



DSP/SPE Workshop Program

Unless otherwise specified, all activities are located in the Taos Ski Valley Resort Center

Sunday, August 1, 2004

Registration	Sunday, 3:00 pm - 6:30 pm
Welcome Reception	Sunday, 6 pm - 8 pm

Monday, August 2, 2004

Registration	Monday, 8 am - 5 pm
Continental Breakfast	Monday, 8 am - 9 am
Welcoming Remarks	Monday, 9:30 am - 10:00 am

Poster Session 1A: Signal Processing Education I **Monday, 10 am - noon**
 (Coffee Available: 10:45 - 11:15 am)
 Session Chair: **Mark Yoder**

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	James H.McClellan, Milind Borkar, Rajbabu Velmurugan, Lonnie D.Harvel and Chris Scheibe	CONCEPT MAPS FOR NAVIGATING SIGNAL PROCESSING EDUCATION RESOURCES
2	Thomas P. Barnwell III	REAL-TIME SIGNAL PROCESSING USING DSP MICROPROCESSORS - AN UNDERGRADUATE CAPSTONE DESIGN COURSE AT GEORGIA TECH
3	N. Kehtarnavaz, N. Kim, I. Panahi	DIGITAL SIGNAL PROCESSING SYSTEM DESIGN: USING LABVIEW AND TMS320C6000
4	Marco Antonio Assis de Melo, Fabrizio Leonardi, Alessandro La Neve	DIGITAL SIGNAL PROCESSING WITH MATLAB AND DSP KITS
5	Darel A. Linebarger, Thomas A. Bryan	AN INTRODUCTION TO FIXED-POINT SIGNAL PROCESSING
6	M.A. Mughal, A. Yardim, G.D. Cain	CLASSROOM DESIGN DEMONSTRATIONS FOR COMPLEX IIR FILTERS

Poster Session 1B: Filter Banks
 (Coffee Available: 10:45 - 11:15 am)
 Session Chair:

Monday, 10 am - noon

Mark Smith

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Christopher M. Brislawn, Brendt Wohlberg	LIFTED LINEAR PHASE FILTER BANKS AND THE POLYPHASE-WITH-ADVANCE REPRESENTATION
2	Rohit Kumar, Ying-Jui Chen, Soontorn Oraintara, Kevin Amaratunga	STRUCTURALLY REGULAR UNIMODULAR FILTER BANKS
3	Ryan Casey, Tanja Karp	FIXED-POINT PROTOTYPE DESIGN FOR BIORTHOGONAL MODULATED FILTER BANKS
4	Mihaela D. Quirk, Christopher M. Brislawn	EXISTENCE OF OPTIMAL PARAUNITARY FINITE IMPULSE RESPONSE FILTER BANKS FOR CONTINUOUS OBJECTIVE FUNCTIONALS
5	R. F. von Borries, C. S. Burrus, R. A. Vargas	FILTER BANK DESIGN FOR REDUNDANT WAVELET TRANSFORMS
6	John D. Norris, Scott C. Douglas	A GRADIENT ALGORITHM FOR ADAPTIVE ORTHOGONAL FIR FILTER BANKS WITH ARBITRARY MAGNITUDE CONSTRAINTS

Lunch

Monday, noon - 1:30 pm

Plenary Talk I	Monday, 1:30 pm - 2:30 pm
Speaker: Alan Oppenheim, MIT	
Title: <i>Things my mother never told me (about doing research)</i>	

Poster Session 2A: Signal Processing Education II

(Coffee available: 3:15 - 3:45 pm)

Session Chair:

