

Sunday		8-Aug-99
8:15am	9:15am	Sunday AM Registration
8:30am	12:30pm	Short Course 1: Digital Signal Processing and Applications Short Course 2: Feedback in Linear Analog Circuits – Systematic Approach Short Course 3: High Speed/High Resolution Data Converters
1:15pm	7:15pm	Sunday PM Registration
1:45pm	5:45pm	Short Course 4: Analog and Mixed-signal Design for Test techniques Short Course 5: Advanced CMOS Digital Integrated Circuit Design Short Course 6: Design of Microelectromechanical (MEM) Structures
6:30pm	8:30pm	Sunday Reception

Monday		9-Aug-99
8:00am	11:00am	Monday Registration
8:30am	9:00am	Welcome
9:00am	10:00am	Keynote Address - Gabor Temes – Switchcraft: Accurate Linear Analog Signal Processing and Data Conversion Using Inaccurate Nonlinear Components
10:15am	12:15pm	MSP Student Paper Contest
12:15pm	1:30pm	Monday Lunch
1:45pm	3:15pm	MP1.1 Sigma-Delta Converters MP1.2 Analog CAD MP1.3 Low Power Digital Systems MP1.4 Digital Signal Processing MP1.5 Invited: Space Electronics MP1.6 Control Systems and Robotics MP1.7 Invited: Neuromorphic and Floating-Gate Circuits MP1.8 Poster Session: Analog Circuits I
3:30pm	5:00pm	MP2.1 Analog-to-Digital Converters MP2.2 VLSI CAD MP2.3 Digital Communications Systems MP2.4 Speech and Coding MP2.5 Invited: Space Systems MP2.6 Nonlinear Circuits MP2.7 Invited: Analog Programmable Arrays MP2.8 Poster Session: VLSI

Tuesday		10-Aug-99
8:00am	10:00am	Tuesday Registration
8:30am	9:30am	Keynote Address - Mo Jamshidi
9:45am	10:45am	TA1.1 Sigma-Delta Techniques TA1.2 Microwave Devices and Modeling TA1.3 Arithmetic Circuits TA1.4 DSP Filtering I TA1.5 Image Processing and Coding I TA1.6 TA1.7 Invited: Methods of Soft Computing in Systems Analysis and Design I TA1.8 Poster: Analog Circuits II
11:00am	12noon	TA2.1 Digital-to-Analog Conversion TA2.2 Analog ICs TA2.3 FFT Processors

The 42nd Midwest Symposium on Circuits and Systems

Preliminary Technical Program

		TA2.4	DSP Filtering II
		TA2.5	Image Processing and Coding II
		TA2.6	
		TA2.7	Invited: Methods of Soft Computing in Systems Analysis and Design II
		TA2.8	Poster: Neural/Control Systems and Applications
12noon	1:15pm		Tuesday Awards Luncheon
1:30pm	2:30pm	TP1.1	Nonlinear Circuit Analysis
		TP1.2	Power Systems I
		TP1.3	Digital Circuits
		TP1.4	Adaptive Signal Processing I
		TP1.5	Invited: Image Compression 1
		TP1.6	Invited: Bioinspired Neural Related Systems I
		TP1.7	Invited: Methods of Soft Computing in Systems Analysis and Design III
		TP1.8	Poster: Signal Processing I
2:45pm	3:45pm	TP2.1	CMOS Circuits
		TP2.2	Power Systems II
		TP2.3	Digital Filters
		TP2.4	Adaptive Signal Processing II
		TP2.5	Invited: Image Compression II
		TP2.6	Invited: Bioinspired Neural Related Systems II
		TP2.7	
		TP2.8	Poster: Digital Circuits and Communications
5:15pm	8:15pm	TB	Banquet and Museum

Wednesday 11-Aug-99

8:00am	9:00am		Wednesday Registration
8:30am	10:00am	WA1.1	High-Speed Analog Circuits
		WA1.2	VLSI Simulation and Modeling
		WA1.3	Digital Architectures and Systems
		WA1.4	Communications Processing
		WA1.5	Fuzzy Systems and Applications
		WA1.6	Linear Circuit Analysis
		WA1.7	Invited: Companding Techniques in Analog Circuits
		WA1.8	Poster: Signal Processing II
10:15am	11:45am	WA2.1	Analog Filters
		WA2.2	Microwave Circuits
		WA2.3	Wavelets and Filterbanks
		WA2.4	Wireless and DSP Applications
		WA2.5	Neural Networks and Applications
		WA2.6	Device and Circuit Modeling
		WA2.7	Invited: Image Compression III
		WA2.8	
12noon	2:00pm		Wednesday Steering Committee Meeting

Sunday, August 8, 1999

8:15AM – 9:15AM Registration

8:30AM – 12:30PM Short Course 1

Digital Signal Processing and Applications

8:30AM – 12:30PM Short Course 2

Feedback in Linear Analog Circuits – Systematic Approach

8:30AM – 12:30PM Short Course 3

High Speed/High Resolution Data Converters

10:30AM – 11:00AM Break

1:15PM – 7:15PM Registration

1:45PM – 5:45PM Short Course 4

Analog and Mixed-Signal Design for Test Techniques

1:45PM – 5:45PM Short Course 5

Advanced CMOS Digital Integrated Circuit Design

1:45PM – 5:45PM Short Course 6

Design of Microelectromechanical (MEM) Structures

3:30PM – 4:00PM Break

6:30PM – 8:30PM Reception

Sunday, August 8, 1999

Monday, August 9, 1999

Monday, August 9, 1999

8:00AM – 11:00AM Registration

8:30AM – 9:00AM

Welcome: Jamie Ramirez

9:00AM – 10:00AM

Keynote Address: Gabor Temes

Switchcraft: Accurate Linear Analog Signal Processing and Data Conversion Using Inaccurate Nonlinear Components

10:00AM – 10:15AM Break

Session MSP

Monday

10:15AM – 12:15PM

Student Paper Contest

Chair: Jorge Zrilic and Mo Jamshidi

he0548 **Performance of Analog Viterbi Decoding**
Kai He, Gert Cauwenberghs - John Hopkins University

sham0370A **Framework for Performance Evaluation of 1-bit CMOS Adder Cells**
Ahmed Shams, Magdy Bayoumi - University of Southwestern Louisiana

mok0279 **Design of Monolithic RF Power Amplifier Using Bulk BiCMOS Process**
W.C. Chan, Philip K.T. Mok, Johnny K.O. Sin - Hong Kong University of Science & Technology, W.T. Ng - University of Toronto

lowe0234 **A Class of Two-Channel Hybrid Analog/Digital Filter Banks**
Per Löwenborg, Håkan Johansson, Lars Wanhammar - Linköping University

john0082 **Quantizing the Effectiveness of MMX in Native Signal Processing**
Deependra Talla, Lizy K John - The University of Texas at Austin

tari2012 **Statistical Design of the Four-MOSFET Structure**
Tuna B. Tarim - Texas Instruments, Inc., Mohammed Ismail - Ohio State University

pant0474 **Dual-Threshold Voltage Assignment with Transistor Sizing for Low Power CMOS Circuits**

Monday, August 9, 1999

Pankaj Pant, Abhijit Chatterjee - Georgia Institute of Technology
Rabindra K. Roy - Intel Corporation

12:15PM – 1:30PM

Lunch

Session MP1.1

Monday

1:45PM – 3:15PM

Sigma-Delta Converters

Chair: K.S. Chao

bota0277 **A 14-Bit MOSFET-Only Second Order Delta-Sigma Modulator for Capacitive Sensor Interfaces**
Jose M. Gsmez Cama, Sebastian A. Bota, Enric Montani, Josep Samitier - Universitat de Barcelona

quer0310 **Stochastic A/D Sigma-Delta Converter on FPGA**
S.L. Toral, J.M. Quero, J.G. Ortega, L.G. Franquelo - Universidad de Sevilla

chao2036 **Pipelined Sigma-Delta Modulators With Interstage Scaling**
M.C. Ramesh - Texas Instruments, K.S. Chao - Texas Tech University

luh0304 **Circuit Design Challenges for High-Speed CMOS Continuous-Time Switched-Current Sigma-Delta Modulators**
Louis Luh, John Choma, Jr., Jeffrey Draper - University of Southern California

reza2008 **CMOS Implementation of a Sixth-Order 2-1-1-2 Cascaded Sigma-Delta Modulator Architecture**
Ho Yoon San - Intel, S. M. Rezaul Hasan - Universiti Sains Malaysia

baez0119 **Low-Pass Double-Sampling SI Sigma-Delta Modulator**
Miguel A. Garcia-Andrade, Guillermo Espinosa - Instituto Nacional de Astrofísica Óptica y Electrónica, Miguel A. GarcíaDavid Báez-López - Universidad de las Américas Puebla

