



CSCC-MCP-MCME 2000 PROGRAM



PROGRAM

Sunday, July 9, 2000.

Welcome to Astir Palace and to CSCC-MCP-MCME 2000.

Monday, July 10, 2000.

9:00: Opening of the Secretariat Desk

9:30-10:00: Coffee-Break

| | | |
|--------------------|--|---|
| 10:00-11:00 | Chair Panel: Kostas Papandreou Mirko Novak Fotis Koumboulis Jai Dahiya Yasumic Hasegawa | Official Opening of CSCC, MCP, MCME, Professor G.Antoniou, Montclair State University, New Jersey, USA, SPEECH FOR THE SIDNEY DARLINGTON |
| 11:00-12:00 | Chair Panel: George Antoniou Valeri Mladenov Panagiotis Linardis Mustafa Abdel Naby Sotirios Ziavras | Plenary Session 1: Professor A.Venetsanopoulos, University of Toronto, Canada, “Multimedia Signal Processing Systems And Applications” |

- 12:00-13:00 Chair Panel:**
M.Devetsikiotis
Cristopher Provatidis
Immed Bennour
Athula Kulatunga
D.Gerakoulis
- Plenary Session 2:**
Professor Zoran Bojkovic
University of Belgrade, Yugoslavia,
“Advances in Multimedia and Teletraffic”
- 15:00-16:00 Chair Panel:**
Ioannis Malagardis
Bret Draayer
Zhi-Ming Lin
Gabriella Bognar
Toshio Ono
- Plenary Session 3:**
Professor Ling Jun Wang, University of
Tennessee at Chattanooga, USA,
*“Debate of the Century: A Review of Clock
Paradox. Uniformity of Space and Time in
Accelerated System.”*
- 16:00-17:00 Chair Panel:**
A.Chronopoulos
F.Batzias
Peter Turner
S.Belbas
Jus Kocijan
- Plenary Session 4:**
Professor Satnam Dlay, University of
Newcastle, UK,
*“Recent advances in artificial neural
networks for character recognition and
verification”*
- 17:00-17:30: Coffee-Break**
- 17:30-18:30 Chair Panel:**
Costas Papaodysseus
Mauro Bisiacco
Sotirios Ziavras
M.Cotsaftis
Ioannis Lambadaris
- Plenary Session 5:**
Professor George Miminis, Memorial
University of Newfoundland, Canada,
“On the Computational Eigenvalue Problem”

All the following lectures are published in CD-ROM and Post-Conference books. For sake of brevity we denote:

- **BOOK 1: Problems in Modern Applied Mathematics**
- **BOOK 2: Advances in Physics, Electronics and Signal Processing Applications**
- **BOOK 3: Systems and Control: Theory and Applications**
- **BOOK 4: Signal Processing, Communications and Computer Science**

Tuesday, July 11, 2000.

ROOM A'

Time: 8:30-10:30

Session: *Differential Equations*

Chair: G.Miminis

The number in the right column is the page number of the papers of this session in the Book: 1

On bounds for the solution of the Riccati and Lyapunov equations 1

Submitted by: *Adam Czornik*

Other Co-Authors: *Aleksander Nawrat*

Acceleration Techniques for Singular Initial Value Problems 6

Submitted by: *Othmar Koch*

Other Co-Authors: *Ewa Weinmuller*

Arbitrary Order and A-Stable Numerical Method for Solving Algebraic Ordinary Differential Equation by Power Series 12

Submitted by: *Hiroshi Hirayama*

Nonlinear and functional parabolic problems - exact and numerical solutions 18

Submitted by: *Henryk Leszczynski*

Computational schemes for integro-differential systems 25

Submitted by: *M. Ganesh*

ROOM B'

Time: 8:30-10:30

Session: *Circuits and Electronics I*

Chair: A.Chrisanthopoulos

The number in the right column is the page number of the papers of this session in the Book: 2

Threshold logic based adders using floating gate circuits 54

Submitted by: *Jose Quintana*
Other Co-Authors: *Esther Rodriguez-villegas, Maria Avedillo, Adoracion Rueda*

Mgx Zn_{1-x} Te semiconductor alloys for light emitting diodes 59

Submitted by: *Mustafa Abdel Naby*
Other Co-Authors: *Fikry El Akkad*

Current Mode Sense Amplifiers Design in 0.25 μ m CMOS technology 66

Submitted by: *Yiannis Moisiadis*
Other Co-Authors: *Angellos Chrisanthopoulos, George Tsiatouhas, George Kamoulakos,*

Analysis and Characterization of GaAs Integrated Digital Circuits 71

Submitted by: *Maria Rizzi*
Other Co-Authors: *Beniamino Castagnolo, Vincenzo Antonicelli*

Streamlining Two-Port Analysis of Practical Electronic Circuits 76

Submitted by: *George Alexakis*
Other Co-Authors: *Stelios Potirakis, Manolis Tsilis, Costantine Lioliousis*

Microwave Low Noise Amplifier: A New Formulation For Single and Two-Stage Design 84

Submitted by: *Vincenzo Antonicelli*
Other Co-Authors: *Beniamino Castagnolo, Maria Rizzi, Roberto Antonicelli*

ROOM C'

Time: 8:30-10:30

Session: *Neural Networks I*

Chair: *V. Mladenov*

The number in the right column is the page number of the papers of this session in the Book: 3

Spread Spectrum Codes Identification by Neural Networks 257

Submitted by: *Celine Boudier*
Other Co-Authors: *Gilles Burel*

Forward Selection Initialization Method for Constructive Neural Networks 263

Submitted by: *Jani Lahnajarvi*
Other Co-Authors: *Mikko Lehtokangas, Jukka Saarinen*

Application of Generalized Regression Neural Networks in Lossless Data Compression 269

Submitted by: *Rajasvaran Logeswaran*

Spatio-Temporal Phenomena in Two-dimensional Cellular Neural Networks Based on First Order Nonlinear Cells 275

Submitted by: *Valeri Mladenov*
Other Co-Authors: *H.Hegt*

A neural network-based flexible image retrieval 282

Submitted by: *Hyoung K. Lee*
Other Co-Authors: *Suk i. Yoo*

Simultaneous speech recognition in noisy reverberant environments 288

Submitted by: *Athanasios Koutras*
Other Co-Authors: *Evangelos Dermatas, George Kokkinakis*

ROOM D'

Time: 8:30-10:30

Session: *Wavelets I*

Chair: S.Dlay, N.Panagiotacopulos

The number in the right column is the page number of the papers of this session in the Book: 2

A novel approach to curvature estimation 246

Submitted by: *Satnam Dlay*
Other Co-Authors: *Stephen Purves*

Looming Motion Segmentation in Vehicle Tracking System using Wavelet Transforms 252

Submitted by: *Satnam Dlay*
Other Co-Authors: *Kumanan Subramaniam, Sachin Shukla and Claire Rind*

Periodic Wavelet Packet Implementation Applied to ECG Signals Coding 258

Submitted by: *Manuel Blanco*
Other Co-Authors: *Francisco Lopez Ferreras, Manuel Rosa Zurera, Fernando Cruz Roldan*

Design of Biorthogonal Wavelet Systems by Maximizing Balanced Regularity 263

Submitted by: *Hilario Gomez-Moreno*
Other Co-Authors: *Saturnino Maldonado-Bascon, Francisco Lopez-Ferreras, F. Javier Acevedo-Rodriguez*

Biometric verification of computer users with probabilistic and cascade forward neural networks 267

Submitted by: *Satnam Dlay*
Other Co-Authors: *Steven Shorrock Angelos.Giannopoulos, David Atkinson*

A novel method for updating vector quantised codebooks 273

Submitted by: *Satnam Dlay*
Other Co-Authors: *Lee Scargall*

ROOM E'

Time: 8:30-10:30

Session: *Modelling and Control*

Chair: D.Biolek, I.Taralova

The number in the right column is the page number of the papers of this session in the Book: 3

Modeling and optimization of active filters by hybrid „VIV-MMC“-graphs 381

Submitted by: *Dalibor Biolek*

Other Co-Authors: *Viera Biolkova*

OSD CASE-tool for Distributed Real-time Systems 387

Submitted by: *Sergei Bogomolov*

Other Co-Authors: *Alexei Berdnikov, Alexander Fyodorov, Dimitri Kudryavtsev*

Modeling of a Plastic-On-Wire Extrusion Process for Control Purposes 391

Submitted by: *Ina Taralova*

Other Co-Authors: *John Edmunds, Steven Schooling*

A simulator engine for IPv6 over ATM networks 396

Submitted by: *Jorge Silva*

Other Co-Authors: *Sergio Duarte, Nuno Veiga, Fernando Boavida*

Influence of Magnetic Nonlinearities on Simulation Accuracy of Switched Reluctance Motor Models 403

Submitted by: *Paulo Branco*

On Controllability of Discrete Time Jump Linear System 409

Submitted by: *Adam Czornik*

Other Co-Authors: *Andrzej Swierniak*

Coffee Break: 10:30-11:00

ROOM A'

Time: 11:00-13:00

Session: *Numerical Methods for PDE's*

Chair: G.Antoniou

The number in the right column is the page number of the papers of this session in the Book: 1

High order Fractionary Step schemes for evolutionary Convection-Diffusion-Reaction problems 31