Monday, 2:30 pm - 4:30 pm**Thad Welch**

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Kathleen E. Wage, John R. Buck, Cameron H. G. Wright	OBSTACLES IN SIGNALS AND SYSTEMS CONCEPTUAL LEARNING
2	G. A. Krudysz, J. H. McClellan	MOVIE-TOOL FOR GUI RECORDING, DATA MINING, AND LEARNER EVALUATION
3	Thad B. Welch, Cameron H. G. Wright, Michael G. Morrow	EXPERIENCES IN OFFERING A DSP-BASED COMMUNICATION LABORATORY
4	G.D. Cain, A. Yardim, M.A. Mughal	DYNAMIC MATCHED FILTERING - ANIMATING THE ACTION
5	<i>Mario I. Chacon M., Ivan Valenzuela O.</i>	FAST IMAGE PROCESSING APPLICATION DEVELOPMENT SCHEME FOR THE DSK C6711 USING MATLAB AND SIMULINK
6	Shahin Farahani, Nazanin Darbanian, Sayfe Kiaei	AN EDUCATIONAL TOOL AND TEACHING GUIDELINES FOR NONLINEAR SYSTEMS WITH SPARSE INPUTS
7	Marc P. Christensen, Scott C. Douglas, Sally L. Wood, Christopher Kitts, Ted Mahler	THE INFINITY PROJECT BRINGS DSP BRAINS TO ROBOTS IN THE CLASSROOM

Poster Session 2B: Filters

(Coffee available: 3:15 - 3:45 pm)

Session Chair:

Monday, 2:30 pm - 4:30 pm**James McClellan**

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	<i>Akshay Athalye, Miodrag Bolić, Sangjin Hong, Petar M. Djuric</i>	ARCHITECTURES AND MEMORY SCHEMES FOR SAMPLING AND RESAMPLING IN PARTICLE FILTERS
2	<i>Victor E. DeBrunner, Linda S. DeBrunner, Stéphanie Coone, Xiaojuan Hu</i>	USING ENTROPY TO BUILD EFFICIENT FIR DIGITAL FILTERS
3	<i>Hun Choi, Jo-Dong Park, Sang-Wook Sohn, Hyeon-Deok Bae</i>	PIPELINED ORTHOGONAL SUBBAND AFFINE PROJECTION FILTERS AND ITS EFFICIENT IMPLEMENTATION
4	Alexander N. Kalashnikov, Richard E. Challis	CONTRADICTIONS ASSOCIATED WITH WIENER FILTERS

Dinner

Monday, 6:15 pm - 8:00 pm

Poster Session 3A: Image Classification
 Session Chair:

Monday, 8 pm - 10 pm
Chuck Creusere

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Vikram Jayaram, Bryan E. Usevitch, Olga M. Kosheleva	DETECTION FROM HYPERSPECTRAL IMAGES COMPRESSED USING RATE DISTORTION AND OPTIMIZATION TECHNIQUES UNDER JPEG2000 PART 2
2	Charles D. Creusere, Lei Zhou	SPATIAL OBJECT DETECTION AND CLASSIFICATION IN JPEG BITSTREAMS
3	Maximiliano Garces, Bryan E. Usevitch	CLASSIFICATION PERFORMANCE OF REDUCED COLOR BAND HYPERSPECTRAL IMAGERY FROM JPEG2000 DECOMPRESSED DATA
4	Adrienne Raglin, Mikhail Vorontsov, Mohamed Chouikha	OPTOELECTRONIC FEEDBACK CIRCUIT SYSTEMS FOR SIGNAL PROCESSING OF HIGH-RESOLUTION IMAGES FOR TARGET TRACKING

Poster Session 3B: Image Analysis and Compression
 Session Chair:

Monday, 8 pm - 10 pm
Sally Wood

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Jose Gabriel Gomes, SanjitK.Mitra	MULTILAYER PERCEPTRONS APPLIED TO ENTROPY-CONSTRAINED IMAGE CODING
2	Olga M.Kosheleva, Sergio D.Cabrera, Edward Vidal,Jr	OPTIMAL BIT ALLOCATION FOR MAXIMUM ABSOLUTE ERROR DISTORTION IN THE APPLICATION OF JPEG2000 PART 2
3	J. Layhue, R. Sundaram	REAL TRANSFORM DOMAIN OPERATIONS FOR IMAGE COMPRESSION AND SEGMENTATION
4	X. Zhuang	IMAGE SEGMENTATION BY ANT SWARM - A CASE STUDY OF DIGITAL SIGNAL PROCESSING WITH BIOLOGICAL MECHANISM OF INTELLIGENCE
5	Truong T. Nguyen, Soontorn Orintara	TEXTURE CLASSIFICATION USING NON-UNIFORM DIRECTIONAL FILTER BANK
6	Sally L. Wood, Dinesh Rajan, Marc P. Christensen, Scott C. Douglas, Bonnie J. Smithson	RESOLUTION IMPROVEMENT FOR COMPOUND EYE IMAGES THROUGH LENS DIVERSITY