Session MP1.2

Monday

1:45PM – 3:15PM

Analog CAD

Chair: R.J. Binns

Monday, August 9, 1999

- binn0203 **Analogue Circuit Design using the Analogue Design Synthesis Assistant (ADSA)**
P. Hallam - University of Central England,
R.J. Binns - University of Northumbria at
Newcastle, R.J. Mack, R.E. Massara, R.E.
Massara - University of Essex
- ewin0262 **Dimensional Analysis Methodology for VHDL-AMS**
Dr. Robert L. Ewing - Air Force Institute of
Technology
- mack0280 **The Role of Designer Knowledge for Circuit-Level Optimization within an Analogue Synthesis System**
D.Enright, R.J.Mack, R.E.Massara -
University of Essex, R.J.Binns - University of
Northumbria at Newcastle, P.Hallam -
University of Central England
- rodr0512 **A Technique for Fast Transient Statistical Simulation of Analog Circuits**
R. López - Ahumada, R. Rodriguez-Macias -
Universidade de Huelva
- swid0058 **CAD Techniques for Robust RF and Wireless IC Design**
Jan Swidzinski, Kai Chang, M. Keramat -
Texas A&M University
- chen0495 **An Improved Design Formulation Suitable for Optimization of Operational Amplifiers**
Yiqin Chen - RocketChips, Inc., Mark
Schlarmann, Randall Geiger - Iowa State
University

Session MP1.3

Monday

1:45PM – 3:15PM

Low Power Digital Systems

Chair: W. Timothy Holman

- bada0323 **A Low Power Prototype for a Motion Estimation Processor**
Wael M. Badawy, Zhang Guoqing, Magdy
Bayoumi - University of Southwestern
Louisiana
- juan0330 **Low Power and Fast CORDIC Processor for Vector Rotation**
Tso Bing Juang - Ta Jen Junior College of
Pharmacy, Shen Fu Hsiao - National Sun Yat
Hsien University
- olss0448 **A Digitally Controlled On-Chip Clock Multiplier for Globally Asynchronous Locally Synchronous Systems**

Monday, August 9, 1999

- Thomas Olsson, Peter Nilsson - Lund
University Ahmed Hemani, Thomas Meincke
- KTH-Electrum
- wang0508 **Analysis of The Logic Model Used in Selective Precharge**
Shao-Yi Wang, Charles A. Zukowski -
Columbia University
- wen0236 **Low Power Pseudo Noise Codec Design for Spread Spectrum Wireless Communication**
Mau-Lin Wu, Kuei-Ann Wen, Chao-Wang
Huang - National Chiao Tung University

Session MP1.4

Monday

1:45PM – 3:15PM

Digital Signal Processing

Chair: Mario Sarcinelli-Filho

- berk0479 **Implementation Issues for Acoustic Echo Cancellers**
Anders Berkeman, Viktor Owall, Mats
Torkelson - Lund University
- romo0369 **A Low-Cost System for Handwritten Signature Recognition**
Julio César Martínez Romo, José de Jesús
López Villalobos, Francisco Javier Luna
Rosas - Instituto Tecnológico de
Aguascalientes

- miwa0372 **Musical Pitch Estimation and Discrimination of Musical Instruments Using Comb Filters for Transcription**
Taeko Miwa, Yoshiaki Tadokoro - Toyohashi
University of Technology, Tsutomu Saito -
Toyota National College of Technology

- rama2035 **Properties of a Class of Third-Order Two-Parameter Variable Magnitude 2-D Digital Transfer Function**
C. S. Gargour - University of Quebec, V.
Ramachandran - Concordia University

- quer0309 **Continuous Time Filter Design Using Stochastic Logic**
J.M. Quero, S.L. Toral, J.G. Ortega, L.G.
Franquelo - Universidad de Sevilla

Session MP1.5

Monday

1:45PM – 3:15PM

Invited Session: Space Electronics

Chair: David F. Cox

Monday, August 9, 1999

cox0098 **Asynchronous Synthesis with Flip-Flops**
David F. Cox - University of New Mexico

hass6000 **Single Event Transients in Deep Submicron CMOS**
K. Joseph Hass, Jody W. Gambles –
Microelectronics Research Center

broc6001 **A Microprocessor Optimized for High Consequence Systems**
Robert W. Brocato, Ivan M. Lowe, Guy D. Chun, Kwok K. Ma – Sandia National Laboratories

dono6002 **Adaptive Computing for Space**
Gregory W. Donohoe, James C. Lyke – Air Force Research Laboratory

Session MP1.6

Monday

1:45PM – 3:15PM

Control Systems and Robotics

Chair: Stephen B. H. Bruder

lim0079 **Gain Scheduling Technique on Tracking of Perturbed Equilibrium Points in Uncertain Nonlinear Systems**
Jong-Tae Lim, Seon-Ho Lee - Korea Advanced Institute of Science and Technology

mahi0460 **Singular Value Decomposition in the Design of Robust Controllers: Some Preliminary Studies**
Surjit S. Mahil - Purdue University Calumet

wede0125 **Development of a Low-Cost Outdoor Mobile Robot: A Platform for Landmine Detection**
Kevin Wedeward, Stephen Bruder, Victor Yodaiken, Jose Guilberto - New Mexico Institute of Mining and Technology

faro5043 **Robotic Application of the Vision Systems for Object Distancing and Ranging**
J. Major, D. Still, M. Farooq - roayl Military College of Canada

baez0049 **A Simple Microprocessor Interface for Biphasic Incremental Encoders**
Jorge Pedraza-Chávez, David Báez-López - Universidad de las Américas-Puebla

brud0139 **Terrain Aided INS Robot Navigation: A Deferred Decision Making Approach**
Stephen B. H. Bruder, Kevin Wedeward - New Mexico Institute of Mining and Technology

Session MP1.7

Monday, August 9, 1999

Monday

1:45PM – 3:15PM

Invited Session: Neuromorphic and Floating-Gate Circuits

Chair: Paul Hasler

hasi5030 **Floating-Gate Simulation in Cadence Using a Modified EKV Model**
AiChen Low, Matt Kucic, Paul Hasler

huds0294 **Implementation of Motoneuronal Behavior Using Analog VLSI Circuits**
Tina A. Hudson, Stephen P. DeWeerth - Georgia Institute of Technology

lope0298 **D/A Conversion Based On Multiple-Input Floating Gate MOST**
Antonio J. Lopez-Martin, Alfonso Carlosena - Universidad Publica de Navarra, Jaime Ramirez-Angulo - New Mexico State University

nace0043 **Analog EEPROM In Standard Process AMS 0.8 mm CMOS**
N.Abouchi, C.Vinard, R. Gallorini - ESCPE Lyon, R.Grisel - Universite Picardie Jules Verne

hasl3008 **A Transistor-only Circuit Model of the Autozeroing Floating-Gate Amplifier**
Paul Hasler, Matt Kucic, Bradley A. Minch - Georgia Institute of Technology

Session MP1.8

Monday

1:45PM – 3:15PM

Poster Session: Analog Circuits I

Chair: Stephen B. H. Bruder

alar0452 **Current-Mode BICMOS Sliding-Mode Controller Circuit for AC Signal Generation in Switching Power DC-DC Converters**
Eduard Alarcon, Domingo Biel, Francesc Guinjoan, Enric Fossas, Eva Vidal, Albert Poveda - University Politecnica de Catalunya

chan0511 **A CMOS Active Notch Filter for RF Image Filtering**
Yuyu Chang, John Choma, Jr., Jack Wills - University of Southern CA

jun0546 **Wide Input Common-Mode Range Comparator**
Si-Bum Jun, Woong-Lim Choi - Flash PJT Team, LG Semicon

lee0293 **A 1V Instrumentation Amplifier**

Monday, August 9, 1999

S.Karthikeyan, Huanzhang Huang, Edward Lee - Iowa State University

simp0256 **A Wireless Microluminometer for a Bioluminescent Bioreporter Integrated Circuit**
G.W. Patterson, J. C. Arnott, J. M. Rochelle - University of Tennessee, M. L. Simpson - Oak Ridge National Laboratory & University of Tennessee

yu2020 **A Current-Mode CMOS Voltage Reference Circuit**
Chong-Gun Yu, Duck-Ki Kwon, Jong-Tae Park - University of Incheon

corr2022 **On the Band-Edge Selectivity of Elliptic Filters**
Celestino A. Corral - Motorola, Claude S. Lindquist - University of Miami

al-j0250 **Application of Fractional Delay Filters to Tune the Centre Frequency Location of Single-Band Sigma-Delta Modulators**
Mohammed Al-Janabi, Izzet Kale, Richard C. S. Morling - University of Westminster

3:15PM – 3:30PM

Break

Session MP2.1

Monday

3:30PM – 5:00PM

Analog-to-Digital Converters

Chair: Mohammed Ismael

bilh0050 **A Current Mode 13 bit 20 Ms/s Pipelined Analog to Digital Converter**
Haydar Bilhan - Texas Instrument, W. Milton Gosney - Southern Methodist University

hamd3002 **Video-Speed Two-Step A/D Converter Architectures**
Hassan Soliman - Mansoura University, Nadder Hamdy - College of Engineering & Technology AAST

holm0523 **A 1.2V Low Power Analog-to-Digital Converter for Use with Sensing Applications**
William McKillop, W. Timothy Holman - University of Arizona

lee0483 **Gain Error Correction Scheme for Multiply-By-Two Gain Amplifier in Pipelined ADC**
Yvette P. Lee, Randall L. Geiger - Iowa State University

Monday, August 9, 1999

park0090 **Low-Power Transistor-String and New Rail-to-Rail Comparator in A/D Converter**
Sangbeom Park - Texas Instruments, E. W. Greeneich, T. A. DeMassa - Arizona State University

anti0374 **Bitwise Random Number Generator Improvement of Stochastic A/D Conversion**
Boris M. Antic - University of Novi Sad