Submitted by: *Juan Carlos Jorge*

Other Co-Authors: *B. Bujanda*

| | |
|---|----|
| Numerical Analysis of Modal Noise in Optical Waveguides | 37 |
| Submitted by: <i>Gyeong-il Kweon</i> | |
| Finite Element Computation of Overland Flows | 44 |
| Submitted by: <i>Guillermo Hauke</i> | |
| ADI FEM applied to modelling electromagnetic problems | 50 |
| Submitted by: <i>Paul Loach</i> | |
| Other Co-Authors: <i>R. C. Ireland</i> | |
| Circulant Preconditioners for Solving Three-Dimensional Convection-Diffusion Equations | 55 |
| Submitted by: <i>Michael Ng</i> | |
| Other Co-Authors: <i>C.M. Yan</i> | |
| Using efficient numerical methods in large-scale air pollution modelling | 60 |
| Submitted by: <i>Zahari Zlatev</i> | |

ROOM B'

Time: 11:00-13:00

Session: *Electronics (MOS and CMOS Technology I)*

Chair: *Zhi-Ming Lin*

The number in the right column is the page number of the papers of this session in the Book: 2

| | |
|---|-----|
| A New Sense Amplifier for Submicron CMOS Technology Memories | 90 |
| Submitted by: <i>Themistoklis Haniotakis</i> | |
| Other Co-Authors: <i>Y. Tsiatouhas, A. Chrisanthopoulos, G. Kamoulakos</i> | |
| A current-path based placement methodology for analog IC layout design | 94 |
| Submitted by: <i>Zhi-Ming Lin</i> | |
| Other Co-Authors: <i>M. E. Liao, J. D. Chen, G. J. Huang</i> | |
| High Speed Analog CMOS Pipeline System for the Recording of Fast Signals from Cherenkov Telescopes | 98 |
| Submitted by: <i>Cristian Chitu</i> | |
| Other Co-Authors: <i>Werner Hofmann</i> | |
| Temperature-compensated CMOS voltage-controlled oscillator | 104 |
| Submitted by: <i>Zhi-Ming Lin</i> | |
| Other Co-Authors: <i>K.-C. Huang, M.Y. Liao and J.-D. Chen</i> | |
| A Low Power Low Noise Amplifier in CMOS | 107 |
| Submitted by: <i>Ozlem Sen</i> | |

Temperature-stable CMOS voltage reference 111

Submitted by: *Zhi-Ming Lin*
Other Co-Authors: *K.-C. Huang*

ROOM C'

Time: 11:00-13:00

Session: *New Trends in Computational Intelligence (Neural Networks & Fuzzy Systems)*

Chair: P.Linardis

The number in the right column is the page number of the papers of this session in the Book: 3

Investigation on practical possibility of function approximations by neural networks 293

Submitted by: *Xiaohui Yang*
Other Co-Authors: *Dingguo Chen*

Toward to Exact Setting of Parameters Fuzzy PID Controllers 299

Submitted by: *Petr Pivonka*

Implementation remarks on learning algorithm based on Kolmogorov theorem 305

Submitted by: *Roman Neruda*
Other Co-Authors: *Arnost Stedry, Jitka Drkosova*

Automated Fuzzy Modelling of High Order Dynamical Processes via Multiple Feedback 311

Submitted by: *Adnan Nabout*
Other Co-Authors: *Bernd Tibken*

About certain optimisation task in pneumatics 316

Submitted by: *Szymon Grymek*
Other Co-Authors: *Tomasz Kiczkowiak*

Fuzzy Modelling of a Ternary Batch Distillation Column 320

Submitted by: *Jose Ruiz-Gomez*
Other Co-Authors: *M.J. Lopez-Baldan, A. Garcia-Cerezo*

ROOM D'

Time: 11:00-13:00

Session: *Wavelets II*

Chair: N.Panagiotacopoulos, S.Dlay

The number in the right column is the page number of the papers of this session in the Book: 2

| | |
|---|-----|
| Applicability of Wavelet Galerkin Method for Reactor Calculations | 279 |
| Submitted by: <i>Hesham Nasif</i> | |
| Other Co-Authors: <i>A.Suzuki, O.Ryota, M.Nagy, N.Mohamed, M. Mohsen, N.Mohamed</i> | |
| 2-D Systems: Image Compression Using the Daubechies Wavelet | 287 |
| Submitted by: <i>George Antoniou</i> | |
| Other Co-Authors: <i>Michael Nalisnik</i> | |
| Wavelets, Nuclear Magnetic Resonance Spectroscopy, and the Chemical Composition of Tumors | 290 |
| Submitted by: <i>Nick Panagiotacopulos</i> | |
| Other Co-Authors: <i>Lertsuntivit Sukit, Savidge Lee Ann, Shic Frederick, Lin Alexander, Ross Brian D</i> | |
| Wavelet Analysis in the Study of the Nuclear Magnetic Resonance Spectroscopy of Head Trauma | 297 |
| Submitted by: <i>Fred Shic</i> | |
| Other Co-Authors: <i>Alexander Lin, Brian D Ross, Charles H Shelden, Nick Panagiotacopulos, Sukit Lertsuntivit, Lee Ann Savidge</i> | |
| Analysis of Gravity Signals and Gravity Potential Determination Using Order 8 Multiresolution Analysis Discrete Wavelets | 303 |
| Submitted by: <i>Ken Friesen</i> | |
| Other Co-Authors: <i>Nick Panagiotacopulos, William Sjogren</i> | |

ROOM E'

Time: 11:00-13:00

Session: *Information Technologies I*

Chair: *I.Kyprianidis*

The number in the right column is the page number of the papers of this session in the Book: 4

| | |
|---|-----|
| Evaluation of the Java graphics environment using a set of specialized microbenchmarks | 182 |
| Submitted by: <i>Riccardo Berta</i> | |
| Other Co-Authors: <i>Francesco Bellotti, Alessandro De Gloria</i> | |
| A comparison of H323 and SIP based architectures for VoIP systems | 187 |
| Submitted by: <i>Maurizio Longo</i> | |
| Other Co-Authors: <i>Vincenzo Langone, Mariacarmela Spatola, Pierangelo Arciello</i> | |
| SNAP – program with symbolic core for educational purposes | 195 |
| Submitted by: <i>Dalibor Biolek</i> | |
| Internet and Parallel Computing in Semiconductor Device Simulation | 199 |
| Submitted by: <i>Jinn-Liang Liu</i> | |

Other Co-Authors: *Y.Li, T.-S. Chao and S.M.Sze*

Intelligent Assistants to the Rescue 204

Submitted by: *Matjaz Gams*

An Interactive Computer Based Training System for Laboratory Works in Communication 211

Submitted by: *Vladimir Tsingouz*

Other Co-Authors: *Michael Bank, Jakob Gavan*

ROOM A'

Time: 14:30-16:30

Invited Session: *Dynamic Programming and Dynamical Systems (Organized by S.Belbas)*

Chair: *S.Belbas*

The number in the right column is the page number of the papers of this session in the Book: 3

Optimal control of 2-D systems with non-local terms 1

Submitted by: *Stavros Belbas*

New Simple Reference State Model of the Third-Order Piecewise-Linear Dynamical Systems 7

Submitted by: *Jiri Pospisil*

Other Co-Authors: *Zdenek Kolka, Jana Horska, Jaromir Brzobohaty*

Dynamic Programming Predictions of Protein Secondary Structure 11

Submitted by: *Larry Stanfel*

Synchronization and phase-locking of two mutually coupled chaotic oscillators 15

Submitted by: *Ioannis Kyprianidis*

Other Co-Authors: *Ioannis Stouboulos*

Constructive Generation and Verification of Lyapunov Functions around fixed points of non-linear Dynamical Systems 19

Submitted by: *Martin Berz*

Other Co-Authors: *Kyoko Makino*

Autonomous behaviors and their decomposition into the direct sum of irreducible components 27

Submitted by: *Mauro Bisiacco*

Other Co-Authors: *Maria Elena Valcher*

ROOM B'

Time: 14:30-16:30

Session: *Electronics (MOS and CMOS Technology II)*

Chair: C.Papaodysseus

The number in the right column is the page number of the papers of this session in the Book: 1

Study of the finite precision error generated in the I.I.R. filtering procedure 114

Submitted by: *Constantin Papaodysseus*

Other Co-Authors: *Kostas Alexiou, Peni Ioannidou, Elias Koukoutsis*

A 4.6 GHz rectifier-driven CMOS voltage-controlled oscillator 119

Submitted by: *Zhi-Ming Lin*

Other Co-Authors: *J.-D. Chen, K.-C. Huang*

DTNS: a Discrete Time Network Simulator for C/C++ Language Based Digital Hardware Simulations 123

Submitted by: *Kimmo Kuusilinna*

Other Co-Authors: *Jouni Riihimaki, Timo Hamalainen, Jukka Saarinen*

Switched capacitor FDNR realized with one unity gain buffer and three phases control clock 129

Submitted by: *Toshio Ono*

An efficient algorithm for digital circuits testing 133

Submitted by: *Bogdan Dugonik*

Earlier integration solutions for embedded systems 138

Submitted by: *Imed Eddine Bennour*

Other Co-Authors: *Rached Tourki*

ROOM C'

Time: 14:30-16:30

Session: *Systems Theory and Control I*

Chair: I. Malagardis

The number in the right column is the page number of the papers of this session in the Book: 3

Interval-Valued, α -Level State Estimation of Statistical Mechanical Systems on Fluctuating Partitions 33

Submitted by: *Ioannis Malagardis*

Other Co-Authors: *George Sotirov*

Assistive navigation control architecture 38

Submitted by: *Urbano Nunes*

Other Co-Authors: *Gabriel Pires, Paulo Coelho*

| | |
|--|----|
| About positively discrete-time singular systems | 44 |
| Submitted by: <i>Carmen Coll</i> | |
| Other Co-Authors: <i>Rafael Bru, Elena Sanchez</i> | |
| Multi-model control of wastewater treatment reactor | 49 |
| Submitted by: <i>Jus Kocijan</i> | |
| Other Co-Authors: <i>Nadja Hvala, Stanko Strmcnik</i> | |
| An Integrated HMM-Based Intelligent Robotic Assembly System | 55 |
| Submitted by: <i>Michael C.C. Ngan</i> | |
| Other Co-Authors: <i>Henry Y.K. Lau, K.L. Mak</i> | |
| Multidisciplinary Simulation of Active Control of Machine-Tool Vibration in Turning | 61 |
| Submitted by: <i>Anders Jonsson</i> | |
| Other Co-Authors: <i>Goran Broman, Stefan Ostholm</i> | |

ROOM D'

Time: 14:30-16:30

Session: *Digital Signal Processing I*

Chair: *S. Ziavras*

The number in the right column is the page number of the papers of this session in the Book: 4

| | |
|--|----|
| Stable realization of co-channel signal separation via the blind deconvolution | 1 |
| Submitted by: <i>Tertulien Ndjountche</i> | |
| Other Co-Authors: <i>Rolf Unbehauen</i> | |
| Matrix Multiplication on an Experimental Parallel System with Hybrid Architecture | 7 |
| Submitted by: <i>Sotirios Ziavras</i> | |
| Other Co-Authors: <i>Constantine Manikopoulos</i> | |
| Evaluation of Spatial Similarity Methods for Image Retrieval | 13 |
| Submitted by: <i>Euripidis Petrakis</i> | |
| Other Co-Authors: <i>Costas Georgiadis</i> | |
| Real-Time Transmission of Stored MPEG-1 Videos Over the Internet | 19 |
| Submitted by: <i>Aylin Kantarci</i> | |
| Other Co-Authors: <i>Turkan Tunali</i> | |
| Real-Time Implementation of a New Contour Tracking Procedure in a Multi-Processor DSP System. | 25 |
| Submitted by: <i>Vincenzo Gemignani</i> | |
| Other Co-Authors: <i>Marcello Demi, Marco Paterni, Antonio Benassi</i> | |
| FPL Implementation of a SIMD RISC RNS-Enabled DSP | 31 |

Submitted by: *Javier Ramirez*
Other Co-Authors: *Antonio Garcia, Pedro G. Fernandez, Antonio Lloris*

ROOM E'

Time: 14:30-16:30

Session: *Electronics Technology and Applications*

Chair: Eduardo Fernandez-Medina Paton

The number in the right column is the page number of the papers of this session in the Book: 2

Rough Fuzzy Computing for Unsupervised Image Segmentation 144

Submitted by: *Michele Ceccarelli*
Other Co-Authors: *Alfredo Petrosino*

Modelisation and Simulation of Noise in CMOS Active Pixel Sensor for Low light Applications 148

Submitted by: *Hassan Belhrach*
Other Co-Authors: *Yavuz Degerly, Mohammed Karim, Jean Farre*

Analysis of Microstrip Circuits Using a Finite-Difference Time-Domain Method 156

Submitted by: *Gabriel Marian Banciu*
Other Co-Authors: *Rodica Ramer*

Controversies on free data flow and the use of cryptography for the protection of privacy 161

Submitted by: *Eduardo Fernandez-Medina Paton*
Other Co-Authors: *Mercedes Perez de Lema Saenz de Viguera, Veronica Canivell Castillo*

Introduction of co-simulation in the design cycle of the real-time control for electrical systems 166

Submitted by: *Regis Ruelland*
Other Co-Authors: *Guillaume Gateau, Jean-Claude Hapiot*

Insightful closed-form expressions for small-signal s-parameters of BJTs 172

Submitted by: *Ahmed Nadeem*
Other Co-Authors: *William Eisenstadt*

Coffee Break: 16:30-17:00

ROOM A'

Time: 17:00-18:20

Session: *Numerical Methods and Techniques*

Chair: M.Bisiacco

The number in the right column is the page number of the papers of this session in the Book: 1

| | |
|--|----|
| Simulating Resistance, Capacitance, and Protocol Speeds in a Computer Network | 66 |
| Submitted by: <i>Raj Desai</i> | |
| GAGA Principle and Singularity Confinement Property on the Integrable Algebraic Finite Difference Equation | 72 |
| Submitted by: <i>Toshiaki Itoh</i> | |
| DQGMRES (m,k) Method with Sparse Approximate Inverse Preconditioning for Solving Nonsymmetric Linear Systems on Origin 2000 | 77 |
| Submitted by: <i>Nodera Takashi</i> | |
| Other Co-Authors: <i>T. Nodera and F. Ohsawa</i> | |
| Simulation of 3d polyarticulated mechanisms through object-oriented approach | 84 |
| Submitted by: <i>Dufosse Francois</i> | |
| Other Co-Authors: <i>Kromer Valerie, Mikolajczak Alain and Gueury Michel</i> | |
| Singularity Analysis of Nearly General Stewart Platforms | 90 |
| Submitted by: <i>Guozhen Wang</i> | |
| Markov chains for random dynamical systems on p-adic trees | 97 |
| Submitted by: <i>Andrei Khrennikov</i> | |
| Other Co-Authors: <i>Karl-Olof Lindahl</i> | |

ROOM B'

Time: 17:00-18:20

Session: *Mathematics Techniques and Applications I*

Chair: *S. Areibi, P. Turner*

The number in the right column is the page number of the papers of this session in the Book: 1

| | |
|---|-----|
| Exponentially Large Availability Computations | 103 |
| Submitted by: <i>Walter Poor</i> | |
| Fast Calculations in Probability Spaces of Exponential Size | 109 |
| Submitted by: <i>Walter Poor</i> | |
| Applying Neural Networks in Case-Based Reasoning Adaptation for Cost Assessment of Steel Buildings | 116 |
| Submitted by: <i>Ahmed Sameh Mohamed</i> | |
| Other Co-Authors: <i>Essam Amin Lotfy</i> | |
| On the Heuristic Dynamics of the Buckling Algorithm | 123 |
| Submitted by: <i>Gopal Kumar</i> | |
| Other Co-Authors: <i>H. Nakamura</i> | |

ROOM C'

Time: 17:00-18:20

Session: *Robotics*

Chair: M.J. Er

The number in the right column is the page number of the papers of this session in the Book: 3

Forward displacement analysis of two classes of Stewart platform using one unified mathematical model 65

Submitted by: *Guozhen Wang*

Other Co-Authors: *Xiaoshen Wang*

Trajectory Tracking of Robot Manipulators Using Adaptive Fuzzy Neural Control 71

Submitted by: *Meng Joo Er*

Other Co-Authors: *Yang Gao, Meng Joo Er, Nikos Mastorakis, W. E. Leithead and D.J. Leith*

Case-Based Reasoning to Control a Smart Wheelchair 79

Submitted by: *Olivier Habert*

Other Co-Authors: *Alain Pruski*

Dual Hypercomplex Quaternions Based Recursions for Generalized Velocities, Accelerations and Forces in Robot Dynamics 85

Submitted by: *Ossama Hacicho*

Other Co-Authors: *Hassan Nour Eldin*

ROOM D'

Time: 17:00-18:20

Session: *Biocomputing and Computational Intelligence*

Chair: F.O.Sonmez

The first three papers of this Session are published in Book 1. The fourth paper is published in Book 4. The number in the right column is the page number of the papers of this session in the Book: 1 (first 3 papers) and Book 4 (fourth paper).

Book 1:

Fast Dynamic Power Comparison at the VHDL Netlist Level 129

Submitted by: *Joachim Neves Rodrigues*

Other Co-Authors: *A.Th. Schwarzbacher and J.B. Foley*

Shape Optimization of 3D-Shell Structures Using Simulated Annealing 135

Submitted by: *Fazil Onder Sonmez*

Other Co-Authors: *Hakan Altinkopru*

Symbolic and Numeric Computations in Kinetic Analysis of Multi Enzyme Systems in Biochemistry 157

Submitted by: *Mustafa Bayram*

Other Co-Authors: *Necmettin Yildirim*

Book 4:

Fuzzy Technology in Design, Planning, and Control of Complex Systems (on the Example of Power Engineering Problems) 333

Submitted by: *Petr Ekel*

Other Co-Authors: *P.Ya. Ekel, L.D.B. Terra, F.P.G. Paletta and Z.A. Sstczynski*

ROOM E'

Time: 17:00-18:20

Session: *Systems and Control Theory*

Chair: E.Jafarov

The first three papers of this Session are published in Book 4. The fourth paper is published in Book 2. The number in the right column is the page number of the papers of this session in the Book: 4 (first 3 papers) and Book 2 (fourth paper).

Book 4:

Optimization problems connected with kernel estimates 339

Submitted by: *Iva Horova*

Stability of mobile robot fuzzy path tracking using frequency response techniques for SIMO systems 364

Submitted by: *Guillermo Heredia*

Other Co-Authors: *Anibal Ollero, Teodoro Alamo*

Stability of mobile robot fuzzy path tracking using frequency response techniques for SIMO systems 364

Submitted by: *Guillermo Heredia*

Other Co-Authors: *Anibal Ollero, Teodoro Alamo*

Book 2:

Robust stabilization of continuous and discontinuous MIMO control systems with parameter perturbations and external disturbances 389

Submitted by: *Elburus Jafarov*

Drink in the Sunset: Swimming Pool of APHRODITE Hotel: 20:00
(Aphrodite Hotel is only a few meters westerly from NAFSIKA HOTEL)

Wednesday, July 12, 2000.

ROOM A'

Time: 8:30-10:30

Session: *Optimization Theory*

Chair: I.Lambadaris

The first five papers of this Session are published in Book 1. The sixth paper is published in Book 2. The number in the right column is the page number of the papers of this session in the Book 1 (first 5 papers) and Book 2 (sixth paper).

Book 1:

Heat Transfer Optimization Using a Simulated Annealing Algorithm 141

Submitted by: *Effie Marcoulaki*

Other Co-Authors: *F.A.Batzias*

Tree and filter optimization for audio compression in a wavelet-based perceptual audio coder 147

Submitted by: *Nicolas Ruiz Reyes*

Other Co-Authors: *Manuel Rosa Zurera, Francisco Lopez Ferreras, Damian Martinez Munoz, Jose Curpian Alonso*

The noisy multidimensional scaling problem: an optimization Approach 151

Submitted by: *Thierry Condamines*

Optimize Jacobian Accumulation Techniques 163

Submitted by: *Uwe Naumann*

Modelling, Simulation and Optimisation of Complex Processes 169

Submitted by: *Harald Leonpacher*

Other Co-Authors: *S.S. Douglas, N.H. Woolley, D. Kraft*

Book 2:

Platon - an open optimisation framework 309

Submitted by: *Christian Heimann*

ROOM B'

Time: 8:30-10:30

Session: *Nonlinear Systems Theory and Applications*

Chair: Y.Hasegawa, P. Turner

The number in the right column is the page number of the papers of this session in the Book: 1

Analysis of Limit Cycles in Lattice Digital Filters Using Fixed Point Arithmetic 175

Submitted by: *Roberto Jimenez-Martinez*

Other Co-Authors: *Francisco Lopez-Ferreras, David Oses-del-Campo, Manuel Utrilla-Manso, Manuel Rosa-Zurera*

| | |
|--|-----|
| Optimum selection of mechanical gearbox ratios for minimization of the unobtainable power | 181 |
| Submitted by: <i>Said Ali Hassan</i> | |
| Fast algorithms for the analysis and characterisation of limit cycles in fixed-point digital filters. | 187 |
| Submitted by: <i>David Oses</i> | |
| Other Co-Authors: <i>Francisco Lopez, Manuel Utrilla, Fernando Cruz,</i> | |
| A Realization Algorithm for Discrete-Time Linear Systems with a non-zero initial state | 192 |
| Submitted by: <i>Yasumichi Hasegawa</i> | |
| Other Co-Authors: <i>Kazuyasu Hamada, Tsuyoshi Matsuo</i> | |
| A DSP-Oriented Fast Algorithm To Detect and Characterise Limit Cycles In Digital Filters | 198 |
| Submitted by: <i>Manuel Utrilla Manso</i> | |
| Other Co-Authors: <i>Francisco Lopez Ferreras, David Oses del Campo, Roberto Jimenez Martinez</i> | |
| The Symmetric Level Index System with an Application to Chaos | 204 |
| Submitted by: <i>Peter Turner</i> | |

ROOM C'

Time: 8:30-10:30

Session: *Dielectric Materials. Solar Systems. Propagation.*

Chair: *J. Dahiya, B. Draayer*

The number in the right column is the page number of the papers of this session in the Book: 2

| | |
|---|-----|
| Influence of the rate of deformation on the formation and propagation of the macroscopic martensitic front | 215 |
| Submitted by: <i>Andrzej Ziolkowski</i> | |
| Experimental methods of Studying the Fluctuations of the Refractive index of Binary Mixtures of Select Gases and Water | 221 |
| Submitted by: <i>Jai Dahiya</i> | |
| Other Co-Authors: <i>Jim Roberts, J. Gadhi</i> | |
| A Computer Control System to Regulate the Temperature of a Microwave Cavity | 225 |
| Submitted by: <i>Bret Draayer</i> | |
| Other Co-Authors: <i>Jai N. Dahiya</i> | |
| Dielectric relaxation behavior of select liquid crystals using a computer controlled resonant cavity | 230 |
| Submitted by: <i>Jai Dahiya</i> | |
| Other Co-Authors: <i>Bret Draayer, Jim Roberts</i> | |
| Multiphase DC-to-AC 1kW Solar Power Inverter | 236 |
| Submitted by: <i>Karl Edelmöser</i> | |

Other Co-Authors: *Lutz Erhartt*

Simulation of a Multiphase DC-to-AC Solar Power Inverter System 241

Submitted by: *Karl Edelmoser*
Other Co-Authors: *Lutz Erhartt*

ROOM D'

Time: 8:30-10:30

Session: *Production Management and Industry Systems*

Chair: C.Provatidis

The number in the right column is the page number of the papers of this session in the Book: 3

Modal Masters and Component Mode Method 325

Submitted by: *Heinrich Voss*

A Model For FMS of Unreliable Machines 331

Submitted by: *Wai Ki Ching*

On Assumptions in Diagnosis 337

Submitted by: *Nadim Obeid*

On the use of Coons' interpolation in CAD/CAE applications 343

Submitted by: *Christopher Provatidis*
Other Co-Authors: *Andreas Kanarachos*

Using Simulation for Performance Evaluation of Production Systems 349

Submitted by: *Serguei Iassinovski*
Other Co-Authors: *A.Artiba, D.Pichel*

Generalized analysis method of engine suspensions based on bond graph modeling and feedback control theory 355

Submitted by: *Pierre-Yves Richard*
Other Co-Authors: *Caroline Ramus-Serment, Jean Buisson, Xavier Moreau, Marcel Le Fol*

ROOM E'

Time: 8:30-10:30

Session: *Advances in Communications and Control*

Chair: C.Manikopoulos

The number in the right column is the page number of the papers of this session in the Book: 3

Analysis of the Overhead of Saturation Routing for ATM Networks 90

Submitted by: *Jose Ucles*

Other Co-Authors: *Constantine N. Manikopoulos*

Analytic design of a fuzzy control for mechanical systems 97

Submitted by: *Domenico Porto*
Other Co-Authors: *Paolo Amato*

Optimization in Design of Multiunit Mechanical Transmission Systems 101

Submitted by: *Alexandre Dolgui*
Other Co-Authors: *Nikolai Guschinsky, Genrikh Levin*

New Trends in Control of Complex Dynamical Systems 107

Submitted by: *Michel Cotsaftis*

Detection and Diagnosis of fault in coke oven using wireless LAN communication at Steel Works 113

Submitted by: *Jong-Hag Jeon*

A Neural-Network Compensator with Fuzzy Robustification Terms for Improved Design of Adaptive Control of Robot Manipulators 119

Submitted by: *S K Tso*
Other Co-Authors: *Y.H.Fung*

Coffee Break: 10:30-11:00

ROOM A'

Time: 11:00-13:00

Session: *Boundary Value Problems*

Chair: *I.Taralova*

The number in the right column is the page number of the papers of this session in the Book: 1

Null Space Algorithms for Solving Augmented Systems arising in the Mixed Finite Element Approximation of Saddle Point Problems 210

Submitted by: *Mario Arioli*
Other Co-Authors: *M.Arioli, G.Manzini*

Control of a Noisy Mechanical Rotor 216

Submitted by: *Gadaleta Sabino*
Other Co-Authors: *Gerhard Dangelmayr*

Optimal Preconditioners Associated with 8 More Trigonometric Transforms 222

Submitted by: *Eugene Boman*

| | |
|---|-----|
| A Spectral Method for Cauchy Problem Solving | 227 |
| Submitted by: <i>Vladimir Chelyshkov</i> | |
| B-Splines Networks | 233 |
| Submitted by: <i>Huynh Ngoc Phien</i> | |
| Other Co-Authors: <i>Wachawee Phuetphan, Hoang Le Tien</i> | |
| Practical design considerations to increase measurement accuracy in a low cost vector network analyzer | 239 |
| Submitted by: <i>Wei Li</i> | |
| Other Co-Authors: <i>Jan Vandewege</i> | |

ROOM B'

Time: 11:00-13:00

Session: *Optimization. Simulation. Identification*

Chair: G.Adam, V.Mladenov

The number in the right column is the page number of the papers of this session in the Book: 1

| | |
|---|-----|
| Neural Networks for Solving Constrained Optimization Problems | 244 |
| Submitted by: <i>Valeri Mladenov</i> | |
| Other Co-Authors: <i>Nicholas Maratos</i> | |
| Verified Global Optimization with Taylor Model Methods | 253 |
| Submitted by: <i>Kyoko Makino</i> | |
| Other Co-Authors: <i>Martin Berz</i> | |
| Identification of Frequency Hopping Communications | 259 |
| Submitted by: <i>Olivier Berder</i> | |
| Other Co-Authors: <i>Celine Boudier, Gilles Burel</i> | |
| Toward Robust Front Tracking, Tracking Based on Conservation | 265 |
| Submitted by: <i>Mao De-kang</i> | |
| Application of object-oriented and qualitative modelling methodologies in the operation and control of a mobile structural press machine | 270 |
| Submitted by: <i>George Adam</i> | |
| The Real Story behind Floquet-Lyapunov Factorizations | 276 |
| Submitted by: <i>Raymond Spiteri</i> | |
| Other Co-Authors: <i>P.Montagnier</i> | |

ROOM C'

Time: 11:00-13:00

Session: *Systems Theory and Control II*

Chair: S.Romero, N.Mastorakis

The number in the right column is the page number of the papers of this session in the Book: 3

A New Method for Computing the Stability Margin of 2-D Discrete Systems 125

Submitted by: *Nikos Mastorakis*

Essential reachability of positive periodic discrete-time systems 131

Submitted by: *Sergio Romero*

Other Co-Authors: *Rafael Bru, Elena Sanchez*

Intelligent Information Systems' Development Strategies for Power Systems Planning: Deregulation and the Internet as Key Factors 137

Submitted by: *Izebe Egwaikhide*

On the Robust Stability of 2-D Schur Polynomials 143

Submitted by: *Nikos Mastorakis*

On nonlinear parameter identification 149

Submitted by: *Floret Fabienne*

Other Co-Authors: *Francoise Lamnabhi-Lagarigue, Homere Nkwawo*

Comparison between PID and PSS effects on transient stability 156

Submitted by: *Francisco Jurado*

Other Co-Authors: *A. Cano, M. Ortega*

ROOM D'

Time: 11:00-13:00

Session: *Digital Signal Processing II*

Chair: C.Papaodysseus

The number in the right column is the page number of the papers of this session in the Book: 3

Gabor spectrogram based risk of aliasing 37

Submitted by: *Dimitri Van De Ville*

Other Co-Authors: *Koen Denecker, Wilfried Philips, Ignace Lemahieu*

A program for visualising real 3-D land maps from aerial photos 43

Submitted by: *Jose Herraes*

Other Co-Authors: *Jose-Carlos Martinez-Llario, Pablo Navarro*

| | |
|---|----|
| Implementation of Two Dimensional Discrete Cosine Transform Using Field Programmable Gate Array | 47 |
| Submitted by: <i>Punya Thitimajshima</i> | |
| Handwritten Pattern Reproduction Using Pen Acceleration and Angular Velocity | 51 |
| Submitted by: <i>Tohru Miyagawa</i> | |
| Other Co-Authors: <i>Yoshimichi Yonezawa, Kazunori Itoh, Masami Hashimoto</i> | |
| Iterative linear programming formulation for routing and wavelength assignment in optical networks | 57 |
| Submitted by: <i>Fernando Gonzalez</i> | |
| Other Co-Authors: <i>Ignacio de Miguel, Patricia Fernandez, Juan-Carlos Aguado, Ruben M. Lorenzo, Evaristo J. Abril, Miguel Lopez</i> | |
| Application of the Co-design Finite State Machines Model for the Design of a Multiprocessor System | 63 |
| Submitted by: <i>Marzougui Mehrez</i> | |
| Other Co-Authors: <i>I.E.Bennour, M.Abid and R.Tourki</i> | |

ROOM D'

Time: 11:00-13:00

Session: *Modern Physics and Signal Processing*

Chair: *Ling Jun Wang*

The number in the right column is the page number of the papers of this session in the Book: 2

| | |
|---|----|
| Efficient Filter Banks and Interpolators | 1 |
| Submitted by: <i>Andrew Dempster</i> | |
| Other Co-Authors: <i>Paul Murphy</i> | |
| Quasi-Matched Filtering in QAM Symbol Rate Sampled Receivers | 7 |
| Submitted by: <i>Ilias Panayiotopoulos</i> | |
| Other Co-Authors: <i>Aris Posonidis and Phillip Constantinou</i> | |
| Operational torque measurement in picking storage carrousel systems | 13 |
| Submitted by: <i>Gerardo Pelaez Lourido</i> | |
| Other Co-Authors: <i>Jose M. Losada Beltran</i> | |
| Rotational Transformation Between Schwarzschild Metric and Kerr Metric | 18 |
| Submitted by: <i>Ling Jun Wang</i> | |
| An Integrated System for the Diagnosis of Cardiac Pathology through the Analysis of Heartbeat Interval Variability | 24 |
| Submitted by: <i>Giorgos Manis</i> | |
| Other Co-Authors: <i>Anastasia Alexandridi, Milos Doroslovacki, Andreas Koulouris</i> | |
| Application of analytical and numerical methods for the design of transonic axial compressor stages | 30 |
| Submitted by: <i>Martin Bohle</i> | |

ROOM A'

Time: 14:30-16:30

Session: *Computational Methods: New Advances*

Chair: G.Miminis

The number in the right column is the page number of the papers of this session in the Book: 1

**Stabilizing Neural Network Controllers for Sampled-Data
Nonlinear Systems** 282

Submitted by: *Suwat Kuntanapreeda*

Other Co-Authors: *Ruangrit Ekachaiworasin*

Functional logic languages: semantics and implementation 287

Submitted by: *Mohamed Hamada*

**Load balancing for parallel computing on distributed
heterogeneous computers** 293

Submitted by: *Y.P. Chien*

Other Co-Authors: *A.Ecer, J.D.Chien and H.U.Akay*

A Generic Method for the Computational Eigenvalue Problem 299

Submitted by: *George Miminis*

Other Co-Authors: *M.Mercer*

**PARNEU: Scalable Multiprocessor System for Soft
Computing Applications** 308

Submitted by: *Pasi Kolinummi*

Other Co-Authors: *Timo Hamalainen, Jukka Saarinen*

Residue Arithmetic Techniques for High Performance DSP 314

Submitted by: *Roberto Lojacono*

Other Co-Authors: *G.Cardarilli, A. Nannarelli, M. Re*

ROOM B'

Time: 14:30-16:30

Session: *Problems of Mathematical Physics and Numerical Techniques*

Chair: G. Bognar, Z. Woznicki

The number in the right column is the page number of the papers of this session in the Book: 1

The SOR Method for Solving Nonsymmetric Linear Systems 319

Submitted by: *Zbigniew Woznicki*

**Tunnel Type Microwave Applicator Modelling Using TLM
Method** 327

Submitted by: *B. Milovanovic*

Other Co-Authors: *N.Doncev, A.Atanaskovic,*

Numerical approximations of some nonlinear problems 333

Submitted by: *Gabriella Bognar*

A Control Volume-Based FEM for the Solution of the Three-Dimensional, Elastic Stress-Strain Equations 339
Submitted by: *Antonio Sousa*
Other Co-Authors: *Vitor Costa*

Microwave modeling using Neural Networks and IIR filters in Time and Frequency Domain 345
Submitted by: *Gati Azzedine*
Other Co-Authors: *M. F. Wong, V. Fouad Hanna, G. Alquie*

ROOM C'

Time: 14:30-16:30

Session: *Systems Theory and Control III*

Chair: *I.Taralova, M.Tzamtzi*

The number in the right column is the page number of the papers of this session in the Book: 3

Stability Robustness for Polytopes of Operators in Hilbert Spaces 161
Submitted by: *Maria Tzamtzi*

Using X-machines to model and test discrete event simulation programs 163
Submitted by: *Evangelos Kehris*
Other Co-Authors: *George Eleftherakis, Petros Kefalas*

Multi - Objective Robust Control for 4WS Cars 169
Submitted by: *Fotis Koumboulis*
Other Co-Authors: *M. G. Skarpetis*

Aspects of automatic CAD model pre-processing and access in mesh generation 172
Submitted by: *Andrey Mezentsev*
Other Co-Authors: *Thomas Woehler*

Automatic Steering Control of Unmanned Vehicles 180
Submitted by: *Fotis Koumboulis*
Other Co-Authors: *M.N.Skarpetis*

Robust Local Input-to-Output Practical Stability of Feedback Linearizable Systems 183
Submitted by: *Maria Tzamtzi*

ROOM D'

Time: 14:30-16:30

Session: *Digital Signal Processing III*

Chair: *V. Oleshchuk, K. Yen*

The number in the right column is the page number of the papers of this session in the Book: 4

Sub-Band/ADPCM audio coder using adaptive vector quantization 70

Submitted by: *Damian Martinez Munoz*

Other Co-Authors: *Manuel Rosa, Francisco Lopez, Nicolas Ruiz, Jose Curpian*

Iterative spatial probability based sound localization 74

Submitted by: *Parham Aarabi*

Other Co-Authors: *Safwat Zaky*

Index arrays: a new method for fast string matching 79

Submitted by: *Vladimir Oleshchuk*

An Automatic Repeat Request Protocol Using Joint Source and Channel Coding 86

Submitted by: *Bin He*

Other Co-Authors: *Constantine N. Manikopoulos*

Secure communication with enhanced steganography 90

Submitted by: *Kang Yen*

Other Co-Authors: *Faisal Kaleem, Jean Andrian, Pierre Schmidt*

Enhanced Waveform Extraction for Perfect Reconstruction WI Speech Coding 96

Submitted by: *Mikko Tammi*

Other Co-Authors: *Ari Heikkinen, Jukka Saarinen*

ROOM E'

Time: 14:30-16:30

Session: *Control and Optimization*

Chair: *M.Cotsaftis, S.Areibi*

The number in the right column is the page number of the papers of this session in the Book: 1

Efficient Hybrid Search Techniques for Circuit Partitioning 375

Submitted by: *Shawki Areibi*

Other Co-Authors: *Anthony Vannelli*

Mapping Approximation by the GMR Neural Network 383

Submitted by: *Giansalvo Cirrincione*

Other Co-Authors: *M.Cirrincione, S.V.Huffel*

Multirate PDE methods for high Q oscillators 391

Submitted by: *Hans Georg Brachtendorf*

Other Co-Authors: *H. G. Brachtendorf and R. Laur*

Vector fields for Collision Avoidance 397

Submitted by: *Moti Reif*

Other Co-Authors: *Aaron Naiman*

Constrained Nonlinear network flow problems through projected lagrangian methods 406

Submitted by: *F.Javier Heredia*

Robust Vehicle Dynamics Control under Cornering Stiffness Uncertainties with Insensitive H2 Theory 412

Submitted by: *Gay Francois*

Other Co-Authors: *de Larminat Philippe*

Coffee Break: 16:30-17:00

ROOM A'

Time: 17:00-18:20

Session: *Laser Physics, Relativity*

Chair: *C.Talbot*

The number in the right column is the page number of the papers of this session in the Book: 2

Three Dimensional Animation of a Disc Brake System Generating Noise 36

Submitted by: *Chris Talbot*

Other Co-Authors: *Kamal Al-Banawi, John Fieldhouse*

Laser Interferometer Gravitational Wave Observatory (LIGO) Data Analysis System 41

Submitted by: *James Kent Blackburn*

Two CMOS implementations of a low-voltage programmable active pixel 47

Submitted by: *Ming Zhang*

Other Co-Authors: *Nicolas Llaser, Francis Devos*

Relativistic kinematics of rotation 51

Submitted by: *Ling Jun Wang*

ROOM B'

Time: 17:00-18:20

Session: *Genetic Algorithms*

Chair: *P.Linardis*

The number in the right column is the page number of the papers of this session in the Book: 3

The parallel genetic algorithm-based multiobjective optimization technique for analog circuit optimizer 363

Submitted by: *Kasin Prakobwaitayakit*

Other Co-Authors: *Nobuo Fujii*

ATPG for Sequential Circuits through Genetic Simulation and Extracted Knowledge Exploitation 369

Submitted by: *P. Linardis*
Other Co-Authors: *M. Dimopoulos*

Fuzzy High-level Control of a Nonlinear MIMO Plant in a PID System Environment and Its Parameter Tuning Using Genetic Algorithm 375

Submitted by: *Mohammad Rohmanuddin*
Other Co-Authors: *Houw Liong The, Kohji Itoh, Tetsuya Ohtani, Adang Suwandi Ahmad, Yul Yunazwin Nazaruddin, Johnner Sitompul*

ROOM C'

Time: 17:00-18:20

Session: *Mathematics Techniques and Applications II*

Chair: *W. Poor, Ahmed Sameh Mohamed*

The number in the right column is the page number of the papers of this session in the Book: 1

A New Compact High Order Multidimensional Upwind Discretization 352

Submitted by: *Doru Caraeni*
Other Co-Authors: *L.Fuchs*

A stopping criterion for Richardson's extrapolation scheme under finite digit arithmetic. 358

Submitted by: *Makoto Murofushi*
Other Co-Authors: *H.Nagasaka*

A Tabu search algorithm for computer networks design 363

Submitted by: *Berna Dengiz*
Other Co-Authors: *Cigdem Alabas*

A Radon transform based method to determine the numerical spread as a measure of non-stationarity 369

Submitted by: *Robert Hedges*
Other Co-Authors: *Bruce Suter*

ROOM D'

Time: 17:00-18:20

Session: *Communications and Informatics*

Chair: *D.Gerakoulis, S.Nikolopoulos*

The first two papers of this Session are published in Book 2. The next two papers are published in Book 4. The number in the right column is the page number of the papers of this session in the Book 2 (1st, 2nd papers) and Book 4 (3rd, 4th paper).

BOOK 2

Towards Implicit Communication and Program Distribution 402

Submitted by: *Raphael Yehezkael*
Other Co-Authors: *H.G.Mendelbaum*

System Design of a Code Division Switch 410

Submitted by: *Diakoumis Gerakoulis*

BOOK 4

On the Using of Time-Frequency Distributions in the Motion Estimation 351

Submitted by: *Vojislav Vukovic*

Other Co-Authors: *Igor Djurovic, Srdjan Stankovic, Radovan Stojanovic*

Indexed P-Tree and Event Horizon: An efficient combination for event set management 356

Submitted by: *Stavros Nikolopoulos*

Other Co-Authors: *K.Asdre*

Thursday, July 13, 2000.

ROOM A'

Time: 8:30-10:30

Session: *Telecommunication Systems I*

Chair: C.Papaodysseus

The number in the right column is the page number of the papers of this session in the Book: 4

A soft decision decoding of product BCH and Reed-Muller codes for error control and peak-factor reduction in OFDM 102

Submitted by: *Yves Louet*

Other Co-Authors: *Annick Le Glaunec, Pierre Leray*

Provision of true VoD services via a broadband wireless networking infrastructure 107

Submitted by: *Evangelos Pallis*

Other Co-Authors: *Anastasios Kourtis, Antonios Alexandridis, George Pantos, Philip Constantinou*

Random Number Generators for Radio Communications 114

Submitted by: *Djuradj Budimir*

Other Co-Authors: *Octavia Adina Dobre*

FBA+: Improving TCP Performance over ATM-UBR Using Modified Fair Buffer Allocation Management Scheme 119

Submitted by: *Aly El-abd*

Other Co-Authors: *Mohamed Mostafa*

Nonnegligible loop delay time influence on Coherent Optical PSK systems performance 125

Submitted by: *Ivan Djordjevic*

Performance evaluation of distributed object platforms for telecommunications service engineering activities 131

Submitted by: *Constantine Papandreou*

Other Co-Authors: *D.Adamopoulos and G.Pavlou*

ROOM B'

Time: 8:30-10:30

Session: *Software Engineering I*

Chair: A.Poggi, N.Brignole

The number in the right column is the page number of the papers of this session in the Book: 4

An Integrated Remote Registration Systems in a Distributed Data Base Environment 217

Submitted by: *Baith Mohamed*

A computer-aided DSS for observability analysis 222

Submitted by: *Nelida Brignole*

Other Co-Authors: *Ignacio Ponzoni, Gustavo Vazquez, Mabel Sanchez*

Creating Hybrid AI Models with Bang 228

Submitted by: *Roman Neruda*
Other Co-Authors: *Pavel Krusina*

COLLEAGUE: A Multi-Document Collaborative Environment for the Web 234

Submitted by: *Agostino Poggi*
Other Co-Authors: *Federico Bergenti*

A Distributed-Based Approach for Advanced Telecommunication Services Management 240

Submitted by: *Jose-F. Martinez*
Other Co-Authors: *Jesus Villamor, Juan-c Yelmo*

ROOM C'

Time: 8:30-10:30

Session: *Systems Theory and Control IV*

Chair: *M.J.Er*

The number in the right column is the page number of the papers of this session in the Book: 3

Stability analysis and proportional PDC design of the Takagi-Sugeno (T-S) model fuzzy system 187

Submitted by: *Meng Joo Er*
Other Co-Authors: *Donghai Lin, Nikos Mastorakis, W. E. Leithead and D.J. Leith*

A Low-Cost Digital Display for Flow Rate Measurements in a Target Fluidic Flowmeter 194

Submitted by: *Meng Joo Er*
Other Co-Authors: *Aik Chong Lua, Jimmy Han Leong Kay, Chee Chong Lim and Nikos Mastorakis*

Real-Time Implementation of a Hybrid Adaptive Fuzzy Controller 197

Submitted by: *Meng Joo Er*
Other Co-Authors: *Moo Teng Lim, Hui Song Lim, Nikos Mastorakis and William E. Leithead*

Command Following and Disturbance Rejection for Drillstring Systems 203

Submitted by: *Fotis Koumboulis*
Other Co-Authors: *M. G. Skarpetis and T. Ladopoulos*

Mixed H₂/H_∞ Design of A multirate Output Controller 205

Submitted by: *Meng Joo Er*
Other Co-Authors: *L.Shen and N.Mastorakis*

On the Evaluation of the MD Passive WDF Discretization Method for a Flow through Cylinder 214

Submitted by: *Fotis Koumboulis*
Other Co-Authors: *M. G. Skarpetis and B. G. Mertzios*

ROOM D'

Time: 8:30-10:30

Session: *Information Technologies II*

Chair: *M. Piattini, V. Tsingouz*

The number in the right column is the page number of the papers of this session in the Book: 4

Techniques and Methods for Managing the Maintenance Process 305

Submitted by: *Mario Piattini*
Other Co-Authors: *Macario Polo, Francisco Ruiz*

Data Quality and Database Design 311

Submitted by: *Mario Piattini*
Other Co-Authors: *Ismael Caballero, Marcela Genero, Coral Calero*

The use of semantic agents within medical guideline servers 315

Submitted by: *Gert Funkat*
Other Co-Authors: *Anne-Kathrin Kaeding, Vesselin Detschew*

Adaptive Fixed Assignment Protocol 318

Submitted by: *Aleksandra Smiljanic*
Other Co-Authors: *Hisashi Kobayashi*

AutoGraL: Java API for configurable electronic dashboards 325

Submitted by: *Alessandro Villamaina*
Other Co-Authors: *Alessandro De gloria, Francesco Bellotti*

Modern Methods of Knowledge Engineering for the Development of Medical Information Systems 331

Submitted by: *Anne-Kathrin Kaeding*
Other Co-Authors: *Gert Funkat, Vesselin Detschew*

Coffee Break: 10:30-11:00

ROOM A'

Time: 11:00-13:00

Session: *Telecommunication Systems II*

Chair: *A. Veglis, S. Felici*

The first five papers of this Session are published in Book 4. The sixth paper is published in Book 2. The number in the right column is the page number of the papers of this session in the Book: 4 (first 5 papers) and Book 2 (sixth paper).