Tuesday, August 3, 2004

Registration

Tuesday, 8 am - 5 pm

Continental Breakfast

Tuesday, 8 am - 9 am

Plenary Talk II	Tuesday, 9 am - 10 am
Speaker: Jim Truchard, President, National Instruments	
Title: <i>DSP and Signal Processing: The Next Generation</i>	

Poster Session 4A: DSP Algorithms and Implementation Tuesday, 10 am - noon

(Coffee Available: 10:45 - 11:15 am)

Session Chair:

Victor DeBrunner

<i>Poster Number</i>	<i>Authors</i>	<i>Title</i>
1	C. Sidney Burrus, James W. Fox, Gary A. Sitton, Sven Treitel	FACTORING HIGH DEGREE POLYNOMIALS IN SIGNAL PROCESSING
2	Markus Pueschel, Martin Roetteler	COOLEY-TUKEY FFT LIKE ALGORITHM FOR THE DISCRETE TRIANGLE TRANSFORM
3	Juan G. Vargas-Rubio, Balu Santhanam	THE CENTERED DISCRETE FRACTIONAL FOURIER TRANSFORM AND LINEAR CHIRP SIGNALS
4	Shahin Farahani, Nazanin Darbanian, Sayfe Kiaei	SIMULATION OF NONLINEAR SYSTEMS WITH SPARSE INPUT VECTORS USING CRC TECHNIQUE
5	John S. Crockett, Todd K. Moon, Jacob H. Gunther	ACCELERATING THE CONVERGENCE OF POCS ALGORITHMS BY EXPONENTIAL PREDICTION
6	Ernst Aschbacher, Sebastian Caban, Christian Mehlhoefer, Georg Maier, Markus Rupp	DESIGN OF A FLEXIBLE AND SCALABLE 4X4 MIMO TESTBED
7	Ameet Chavan, Patricia A. Nava, John A. Moya	RECONFIGURABLE DATA PATH PROCESSOR: IMPLEMENTATION AND APPLICATION FOR SIGNAL PROCESSING ALGORITHMS
8	Limei Zhao, Chan H. Ham, Thomas X. Wu, Liping Zheng, Kalpathy B. Sundaram, Jay Kapat, Louis Chow	A DSP-BASED SUPER HIGH-SPEED PMSM CONTROLLER DEVELOPMENT AND OPTIMIZATION

Poster Session 4B: Communications
(Coffee Available: 10:45 - 11:15 am)
Session Chair:

Tuesday, 10 am - noon
Doug Williams

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Douglas A. Cairns, Gregory E. Bottomley, Y.-P. Eric Wang	LOW COMPLEXITY PARAMETER ESTIMATION FOR THE GENERALIZED RAKE RECEIVER
2	Tanja Karp, Carsten Bauer, Norbert J. Fliege	INITIALIZATION AND BITLOADING OF DISCRETE MULTI-TONE TRANCEIVERS FOR CHANNELS WITH UNKNOWN IMPULSE RESPONSE LENGTH
3	Malay Gupta and Balu Santhanam	ICA BASED BLIND ADAPTIVE MAI SUPPRESSION IN DS-CDMA SYSTEMS
4	Jacob Gunther, Madan Ankapura, Todd Moon	BLIND TURBO EQUALIZATION USING A GENERALIZED LDPC DECODER
5	Soner Oezguer, Douglas B. Williams	AN ITERATIVE MULTI-USER DETECTOR FOR CODED MUTUALLY ORTHOGONAL COMPLEMENTARY SETS WITH SPACE-TIME CODING

Lunch

Tuesday, noon - 1pm

Plenary Talk III	Tuesday, 1 pm - 2 pm
Speaker: Gene Frantz, Texas Instruments	
Title: <i>Personal and Portable</i>	

Poster Session 5A: Classification and Detection
Session Chair:

