-5 “Hybrid Fiber Coax - A Gateway to the Home,” John Limb, Deorgia Institute of Technology

TA1-6 “Discrete Multi-Tone Modulation for High-Speed Upstream Communications on HFC Networks,” Krista Jacobsen, Amati Communications Corporation

TA1-7 “A Vector Constant Modulus Algorithm for Shaped Constellation Equalization,” Vanessa Yang, University of Illinois at Urbana-Champaign; Douglas Jones, University of Illinois

TA1-8 “Effects of Channel Estimation Errors on Discrete Multitone Modulation Systems in a Rayleigh-Fading Environment"
Achankeng Leke and John Cioffi, Stanford University

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SESSION: TA2 - CELLULAR ASPECTS OF WIRELESS SYSTEMS
Chairperson: Venu Veeravalli, Cornell University

TA2-1 “Multiuser Detectors for Fast-Fading Multipath Channels,” Akbar Sayeed, Andrew Sendonaris, and Behnaam Aazhang, Rice University

TA2-2 “Fade Margins for Minimum Duration Outages in Log-Normal Shadow Fading and Rayleigh Fading,” Jie Lai and Narayan Mandayam, Rutgers University

TA2-3 “Delay Limited Capacity of Some Wireless Systems,” Elza Erkip and Behnaam Aazhang, Rice University

TA2-4 “Transmit Diversity and Equalization for Power Controlled Wireless Networks,” L. Tassiulas, F. Rashid-Farrokhi, and K. J. R. Liu, University of Maryland

TA2-5 “The Capacity-Coverage Tradeoff in CDMA Systems with Soft Handof," Andrew Sendonaris, Rice University; Venugopal Veeravalli, Cornell University

TA2-6 “On Channel Assignment Problem in Cellular Networks,” Tom Roxborough, Sirisha Medidi, and Arunabha Sen, Arizona State University

TA2-7 “Blocking Probability of Handoff Calls and Carried Traffic in Wireless Networks with Antenna Arrays,” Javad Razavilar, F. Rashid-Farrokhi, and K. Liu, University of Maryland

TA2-8 “Usage of Smart Antenna for Cancelling Neighboring Base-Station Interferences in Wireless CDMA Communications,” Weichen Ye, Yeheskel Bar-Ness, and Alexander Haimovich, New Jersey Institute of Technology

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SESSION: TA3 - MULTIRESOLUTION AND PROGRESSIVE IMAGE CODING
Chairperson: Pamela Cosman, University of California-San Diego

TA3-1 “Media Compression via Data Hiding,” B. Zhu and A. Tewfik, University of Minnesota

TA3-2 “Scalable Subband Coding with Visual Sensitivity Considerations,” Sheila Hemami, Marcia Ramos, and Michael Tamburro, Cornell University

TA3-3 “Human Observer Responses to Progressively Compressed Images,” Hakan Persson, Song Cen, Dirck Schilling, and Pamela Cosman, University of California-San Diego

TA3-4 “Nonlinear Wavelet Transforms for Image Coding,” Geoffrey Davis, Dartmouth College; Roger Claypoole and Rich Baraniuk, Rice University; Wim Sweldens, Lucent Technologies Bell Labs

TA3-5 “A New Similarity Measure for Image Compression and Texture Identification,” Uusuf Ozturk and Huseyin Abut, San Diego State University; B. Premkumar and A.. Madhukumar, Nanyang Technological University

TA3-6 “Statistical Models for Images: Compression, Enhancement and Synthesis,” Eero Simoncelli, New York University

TA3-7 “A Progressive Transmission Image Coder Using Linear Phase Paraunitary Filter Banks," Trac Tran, University of Wisconsin; Truong Nguyen, Boston University

TA3-8 “Directional Zerotrees Image Coding," Vutipong Areekul and Roberto Bamberger, Washington State University

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SESSION: TA4 - DIGITAL FILTERS AND FILTER BANKS
Chairperson: W.-S. Lu, University of Victoria

TA4-1 “PCLS Optimization of Complex FIR Digital Filters and Windows,” James Sullivan, Allied Signal; John Adams, California State University-Northridge

TA4-2 “Nonlinear-Phase M-th Band Filter and Applications in Filter Bank Design,” Y. Wisutnethangoon and Truong Nguyen, University of Wisconsin

TA4-3 “Sequential Design of FIR Digital Filters for Low-Power DSP Applications,” S. Saab and A. Antoniou, University of Victoria

TA4-4 “Structural Properties of a General Multirate System," Aryan Saadat Mehr and Tongwen Chen, University of Alberta

TA4-5 “PCLS IIR Digital Filters with Simultaneous Frequency Response Magnitude and Group Delay Specifications,” James Sullivan, Allied Signal; John Adams, California State University-Northridge

TA4-6 “Advanced Filter Design,” Miroslav Lutovac, IRITEL R&D Telecommunications and Electronics Institute; Dejan Tosic, Department of Electrical and Computer Engineering, The Unive; Brian Evans, The University of Texas at Austin

TA4-7 “A New Prefilter Design for Discrete Multiwavelet Transforms,” Xiang-Gen Xia, University of Delaware

TA4-8 “On 2D Perfect Reconstruction Linear Phase Filter Banks,” Masaaki Ikehara, Keio University; Truong Nguyen, Boston University

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SESSION: TA5 - LOW POWER TECHNIQUES
Chairperson: Graham A. Jullien, University of Windsor

TA5-1 “A Power Efficient Implementation of the Discrete Cosine Transform," Christian Schimpfle, Peter Rieder, and Josef Nossek, Technical University of Munich

TA5-2 “Low Power Digital Filters Based on Constrained Least Squares Solution,” Khurram Muhammad and Kaushik Roy, Purdue University