Session MP2.2

Monday

3:30PM – 5:00PM

VLSI CAD

Chair: Magdy Bayoumi

nunn0248 **Modeling and Formal Verification of Globally Iterated Locally Non-Iterated Finite State Machines**
Lubomir Ivanov - Stevens Institute of Technology, Ramakrishna Nunna - California State University of Fresno

rim0318 **A Gridless Area Router for MultiChip Module Design**
Tae Sun Lee, Chong Suck Rim - Songang University

kora0192 **Static Methods for Switching Activity Estimation in Digital CMOS Circuits**
Sandeep Koranne - Indian Institute of Technology

saab2004 **A Ratio-Cut Partitioning Algorithm Using Node Contraction**
Youssef Saab` - University of Missouri-Columbia

kuma0536 **Low-Power Binding of Function Units in High-Level Synthesis**
Ashok Kumar, Magdy Bayoumi - University of Southwestern Louisiana

Session MP2.3

Monday

3:30PM – 5:00PM

Digital Communications Systems

Chair: Emmanuel Boutillon

bada0322 **A High Performance Pipelined Architecture for Mobile GIS Applications**
Wael M. Badawy, Magdy Bayoumi - University of Southwestern Louisiana

Monday, August 9, 1999

foto0076 **A 1V CMOS 2-level FSK Demodulator for Pager Applications**
Kaveh Shakeri, Hossein Hashemi, Ali Parsa,
Ali Fotowat - Sharif University of Technology
Reza Rofougaran - UCLA

gonz0244 **A VLSI Architecture for Joint Source and Channel Trellis Coding**
Luis Gonzalez Perez, Emmanuel Boutillon -
Ecole Nationale Supérieure des
Telecommunications

joha0440 **Implementation of an OFDM Synchronization Algorithm**
Stefan Johansson, Peter Nilsson, Mats
Torkelson - Lund University

agui0401 **A 0.8µm CMOS, 622Mb/s SDH/SONET Communication System**
Eduardo de Vasconcelos, Rui L. Aguiar, Dinis
M. Santos - Instituto de Telecomunicacoes

bout0437 **Architecture for a Smart Reed-Solomon Decoder**
Emmanuel Boutillon, Arnaud Dehameil -
Ecole Nationale Supérieure des
Telecommunications

Session MP2.4

Monday

3:30PM – 5:00PM

Speech and Coding

Chair: Phillip DeLeon

mart0458 **New Adaptive Structures for Speech Enhancement in Noisy Environments**
Carlos R. Martins, Moisés S. Piedade -
ENIDH, INESC

chun0088 **Low Bit Rate Audio Coding Using Wavelets Approximated to Critical Band**
Kwanwoo Park, Jae H. Chung - Inha
University

dele3012 **Parameter Distributions for Speech Signals Modeled with Spherically Invariant Random Processes**
Phillip DeLeon, Hui Jiang - New Mexico State
University

godd0436 **Messy Coding Schemes for Prototype Selection**
John Goddard, Alma Martínez, Fabiola
Martínez, Tomás Aljama - Universidad
Autónoma Metropolitana, Iztapalapa

gopa0157 **Speech Coding using Fourier-Bessel Expansion of Speech Signals**
Kaliappan Gopalan - Purdue University
Calumet

Monday, August 9, 1999

teag0229 **Harmonic Pre-Emphasis for Improving the Performance of FS-1016 CELP**
Keith A. Teague - Oklahoma State University

Session MP2.5

Monday

3:30PM – 5:00PM

Invited: Space Systems

Chair: Natalie Clark

TBA

Session MP2.6

Monday

3:30PM – 5:00PM

Nonlinear Circuits

Chair: Khaled N.Salama

abue2006 **A Translinear Programmable Analog Nonlinear Function Synthesizer**
M. T. Abuelma'atti - King Fahd University of
Petroleum and Minerals

scha0466 **Low-Voltage CMOS Analog Computational Circuits**
Viola Schaffer, W. Timothy Holman -
University of Arizona

seon0284 **Design and Applications of Precise Analog Computational Circuits**
Jong-Kug Seon, Jean-Jacques Charlot -
Ecole Nationale Supérieure des
Telecommunications

sala2037 **Novel MOS-C Quadrature Oscillator Using the Differential Current Voltage Conveyor**
Khaled N.Salama - Stanford University,
Ahmed M. Soliman - Cairo University

chan0152 **Monolithic Phase-Locked Loop Circuits with Coarse-Steering Acquisition-Aid**
Yi-Cheng Chang, Edwin W. Greeneich -
Arizona State University

lope0299 **Synthesis of Sinh Systems From Gm-C Systems By Component-To-Component Substitution**
Antonio J. Lopez-Martin, Alfonso Carlosena -
Universidad Pública de Navarra

Session MP2.7

Monday

3:30PM – 5:00PM

Monday, August 9, 1999

Invited Session: Analog Programmable Arrays

Chair: Edmund Pierzchala

buxt5040

Alan Buxton -

lee5041 **A Flexible 2-D Switched-Capacitor FPA Architecture and its Mapping Algorithm**
Edward Lee -

wefe0046 **Simulating Field Programmable Analog Devices**

Sandro Wefel, Paul Molitor, Manfred Rost -
Martin-Luther-University Halle

carn0465 **An Adaptive Cell for Resistive Grid Applications**

Noel Carlos F. Carneiro, Jaime Ramirez-Angulo - New Mexico State University

Session MP2.8

Monday

3:30PM – 5:00PM

Poster Session: VLSI

Chair: Arturo Sarmiento-Reyes

bagh0285 **VLSI Implementation of Conjugate Gradient Based Mobile User Tracking System**

Ramin Baghaie, Petri Karttunen - Helsinki University of Technology

hong0222 **Comprehensive Energy vs. Complexity Analysis of VLSI FFT Architecture for Low Energy Wireless Communication Applications**

Sangjin Hong, Suhwan Kim, Marios C. Papaefthymiou, Wayne E. Stark - University of Michigan

chen0355 **Analytical Transient Solution for Short-Channel CMOS Devices Using Pseudo Piecewise Constant Approach**

Hung-Jung Chen, Bradley S. Carlson - State University of New York at Stony Brook

garc2023 **CAD Tools for Developing Modularly Configured Attached Processors**

Hugo Garcia, Teresa Guerna, Glenn A. Gibson, Sergio Cabrera - University of Texas at El Paso, Oscar Mondragon - Instituto Tecnológico y de Estudios Superiores de Monterrey

gian0149 **The Implications of Adaptive Finite Element Analysis on Electromagnetic Simulation for Microelectronic System Interconnections**

Monday, August 9, 1999

Steve McFee, Dennis Giannacopoulos -
McGill University

ker2025 **Optimal Inflation Technique in Gradient Estimation of Parametric Yield of Electronic Circuits**

Mansour Keramat - Texas A&M University

sarm2026 **A Symbolic Circuit Analysis-Oriented Algorithm for Finding a Common Tree of the Current and Voltage Graphs**

L. A. Sarmiento-Reyes, L. O. Gonzalez-Castolo, Victor H. Champac - National Institute for Astrophysics

cruz3005 **PLAGA: A Highly Parallelizable Genetic Algorithm for Programmable Logic Arrays Test Pattern Generation**

Alfredo Cruz - EDP College of Puerto Rico, Sumitra Mukherjee - Nova Southeastern University

pour0258 **Fixed and Variable Input Biasing as Applied to Pulse Response Testing of Digital Integrated Circuits**

Saadat Pour-Mozafari, Jeffrey Beasley, Robert Steiner - New Mexico State University

anid0471 **A Tool for Test Automation with Support for Remote Tests**

G.R. Magalhaes, C.E.T. Oliveira, M.L. Anido - Universidade Federal do Rio de Janeiro

Tuesday, August 10, 1999

Tuesday, August 10, 1999

8:00AM - 10:00AM Registration

8:30AM - 9:30AM

Keynote Address: Mo Jamshidi

Session TA1.1

Tuesday

9:45AM - 10:45AM

Sigma-Delta Techniques

Chair: Mansour Keramat

goth0399 **A Method for Stability and Performance Analysis of Low Oversampling Ratio Higher Order Sigma Delta Noise Shaper Architectures**

Andreas Gothenberg, Bingxin Li, Hannu Tenhunen - Royal Institute of Technology

hong0463 **A Fast Mixed-Signal Simulation Approach and an Efficient Signal Analysis Technique with Application to Continuous-Time Sigma-Delta Modulator Design**

Merit Y. Hong - Motorola

luh0118 **A High-Speed Digital Comb Filter for Sigma-Delta Analog-to-Digital Conversion**

Louis Luh, John Choma, Jr., Jeffrey Draper, Harming Chiueh - University of Southern California

alar0217 **A One Bit Neural A/D Converter**

Jason Alarid, Predrag Djurdjevic - New Mexico Highlands University

Session TA1.2

Tuesday

9:45AM - 10:45AM

Microwave Devices and Modeling

Chair: G.R. Banner

bran2010 **Development of a Microwave PHEMT Device Model**

B. Huang, G. R. Branner, D. G. Thomas - University of California

swid0108 **A Novel Approach To Efficient Yield Estimation for Microwave Integrated Circuits**

Jan Swidzinski, Kai Chang, M. Keramat - Texas A&M University

Tuesday, August 10, 1999

boyo0513 **Sensitivity Improvement Technique for High-Speed Burst-Mode Photoreceiver**
Andre Boyogueno Bende - Ecole Polytechnique de Montreal

bran2052 **Nonlinearities in FET/HEMT Microwave Devices for Circuit Synthesis Applications**

D. G. Thomas, B. Huang, G. R. Branner - University of California

Session TA1.3

Tuesday

9:45AM - 10:45AM

Arithmetic Circuits

Chair: Antonio Torralba

radh0408 **A 36-bit Balanced Moduli MAC Architecture**

A.P. Preethy, D. Radhakrishnan - Nanyang Technological University

choe2014 **Complexity of Merged Two's Complement Multiplier-Adders**

Gwangwoo Choe, Earl E. Swartzlander, Jr. - University of Texas at Austin

sang0117 **A Fast, Low-Power Logarithm Approximation Technique and Circuit**

Samuel L. SanGregory, Charles Brothers - Air Force Institute of Technology, Ray E. Siferd - Wright State University

abde3011 **Analog Signal Selector for Competitive Learning ANN**

Hoda S. Abdel-Aty-Zohdy, Fatma El-Licy - Oakland University

Session TA1.4

Tuesday

9:45AM - 10:45AM

DSP Filtering I

Chair: Hakan Johansson

joha0410 **A Class of High-Speed Approximately Linear-Phase Recursive Digital Filters Based on the Frequency-Response Masking Approach**

Hakan Johansson - Linköping University

scho0307 **Computationally Efficient Multirate Passband Equalization for Bandpass Digital/Analog Conversion**

Dan P. Scholnik, Jeffrey O. Coleman - Naval Research Laboratory

Tuesday, August 10, 1999

tans0339 **Coefficient Sensitivity of Polynomial-Predictive FIR Differentiators: Analysis**
Jarno M. A. Tanskanen, Seppo J. Ovaska - Helsinki University of Technology

scho0308 **Design of Nonlinear-Phase FIR Filters with Second-Order Cone Programming**
Jeffrey O. Coleman, Dan P. Scholnik – Naval Research Laboratory

Session TA1.5

Tuesday

9:45AM – 10:45AM

Image Processing and Coding I

Chair: Krit Panusopone

asar0338 **A New Technique for the Segmentation of Lumen from Endoscopic Images by Differential Region Growing**
Sanjiv Kumar - National University of Singapore, Vijayan K. Asari, D. Radhakrishnan - Nanyang Technological University

gand0505 **Robust Differential Coding Over Noisy Channels**
Rajeev Gandhi, Sanjit K. Mitra - University of California

hash0140 **A Low Gate Image Encoder, the Algorithm and the Design**
Reza Hashemian, Felipe Hernandez, James Citta - Northern Illinois University

panu0190 **Shape Coding with a Modified Chroma-Keyed Technique**
Krit Panusopone, Xuemin Chen - General Instrument Corporation

Session TA1.7

Tuesday

9:45AM – 10:45AM

Invited Session: Methods of Soft Computing in Systems Analysis and Design I

Chair: Vladik Kreinovich

krei5014 **Chu Spaces – A New Approach to Describing Uncertainty in Systems**
Vladik Kreinovich, Hung T. Nguyen, Guoging Liu –

kris5015 **Fuzzy Logic in Non-Destructive Testing of Aerospace Structures**
Murali Krishna, Vladik Kreinovich, Roberto Osegueda –

Tuesday, August 10, 1999

mend5016 **Theoretical Explanation for the Empirical Probability of Detection (POD) Curve: A Neural Network-Motivated Approach**
Yohans Mendoza, Roberto Osegueda –

salv5017 **Neural Network Approach to Speech Pathology**
Antonio Salvatore, Nicole Thorne

Session TA1.8

Tuesday

9:45AM – 10:45AM

Poster Session: Analog Circuits II

Chair: John Choma Jr.

alar0453 **Novel Pulse-Width-Modulated Current-Mode Analog Defuzzifier for the Fuzzy Control of Switching DC-DC Converters**
Eduard Alarcon, Alberto Poveda, Jordi Madrenas, Eva Vidal, Spartacus Gomáriz, Francesc Guinjoan - University Politécnica de Catalunya

corr2030 **A Sensitivity Relation for Biquad Filters**
Celestino A. Corral – Motorola

dema0246 **A Low-Voltage 190-MHz 1.2-um CMOS Relaxation Oscillator**
Si-yuen Su, Thomas A. DeMassa - Arizona State University

al-j0251 **A Comparative Study of Complex Multiple-Band Noise-Shaping Sigma-Delta Modulators for Multi-Tone Input Signals**
Mohammed Al-Janabi, Izzet Kale, Richard C. S. Morling - University of Westminster

gao2054 **Design and Implementation of a 71 Msample/sec Fifth Order Sigma-Delta Modulator**
Yonghong Gao, Hannu Tenhunen - Royal Institute of Technology

zour0259 **Variable-Structure Delta-Sigma Modulators with Resolution Enhancement Strategies**
Takis Zourmtos, David A. Johns - University of Toronto

dupp0431 **Realization of Fully Programmable Narrow-Band FIR Filters with SC Technique**
Mattias Duppils, Christer Svensson - Linköping University, Jan-Erik Eklund - Ericksson Components AB

chan0383 **A Novel Phase-Shift DC-DC Converter with Bi-Directional Power Flow**
H. L. Chan, K. W. E. Cheng, D. Sutanto - Hong Kong Polytechnic University

Tuesday, August 10, 1999

10:45AM – 11:00AM

Break

Session TA2.1

Tuesday

11:00AM – NOON

Digital-to-Analog Conversion

Chair: Peter Stubberud

bruc0480 **An Analysis of Harmonic Distortion and Integral Nonlinearity Errors in Digital to Analog Converters**
J.W. Bruce, Peter Stubberud - University of Nevada Las Vegas

wey0243 **A 11-b, 100MS/s, 4.4mW CMOS Switched-Current Digital-to-Analog Converter**
Jin-Sheng Wang - Philips Semiconductors, Chin-Long Wey - Michigan State University

cole0085 **Vector Switching Generalizes D/A Noise Shaping**
Jeffrey O. Coleman, Dan P. Scholnik - Naval Research Laboratory

stub0482 **An Analysis of Stochastic Dynamic Element Matching DACs**
Peter Stubberud, J.W. Bruce - University of Nevada Las Vegas

Session TA2.2

Tuesday

11:00AM – NOON

Analog ICs

Chair: Hoda S. Abdel-Aty-Zohdy

beck0094 **Can Deep Submicron Digital Technology be Applied to High Performance Analog Circuitry?**
Rolf Becker, Thom Wolff - Philips Semiconductors, Switzerland

abde3009 **Ann Digitally Programmable Analog Synapse**
Mahmoud Al-Nsour, Hoda S. Abdel-Aty-Zohdy - Oakland University

saav0541 **A Compact Mixed-Mode VLSI Block Fuzzifier**
Patricia Saavedra, Jaime Ramirez-Angulo - New Mexico State University, Jorge Zrilic - New Mexico Highlands University

vazq0213 **Fault Diagnosis of Analog Integrated Circuits Using Response Surface Methods**
José Luis Vázquez-González - University Ex-Hacienda Sta. Catarina Martier Cholula

Tuesday, August 10, 1999

Puebla, Guillermo Espinosa-Flores-Verdad - National Institute for Astrophysics

Session TA2.3

Tuesday

11:00 – NOON

FFT Processors

Chair: Lirida Naviner

joha0442 **Word Length Optimization of a Pipelined FFT Processor**
Stefan Johansson, Shousheng He, Peter Nilsson - Lund University

ho0239 **Design and PLD Implementation of a Group Demultiplexer**
H. Ho, V. Szwarc, C. Loo - Communications Research Centre, T. Kwasniewski - Carleton University

navi0165 **Efficient Implementation for High Accuracy DCT Processor Based on FPGA**
Lirida Naviner, Jean-Luc Danger, Charles Laurent - Ecole Nationale Supérieure des Telecommunications

ma0055 **A Coefficient Access Control for Low Power FFT Processors**
Yutai Ma, Lars Wanhammar - Linkoping University

Session TA2.4

Tuesday

11:00AM – NOON

DSP Filtering II

Chair: Lizy K. John

sarc0115 **On the Stability of Coupled-Form State-Space Digital Filters with Quantization Before Summation**
Mario Sarcinelli-Filho - Federal University of Espirito Santo, Farancisco C. Mota - Federal University of Rio Grande do Norte

tapi0225 **Phase Compensation by an Enhanced Eigenfilter Algorithm for All-Pass Filter Design**
Javier J. Tapia - Motorola Inc, Guillermo Atkin - Illinois Institute of Technology

tans0340 **Coefficient Sensitivity of Polynomial-Predictive FIR Differentiators: Design for Short Word Length**
Jarno M. A. Tanskanen, Seppo J. Ovaska - Helsinki University of Technology

Tuesday, August 10, 1999

Session TA2.5

Tuesday

11:00AM – NOON

Image Processing and Coding II

Chair: Yoshifumi Shimodaira

shim0411 **Retrieval of Live Images using Real Time Image Directory**

Masato Yamazaki - Yokkaichi University,
Kayo Suzuki, Yoshifumi Shimodaira -
Shizuoka University, Mitsuru Nagao, Hiroaki
Ikeda - Hamamatsu Research Center

velt0254 **Image Processing Algorithms for Video Based Real-Time Railroad Track Inspection**

Joerg Velten, Anton Kummert - University of
Wuppertal, Dirk Maiwald - STN ATLAS
Elektronik GmbH

zeis0109 **A Nonlinear Vectorbased Image Interpolation Method for Increasing the Frame Rate in Visual Interactive Simulation Environments**

Wilfried Zeise, Marco Schnitzler, Anton
Kummert - University of Wuppertal

panu0315 **A Fast Motion Estimation using a Hierarchical Matching Criteria**

Krit Panusopone, Xuemin Chen - General
Instrument Corporation

Session TA2.7

Tuesday

11:00AM – NOON

Invited Session: Methods of Soft Computing in Systems Analysis and Design II

Chair: Hung T. Nguyen

schm5018 **Kolmogorov Complexity-Based Ideas for Locating Text in Web Images**

Martin Schmidt, Luc Longpre –

sidd5019 **A Soft Computing Approach to Classification of Trash in Ginned Cotton**

Murali Siddajah, Michael Lieberman,
Nadipuram Prasad –

stuf5020 **A Modified TSK Approach to Hierarchical Control of Tracking Systems**

Joe Stufflebeam, Nadipuram Prasad –

Session TA2.8

Tuesday

Tuesday, August 10, 1999

11:00AM – NOON

Poster Session: Neural/Control Systems and Applications

Chair: Mohammed Farooq

spen0375 **A CMOS Implementation of the R-Transform for Translation Invariant Feature Extraction**

Ronald G. Spencer, Edgar Sánchez-Sinencio
- Texas A&M University

spen0333 **CMOS Implementation of 2-D Pseudo-Gabor Wavelets for Facial Feature Extraction**

Ronald G. Spencer, Edgar Sánchez-Sinencio
- Texas A&M University

harm0202 **A Neural Network Based Algorithm for the Allocation Problem in High-Level Synthesis Using PVM**

Haidar M. Harmanani, Walid T. Keirouz - The
Lebanese American University

man_0384 **Fuzzy Logic Control of Battery Energy Storage System to Enhance Synchronous Machine Damping**

M. W. Tsang, D. Sutanto - The Hong Kong
Polytechnic University

urbi2055 **Implementation of Intelligent Control Using a Fuzzy Microcontroller**

Romeo Urbieta Parrizales, Armando Morales
S., Adriano de Luca - Digital Systems
Laboratory

rizc2057 **Extending Sawtooth Functions to Hurwitz Polynomials**

Harry C. Gundrum, Maher E. Rizkalla –

el-m2031 **Dynamic Simulation and Performance of Diesel Electric Locomotives**

Ibrahim M. El-Mohr - Arab Academy for
Science and Technology

ruz-0208 **Fuzzy Logic Applied to High Impedance Fault Detection in Compensated M.V. Power Systems**

Francisco Ruz-Vila - Francisco Ruz-Vila

mend0496 **Design and Implementation of VLSI Fuzzy Adaptive Filters**

Guillermo Espinosa - Instituto Nacional de
Astrofísica, Alejandro Diaz-Mendez -
Sección de Estudios de Posgrado e
Investigación, Ruben Alejos - Universidad de
las Américas, Puebla

NOON – 1:15PM Tuesday Awards Luncheon

rosk5042 **A Visual, TeraOPS, Focal Plane Microprocessor in Action**

Tamas Roska – Computer and Automation
Institute Budapest

Tuesday, August 10, 1999

Session TP1.1

Tuesday

1:30PM – 2:30PM

Nonlinear Circuit Analysis

Chair: Jose Manuel Quero

masc0147 **Linear Observer For Synchronizing Hyperchaotic Circuits**

Giuseppe Grassi - Universita de Lecce,
Saverio Mascolo - Politecnico di Bari

pere0100 **Analysis of Bifurcation Parameters by Symbolic Computation**

U. F. Moreno, P. L. D. Peres, I. S. Bonatti -
University of Campinas

quer0470 **Electronic Implementation of a Quasihamiltonian Dynamical System**

F.R.Palomo, J.M.Quero, L.G.Franquelo -
Universidad de Sevilla

midy0501 **Orthogonal Estimation Algorithm**

Pallab Midya - Motorola Corporate Research
Lab.

Session TP1.2

Tuesday

1:30PM – 2:30PM

Power Systems I

Chair: Pallab Midya

bagg0163 **Power Controller for Mobile Applications**

Barbara Baggini, Rolf Becker, Hans-Ulrich
Schroeder - Phillips Semiconductor Zurich,
Ralf Burdenski, Martin Simon - Technology
Centre for Mobile Communication

fila0219 **Periodically Time-Variant Systems and Harmonic Analysis of Quasi-Resonant Converters**

Shui-Sheng Qiu - South China University of
Technology, I.M. Filanovsky, J. Salmon -
University of Alberta

mont0404 **State Equations in the Haar Domain**

Alessandro Gandelli, Antonello Monti,
Ferdinanda Ponci - Politecnico di Milano

Session TP1.3

Tuesday

1:30PM – 2:30PM

Digital Circuits

Tuesday, August 10, 1999

Chair: Randall Geiger

lee0177 **A CMOS Phase Frequency Detector for Charge Pump Phase-Locked Loop**

Guan Boon Lee, Pak Kwong Chan, Liter Siek
- Nanyang Technological University

yeo0226 **A Novel 1-V Full-Swing BiCMOS Circuit Using a Positive Feedback Base-Boost Technique**

Lee Heng Kah, Yeo Kiat Seng, Do Manh Anh
- Nanyang Technological University

gold0124 **A 1.0-nsec 32-bit Prefix Tree Adder in 0.25-um. Static CMOS**

A.Goldovsky, R.K. Kolagotla, M. Besz -
Lucent Technologies, C.J. Nicol - Lucent
Technologies Australia

sife2021 **CMOS Implementation and Performance of β -bit Serial/Parallel Multipliers**

Jian Wei, Xiaoming Qian, Raymond Siferd -
Wright State University

Session TP1.4

Tuesday

1:30PM – 2:30PM

Adaptive Signal Processing I

Chair: Mohammed A. Khasawneh

khas0102 **Stationary and Nonstationary Learning Characteristics of the MMAXNLMS Algorithm**

Monther I. Haddad, Mohammed A.
Khasawneh, Khaled A. Mayyas - Jordan
University of Science & Technology

pere0286 **Imperfect Integration and DC Offset Effects in the Convergence Performance of Gradient Search Based Analog Adaptive Filters**

Hector Perea-Meana, Luis Nino-De-Rivera,
Mariko Nakano-Miyatake - National
Polytechnic Institute

jord0407 **An Adaptive Nonlinear Parameter Estimator with Ability for Sorting Local Minima**

Hector R. Bambill, Mario A. Jordan -
Universidad Nacional del Sur

ho0300 **Convergence Behavior of Two Adaptive Filters in Tandem**

K.C. Ho, Shannon D. Blunt - University of
Missouri-Columbia

Session TP1.5

Tuesday

1:30PM – 2:30PM

Tuesday, August 10, 1999

Invited Session: Image Compression I

Chair: Kameswara Rao Namuduri

delp5032 **New rate Scalable Image and Video Compression Techniques**
Edward J. Delp -

gibs5033 **Compressed Multimedia in Wireless Network**
Jerry D. Gibson -

sun5034 **Encoding DCT Coefficients Based on Rate-Distortion Measurement**
I-Ming Pao, Ming-Ting Sun – University of Washington

Session TP1.6

Tuesday

1:30PM – 2:30PM

Invited Session: Bioinspired Neural Related Systems I

Chair: Robert Newcomb

gome5001 **Robust Speech Processing Based on Binaural Hearing Systems**
Pedro Gomez, V. Rodellar, R. Martinez, A. Alvarez, V. Nieto – Universidad Politecnica de Madrid, R.W. Newcomb – University of Maryland

rode5002 **An Inner Ear Hair Cell Parameterizable Implementation**
V. Rodellar, P. Gomez, M. Ferrandez –

rasm5003 **Current Pumping Techniques Available for Use in Biomedical Analysis Systems**
Angela rasmussen, M. Zaghloul –

mosk5004 **A Switched Current Mode Real Ear-Type Lattice**

Session TP1.7

Tuesday

1:30PM – 2:30PM

Invited: Methods of Soft Computing in Systems Analysis and Design III

Chair: Vladik Kerinovich

wang5021 **Neural Network Approach to Non-Destructive Evaluation of Pavements**
Su Wang, Soheil Nazarian –

vehi5022 **Necessary and Sufficient Conditions for Robust Stability Using Modal Intervals**
Josep Vehi, Miguel A. Sainz –

drak6005 **Current Trend Towards Using Soft Computing Approaches to Phase**

Tuesday, August 10, 1999

Synchronization in Communication Systems

Jeff Drake, Nadipuram Prasad – New Mexico State University

Session TP1.8

Tuesday

1:30PM – 2:30PM

Poster Session: Signal Processing I

Chair: Neeraj Magotra

ho0270 **Identification of CDMA Signal and GSM Signal Using the Wavelet Transform**
Haiqin Liu, K. C. Ho - University of Missouri-Columbia

jova2040 **One Approach to a Modulation of a Bandpass Signals**
G. Jovanovic Dolecek, Alfredo M. Montiel - Instituto Nacional de Astrofisica Optica y Electrónica

le_b0349 **Efficient Series Expansions and Accurate Approximate Expressions for Computing the Extrema of $\sin x/x$ Function**
Jean Le Bihan –

lim0062 **Wavelet Based Audio Coder (W-Coder) - A Real-Time Implementation with TMS320C3x DSP**
B.L.Lim, C.E.Sng, H.K.Ng, K.S.Eng, W.K.Chua - Ngee Ann Polytechnic

mago0547 **Quantization Analysis for Fixed-Point Implementation of Speech Processing Algorithms for the Hearing Impaired**
Dr. Neeraj Magotra, S. Bangalore, S. Savadatti, P. Kasthuri, S. Divakar - University of New Mexico, T. Stetzler, P. Gelabert - Texas Instruments

jord0415 **A Set-Valued Adaptive Observer for Uncertain Nonlinear Systems**
Jorge O. Morel - Universidad Nacional de Misiones, Mario A. Jordan - Universidad Nacional del Sur

so2005 **Adaptive Cancellation of Multiple Interfering Sinusoids**
H. C. So - City University of Hong Kong

so2007 **Unbiased FIR System Identification in the Presence of Input and Output Interference**
H. C. So - City University of Hong Kong

catu0461 **Quantization Effects in the Resolution of the Measurand in a Measurement System**
Jean-François Naviner - Ecole Nationale Supérieure des Telecommunications, Gurdip S. Deep, Raimundo C. S. Freire - Universidade Federal do Maranhao, Sebastian Catunda - Ecole Nationale Supérieure des Telecommunications &

Tuesday, August 10, 1999

Universidade Federal da Paraiba &
Universidade Federal do Maranhao

2:30PM – 2:45Pm Break

Session TP2.1

Tuesday

2:45PM – 3:45PM

CMOS Circuits

Chair: Edgar Sanchez-Sinencio

grif0077 **Large-Signal Active Resistor Output Driver**

Jed Griffin, David Johnson - Performance Microprocessor Division, Intel

summ0493 **Low Voltage Line Driver Topologies for 10Base-T and 100Base-TX Ethernet**

Mark Alan Summers, John Mark Mullen - Cadence Design Systems

chan2001 **Correlated-Double Sampling Time-Multiplexing Integrator**

P. K. Chan, L. Siek, S. C. Yeo, S. S. Yong, H. L. Zhang, M. S. Tse - Nanyang Technological University

mend0388 **A High Resolution Switch-Current Memory Base Cell**

E. de Lira Mendes, P. Loumeau - Ecole Nationale Supérieure des Telecommunications

Session TP2.2

Tuesday

2:45PM – 3:45Pm

Power Systems II

Chair: Antonello Monti

hube0099 **Evolutionary Optimization of Power Supply Systems on MCM**

Andreas Huber, Karl Reiss, Dieter A. Mlynski - Universitaet Karlsruhe, Kaiserstr

ross0205 **The Influence of Double Excitation AC/DC in the Reactive Power Demand of 3-Phase Transformers**

José Carlos Rossi, Luis Carlos Origa de Oliveira, Marco Arthur Stort Ferreira - Department of Electrical Engineering- FEIS/UNESP

yust0400 **Malfunction Detection of an Inverter by Using a DSP**

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Antonio Pérez Yuste - EUIT de Telecomunicacion, Jose María Licerias - Sistemas Electronicosw de Potencia

Session TP2.3

Tuesday

2:45PM – 3:45PM

Digital Filters

Chair: Maher E. Rizkalla

rizc2049 **VLSI Implementation of Memory Design Applied to Median Filter**

Krishna J. Palaniswamy, Maher E. Rizkalla - Purdue School of Engineering and Technology

doss0178 **Linear Phase Bandpass Sampled-Data Filters**

Magdy M. Doss - Assiut University

gurk0266 **A Modular Pipelined Macro-Block for High-Speed Digital Filtering Applications**

Frank K. Gurkaynak, Yusuf Leblebici - Worcester Polytechnic Institute

rizc2048 **VHDL Implementation of 2-D Median Filter**

Krishna J. Palaniswamy, Maher E. Rizkalla - Purdue School of Engineering and Technology

Session TP2.4

Tuesday

2:45PM – 3:45PM

Adaptive Signal Processing II

Chair: Jeffrey O. Coleman

nogu0220 **Adaptive Frequency Estimation using Variable Sampling Rate and Synchronous Addition and Subtraction Processing**

Kentaro Noguchi, Yoshiaki Tadokoro - Toyohashi University of Technology

nino0290 **Real Time High Frequency Spectrum Analyser**

Angel Orozco-Alvarea, Luis Nino-De-Rivera, Hector Perea-Meana - Instituto Politécnico Nacional

lee0179 **Finite-Precision Effects Analysis of Adaptive Canceler-Equalizer**

Inseop Lee, W. Kenneth Jenkins - University of Illinois at Urbana

cole0120 **Random-Process Formulation of Computationally Efficient Performance**

Tuesday, August 10, 1999

Measures for Wideband Arrays in the Far Field

Jeffrey O. Coleman - Naval Research Laboratory, Robert J. Vanderbei - Princeton University

Session TP2.5

Tuesday
2:45PM – 3:45PM

Invited Session: Image Compression II

Chair: Kameswara Rao Namuduri

gorm5035 **JPEG 2000: Worth the Wait?**
Michael Gormish – Ricoh Silicon Valley, Inc.

abde5037 **MPEG 7: A Content Description Standard Beyond Compression**
M. Abdel-Mottaleb, N. Dimitrova, L. Angihotri, S. Dagtas, S. Jeannin, S. Krishnamachari, T. McGee, G. Vaithilingam – Phillips Research

shen5038 **Video Preprocessing Techniques for Real-Time Video Compression**
Ke Shen, Andrew W. Johnson – DiviCom, Inc.

Session TP2.6

Tuesday
2:45PM – 3:45PM

Invited Session: Bioinspired Neural Related Systems II

Chair: Robert Newcomb

sala5005 **A Model of Learning to Track Objects and Eye Movements of the Squirrel Monkey**
Fathi M. Salam – Michigan State University

pana5006 **A Current-Mode Analog Memory for Neurocomputing**
Dimokritos A. Panagiotopoulos – Technological Institute of Thessaloniki, Robert W. Newcomb, Sanjeey K. Singh – University of Maryland

ahn5007 **A Pool Based Threshold Extractor for In-Circuit Compensation**
Su-Jin Ahn – Pohang University of Science & Technology, Si-Bum Jun – LG Semicon, Robert W. Newcomb – University of Maryland

rasm5008 **CMOS Microfluidic Fabrication Technology for Biomedical Applications**
Angela Rasmussen, M. Zaghoul –

Session TP2.8

Tuesday, August 10, 1999

Tuesday
2:45PM – 3:45PM

Poster Session: Digital Circuits and Communications

Chair: Michael A. Soderstrand

vest0297 **A New Six-Transistor CMOS XOR Circuit with Complementary Output**
Mark Vesterbacka - Linkoping University

maaz0539 **A Clock Skew Scheduling and Minimization Algorithm for High Speed Synchronous Digital Circuits**
Mohamad Bassem Maaz, Magdy A. Bayoumi - University of Southwestern Louisiana

mali2039 **Effects of Substrate-Conductivity and Temperature on Crosstalk applied to Ultra-High-Speed Integrated Circuits**
Sttaponng Malisuwan - Florida Atlantic University

jia0402 **A Pipelined Shared Memory Architecture for FFT Processors**
Lihong Jia, Yonghong Gao, Hannu Tehunen - Royal Insititute of Technology

kim0199 **Implementation of High Speed Reed-Solomon Decoder**
Dong-Sun Kim, Jong-Chan Choi, S.C. Lee - Korea Electronics Technology Institute, Duck-Jin Chung - INHA University

mcea0473 **Modeling Bus Contention in an ATM High-Speed Network Interface Architecture**
John C. McEachen, Mickey S. Batson - Naval Postgraduate School

rama0167 **Design of an Efficient DVB/MPEG Transport Stream Remultiplexor**
Arun Ramaswamy - Vela LP

pope0288 **A Container Algorithm for Electromagnetic Power Distribution Calculation Using Ray-Launching-Ray-Tracing Based Models**
Gabriel Stefan Popescu - Technical University "Gh. Asachi"

sode0114 **Digital Signal Processing for Extended Phase-Shift Keying (EPSK)---A New Modulation Scheme**
Earl W. McCune - University of California, Michael A. Soderstrand - Oklahoma State University

abd-2003 **Ambiguity Function and Related Studies for Ultra-wide Band Radar**
Darwish Abd-el Aziz Mohamed - Technical Research Center & Development, Cairo

5:15PM – 8:15PM Banquet and Museum

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Wednesday, August 11, 1999

8:00AM – 9:00AM Registration

Session WA1.1

Wednesday
8:30AM – 10:00AM

High-Speed Analog Circuits

Chair: Ramon G. Carvajal

carv0350 **Tunable CMOS Low-Voltage Linear Transconductor and its Application to HF GM-C Filter Design**
Fernando Muñoz, Antonio Torralba, Ramon G. Carvajal - Universidad de Sevilla, Jaime Ramirez-Angulo - New Mexico State University

lee0358 **2V 3GHz Low-noise Bipolar Wideband Amplifier**
Wilson Lee, I.M. Filanovsky - University of Alberta & TR Labs

sand0398 **A 1.8GHz Double Balanced CMOS Receiver Front-End**
Torbjorn B. Sandstrom, Lars Sundstrom - Lund University

vass0540 **A Subsampling Receiver for RF Application**
Tony Vasseaux, Bernard Huyart, Patrick Loumeau - Ecole Nationale Supérieure des Telecommunications

sten0289 **A 2-GHz Tuned Linear CMOS Amplifier**
Anna-Karin Stenman, Lars Sundström - Lund University

Session WA1.2

Wednesday

8:30AM – 10:00AM

VLSI Simulation and Modeling

Chair: Hoda Anis Baraka

agui0459 **Simulation and Modelling of Digital Delay Locked Loops**
Rui L. Aguiar, Dinis M. Santos - Universidade de Aveiro

el-s0081 **A Relaxation-Time Based MOSFET Model for HF Amplifier Design**
Alaa Y. El-Sherif, Kenneth L. Ashley - Southern Methodist University

pope0287 **Some Aspects of Interconnections Macromodels Development Using VHDL**

Wednesday, August 11, 1999

Gabriel Stefan Popescu - Technical University "Gh. Asachi" Iasi

chen0380 **Circuit Simulation for Large-Scale MOSFET Circuits with Lossy Coupled Transmission Lines Using Various Relaxation-Based Algorithms**
Chun-Jung Chen - Chinese Culture University, Wu-Shiung Feng - National Taiwan University

bara0525 **An Architecture of Distributed Cosimulation Backplane**
Dina Atef - Mentor Graphics, Ashraf Salem - Ain Shams University, Hoda Baraka - Cairo University

agui2034 **A symbolic Method for Network Function Approximation with Order Reduction**
Idoia Aguirre, Alfonso Carsolena - Universidad Publica de Navarra

Session WA1.3

Wednesday

8:30AM – 10:00AM

Digital Architectures and Systems

Chair: Earl E. Swartzlander

bhag0305 **Pre-fetching with the Segmented LRU Algorithm**
Ravi Bhagavathula, Ravi Pendse - Wichita State University

pend0306 **Selective Pre-fetching: Pre-Fetching When Only Required**
Ravi Pendse, Harendranath Katta - Wichita State University

swar2041 **A New Scheme for Prediction of Rotation Directions in CORDIC Processing**
Jae-Hyuck Kwak, Earl E. Swartzlander - The University of Texas at Austin

pass0291 **ASIC Design for Conditional Nested Loops with Predicate Registers**
Bryce Sinclair, Robert P. Light, Nelson L. Passos - Midwestern State University

bae0509 **Application Specific Embedded 8-Port SRAM with Simultaneous 256-bit Data Accessibility**
Cheon-Ho Bae, Sun-Ho Chang, Bum-Sik Kim, Lee-Sup Kim - Korea Advanced Institute of Science & Technology

li2044 **Structural Test Cases Analysis and Implementation**
Yong Y. Li - University of Wisconsin-Platteville

Session WA1.4

Wednesday, August 11, 1999

Wednesday

8:30AM – 10:00AM

Communications Processing

Chair: Ramin Baghaie

sanm2042 **Tracking Radar with LPI Characteristics Based on High Rate SS-FH**

J. Sanmartin-Jara, M. Burgos-Garcia, Ju. Cuesta-Acosta, F. Perez-Martinez - Universidad Politecnica de Madrid

inac0313 **New PN Even Balanced (PN-EB) Sequences for High Processing Gain DS-SS Systems**

José António Lobato Inácio, José Beltran Gerald, Manuel Duarte Ortigueira - Instituto Nacional de Engenharia de Sistemas e Computadores

juri0067 **Performance Evaluation of the Hilbert Transform Based Digital Phase-Locked Loop**

Ivica Kopriva, Dragan Juricic - Institute for Defence Studies, Croatia

hamm0241 **On an (old) Idea Whose Time has Come: The use of Smart Antennas and Space-Time Processing at the Mobile**

Joachim S. Hammerschmidt, Christian Drewes, Andreas A. Hutter - Technische Universitaet Muenchen

wen2051 **Synchronization Combined PN Code Phase Acquisition Algorithm (SCA) for DSSS Receiver**

Chao-Wang Huang, Kuei-Ann Wen, Mau-Lin Wu - National Chiao-Tung University

bagh0341 **Applications of Transformation Techniques in CDMA Receivers**

Ramin Baghaie - Helsinki University of Technology

Session WA1.5

Wednesday

8:30AM – 10:00AM

Fuzzy Systems and Applications

Chair: Predrag Djurdjevic

djur0519 **Real Time Adaptive Fuzzy Control of Inverted Pendulum**

Predrag Djurdjevic - New Mexico Highlands University

elsh3000 **Sensitivity Analysis of the Photovoltaic Model Parameters**

Th F. Elshatter, M.T. Elhagry - Electronics Research Institute

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kala0201 **New Speed Limits of the Fuzzy Controller Hardware**

Ivan Kalaykov - University of Örebro

kaur0494 **Applying Neuro-Fuzzy Techniques for Intelligent Highway Pavement Performance Prediction Model**

D. Kaur, Eddie Chou - University of Toledo

mogh0212 **Fuzzy Clustering Approach to Evaluating Power System Security**

Javad Moghaddas, Nadipuram R. Prasad - New Mexico State University

carv0351 **Mixed-Signal CMOS Fuzzifier with Emphasis in Power Consumption**

Ramon G. Carvajal, Antonio Torralba, Francisco Colodro, Leopoldo G. Franquelo - Escuela Superior de Ingenieros de Sevilla

Session WA1.6

Wednesday

8:30AM – 10:00AM

Linear Circuit Analysis

Chair: Larry Huelsman

sand0105 **Multidimensional Linear Systems: The Extra Term**

Irwin W. Sandberg - University of Texas at Austin

shim3001 **Stability and Rationalization of Singularly Perturbed Systems with Multiple Time Delay by Unified Approach Using Delta Operator**

Kyu-Hong Shim, M. Edwin Sawan - Wichita State University

van_0066 **A Frequency-Domain Stability Criterion for Periodically Driven Varactor Circuits**

Irwin W. Sandberg, G. J. J. van Zyl - The University of Texas at Austin

ekam0529 **Behavioral Autonomous Steady-State Analysis Using Broyden's Method**

Dr. Uma Ekambaram - Synopsys, Inc. & University of Illinois, Prof. S. M. Kang - University of Illinois, Dr. R. A. Saleh - Simplex Solutions, Inc.

tras0112 **Distortion Improvement of Lossless Feedback Amplifiers Using Augmentation**

Chris Trask - ATG Design Services

och0361 **Finding Equivalent Noise Sources in Linear Circuits**

Agustin Ochoa - Fairchild Semiconductor Sys

Session WA1.7

Wednesday, August 11, 1999

Wednesday

8:30AM – 10:00AM

Invited Session: Companding Techniques in Analog Circuits

Chair: Alfonso Carlosena

efth0325 **Noise Analysis of Externally Linear Filters**
G. Efthivoulidis - National Technical University of Athens, L. Toth - Technical University of Budapest, Y. Tsvividis - Columbia University

fox0303 **Dynamic Currents in Log-Domain Filters**
Hyung-Jong Ko, William R. Eisenstadt, R. M. Fox - University of Florida

edwa5010 **Log-Domain Circuits for Auditory Signal Processing**
R. Timothy Edwards, Gert Cauwenberghs – Johns Hopkins University

payn5011 **Design and Implementation of High Frequency Log-Domain Filters**
A. Payne, E. Drakakis, P. Khumsat –

lope5012 **Synthesis of Internally Nonlinear Systems from LTI Systems by Component-to-Component Substitution and its Application to Companding**
A.J. Lopez-Martin, A. Carlosena –

fox3010 **Common-Mode Circuits for Differential Log-Domain Filters**
R. M. Fox, Y. Ro, W. R. Eisenstadt, K. Karnik, F. Yuan - University of Florida

Session WA1.8

Wednesday

8:30AM – 10:00AM

Poster Session: Signal Processing II

Chair: H. C. So

so2013 **Fractional Lower-Order Moment Based Adaptive Algorithms for Time Delay Estimation in Impulsive Noise**
H. C. So - City University of Hong Kong

cola0260 **Improving DOA Estimation Methods using a Prior Knowledge about the Sources Location**
Ricardo F. Colares, Amauri Lopes - Universidade Estadual de Campinas

choi0319 **An Auditory-Based Adaptive Speech Enhancement System by Neural Network According to Noise Intensity**

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Jaeseung Choi, Jiro Okamoto, Shigeyoshi Nakajima, Yutaka Suzuki, Shoichi Hosokawa - Osaka City University

lee0344 **A Study on the Transmission Bit Rate Reduction by Unvoice Detection in the CELP Vocoder**
HeeWon Lee, DuckSu Na, MyungJin Bae - Soongsil University

elde2060 **A High Performance Computing Algorithm for Improving the in-line Holography**

elsh2028 **Matching Criteria in Fractal Image Compression**
Mohamed Elsherif, Alaa Elsayad - Electronic Research Institute, Mohsen Rashwan - Cairo University

panu0314 **A Fast Three Step Search Motion Estimation for Video Conferencing**
Krit Panusopone, Xuemin Chen - General Instrument Corporation

sada0174 **A Practical Binary "Bit Stuffing" Algorithm for Multiplierless Arithmetic Encoders**
Gilberto I. Sada, Bryan E. Usevitch - University of Texas at El Paso

chan0061 **Designing Two-Channel Causal Stable IIR PR Filter Banks and Wavelet Bases by Model Order Reduction and Constrained Optimization**
J. S. Mao, S. C. Chan, K. L. Ho - The University of Hong Kong

10:00AM – 10:15AM

Break

Session WA2.1

Wednesday

10:15AM – 11:45AM

Analog Filters

Chair: Peter Aronhime

aron2018 **Current-Mode Frequency Discriminators**
Peter Aronhime, Jie Deng - University of Louisville

biol0230 **FIR-BL Analog Filters**
Dalibor Biolek - Dept of Telecommunications, BRNO, Viera Biolkova - Dept of Radioelectronics, BRNO

lope0295 **Versatile CMOS and BiCMOS Linear Transconductor Circuits**
Antonio J. Lopez-Martin, Alfonso Carlosena - Universidad Publica de Navarra, Jaime Ramirez-Angulo - New Mexico State University

Wednesday, August 11, 1999

- raut0542 **Optimizing Transconductor-C filters for Low Power and Wide Band Operation**
Ning Guo, Rabin Raut - Concordia University
- fila0373 **One Method of Synthesis of Time Delay Circuits**
Igor M. Filanovsky - University of Alberta
- zril0216 **PCM-to-DM Converters**
Djuro Zrilic, Milan Narandzic - New Mexico Highlands University

Session WA2.2

Wednesday

10:15AM – 11:45AM

Microwave Circuits

Chair: Ali Fotowat

- wang0549A **Low-Jitter 750MHz-1.15GHz CMOS Phase Frequency Locked Loop**
Hui Wang - National Semiconductor Corp,
Richard Nottenburg - University of Southern California
- foto0075 **A 1V 450uW CMOS Fully Integrated Bandpass Filter for Pager Applications**
Hossein Hashemi, Ali Parsa, Kaveh Shakeri,
Ali Fotowat - Sharif University of Technology,
Reza Rofougaran – UCLA
- li2024 **A Novel Design Approach of GHz CMOS Low Noise Amplifier**
Xiaopeng Li, Hong-sun Kim, Mohammed Ismail - Ohio State University
- midy0365 **Generation of Modulated RF Signal using PWM**
Pallab Midya, Poojan Wagh – Motorola
- bran2056 **Microwave Frequency Tripling Utilizing Active Devices**
J. P. Mima, G. R. Branner - University of California

Session WA2.3

Wednesday

10:15AM – 11:45AM

Wavelets and Filterbanks

Chair: Bryan E. Usevitch

- debr0151 **Texture Classification using Wavelet Transform**
Victor DeBrunner, Madhavi Kadiyala - University of Oklahoma

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- gand0504 **Design of Optimal Tree-Structured Orthonormal Filter Banks**
Rajeev Gandhi, Sanjit K. Mitra - University of California
- ibar0514 **Cosine-Modulated FIR Filter Banks Satisfying Perfect Reconstruction: An Iterative Algorithm**
Oscar G. Ibarra-Manzano - Gordana Jovanovic-Dolecek, Gordana Jovanovic-Dolecek - National Institute of Astrophysics

- klou0162 **An Even Order IIR Real QMF Recursive Digital Filter Bank with Near Perfect Reconstruction**

A. Klouche-Djedid, S.S. Lawson - University of Warwick

- nall0324 **Lapped Orthogonal Transform with Integer Coefficients**

A.Nallanathan, S.C.Chan, T.S.Ng - University of Hong Kong

- usev2002 **Fixed-Point Error Analysis of Two-Channel Perfect Reconstruction Filter Banks with Perfect Alias Cancellation**
Bryan E. Usevitch, Carlos L. Betancourt - University of Texas at El Paso

Session WA2.4

Wednesday

10:15AM – 11:45AM

Wireless and DSP Applications

Chair: Ralph Hippenstiel

- aude2015 **An Internet Request Server Architecture for Telecommanding the CONTROLAB AGV through Real Time Data and Image**
G.H.M.B. Carneiro - IME/RJ, Brazil, E.P.L. Aude, H. Serdeira, J.T.C. Silveira, M.F. Martins, E.P. Lopes - Federal University of Rio de Janeiro

- pint0097 **Wireless Implementation For Access Control to Restrict Areas**

Carlos Alberto Ramos Pinto, Andrea Carla Alves Borim, Jose Manoel Fernandes, Adriano R. Ferreira - Universidade Federal de Uberlandia

- hipp2017 **Time Difference of Arrival Estimation Using Denoised Wavelet Transforms**

R. Hippenstiel, U. Aktas - Naval Postgraduate School

- dunn0363 **2-D Image Processing using an Acousto-Optic System Operating in the Bragg Regime**

Derrek Butler Dunn, Dewayne R. Brown - North Carolina A&T State University, Ting-

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Chung Poon - Virginia Polytechnic Institute & State University

nove0464 **Error Resilient Variable Length Encoder/Decoder for Low Power Wireless Video Codecs**
Mario Novell – UCLA, Steve Molloy - Luxxon Corporation

radh0218 **Fast Residue-to-Binary Converter Architectures**
Jimson Mathew, D. Radhakrishnan, T. Srikanthan - Nanyang Technological University

Session WA2.5

Wednesday

10:15AM – 11:45AM

Neural Networks and Applications

Chair: Fathi M. Salam

brau0502 **Neuromorphic aVLSI Circuit of Lamprey Unit Pattern Generator**
Elizabeth J. Brauer, Brett Thompsen - Northern Arizona University, Ranu Jung, James J. Abbas - University of Kentucky

oki0327 **A Radial Basis Function Network (RBFN) for Function Approximation**
Marcio Lucks, Nobuo Oki - FEIS - Unesp - Departamento de Engenharia Elétrica

shut0211 **Current Mode VLSI Neural Cell Proposal for Motion Perception**
Goce V. Shutinoski, Tomislav A. Dzhekov - SS. Cyril and Methodius University, Vanco B. Litovski - University of Nis, beogradska

spen0357 **A Fully-Differential CMOS Implementation of Oja's Learning Rule in a Dual-Synapse Neuron for Extracting Principle Components for Face Recognition**
Ronald G. Spencer, Edgar Sánchez-Sinencio - Texas A&M University

brau0506 **Graphical User Interface for Functional Neuromuscular Stimulation System**
Elizabeth J. Brauer, Joshua Colvin - Northern Arizona University, James J. Abbas - University of Kentucky

oki0328 **An Analog Implementation of Radial Basis Function Network Appropriate for Transducer Linearization**
Marcio B. Lucks, Nobuo Oki - FEIS - Unesp - Departamento de Engenharia Elétrica

Session WA2.6

Wednesday

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10:15AM – 11:45AM

Device and Circuit Modeling

Chair: Igor M. Filanovsky

benz0352 **Effect of the Selection MOS Transistor Polarization Voltage During a Write and an Erase Operation of an EEPROM Memory Cell**
Walid Benzerti, Rachid Bouchakour - Ecole Nationale Supérieure des Telecommunications, Jean Michel Mirabel, Philippe Boivin - SGS-THOMSON Microelectronics

thom0469 **MOSFET Threshold Voltage Extractor Circuits Based on Square-Law Behavior**
Fred Thomas, W. Timothy Holman - University of Arizona

moin0377 **Mismatch in Analog VLSI Networks for Early Visual Processing**
Alireza Moini - University of Adelaide

vida0447 **Nonlinear Analytical Model of the MRC (MOS Resistive Circuit)**
Eva Vidal, Herminio Martinez, Eduard Alarcon, Alberto Poveda - Universidad Politecnica de Cataluna

lan0377 **A New Current Mirror Layout Technique for Improved Matching Characteristics**
Mao-Feng Lan, Anilkumar Tammineedi, Randall Geiger - Iowa State University

Session WA2.7

Wednesday

10:15AM – 11:45AM

Invited Session: Image Compression III

Chair: Sergio D. Cabrera

lam5024 **Robust Image Coding Using Perceptually-Tuned Channel-Optimized Trellis-Coded Quantization**
Tuyet-Trang Lam, Lina J. Karam - Arizona State University, Glen P. Abousleman – Motorola SSG

bris5025 **Subband Coding of RF Signals in Reconfigurable Computing Hardware**
Christopher M. Brislawn, Scott H. Robinson – Los Alamos National Laboratory

tian5026 **Joint Compression and Detection in the Wavelet Domain**
Jun Tian, Raymond O. Wells, Jr. – Rice University

ives5027 **A New SAR Image Compression Quality Metric**

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Robert W. Ives – Naval Postgraduate School,
Paul Eichel – Sandia National Laboratories,
Neeraj Magotra – University of New Mexico

cabr5028 **Metrics for Evaluation and Control of
Lossy Compression Effects on the
Processing of SMD Images**

Olga M. Kosheleva, Carlos A. Mendoza,
Jorge S. Perez, Sergio D. Cabrera – The
University of Texas at El Paso

NOON – 2:00PM

MWSCAS Steering Committee Meeting