Tuesday, 2:00 pm - 3:40 pm
Petar Djuric

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Mubashir Alam ,James H. McClellan	NEAR FIELD IMAGING OF SUBSURFACE TARGETS USING ACTIVE ARRAYS AND ELASTICWAVES
2	Václav Smidl, Anthony Quinn	BAYESIAN ESTIMATION OF NON-STATIONARY AR MODEL PARAMETERS VIA AN UNKNOWN FORGETTING FACTOR
3	S. Kadambe , Q. Jiang	CLASSIFICATION OF MODULATION OF SIGNALS OF INTEREST
4	Sergio D. Cabrera, Suresh Malladi, Rama Mulpuri, Alejandro E. Brito	ADAPTIVE REFINEMENT IN MAXIMALLY SPARSE HARMONIC SIGNAL RETRIEVAL
5	Manish Marwah , Sharmistha Das	UNICA —A UNIFIED CLASSIFICATION ALGORITHM FOR CALL PROGRESS TONES
6	S. A. Starks, V. Kreinovich, R. Araiza, S. Nazarian, J. Adidhela	USING FFT-BASED DATA PROCESSING TECHNIQUES TO CHARACTERIZE ASPHALTIC CONCRETE MIXTURES

Poster Session 5B: Networks
Session Chair:

Tuesday, 2:00 pm - 3:40 pm
Joel Trussell

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	H. J. Trussell, A. A. Nilsson, P. M. Patel, Y. Wang	ESTIMATION AND DETECTION OF NETWORK TRAFFIC
2	Yingbo Hua, Yu Chang, Yan Mei	A NETWORKING PERSPECTIVE OF MOBILE PARALLEL RELAYS
3	Amitabh Dixit, Geoffrey Orsak	A NETWORK BASED BLIND APPROACH TO OPTIMIZING MULTI-RECEIVER SYSTEM PERFORMANCE
4	John R. Treichler, Michael G. Larimore, Sally L. Wood, Michael Rabbat	DETERMINING THE TOPOLOGY OF A TELEPHONE SYSTEM USING INTERNALLY SENSED NETWORK TOMOGRAPHY

Coffee Break

Tuesday, 3:40 pm - 4:20 pm

Poster Session 6A: Distributed Signal Processing
Session Chair:

Tuesday, 4:20 pm - 6:00 pm
Alan Oppenheim

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Petar M. Djuric, Mahesh Vemula, Monica F. Bugallo	SIGNAL PROCESSING BY PARTICLE FILTERING FOR BINARY SENSOR NETWORKS
2	Ernesto Santos, Michael Zoltowski	ADAPTIVE BEAMFORMING WITH PARAMETRIC ESTIMATION OF THE CORRELATION MATRIX
3	P. Debroux, J. Boehm F. Modave, V. Kreinovich, G. Xiang, J. Beck, K. Tupelly, R. Kandathi, L. Longpre, K. Villaverde	USING 1-D RADAR OBSERVATIONS TO DETECT A SPACE EXPLOSION CORE AMONG THE EXPLOSION FRAGMENTS: SEQUENTIAL AND DISTRIBUTED ALGORITHMS
4	Fabrizio Leonardi, Marco A. A. de Melo, Alessandro La Neve	DISTRIBUTED DSP PROCESSING FOR MULTIVARIABLE STATE EQUATIONS

Poster Session 6B: Security
Session Chair:

Tuesday, 4:20 pm - 6:00 pm
John Treichler

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Vishal Monga, Arindam Banerjee, Brian L. Evans	CLUSTERING ALGORITHMS FOR PERCEPTUAL IMAGE HASHING
2	Nedeljko Cvejic, Tapio Seppänen	A NOVEL SELF-SYNCHRONIZING PPM ROBUST AUDIO WATERMARKING ALGORITHM
3	Annajirao Garimella, M.V.V. Satyanarayana, P.S. Muruges, U.C. Niranjan	ASIC FOR DIGITAL COLOR IMAGE WATERMARKING

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
4	Mahmood Al-khassawneh , Selin Aviyente	ROBUSTWATERMARKING ON THE JOINT SPATIAL-SPECTRAL DOMAIN
5	Deva K. Borah, Phillip DeLeon	SPEAKER IDENTIFICATION IN THE PRESENCE OF PACKET LOSSES
6	Joseph San Filippo, Phillip DeLeon	EVALUATION OF SPHERICALLY INVARIANT RANDOM PROCESS PARAMETERS AS DISCRIMINATORS FOR SPEAKER VERIFICATION