TA5-3 “Low-Power FIR Digital Filters Using Residue Arithmetic," William Freking and Keshab Parhi, University of Minnesota

TA5-4 “A 10-bit Pipelined ADC for High Speed, Low Power Applications,” Shang-Ching Dong and Bradley Carlson, State University of New York

TA5-5 “Repeater Insertion to Reduce Delay and Power in RC Tree Structures,” Victor Adler and Eby Friedman, University of Rochester

TA5-6 “Instruction Level Power Metric and its Application to Low Power DSP System," Ramalingam Sridhar and Kris Schindler, State University of New York at Buffalo

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SESSION: TA6 - ADAPTIVE SENSOR ARRAY PROCESSING
Chairperson: D. Lake, Office of Naval Research

TA6-1 “Space-Time Adaptive PCI," Brian Freburger, Don Tufts, and Rick Vaccaro, University of Rhode Island

TA6-2 “A Low-Complexity Implementation of Adaptive Wiener Filters,” J. Scott Goldstein, USAF Rome Laboratory & USC; Irving Reed, University of Southern California; Louis Scharf, University of Colorado; John Tague, Office of Naval Research

TA6-3 “Two Decades of Array Signal Processing Research," Hamid Krim, MIT; Mats Viberg, Chalmers University of Technology

TA6-4 “Adaptive Detection of Maneuvering Targets in Space-Time Processing,” Ariela Zeira, Signal Processing Technology, Ltd.; Benjamin Friedlander, University of California-Davis

TA6-5 “A Geometric Approach to Subspace Tracking,” Daniel Fuhrmann, Washington University

TA6-6 “Simultaneous Blind Equalization and Decoding of Multiple Coded Co-Channel Signals with an Antenna Array"
Jacob Gunther and A. Lee Swindlehurst, Brigham Young University

TA6-7 “Post-STAP Detection Performance Under Non-Ideal Conditions,” Steven Smith, MIT

TA6-8 “Track-before-detect Maximum Likelihood Source Localization,” Jeffrey Krolik, Kerem Harmanci, and Joseph Tabrikian, Duke University

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SESSION: TA7 - ADAPTIVE SIGNAL PROCESSING TECHNIQUES OF MULTIUSER COMMUNICATIONS
Chairperson: Yih-Fang Huang, University of Illinois

TA7-1 “Adaptive Set-Membership Filtering and Applications to Multiuser Detection for CDMA Systems,”
Shirish Nagaraj, Sridhar Gollamudi, Samir Kapoor, and Yih-Fang Huang, University of Notre Dame; John Deller, Michigan State University

TA7-2 “A Theorm in Multi-Channel Multi-User Blind Equalization,” Ruey-wen Liu and Hui Luo, University of Notre Dame

TA7-3 “Multipath Combining/Cancelling DS Spread Spectrum Detection,” Paul Flikkema, University of South Flordia

TA7-4 “Joint Carrier and Timing Offset Estimation for Blind Separation and Decoding of Multiple Co-Channel Digital Signals with Antenna Arrays,” Michael Zoltowski and Anand Kannan, Purdue University

TA7-5 “A New Adaptive Intialization and Re-Initialization for the Constant Modulus Algorithm" Scott Evens and Lang Tong, University of Connecticut

TA7-6 “Combined Spatial-Temporal Multi-User Detection in DS-CDMA System,” Benjamin Friedlander, UC-Davis & Signal Processing Technology

TA7-7 “Blind Multi-User Sequence Estimation,” Murat Torlak, Lars Hansen, and Guanghan Xu, University of Texas at Austin

TA7-8 “A Modular Approach for Designing Low Power Adders,” Ahmed Shams and Magdy Bayoumi, University of Southwestern Louisiana

TA7-9 “Improved MUSIC Algorithm for Estimation of Time Delays in Asynchronous DS-CDMA Systems,” Thomas Ostman, Stefan Parkvall, and Bjorn Ottersten, Royal Institute of Technology

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SESSION: TA8a - RADAR AND SONAR II (Poster)
Chairperson: Roberto Cristi, Naval Postgraduate School

TA8a-1 “A Spectral Method of Digital I Q Conversion,” Knut Kongelbeck, Hughes Space & Communications Company

TA8a-2 “Non-Parametric Multiple Channel Detection in Deep Ocean Noise,” Axel Clausen and Douglas Cochran, Arizona State University

TA8a-3 “Classification of Sonar Signals Using Bayesian Networks,” Michael Larkin, Naval Undersea Warfare Center

TA8a-4 “Hidden Markov Modeling for Automatic Target Recognition,” Dane Kottke, Jong-Kae Fwu, and Kathy Brown, Sanders, A Lockheed Martin Company

TA8a-5 “Detection of Vapor Emitting Source,” Qi Cheng, The Northern Territory University; Yingbo Hua, University of Melbourne

TA8a-6 “Multiple Frequency Detection in Undersampled Waveforms,” Xiang-Gen Xia and Guangcai Zhou, University of Delaware

TA8a-7 “Statistical Performance Analysis of the Adaptive Sidelobe Blanker Detection Algorithm,” Christ Richmond, MIT Lincoln Laboratory

TA8a-8 “Parameter Estimation of Exponentially Damped Sinusoids in Noise,” Athina Petropulu and Chris Dafis, Drexel University

TA8a-9 “Automatic Noise Floor Estimation in the Presence of Signals,” Michael Ready, Michael Downey, and Leo Corbalis, Applied Signal Technology, Inc.

TA8a-10 “A Fast Nonlinear Filtering Algorithm for Tracking a Target in Clutter using the Wavelet Transformation,” Jonghun Chun and Joohwan Chun, Korea Advanced Institute of Science & Technology; Timothy Johnson, General Electric R&D

TA8a-11 “A Training-Based Approach to Transient Classification,” Berkant Tracer and Patrick Loughlin, University of Pittsburgh

TA8a-12 “Bit-Ordered Tree Classifiers For SAR Target Classification,” Pankaj Topiwala and Paul Fiore, Sanders, A Lockheed Martin Company

TA8a-13 “Fault Tolerance of the Global Navigation Satellite System using System-Level Diagnosis,” Chad Lamb, Linda Debrunner, K. Thulasiraman, Anindya Das, and John Fagan, University of Oklahoma; Ralph Sexton, Innovative Solutions International

TA8a-14 “Least-Squares Multi-User CMArray: A New Algorithm for Blind Adaptive Beamforming,” Jonathan Leary, Applied Signal Technology, Inc.

TA8a-15 “Minimum-Noise-Variance Beamformer with an Electromagnetic Vector Sensor," Arye Nehorai, University of Illinois at Chicago; Kwok-Chiang Ho, Nanyang Technological University; B. T. G. Tan, National University of Singapore

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SESSION: TA8b - APPLICATIONS OF SIGNAL AND INFORMATION PROCESSING (Poster)

Chairperson: John T. Rickard, OptiMark
George Dillard, NCCOSC

TA8b-1 “Optimal Execution of Linked Trades,” John Rickard, William Lupien, and George Wallace, OptiMark Technologies, Inc.

TA8b-2 “Joint beamforming and Viterbi equalizer in wireless communications,” Miguel Lagunas, Ana Perez-Neira, Polytechnic University of Catalunya

TA8b-3 “Multi-Rate Adaptive Beamforming,” Henry Cox and Richard Pitre, ORINCON Corporation

TA8b-3 “Confidence Intervals for Power Estimates,” George Dillard, NCCOSC, RDT&E DIV

TA8b-5 “Prediction of Fast Fading Parameters by Resolving the Interference Pattern,” Tugay Eyceoz, Alexandra Duel-Hallen, and Hans Hallen, North Carolina State University

TA8b-6 “Analyzing Adaptive Space-Time Processors Using Measured Data," Braham Himed, Research Associates for Defense Conversion Inc.; William Melvin, United States Air Force Research Laboratory, OCSS

TA8b-7 “Ambiguity Resistant Precoders in ISI/Multipath Cancellation: Distance and Optimality," Xiang-Gen Xia, University of Delaware

TA8b-8 “How Narrow is Narrowband ?" Michael Zatman, M.I.T.

TA8b-9 “Optimal Data Fusion Strategies Using Multiple-Sensor Systems,” Ashraf Aziz, Naval Postgraduate School

TA8b-10 “Correlation Function Processing of Frequency Hopped Signals Using Wavelet Transforms,” Ralph Hippenstiel and Nabil Khalil, Naval Postgraduate School

TA8b-11 “Code-only Dependent Asynchronous CDMA Receivers for MUI Elimination and Mitigation of Unknown Multipath," Anna Scaglione, University of Rome - La Sapienza; Georgios Giannakis, University of Virginia

TA8b-12 “Rational Signal Subspace Approximations with Applications to DOA Estimation,” Jawad Hasan, University of Baghdad; Mohammed Hasan, Colorado State University

TA8b-13 “Deriving Algorithms for Computing Sparse Solutions to Linear Inverse Problems,” Bhaskar Rao and K. Kreutz-Delgado, University of California-San Diego

TA8b-14 “Detection and Estimation of Frequency-Hopped Signals in Noise,” Howard Overdyk and Monique Fargues, Naval Postgraduate School

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SESSION: TP1 - IMAGE CODING FOR TRANSMISSION OVER LOSSY CHANNELS
Chairperson: Antonio Ortega, University of Southern California

TP1-1 “Error Correction for Wireless Image Communication with A Rate-Distortion Model," Te-Chung Yang and C.-C.Jay Kuo, University of Southern California

TP1-2 “Robust Image Compression for Transmission over Time-Varying Channels,” Shankar Regunathan and Kenneth Rose, University of California-Santa Barbara

TP1-3 “Improved Noise Resilience Using Joint Source Channel Coding,” Javier Garcia-Frias, University of California-Los Angeles

TP1-4 “Error Protection of Wavelet Coded Images Using Residual Source Redundancy," P. Greg Sherwood and Kenneth Zeger, University of California-San Diego

TP1-5 “Constrained Bit Allocation for Error Resilient JPEG Coding,” Youngjun Yoo and Antonio Ortega, University of Southern California

TP1-6 “Linear solution of the combined source- channel coding problem using joint optimal analysis and synthesis filter banks,” Are Hjoerungnes and Tor Ramstad, Norwegian University of Science and Technology (NTNU)

TP1-7 “Locally-Adaptive Perceptual Quantization of DCT Coefficients,” Ingo Hontsch and Lina Karam, Arizona State University

TP1-8 “A Perceptually-Tuned Block-Transform-Based Progressive Transmission Image Coder" Trac Tran, University of Wisconsin, Truong Nguyen, Boston University; Yu Hu, University of Wisconsin

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SESSION: TP2 - SIGNAL PROCESSING FOR WIRELESS COMMUNICATIONS
Chairperson: Gregory W. Wornell, MIT

TP2-1 “Nonlinear Equalization in Spread-Signature CDMA Systems,” Gregory Wornell, Soosan Beheshti and J. Nicholas Laneman, Massachusetts Institute of Technology

TP2-2 “Subspace Methods for Blind Adaptive Multiuser Detection,” H. Vincent Poor and Xiaodong Wang, Princeton University

TP2-3 “Design of Smart Antenna Downlink Weighting Vectors,” Weidong Yang and Guanghan Xu, University of Texas at Austin

TP2-4 “A Wavelet Zerotree-Based Hybrid Compressed/Uncompressed Framework for Wireless Image Transmission,” Kannan Ramchandran, University of Illinois at Urbana-Champaign

TP2-5 “Practical Blind Equalizers for High-order QAM Signals,” John Treichler, Applied Signal Technology

TP2-6 “Generalized Likelihood Detection on Multiple Access Channels,” Michael McCloud and Louis Scharf, University of Colorado at Boulder

TP2-7 “Optimal and Suboptimal Approaches for Training Sequence Based Spatio-Temporal Channel Identification in Colored Noise,” Hafedh Trigui and Dirk Slock, Institut EURECOM

TP2-8 “Precoding Techniques for Undersampled Multi-receiver Communication Systems,” Hui Liu, University of Virginia; Xiang-Gen Xia, University of Delaware

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SESSION: TP3 - SPEECH SIGNAL PROCESSING
Chairperson: Bhaskar D. Rao, University of California-San Diego

TP3-1 “Analysis of Low-Rate Structured Codebooks for CELP Speech Coding,” William Gardner, LSI Logic Wireless Design Center

TP3-2 “Modeling Auditory Perception to Improve Robust Speech Recognition,” Brian Strope and Abeer Alwan, University of California-Los Angeles

TP3-3 “Minimum-Variance All-Pole Modeling of Speech" Manohar Murthi and Bhaskar Rao, University of California-San Diego

TP3-4 “Multimode Speech Coding at Low Bit Rate,” Amitav Das, Qualcomm Inc.

TP3-5 “Controlling Spectral Dynamics in LPC Quantization for Perceptual Enhancement," Jonas Samuelsson, Jan Skoglund, and Jan Linden, Chalmers University of Technology

TP3-6 “Enhanced Spectral Modeling for MBE Speech Coders,” Keith Teague and Walter Andrews, Oklahoma State University

TP3-7 “Sinusoidal Speech Coding at 2.4 kbps Using an Improved Phase Matching Algorithm," Sassan Ahmadi and Andreas Spanias, Arizona State University

TP3-8 “Self-affine Modeling of Speech Signal in Speech Compression,” K Anandakumar and Saleem Kassam, University of Pennsylvania

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SESSION: TP4 - POINT PROCESSES
Chairperson: A. Swami & Brian Sadler,

TP4-1 “Wavelet Analysis of Point Process Data," David Billinger, University of California-Berkeley

TP4-2 “Performance Analysis of Hypothesis Testing for Pairwise Interaction Point Processes,” John Gubner and Wei-Bin Chang, University of Wisconsin-Madison; Majeed Hayat, University of Dayton

TP4-3 “Bayesian Estimation of Filtered Point Processes Using Markov Chain Monte Carlo Methods,” Christophe Anrieu, Arnaud Doucet, and Patrick Duvaut, ENSEA

TP4-4 “A Point Process Model for Biological Events Involving Activation,” G. Zhou, Georgia Tech; W. Schafer, University of California-San Diego; R. Schafer, Georgia Tech

TP4-5 “A Class of Quasi-Fractal Markov Renewal Processes,” Eric Moulines, Ecole Nationale Superieure Des Telecommunications

TP4-6 “Modeling Network Traffic Data by a Doubly Stochastic Point Process with Self-Similar Intensity Process and Fractal Renewal Point Process,” Sergio Barbarossa, A. Scaglione, A. Baiocchi, and G. Colletti, University of Rome - La Sapienza

TP4-7 “Wavelet Spectral Density Estimation Under Irregular Sampling,” Mark Lehr and Keh-Shin Lii, University of California-Riverside

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SESSION: TP5 - DIGITAL AND ANALOG ARRAYS
Chairperson: Majid Ahmadi, University of Windsor

TP5-1 “Limits to Neural Computations in Digital Arrays,” Howard Card, University of Manitoba

TP5-2 “Neural Network Chips with Single-block Mixed-signal Arrays,” H. Djahanshahi, M. Ahmadi, G. Jullien, and W. Miller, University of Windsor

TP5-3 “CMOS Bilateral Floating Linear Resistor for Neural Type Cell Arrays,” L. Sellami, US Naval Academy; A. Rasmusson, George Washington University; S. Singh, University of Maryland; M. Zaghloul, George Washington University; R. Newcomb, University of Maryland

TP5-4 “A Network for Learning Temporal Signals in CMOS Micro-Electronics,” Fathi Salam, Michigan State University

TP5-5 “Cellular Mixed Signal Pixel Array for Real Time Image Processing,” Gamze Erten, IC Tech

TP5-6 “VLSI Cellular Array of Coupled Delta Sigma Modulators for Random Analog Vector Generations,” Gert Cauwenberghs, The Johns Hopkins University

TP5-7 “CMOS Implementation of a Current Conveyor-Based Field-Programmable Analog Array," Vincent Gaudet and Glenn Gulak, University of Toronto

TP5-8 “Haar Transform with Linear Processor Array Using Data-Driven Control Scheme," Ding-Ming Kwai and Behrooz Parhami, University of California-Santa Barbara

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SESSION: TP6 - COMPUTER ARITHMETIC
Chairperson: M. Schulte, Lehigh University

TP6-1 “Effective Coding for Fast Redundant Adders using the Radix-2 Digit Set {0,1,2,3}," Milos Ercegovac, University of California-Los Angeles; Tomas Lang, University of Claifornia-Irvine

TP6-2 “On the Implementation of a Three-operand Multiplier," Robert McIlhenny and Milos Ercegovac, University of California-Los Angeles

TP6-3 “A Multiplier Design for Variable Long-Precision Computations,” Alexandre Tenca and Milos Ercegovac, University of California, Los Angeles

TP6-4 “Data-Dependent Truncation Scheme for Parallel Multipliers,” Eric King, Crystal Semiconductor; Earl Swartzlander, University of Texas at Austin

TP6-5 “High-Speed Reciprocal Approximations,” Michael Schulte, James Stine, and Kent Wires, Lehigh University

TP6-6 “Overlap Resolution: Arithmetic with Continuous Valued Digits in Hybrid Architectures,” Aryan Saed, Majid Ahmadi, Graham Jullien, and William Miller, University of Windsor

TP6-7 “Arithmetic Arrays using Cellular Neural Networks,” Saeid Sadeghi-Emamchaie, Graham Jullien, and William Miller, University of Windsor

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SESSION: TP7 - SPECTRAL ANALYSIS AND RADAR APPLICATIONS
Chairperson: J. Li, University of Florida & P. Stoica, Uppsala University

TP7-1 “Some Applications of Statistical Signal Processing in Synthetic Aperture Radar Imaging,” Charles Jakowatz, Jr., Daniel Wahl, and Paul Thompson, Sandia National Laboratories

TP7-2 “Adaptive High-Definition Imaging,” Gerald Benitz, MIT - Lincoln Laboratory

TP7-3 “On the Performance Analysis of Matched-Filterbank Spectral Estimators,” H. Li, University of Florida; P. Stoica, Uppsala University; Jian Li, University of Florida; A. Jakobsson, Uppsala University

TP7-4 “An Efficient Rooting Algorithm for Simultaneous Angle and Doppler Estimation with Space-Time Adaptive Processing,” James Ward and Gary Hatke, MIT - Lincoln Laboratory

TP7-5 “Radar Signal Processing with Antenna Arrays via Maximum Likelihood,” A. Lee Swindlehurst, Uppsala University; P. Stoica, Uppsala University

TP7-6 “Multichannel SAR for Detecting Ground Slowly Moving Targets Against Non-Homogeneous Gackground,” Alfonso Farina, Systems Analysis Group - Italy; P. Lombardo and E. Di Nezza, University of Rome - La Sapienza

TP7-7 “Chaos, Radar Clutter, and Neural Networks,” Simon Haykin, McMaster University

TP7-8 “Adaptive Detection and Parameter Estimation of Polynomial-Phase Signals Embedded in Noise Using High Order Ambiguity Functions,” Sergio Barbarossa and Anna Scaglione, University of Rome - La Sapienza

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SESSION: TP8a - WAVELETS AND FILTERBANKS (Poster)
Chairperson: TBD

TP8a-1 “A Fast Discrete Approximation to the Continuous Wavelet Transform with Applications,” Kathrin Berkner and Raymond Wells, Jr., Rice University

TP8a-2 “Biorthogonal Generalization of Meyer Wavelets,” Raghuveer Rao, Rochester Institute of Technology

TP8a-3 “Asymptotic Convergence of Biorthogonal Wavelet Filters,” Dong Wei and Alan Bovik, The University of Texas at Austin

TP8a-4 “Linear Parameterization of Orthogonal Wavelets,” W.- Lu, University of Victoria

TP8a-5 “Registration and Shift-Invariance Using the Maximally Decimated Wavelet Decomposition,” Shankar Moni, Naval Air Warfare Center

TP8a-6 “Hybrid Wavelet Packet Analysis,” Robert Hedges, Arizona State University

TP8a-7 “Generalized Coiflets,” Dong Wei, Alan Bovik, and Brian Evans, The University of Texas at Austin

TP8a-8 “Multistage Implementation of Optimal Reconstruction in Noisy Filter Banks,” Onoriu Bradeanu, Technical Academy-Romania; Ulrich Appel, Bundeswehr University

TP8a-9 “A necessary and sufficient condition for commutative PR orthogonal multifilter banks,” Kurt Johnson, University of Wisconsin Madison

TP8a-10 “Multidimensional 2-Channel PR Filter Banks,” Soontorn Oraintara and Truong Nguyen, Boston University

TP8a-11 “A Oversampled Filterbank with Different Analysis and Synthesis Filters for the Use with Adaptive Filters,” Moritz Harteneck and Robert Stewart, University of Strathclyde

TP8a-12 “On the Symmetry of Orthogonal Complex Filter Banks and Wavelets,” Xiao-Ping Zhang and Mita Desai, University of Texas at San Antonio; Ying-Ning Peng, Tsinghua University, China

TP8a-13 “Atomic Signal Models Based on Recursive Filterbanks,” Michael Goodwin, University of California-Berkeley; Martin Vetterli, U.C. Berkeley & Ecole Polytechnique Federale de Lausanne

TP8a-14 “Sampling Systems Matched to Input Processes and their Implementations using PRCC Filter Banks," Ajit Bopardikar and Raghuveer Rao, Rochester Institute of Technology; B. Adiga, Motorola India Electronics Ltd.

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SESSION: TP8b - STATISTICAL ARRAY PROCESSING (Poster)
Chairperson: L. Swindlehurst,

TP8b-1 “On the Statistics of Eigenvectors of Covariance,” Benjamin Friedlander, UC-Davis & Signal Processing Technology

TP8b-2 “Source Localization Using Recursively Applied and Projected (RAP) MUSIC," John Mosher, Los Alamos National Laboratory; Richard Leahy, University of Southern California, Signal & Image Proc. Inst

TP8b-3 “3-D Source Localization By Matrix Pencils,” Karim Abed-Meraim and Yingbo Hua, The University of Melbourne

TP8b-4 “Fast Subspace Tracking by a Novel Information Criterion,” Yongfeng Miao and Yingbo Hua, The University of Melbourne

TP8b-5 “Gradient Flows on Projection Matrices for Subspace Estimation,” Anuj Srivastava, Brown University; Daniel Fuhrmann, Washington University

TP8b-6 “Computing the Discrete-Time 'Analytic' Signal Via FFT," S. Lawrence Marple, Jr.,

Orincon Corporation

TP8b-7 “SMI Based Beamforming Algorithms for TDMA Signals,” A. Wang and Jonathan Leary, Applied Signal Technology, Inc.

TP8b-8 “A Self-Calibration Scheme for Partially Adaptive Processing in Airborne Radar," Qingwen Zhang and Wasfy Mikhael, University of Central Florida

TP8b-9 “Distribution Results for Adaptive Matched Subspace Detectors,” Shawn Kraut, University of Colorado; Louis Scharf and Michael McCloud, University of Colorado at Boulder

TP8b-10 “Derivative DFT Beamspace ESPRIT: Improving Arrival Angle Estimation Accuracy Using Virtual Derivative DFT Beamforming,” Cherian Mathews, University of West Florida

TP8b-11 “Multi-Target Track Segment Bearings-Only Association and Ranging in a Multipath Environment," Evangelos Giannopoulos and Roy Streit, Naval Undersea Warfare Center (NUWC); Peter Swaszek, University of Rhode Island

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SESSION: WA1 - SOURCES AND CHANNEL CODING
Chairperson: Michelle Effros,

WA1-1 “Joint Source-Channel Coding via Space Filling Curves,” Mitchell Trott and Sae-Young Chung, MIT

WA1-2 “Second-Order Analysis of Lossless and Lossy Versions of Lempel-Ziv Codes,” Ioannis Kontoyiannis, Stanford University

WA1-3 “Voice Channel," Garud Iyengar, Stanford University

WA1-4 “The Common Randomness Capacity of a Finite Network of Channels,” Sivarama Venkatesan, Cornell University; V. Anantharam, University of California-Berkeley

WA1-5 “Performance Bounds for Serially-Concatenated Trellis-Coded Modulation,” Minnie Ho, Radix Technologies, Inc.

WA1-6 “Uniformity of High Dimensional Trellis-Coded Modulation,” Jeffrey Dill, Changlin Chen, and Yung-Cheng Lo, Ohio University; Alan Lindsey, Rome Laboratory

WA1-7 “Significance Maps and Coefficient Rate in Transform Coding,” Wenye Yang and Jerry Gibson, Texas A & M University

WA1-8 “High-Order Context Modeling of Wavelet Coeffcients for High Performance of Wavelet Image Coders,” Xiaolin Wu, University of Western Ontario

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SESSION: WA2 - MULTIUSER DETECTION AND ESTIMATION
Chairperson: Urbashi Mitra, Ohio State University

WA2-1 “MMSE Linear Interference Cancellation for GEO Land Mobile Satellite Systems,” Ezio Biglieri, Giuseppe Caire, Giorgio Taricco, and Fabrizio Boggio, Politecnico di Torino

WA2-2 “On Joint Multiuser Detection and Diversity Combining for Bandwidth Efficient Asynchronous CDMA," Alexandra Duel-Hallen and Silvija Andrijic, North Carolina State University

WA2-3 “Eavesdropper Performance in Power-Controlled Cellular CDMA," Andrew McKellips and Sergio Verdu, Princeton University

WA2-4 “On Blind Separability of Multiple User Signals in Presence of Delay Spread,” Constantinos Papadias and Arogyaswami Paulraj, Stanford University

WA2-5 “Bandwidth Efficient Multiple Access Communications,” Mahesh Varanasi, University of Colorado

WA2-6 “Non-Linear Detectros for Multiuser CDMA Exploiting Non-Gaussianity," Laurence Mailaender, Bell Labs/Lucent Technologies

WA2-7 “Reduced Complexity ML Multiuser Sequence Detection with Per-Survivor Interference Cancellation," Eduardo S. Esteves and Robert Scholtz, University of Southern California

WA2-8 “An Efficient Code-Timing Estimator for Receiver Diversity DS-CDMA Systems," Zheng-She Liu, Jian Li, and Scott Miller, University of Florida

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SESSION: WA3 - LOSSLESS AND NEAR-LOSSLESS IMAGE COMPRESSION
Chairperson: Glen Langdon, University of California-Santa Cruz

WA3-1 “Near-Lossless Image Compression by Combining Wavelets and CALIC," Xiaolin Wu, University of Western Ontario

WA3-2 “Lossless and Near-lossless Compression of EEG Signals,” X. Kong and Nasir Memon, Northern Illinois University

WA3-3 “Application of Motion to Lossless Compression of Multispectral GOES Images,” James Spring and Glen Langdon, University of California

WA3-4 “On Prediction Error Coding Methods for Lossless Image Compression,” Glen Langdon and Byran Mealy, University of California-Santa Cruz

WA3-5 “An Analysis of Some Common Scanning Techniques For Lossless Image Coding,” Nasir Memon, Northern Illinois University; David Neuhoff, University of Michigan; Sunil Shende, University of Nebraska

WA3-6 “Adaptive Coding of Mixed Data Types,” Samuel Stearns, Sandia National Laboratories; Tim McDonald, Applied Physics, Inc.

WA3-7 “Spatially Partitioned Lossless Image Compression in an Embedded Framewor,k" Charles Creusere, Naval Air Warfare Center

WA3-8 “Lossless Image Coder With Low Power Implementation,” Etienne Kuntzel and Truong Nguyen, University of Wisconsin-Madison

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SESSION: WA4 - TIME-FREQUENCY ANALYSIS
Chairperson: TBD

WA4-1 “Properties of Time-Frequency Representations,” Benjamin Friedlander, UC-Davis & Signal Processing Technology; Louis Scharf, University of Colorado

WA4-2 “Time-Variant Filtering in the Time-Frequency Space: Performance Analysis and Filter Design,” Zvi Dubiner, DSP Zoftware, Inc.; Moshe Porat, Technion

WA4-3 “Fast Basis Selection Methods,” Shane Cotter, Manohar Murthi, and Bhaskar Rao, University of California-San Diego

WA4-4 “Zero-Crossing Contour Construction for Scale-Space Filtering,” Hossein Dehghan, Stanford Telecom

WA4-5 “Comparative study of the Cross-term Deleted Wigner and Cross Biorthogonal Representation,” Shubha Kadambe and Richard Orr, Atlantic Aerospace Electronics Corporation

WA4-6 “Using Resonating Filter Banks and Energy Levels to Detect Signal Transitions in Complex Sound Fields,” Andrew Blackford and Victor DeBrunner, University of Oklahoma

WA4-7 “Linear Chirp Invariant Systems: Fractional Filtering and Correlation Through A New Unitary Chirp Operator," Olay Akay and G. Faye Boudreaux-Bartels, University of Rhode Island

WA4-8 “Transionospheric Signal Detection with Chirped Wavelets,” Adele Doser and Mark Dunham, Los Alamos National Laboratory

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SESSION: WA5 - SPECIAL TECHNOLOGIES AND TECHNIQUES
Chairperson: Neil Burgess, University of Adelaide

WA5-1 “A Complementary GaAs Parallel Array Multiply Unit with Accumulate,” Timothy Strong, Matthew Postiff, Michael Kelley, and Richard Brown, University of Michigan

WA5-2 “Design of Low Power, High Density Gallium Arsenide Asynchronous Primitives for Multimedia Computing,” Kamran Eshraghian and Stefan Lachowicz, Edith Cowan University; T. C. B. Yu, The University of Reading

WA5-3 “GaAs Multiplier and Adder Designs for High-Speed DSP Applications,” Andrew Beaumont-Smith, Neil Burgess, Song Cui, and Michael Liebelt, University of Adelaide

WA5-4 “A Generalised Convolver for Computer Vision,” N. Seed, R. Lane, N. Thacker, and P. Ivey, University of Sheffield

WA5-5 “A 600 MHz 2D-DCT Processor for MPEG Applications,” R. Sarmiento, C. Pulido, V. Armas, R. Esper-Chain, J. Lopez, and J. Montiel, University of Las Palmas de Gran Canaria

WA5-6 “Efficient Implementation of DCT-based Video Compression on Custom Computers,” Neil Bergmann and Y. Chung, Queensland University of Technology

WA5-7 “A Planar Integrated Sensor Array for Neural Recordings,” Abhimanyu Kolla, Mircea Stan, Erik Herzog, and Suzanne Moenter, University of Virginia

WA5-8 “A New 3-GSPS 65-GOPS UHF Digital Radar Receiver And Its Performance Characteristics,” William Song, MIT Lincoln Laboratory

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SESSION: WA6 - ADAPTIVE ALGORITHMS IN COMMUNICATIONS
Chairperson: Ali H. Sayeed, University of California-Los Angeles

WA6-1 “Characterization of Empirically Derived Time-Varying Channel Models With Implications for Blind Equalization and Identification,” Tom Endres, J. Behm, C. Prettie, and C. Johnson, Jr., Cornell University

WA6-2 “Adaptive Communications in Interference-Coupled Systems,” Gregory Pottie, University of California-Los Angeles

WA6-3 “A Robust Viterbi Algorithm for Symbol Recovery in the 1900MGz PCS Band,” Markus Rupp, Rajeev Krishnamoorthy, and Sayandev Mukherjee, Lucent Technologies

WA6-4 “On the Performance of Beamforming and Equalization Algorithms for Asynchronous TDMA Signals,” Arvind Keerthi and John Shynk, University of California-Santa Barbara

WA6-5 “On Adaptive Filtering with Combined Least-Mean-Squares and H_oo Criteria," Babak Hassibi and T. Kailath, Stanford University

WA6-6 “Adaptive Algorithms for Generalized Eigen-Decomposition and SVD and Their Applications in CDMA Communication Systems,” Wwani Roychowdhury, University of California-Los Angeles; Chanchal Chatterjee, Newport Corporation

WA6-7 “An Adaptive Multisensor Receiver for Frequency Selective Channels in DS-CDMA Communications Systems,” S. Buljore, University of California-San Diego; J. Zeidler, UCSD/NCCOSC; L. Milstein, University of California-San Diego

WA6-8 “A Parallel Low-Complexity Coefficient Computation Processor for the MMSE Decision Feedback Equalizer," Naofal Al-Dhahir, GE Corporate R&D Center; Ali Sayed, University of California-Los Angeles

WA6-9 “Convergence Analysis of the LMS Algorithm: A Survey and Critique,” Simon Haykin, McMaster University

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SESSION: WA7 - (SEMI-) BLIND CHANNEL ESTIMATION AND EQUALIZATION

Chairperson: J.K. Tugnait, Auburn University

WA7-1 “New Methods of Blind Channel Equalization For GSM Systems,” Zhi Ding and Gary Li, Auburn University

WA7-3 “Blind SIMO-FIR Second Order Identification: A Robust Approach," Alexei Gorokhov, Ecole Nationale Superieure des Telecommunications

WA7-4 “On Direct Blind Equalization of SIMO IIR Channels using Second-Order Statistics,” Jitendra Tugnait and Bin Huang, Auburn University

WA7-5 “Partially Blind Equalization of SIMO-FIR Channel Driven by a Finite-Alphabet Sequence in Colored Noise,” Vladimir Radionov and Sylvie Mayrargue, France Telecom CNET

WA7-6 “Asymptotic Performance of ML Methods for Semi-Blind Channel Estimation,” Elisabeth De Carvalho and Dirk Slock, EURECOM Institute

WA7-7 “Stochastic Maximum Likelihood Methods for Semi-Blind Channel Equalization,” Hakan Cirpan and Michail Tsatsanis, Stevens Institute of Technology

WA7-8 “Blind Identification of ARMA Models With Periodically Encoded Inputs,” Georgios Giannakis, University of Virginia; Erchin Serpedin, University of Virginia

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SESSION: WA8a - INFINITE IMPULSE RESPONSE AND TRANSFORM DOMAIN FILTERS (Poster)

Chairperson: Geoffrey A. Williamson, Illinois Institute of Technology & Majid Nayeri, Michigan State University

WA8a-1 “Rational Approximation and Undermodelled Adaptive IIR Filtering,” Mamadou Mboup, Universite Rene Descartes - Paris V

WA8a-2 “A Posteriori Updates for Adaptive Filters,” Scott Douglas, University of Utah; Markus Rupp, Lucent Technologies

WA8a-3 “An Observer-Based Algorithm for Adaptive IIR Filters,” Rifat Hacioglu and Geoffrey Williamson, Illinois Institute of Technology

WA8a-4 “A Robust Frequency-Domain Adaptive Filter in Colored Additive Noise,” Hiroshi Ochi and Masafumi Ohsiro, University of the Ryukyus; Majid Nayeri, Michigan State University

WA8a-5 "Small Sample Properties of the RSS Estimation Algorithm for Gaussian Measurement Noise," Craig Agate and Ronald A. Iltis, University of California-Santa Barbara

WA8a-6 "Adaptive Phaseshifting in FIR Filters with Application to Blind Equalizers," Patrik Larsson, Bell Labs/Lucent Technologies

WA8a-7
"Interior Point Column Generation Algorithms for Adaptive Filtering," Kaywan H. Afkhamie, Zhi-Quan Luo, and Max Wong, McMaster University

WA8a-8 "Modulation of Signals in Rapidly Updated Adaptive Filters: Theory, Mitigation and Applications," Daniel J. Rabideau, MIT

WA8a-9 "Normalized LMS Algorithm with Orthogonal Correction Factors," Sundar Sandaran and Louis A. Beex, Virginia Tech

WA8a-10 "Investigation of Acoustic Echo Cancellation in the Presence of Double Talk," Timothy

Creasy and Tyseer A. Aboulnasr, University of Ottawa

WA8a-11 "A New Pre-whitened Adaptive Algorithm for Acoustic Echo Cancellation," Edward N. Ndungu, Loughborough University; Colin F.N. Cown, The Queen's University of Belfast

WA8a-12 "Comparison of the Convergence of IIR Evolutionary Digital Filters and Other Adaptive Digital Filters on a Multiple-Peak Surface," Masahide Abe and Masayuki Kawamata, Tohoku University

WA8a-13 "A Performance Comparison of the Teager-Kaiser Operator and an Adaptive Notch Filter," Victor DeBrunner and Sebastian Torres, Univeristy of Oklahoma

WA8a-14 "On the Composite Squared Error Algorithm for Adaptive IIR Filters," Sergio Lima Netto, Universidade Federal do rio de Janeiro; Panajotis Agathoklis, University of Victoria

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SESSION: WA8b - 2D AND IMAGE PROCESSING APPLICATIONS (Poster)
Chairperson: TBD

WA8b-1 “Polyphase Implementation of a Video Scala,r" Arun Ramaswamy and Yosef Nijim, Vela Research, Inc.; Wasfy Mikhael, University of Central Florida

WA8b-2 “Davidson Method for Total Least Squares Filter in Robot Navigation,” Tianruo Yang, Linkoping University

WA8b-3 “New Edge Detection Algorithms Based on Adaptive Estimation Filters,” Michael Woodhall, Harris Corporation; Claude Lindquist, University of Miami

WA8b-4 “A Fast Method for Automated Detection of Blood Vessels in Retinal Images,” Yiming Wang and Samuel Lee, University of Oklahoma

WA8b-5 “Wavelet Approaches to Still Image Denoising,” W.- Lu, University of Victoria

WA8b-6 “An Elliptical Head Tracker," Stan Birchfield, Stanford University

WA8b-7 “A new pairing step for the MEMP method,” Stephanie Rouquette and Mohamed Najim, Equipe Signal et Image de l'ENSERB

WA8b-8 “Application of quadratic phase transform to multi-line fitting and straight edge detection,” Karim Abed-Meraim and Yingbo Hua, The University of Melbourne

WA8b-9 “An Image Filtering Process Based on Foveal Mechanism Simulation,” Fredrique Robert, ISEM - Maison des Technologies; Eric Dinet, Institut de l'Ingenierie de la Vision

WA8b-10 “A Computationally Efficient Implementation of 2-D IQML," Michael Clark, Mission Research Corporation; Lars Elde'n, Linkoping University; Petre Stoica, Uppsala University

WA8b-11 “Region-based Segmentation of Color Images: Application to Aerial Image Cartography," J. Devaux, R. Kouassi, P. Gouton, and F. Truchetet, d'Informatique et d'Image de Bourgogne

WA8b-12 “Application of the Karhunen-Loeve Transformation for Natural Color Images Analysis,” R. Kouassi, J. Devaux, P. Gouton, and M. Paindavoine, L.E.I.I.

WA8b-13 “The Bounded-Resolution Image Model and its Applications to Wavelet-based Image Processing,” Shankar Moni, Naval Air Warfare Center

WA8b-14 “Performance and Design of Farrow Filter for Arbitrary Resampling,” fred harris, San Diego State University

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