Analytical simulation of ATM switch architectures 137

Submitted by: *Andreas Veglis*

Other Co-Authors: *Andreas Pombortsis*

Linear equalizer based in NLMS algorithms for a communication system with integrated power transmission 142

Submitted by: *Juanjo Perez Solano*

Other Co-Authors: *Santiago Felici*

Optical Multiplexing of Ultrasonic Signals using Optical fiber by IM-FM Sub-carrier Modulation 147

Submitted by: *Jose Curpian Alonso*

Other Co-Authors: *Francisco Montero de Espinosa, Raul Mata Campos, Pedro Vera Candeas*

Analysis and correction of the chromatic error in the cameras television 152

Submitted by: *Pilar Martin*

Other Co-Authors: *Alfonso Martin, Francisco Lopez, Fernando Cruz, Javier Acevedo*

Implementation of Runtime Code Generator for RMI 158

Submitted by: *Kazuaki Maeda*

Evaluation of different Multicast Techniques for Video Transmission based on Subband Coding over ABR services in ATM networks 396

Submitted by: *Santiago Felici-Castell*

Other Co-Authors: *A.Lopez-Penaranda, J. Martinez and J. Perez*

ROOM B'

Time: 11:00-13:00

Session: *Software Engineering II*

Chair: *N.Meskens, D.Korze*

The number in the right column is the page number of the papers of this session in the Book: 4

An ANSI-C environment for structure resolution using GMRES 246

Submitted by: *Manuel J. Galan-Moreno*

Other Co-Authors: *Fidel Garcia del Pino*

Different band-limited approaches to web supported learning 251

Submitted by: *Danilo Korze*

Other Co-Authors: *Marjan Krasna*

Which pertinent metrics used to evaluate the software maintainability? 255

Submitted by: *Nadine Meskens*

Other Co-Authors: *Philippe Levecq, David Philippard*

Decision strategies for rating objects in knowledge-shared research networks 260

Submitted by: *Alexandra Grancharova*

Other Co-Authors: *Hans-Joachim Nern, Hassan Nour Eldin, Tomi Suuronen, Harri Airaksinen*

An Analytical Model to Compare AAL2 with a Prebuffered TDM-Based Multiplexing System to Support VBR Voice Connections over ATM 266

Submitted by: *Giovanni Schembra*

Other Co-Authors: *Francesco Cocimano, Alfio Lombardo, Sergio Palazzo*

ROOM C'

Time: 11:00-13:00

Session: *Signal Processing and Applications in Music*

Chair: *Y.Tadokoro, B.Sherlock*

The number in the right column is the page number of the papers of this session in the Book: 2

Musical pitch and instrument estimation of polyphony using comb filters for transcription 315

Submitted by: *Yoshiaki Tadokoro*

Other Co-Authors: *Taeko Miwa,*

Windowing the Discrete Cosine Transform in the Transform Domain 320

Submitted by: *Barry Sherlock*

Other Co-Authors: *Yogendra Kakad*

Enhancement of Speech Signals Disturbed by Noise Using Time-Varying Filtering 325

Submitted by: *Srdjan Stankovic*

Other Co-Authors: *Jan Tilp, Radovan Stojanovic*

The cause of "exponential" divergence due to finite precision effects in the Fast Kalman algorithm 329

Submitted by: *Constantin Papaodysseus*

Other Co-Authors: *Kostas Alexiou, Peni Ioannidou, Elias Koukoutsis*

An Audio Signatures Indexing Scheme For MIDI Format Music Files 334

Submitted by: *Dionysios Politis*

Other Co-Authors: *Panagiotis Linardis*

A Synopsis of Hardware and Software Implementations of Byzantine Music Delta Systems 340

Submitted by: *D.Politis*

Other Co-Authors: *Nikos Mastorakis*

ROOM A'

Time: 14:30-16:30

Session: *Information Systems*

Chair: *N.Georganas, N.Koutsoupas*

The number in the right column is the page number of the papers of this session in the Book: 4

| | |
|---|-----|
| An assessment tool within the customer/sub-contractor context | 272 |
| Submitted by: <i>Bernard Grabot</i> Other Co-Authors: <i>Agnes Letouzey, Laurent Geneste</i> | |
| AFC97: A New Software Implementation for Correspondence Analysis | 278 |
| Submitted by: <i>Nikos Koutsoupias</i> | |
| Virtual Collaboration and Media Sharing using COSMOS | 282 |
| Submitted by: <i>Vasilios Darlagiannis</i> Other Co-Authors: <i>Nicolas Georganas</i> | |
| Teaching for Mission Using Information Technology to Support Instruction | 288 |
| Submitted by: <i>Juli-Ann Gasper</i> | |
| Virtual theater for industrial training: A collaborative virtual environment | 294 |
| Submitted by: <i>Jauvane Oliveira</i> Other Co-Authors: <i>Shervin Shirmohammadi, Mojtaba Hosseini, Marius Cordea, Nicolas Georganas, Emil Petriu, Dorina Petriu</i> | |
| A study of signal detection for road-to- vehicle communications in ITS | 300 |
| Submitted by: <i>Masuo Umemoto</i> | |

ROOM B'

Time: 14:30-16:30

Session: *Circuits and Electronics II*

Chair: G. Lambert-Torres, I.E. Bennour

The number in the right column is the page number of the papers of this session in the Book: 2

| | |
|--|-----|
| Oxynitridation of Si with Nitrogen Plasma for Flash Memory and its high frequency C-V characteristics | 178 |
| Submitted by: <i>Akihiro Ikeda</i> Other Co-Authors: <i>Mustafa Abd El Naby, Tsuyoshi Fujimura, Reiji Hattori, Yukunori Kuroki.</i> | |
| A new approach to determining the time-stamping counter's overhead on the Pentium Pro processors | 183 |
| Submitted by: <i>Hsin-Ta Chiao</i> Other Co-Authors: <i>Shyan-Ming Yuan</i> | |
| Considerations about Electric Vehicles Impacts on Daily Load and Environment | 189 |
| Submitted by: <i>Germano Lambert-Torres</i> Other Co-Authors: <i>L. Pecorelli Peres, L.A. Horta Nogueira</i> | |
| Low frequency model of stacked film capacitors inductance | 194 |

Submitted by: *Nicole Daude*
Other Co-Authors: *T. Talbert, C. Joubert, C. Glaize*

Some results on variable discrete-time descriptor systems 205

Submitted by: *Nestor Thome*
Other Co-Authors: *Rafael Bru, Carmen Coll*

Systems on chips: design challenges 209

Submitted by: *Imed Eddine Bennour*
Other Co-Authors: *Rached Tourki*

ROOM C'

Time: 14:30-16:30

Invited Session: *Multimedia communication systems (Organized by Z.Bojkovic)*

Chair: *Z.Bojkovic*

The first four papers of this Session are published in Book 4. The fifth paper is published in Book 2. The number in the right column is the page number of the papers of this session in the Book: 4 (first 4 papers) and Book 2 (fifth paper).

Book 4:

Optimal Bit Allocation in Subband Loop Coding for Multimedia Processing 164

Submitted by: *Zoran Bojkovic*
Other Co-Authors: *Andreja Samcovic, Zoran Bojkovic, Dragorad Milovanovic*

Adaptive decimation algorithm for image compression 167

Submitted by: *Anissa Zergainoh*
Other Co-Authors: *Anissa Zergainoh, Jean-Pierre Astruc*

Flexible Word Division Into Characters 173

Submitted by: *Dan Lacrama*
Other Co-Authors: *Radu Vasiiu, Florin Alexa*

The Admission Control Criterion Model for ATM Call Admission Control Procedure 177

Submitted by: *Zoran Bojkovic*
Other Co-Authors: *Z.Krusevac*

Book 2:

Multimedia: the Impact on the Teletraffic 366

Submitted by: *Branimir Reljin*
Other Co-Authors: *Irini Reljin*

Late Papers of the session (not confirmed)

ROOM D'

Time: 14:30-16:30

Session: *Systems Theory and Applications*

Chair: S. Majumdar, J. Golebiowski

The number in the right column is the page number of the papers of this session in the Book: 3

Attaining High Performance in CORBA-Based Middleware Systems 219

Submitted by: *Shikharesh Majumdar*

Other Co-Authors: *Imran Ahmad, E-Kai Shen, Istabrak Abdul-Fatah*

Computer-based Acoustical Analysis of Electroglottographic Signals During Human Deglutition 226

Submitted by: *Athula Kulatunga*

Other Co-Authors: *Sakina Drummond*

Modelling of the interdigital transducers to generating the ultrasonic plate waves in silicon microsensors' membranes 231

Submitted by: *Jacek Golebiowski*

A new adaptive baseband pre-distortion algorithm for linearisation of power amplifiers, application to EDGE-GSM transmitters 235

Submitted by: *Genevieve Baudoin*

Other Co-Authors: *Pascale Jardin*

Performance Analysis of the 8-way P6 Based Systems 239

Submitted by: *Oleg Panfilov*

Other Co-Authors:

Survey of Medical Imaging Techniques for Detection of Breast Cancers 244

Submitted by: *Meng Joo Er*

Other Co-Authors: *Wen Hsiang Chow, Eugene Sze-Yen Phang and Nikos Mastorakis*

Coffee Break: 16:30-17:00

ROOM A'

Time: 17:00-18:40

Session: *Signal Processing and Military Applications*

Chair: N.Petrov, N.Mastorakis

The number in the right column is the page number of the papers of this session in the Book: 2

Algorithm for Determination of the Quantity of Aviation Systems for Basic and Current Repairs 351

Submitted by: *Niki Petrov*

Other Co-Authors: *S.Asenov, C.Bernikolov*

Extrapolation Prediction of The Technical Resource Via Forced Testing 353

Submitted by: *Niki Petrov*
Other Co-Authors: *S.Yordanova*

FPGA-Based Real Time Digital Image Processing System 357

Submitted by: *Punya Thitimajshima*

Phase factor influence on amplitude distortion and aliasing of pseudo-QMF banks. 360

Submitted by: *Fernando Cruz-Roldan*

Other Co-Authors: *Francisco Lopez, Pilar Martin, Manuel Blanco*

Regulation of Current/Voltage Characteristics in Photovoltaic Pumping Systems 416

Submitted by: *Charles Joubert*

Other Co-Authors: *Thierry Martire, Christian Glaize, Benoit Rowiere*

Banquet: 21:00-02:00 (Nafsika Hotel)

Friday, July 14, 2000.

ROOM A' - PANEL DISCUSSION 1:

Time: 8:30-9:30

"Future Trends and New Horizons in Applied Mathematics"

Chair: G.Mimimis

Speakers: G.Mimimis, S.Belbas, P. Turner, G.Bognar, Carmen Coll,

ROOM D' – WORKING GROUP 1: (Round Table Discussion 1)

Time: 8:30-9:30

"Multidimensional Systems"

Chair: G. Antoniou

Kernel of Members (list not complete):

G.Antoniou, M.Bisiacco, N.Mastorakis, M.-E. Valcher

You are invited to participate in this round table discussion, if your interests lie in this area.

ROOM A' - PANEL DISCUSSION 2:

Time: 9:30-10:30

"Advances in Computational Intelligence and Applications"

Chair: P.Linardis

Speakers: P.Linardis, B. Dengiz, P. Pivonka, A. S. Mohamed, V.Mladenov

ROOM D' – WORKING GROUP 2 (Round Table Discussion 2):

Time: 9:30-10:30

"Open Problems in Computational Physics, Computational Fluid Mechanics"

Chair: J.Dahiya

Kernel of Members (list not complete):

J. Dahiya, B. Draayer, A. Ziolkowski, M.Bayram, L.J. Wang, K.Edelmoser

You are invited to participate in this round table discussion, if your interests lie in this area.

Coffee Break : 10:30-11:00

ROOM A' - PANEL DISCUSSION 3:

Time: 11:00-12:00

"Signal Processing and Applications"

Chair: A.Venetsanopoulos

Speakers:

A.Venetsanopoulos, S.Dlay, C.Papaodysseus, M. Umemoto, C.Talbot, Z.Bojkovic

ROOM D' – WORKING GROUP 3:

Time: 11:00-12:00

"Signal Processing, Information Technologies"

Chair: S.Nikolopoulos

Kernel of Members (list not complete): S.Nikolopoulos, M. Piattini, S.Felici, D. Korze, M. Piattini

You are invited to participate in this round table discussion, if your interests lie in this area.

ROOM A' - PANEL DISCUSSION 4:

Time: 12:00-13:00

"Multimedia - Communications"

Chair: Z.Bojkovic

Speakers: Z.Bojkovic, B.Reljin, M.Novak, V. Oleshchuk, Aly El-abd

ROOM A' - PANEL DISCUSSION 5:

Time: 14:30-15:30

"Systems Theory and Control for the 21st Century"

Chair: M.Cotsaftis

Speakers: M.Cotsaftis, M. Novak, M. Bisiacco, M.J.Er, I. Eddine Bennour, D.Oses

ROOM A' - PANEL DISCUSSION 6:

Time: 15:30-16:30

"Computer Science and Social Implications"

Chair: S.Ziavras,

Speakers: S.Ziavras, N.Georganas, B. Matkowsky, M.Baith, K. Maeda, M.Galan-Moreno

Coffee-Break: 16:30-17:00

ROOM A' - PANEL DISCUSSION 7:

Time: 17:00-18:00

"New Directions in Electrotechnology and Electronics"

Chair: T.Ono

Speakers: T. Ono, K. Edelmoser, P.Thitimajshima, A.Nadeem, M.Novak, G.Lambert-Torres

ROOM D' - WORKING GROUP 4:

Time: 15:30-18:00 (with coffee-break: 16:30-17:00)

"Control, Manufacturing Systems, Industrial Systems, Robotics"

Chair: Meng Joo Er

Kernel of Members (list not complete):

M.J.Er, N. Brignole, B. Grabot, G. Adam, I. Taralova, S. Bogomolov, O. Habert, C. Provatidis, F.Koumboulis, M.Skarpetis, M.Tzamzi, E.Jafarov, I.Horova, F.Batzias.

You are invited to participate in this round table discussion, if your interests lie in this area.

ROOM A' - OFFICIAL CLOSE OF THE MEETING:

Time: 18:15-18:35

"Official Close of the Multiconference"

Chair: N.Mastorakis

Panel: A.Venetsanopoulos, Z.Bojkovic, G.Antoniou, S.Belbas, G.Miminis, F.Koumboulis

Saturday, July 15, 2000.

Multiconference Tour at Evia Island:

Program:

**Hotel Nafsika - Hotel Armonia – Hotel Apollon Divani – Chalkida
Monastery of Saint Ioannis the Russian at Prokopi Village -
Limni Evias (lunch – bathe)
Monastery of Saint David and Saint Iakovos
Chalkida, Athens, Vouliagmeni.**

Sunday, July 16, 2000.

Departure from Astir Palace and Greece.

• **QUESTIONNAIRE**

Please, give us your opinion (please, put a * or a + in the appropriate box)

| | <i>Excellent</i> | <i>Very Good</i> | <i>Good</i> | <i>Medium</i> | <i>Low</i> |
|---|------------------|------------------|-------------|---------------|------------|
| Scientific – Technical Part of the meeting | | | | | |
| Organization of the Conference | | | | | |
| Social Part | | | | | |
| Proceedings | | | | | |
| Post-Conference Books | | | | | |

How did you learn about the conference? (please, put a * or a + in the appropriate box)

- From an e-mail message (from organizing committee).
- From the Web. If yes, write here the site of the organization or individual (for example, write from the site of XYZ)

- From a brochure (hard copy).
- From an announcement in a Journal. Please, write the name of the Journal

- From personal invitation by the Organizing Committee.
- From some friend that spoke to me about the conference.
- I had participated in a previous meeting and so I knew it.
- Other (please, indicate)

About the (multi)-conference.

- In general, I am pleased from the conference
- In general, I am not pleased from the conference

Other Comments:

• **PAPERS' EVALUATION – SPECIAL ISSUES**

We will promote the best papers of the conference to Special Issues in the collaborating journals. For this reason, you are kindly requested to indicate below the ID numbers and the titles of the best – in your opinion - 5 papers. You must not be author or co-author of these papers. Authors of these papers must not be with your university, company, institution, etc. Also, they must not be papers of any member of the Organizing Committee(*). The papers must not belong to the same Session. If you don't want to propose 5 papers, you may propose less.

(Your name will be kept secret)

| | PAPER ID NUMBER # (for example 101) | TITLE of the Paper (for example: New Fuzzy Algorithms in Signal Processing) | Title of Post-Conference Book that contains it | Pages (for example 38-46) |
|---|-------------------------------------|---|--|---------------------------|
| This the first paper in my opinion | | | | |
| This is the second paper in my opinion | | | | |
| This is the third paper in my opinion | | | | |
| This is the forth paper in my opinion | | | | |
| This is the fifth paper in my opinion | | | | |

(*) Members of the Organizing Committee:

| | | | |
|---------------------|------------------------|-------------------|------------------|
| Nikos Mastorakis, | Fotis Koumboulis, | Areti Tzelepi, | Ioannis Gonos, |
| Kostas Oikonomou, | Dimitris Sotiropoulos, | Spyros Maridakis, | Markos Griparis, |
| John Aragiorgis, | Dionysis Politis, | Nikolaos Kouvakas | Maria Louka |
| Michalis Skarpetis, | Dimitris Irakleous, | Christos Mavridis | |

Please, give sufficient justification for your choices. Write here clearly the reasons for which you “voted” these papers. Use additional sheets from your Note Book if it needs.

For the First Paper:

For the Second Paper:

For the Third Paper:

For the Forth Paper:

For the Fifth Paper:

If you have comments for the authors (of how to improve their paper or to correct some mistakes, or of how to enhance them for a journal version, please, complete). Use additional sheets from your Note Book if necessary.

For the First Paper:

For the Second Paper:

For the Third Paper:

For the Forth Paper:

For the Fifth Paper:

Except these five (5) papers, the conference has many other papers. Please, write here comments for other papers:

I have specific comments and questions for other papers (please determine).

The author/s of the following paper/papers did not give adequate explanations and they don't convince me about their validity, or originality, or novelty, or usefulness, or effectiveness:

MY NAME:

MY ADDRESS (complete business address):

MY EMAIL:

AREA OF MY INTEREST:

SIGNATURE

DATE