Dinner Texas Instruments Banquet
(Location: The Bavarian)

Tuesday, 6:30 pm - 8:30 pm

Wednesday, August 4, 2004

Continental Breakfast

Wednesday, 8 am - 9 am

Plenary Talk IV	Wednesday, 9 am - 10 am
Speaker: Carey Schwartz, DARPA	
Title: <i>A DARPA Perspective on Signal Processing: Past, Present, and Future</i>	

Poster Session 7A: Bio-Medical Signal Processing
(Coffee Available: 10:45 - 11:15am)
Session Chair:

Wednesday, 10 am - noon
Cameron Wright

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Don H. Johnson, Jyotirmai Uppuluri	FINDING AND ANALYZING LIKELY MODELS THAT DESCRIBE NEURAL POPULATION RESPONSES
2	Byung-Jun Yoon, P. P. Vaidyanathan	IDENTIFICATION OF CPG ISLANDS USING A BANK OF IIR LOWPASS FILTERS
3	D. H. Justice, H. J. Trussell, M. S. Olufsen	MODELING OF BLOOD FLOW VELOCITY AND PRESSURE SIGNALS USING THE MULTIPULSE METHOD IX
4	Zhu Hongqing, Shu Huazhong, Luo Limin, Zhou Jian	A ROW-ACTION ALTERNATIVE TO THE SPACE-ALTERNATING GENERALIZED EXPECTATION-MAXIMIZATION ALGORITHM FOR IMAGE RECONSTRUCTION IN POSITRON EMISSION TOMOGRAPHY
5	Brynmor J. Davis, W. Clem Karl, Bennett B. Goldberg, Anna K. Swan, M. Selim Unlu	SAMPLING BELOW THE NYQUIST RATE IN INTERFEROMETRIC FLUORESCENCE MICROSCOPY WITH MULTI-WAVELENGTH MEASUREMENTS TO REMOVE ALIASING
6	Paul Hasler, Paul D. Smith, Ethan Farquhar, David V. Anderson	A NEUROMORPHIC IC CONNECTION BETWEEN CORTICAL DENDRITIC PROCESSING AND HMM CLASSIFICATION
7	Shuren Qin, Zhong Ji	MULTI-RESOLUTION TIME-FREQUENCY ANALYSIS FOR DETECTION OF RHYTHMS OF EEG SIGNALS
8	Ali Nasiri Amini, Emad S. Ebbini, Tryphon T. Georgiou	NONINVASIVE TISSUE TEMPERATURE ESTIMATION VIA STATE-COVARIANCE SPECTRAL ESTIMATION

Poster Session 7B: Acoustics, Speech, and Audio
(Coffee Available: 10:45 - 11:15am)
Session Chair:

Wednesday, 10 am - noon

Phillip De Leon

<i>Poster Number</i>	<i>Authors</i>	<i>Paper Title</i>
1	Volkan Cevher, James H. McClellan	ACOUSTIC NODE CALIBRATION USING HELICOPTER SOUNDS CARLO MARKOV CHAIN METHODS
2	Sunil Kamath, Sourabh Ravindran, David V. Anderson	INDEPENDENT COMPONENT ANALYSIS FOR AUDIO CLASSIFICATION
3	Yoshikazu Yokotani, Ralf Geiger, Gerald Schuller, Soontorn Oraintara, K. R. Rao	IMPROVED LOSSLESS AUDIO CODING USING THE NOISE-SHAPED INTMDCT
4	Rongqiang Hu, David V. Anderson	AUDIO NOISE SUPPRESSION BASED ON NEUROMORPHIC SALIENCY AND PHONEME ADAPTIVE FILTERING
5	Sourabh Ravindran, David V. Anderson	CASCADE CLASSIFIERS FOR AUDIO CLASSIFICATION
6	Michiru Yamaguchi, Yoshiaki Tadokoro	PITCH ESTIMATION OF POLYPHONY BASED ON CONTROLLING DELAYS OF COMB FILTERS FOR TRANSCRIPTION

Workshop ends

Wednesday, noon: