

**2002 WSEAS International Conferences on
Signal Processing, Robotics and Automation
(WSEAS ISPRA '02)**

**Microwaves, Antennas and Radar Systems
(WSEAS IMARS '02)**

**Electronics and Hardware Systems
(WSEAS IEHS '02)**

JOINT PROGRAM



*Andalucia Playa, Chiclana, Cadiz, Spain
June 12-16, 2002*



Dear Participants,

We are greatly honored to have you with us once again in the WSEAS Conferences ISPRA, IMARS, IEHS. Taking this opportunity, we would like to express our appreciation to you and wish you to enjoy the scientific and cultural part of the meeting.

In your conference bag, you can find the following material:

- Conference Proceedings (CD-ROM)
- One volume of WSEAS-Press International Editions (*free sample*)
- Certification of attendance
- Notebook and pen
- Name Card
- A coupon for our Banquet
- T-Shirt from WSEAS

Also a volume of WSEAS-Press International Editions with your paper or an issue of WSEAS Transaction with your paper, which will be sent to you after the Conference.

Thank you very much.

The Organizing Committee

Wednesday, June 12

09:00-13:00 Distribution of the Conference Material

16:00-20:00 Distribution of the Conference Material

Thursday, June 13

Room A

Time: 08:00-11:00

SESSION: Signal Processing I

Chair: Waleed Fakhr

Mosaic image reconstruction for video compression

Evgenia Gelman

Efficient Prediction of Workpiece-Fixture Contact

Michael Yu Wang

MRF model based algorithm for image segmentation using extremal optimization

Kamal E. Melkemi, Mohamed Batouche

Biological Sequences Analyzed by Means of Genetic Algorithms: An efficient way for Alignment

Carmen Morato, Diego Andina, Juan Seijas

Experimental and Theoretical Analysis of Wavelet-Based Denoising Filter for Echocardiographic Images

Sucheol Kang, Seunghong Hong

Feature-Based Approach to Speech Recognition

Li Zhang, William Edmondson

Automatic Speaker Recognition In Noisy Environments Using Wavelet Transform

Waleed Fakhr, Nadder Hamdy, Weam Alkhaldi

Relations-ship between two-scale sequences of two-scale sequences of B-splines's Multiresolution Analysis

Lucia Agud Albesa

Room B

Time: 09:00-11:00

SESSION: Electronics Systems and Hardware

Chair: George-Othon Glentis, I. Theologitou

Peculiarities of spacecraft "Ocean-O" control in geomagnetic storms

Udaloy Valeriy Alekseevich, Ivanov Nikolai Mihailovich, Sokolov Nikolai Leonidovich, Pazdnikov Vladimir Urevich

Methodology of development of high-tech profitable Mission Control Center for automatic space vehicles

Udaloy Valeriy Alekseevich, Ivanov Nikolai Mihailovich, Sokolov Nikolai Leonidovich, Pazdnikov Vladimir Urevich

Hardware Implementation of a Generic Fuzzy-ROM Controller

Ahmed Sameh, Ayman Kasem

Application Verification Architecture for Communication SoCs

I. Z. Theologitou, C. N. Charopoulos, F. E. Karoubalis, G. A. Doumenis, D. Reisis

Experimental evaluation of a low-power sense comparator for multilevel flash memories

Alessandro Cabrini, Rino Micheloni, Osama Khouri, Stefano Gregori, Guido Torelli

Relief presentation on maps by means of shading

Stanislav Franges, Vesna Posloncec-Petric

Coffee Break 11:00 – 11:30

Room A

Time: 11:30-13:30

SESSION: Electromagnetics and applications in microwaves, radar and scattering

Chair: George-Othon Glentis

An Algorithm for Target Detection and Identification with Very High-Resolution Maritime Surveillance Radars

F. Perez, J. Garcia, F. Casanova

Theoretical study of the power distributions for interstitial microwave hyperthermia

Kamyay Yekeh Yazdandoost, Kazuo Sato

Application of the wavelets in 2D and 3D scattering problems

A. P. Anyutin, A. G. Kyurkchan

Implementation of the Transform Domain Generalized Sidelobe Canceller using real valued arithmetic

George-Othon Glentis

Fast algorithms for dyadic greens function and solvers for electromagnetic scattering in layered media

Wei Cai

Numeric Simulation of Magnetron Injection Gun (MIG) for Electron Trajectories

M. Flissi, Dj. Slimani, N. Khenfer

Room B

Time: 11:30-13:30

SESSION: Signal Processing II

Chair: Hilario Gómez-Moreno

An Alternative to Exhaustive Search Scheme for Limit Cycles Behavior in Digital Filters

R. Jimenez Martinez, F. Lopez Ferreras, D. Oses del Campo, M. Utrilla Manso

Incremental hough transform: an improvement algorithm for digital devices implementation

O. Djekoune, K. Achour, M. Halimi, S. Kahlouche

Fingerprint identification using the finite element technique

Magdi Saeb, Sherif Hegazy

Characterization of bone texture by fractal method : application on CT-Scan images

A. Taleb-Ahmed, P. Dubois

Design and modeling tool for chromatic dispersion compensation with fiber Bragg gratings

Patricia Fernandez, Juan C. Aguado, Juan Blas, Fernando Gonzalez, Ignacio De Miguel, Javier Duran, Ruben M. Lorenzo, Evaristo J. Abril, Miguel Lopez

The Multi-band LPC Coherence for Voice Activity Detection

Sofia Ben Jebara

Room A

Time: 15:00-17:00

SESSION: Electronic Systems, Filters, Applications

Chair: Agustin Martinez Hellin, Sau-Mou Wu

Construction of a tool for Dynamic WAP Applications Editing

E. Carrillo, J. J. Samper, J. J. Martinez Dura, V. Ramon Tomas

Sensitivity Analysis of a Mesfet Small- Signal Model by Calculation of Condition Number

Wahid Bejaoui, Fethi Choubani, Ammar Bouallegue

Synchronism Architecture Implementation for High Quality Audio Processing and Transmission

Agustin Martinez Hellin, Daniel Meziat Luna, Manuel Rosa Zurera, Francisco Lopez Ferreras

A Programmable Linear-Phase SC Lowpass Filter Chip Design for Multi-Standard Communications

Sau-Mou Wu, Ron-Yi Liu, Chi-Ming Wu, Sin-Yu Chen

A 4th-Order Bandpass Sigma-Delta Modulat

Sau-Mou Wu, Rou-Yi Liu, Chia-Hau Chang, Chao-Chyun Chen

Design of digital FIR filters with arbitrary magnitude using the Least squares error

Nikzad Babaii, AbdolReza Nabavi

Room B

Time: 15:00-17:00

SESSION: Control and Robotics I

Chair: J. Torres Garcia, J. Seijas

A combined adaptive PID and Chebyshev series to control a class of MIMO non-linear systems

I. Boumhidi

The Reg Circle Game - Learning about Remote Hardware Control

Alejandro Lopez Pamplona, Sorn Stoll

Fast Position Estimation for Autonomous Mobile Robot Navigation

Alvaro Sanchez-Miralles, Miguel Angel Sanz-Bobi

Shaping tool head pneumatic actuator commands to reduce flexible structure cut car letters machine vibration

Gerardo Pelaez, William E. Singhose, Antonio Vizan

Integrating and Modelling Sensors: An Approach to Low-Cost Robotics Systems using Multilayer Perceptrons

Alvaro Sanchez-Miralles, Miguel Angel Sanz-Bobi

Applying Multi-Rate Modelling Techniques

Josep Tornero Leopoldo Armesto

Coffee Break 17:00 – 17:30

Room A

Time: 17:30-19:30

SESSION: Systems Theory and Control

Chair: R. Cordoba, R. Vig

A comparison of iterative feedback tuning and classical PID tuning schemes

Magnus Mossberg, Michel Gevers, Olivier Lequin

Parameterization of All Observers for Generalized Dynamical Systems

Zhiwei Gao, Yajun Wu

A simplified algorithm for radiation source coordinate estimation by passive multisite hyperbolic systems

Victor S. Chernyak

Segmentation and recognition using neural networks

Renu Vig, Tangkeshwar Thokchom

TCOM : a Temporal Component Oriented Methodology for the industrial Automation Engineer

G.Vidal-Naquet, H.G.Mendelbaum

A self-developing neural network designed for discrete event system autonomous control

Jerome Leboeuf Pasquier

Room B

Time: 17:30-19:30

SESSION: Microwaves, Antennas and Propagation

Chair: V.Riznyk, F. Jimenez

Application of the "perfect" combinatorial configurations for design of microwave antennas and radar systems

Volodymyr Riznyk

Simulation of Electromagnetic Radiation Levels for some Radiocomunication Systems

Rafael Herradon, Florentino Jimenez, Lidia Munoz, Juan Aguilera

Electromagnetic field measure procedure in proximities of mobile communications antenna and comparison results

Francisco Leon, Roberto Maroto, Florentino Jimenez, Rafael Herradon, Oscar J. Suarez

Multi-Port Network Modeling of Multi-Layer Planar Circuits Containing Ground Plane Slots

Amirreza Khajehnasiri, Safieddin Safavi-Naeini

MAP radar cross-section estimation in SAR

Alexander Ksendzuk, Valery Volosyuk

Maritime overage in dual gsm 900 dcs 1800 network of big capacity planning integration and optimization

Miguel Arcas Oliver, Juan Jose Flores Mederos Jose, Hernando Rabanos, Rafael Herradon Diez, Florentino Jimenez Munoz

Friday, June 14

Room A

Time: 09:00-11:00

SESSION: Hardware Systems and Hardware/Software Codesign

Chair: E.Carrillo, M.Saeb

The design of pseudo-n-path bandpass $\mu\text{U}\mu\text{G}$ a/d modulator with single op-amp

Sau-Mou Wu, Ron-Yi Liu, Chao-Chyun Chen

Design and Implementation of a dual mode digital APC Algorithm for an APON burst-mode Laser driver

Y. Martens, X. Z. Qiu, J. Bauwelinck, K. Noldus, P. Ossieur, J. Vandewege, E. Gilon, F. Duthilleul, G. Lorusso

Mobile E-Commerce Portal

E. Carrillo, S. Guerero, G. Pabon, J. Javier Samper, J. Martinez

Improving Traffic Management Plans Using HTML and XML

V. Ramon Tomas, J. F. Garcia, J. J. Samper, E. Carrillo, C. Cambres

A new approach to execution time estimations in a hardware/software codesign environment

Javier Resano, Elena Perez, Daniel Mozos, Hortensia Mecha, Julio Septien

Performance Estimation of a Codesign System

Luiza de Macedo Mourelle, Nadia Nedjah

Room B

Time: 09:00-11:00

SESSION: Signal Processing Systems III

Chair: Luis Gracia, J.Torres Garcia

Vision-based System for Self-positioning and Calibration

Luis Gracia, Josep Tornero

Chirp Detection Through Discrete Wavelet Transform

Joaquin Torres, Antonio Vega, Santiago Torres, Diego Andina

Real Time Dynamic Ellipsoidal Neural Network (RTDENN)

Alvaro Sanchez-Miralles, Miguel Angel Sanz-Bobi

Image Labeling in Real Conditions. Application in scale treatment

Juan Manuel Garcia Chamizo, Andres Fuster Guillo, Jorge Azorin Lopez

Image Restoration for Compression Artifacts by an Associative Memory

Rene Rebmann, Gerald Krell, Bernd Michaelis

e-v@l: an Automatic Evaluation Module for Information Retrieval

Pedro Amo-Lopez, Francisco Lopez-Ferreras, Fernando Cruz-Roldan, Roberto Jimenez-Martinez

Coffee Break 11:00 – 11:30

Room A

Time: 11:30-13:30

SESSION: Antennas and Propagation

Chair: V.Chernyak

Multisite radar systems with information fusion: a technology of XXI century

Victor S. Chernyak

Sea surface surveillance with a very high resolution continuous wave radar

Felix Perez, Jose L. Jimenez, Alberto Asensio, Javier Gismero, German Torregrosa, Jose M. Monje, Fernando Casanova, Rafael Cortijo, J. Perez

Carrier phase estimation assisted by pilot symbol for power efficient modulation with honeycombed constellation

Noboru Izuka, Yoshimasa Daido

Dynamic Behavior of Dielectric Antennas at High Communication Rates

Boris Lvov, Osama Ata, Vsevolod Petrunkin

Application of the MMDS in 2D and 3D scattering problems

A. P. Anyutin, A. G. Kyurkchan, S. A. Minaev

Room B

Time: 11:30-13:30

SESSION: Signal Processing Systems and SP applications in telecommunications

Chair: E.Carrillo

Implementation of Neural Network for Image Processing on the FPGA Programmable Systems

Kazimierz Wiatr, Pawel Chwiej

Application of Radial-Basis Function Networks to Radar Detection

M. Pilar Jarabo Amores, Manuel Rosa Zurera, Roberto Gil Pita, Francisco Lopez Ferreras

A Sound Localization System for a Robot Head

Oscar Deniz, Mario Hernandez

A Scalable Formulation For Multidimensional Walsh-Hadamard Transform

Mokhtar Aboelaze, Ayman Elnaggar

Room A

Time: 16:00-17:00

SESSION: Systems Theory and Robotic Systems

Chair: Ahmad Sadegheih

Fusion of piecewise stationary process

Serge Reboul, Mohammed Benjelloun

An autonomous tour-Guide robot for public places

Jes-S. Salido, Vicente Feli, Antonio Adan, Luis Sanchez, Jose Somolinos, Pedro Roncero

Methods and techniques in operation research

Ahmad Sadegheih

Room B

Time: 15:00-17:00

SESSION: Neural Networks and their applications in Signal Processing

Chair: R.Cordova, L.Carnimeo

3D reconstruction approach based on wavelet analysis and neural network in neuro-vision system

Yingen Xiong, Francis K H Quek

Application of neural networks to duration modeling in a Spanish text-to-speech system

Ricardo Cordoba, Juan Montero, Jose Pardo

Using Neural Networks for Adaptive Equalization

L. Radouane, M. Laarabi

Ceramic Tiles Quality Inspection Using Statistical Methods And Neural Networks Approach
Zeljko Hocenski

Cellular Neural Networks for Pattern Recognition in Control Charts
Leonarda Carnimeo, Michele Dassisti, Antonio Giaquinto

A hybrid neural-genetic algorithm for FPGA segmented channel routing problems
Sancho Salcedo-Sanz, Carlos Bousoño-Calzon

Applications of Artificial Neural Networks
Habib Goraine

Coffee Break 17:00 – 17:30

Room A
Time: 17:30-19:30
SESSION: Signal Processing Algorithms and Applications
Chair: Eugenia Macer-Story

A new and improved edge detector using the support vector machines
Hilario Gomez-Moreno, Saturnino Maldonado-Bascon, Francisco Lopez-Ferreras, Pedro Gil-Jimenez

Modelling input signal covariance function estimators for the SAR system
Alexander V. Ksendzuk

Methodology of development of high-tech profitable Mission Control Center for automatic space vehicles
Udaloy V. A., Ivanov N. M., Sokolov N. L., Pazdnikov V. U.

An Efficient Implementation of IS-95 CDMA Reverse Link Transceiver: A Codesign approach
Vinod Raman, Rabi Mahapatra

Security issues in network control protocols

Jorge Ferreiro, Diego Andina

Shaping Events:Self-Organazation of Digital Photos

Eugenia Macer-Story

Room B

Time: 17:30-19:30

SESSION: Biologically Inspired Systems and Robotics

Chair: Gracian Trivino

The CPA Paradigm for Autonomous Mobile Robot Knowledge Representation

Gracian Trivino, Felipe Fernandez, Juan C. Crespo

A computational model of synaptic strength multiplicative scaling

Javier Roperro, Ademar Ferreira

Fuzzy function approximation with guaranteed error-bounds estimate

V. Vigneron, H. Maaref, C. Barret, L. Jaulin

Artificial life for biodiversity education

Terry Bossomaier

Multilayer Perceptron Trained by the Backpropagation Algorithm

Serban Radu

New composite heart activation waveforms

Stefan Popescu

Saturday, June 15

Room A

Time: 08:00-11:00

SESSION: Signal Processing and applications

Chair: Lucia Agud Albesa, Anna Baraniecki

Using New Tools for Education. A Case of an International Cooperation for a Rapid Prototyping Course

R. Ruelas, S. Stoll, J. G. Robledo-Hernandez, V. M. Rangel-Cobian

Improving classification with combined classifiers

Ma. A. Corona-Nakamura, J. J. Hernandez-Constante, R. Ruelas

Filter Interpretation for the relationship between the two-scale sequences in B-splines's MRA

Lucia Agud Albesa

Digital FIR filter optimization in advanced data storage channel

Mostafa Abuitbel, David King, Burry Middleton

Efficient Digital Correlations in Subbands

Anna Baraniecki

Estimation from noisy images with the EM-algorithm

Mikhail Maljutov, Andrei Nikiforov, Rossen Mirchev, David Golan

De-noising of ECG Signal in Wavelets Domain

Gulay Tohumoglu, Ergun Ercelebi

On Efficiency of Transport Triggered Architectures in DSP Applications

Jari Heikkinen, Jarmo Takala, Andrea Cilio, Henk Corporaal

Image Synthesis from Projective Displacement: Application to Image-Based Visual Servoing

Jae Seok Park, Myung Jin Chung

Coffee Break 11:00 – 11:30

Room A

Time: 11:30-13:30

SESSION: Hardware Systems and Engineering Applications I

Chair: Ahmed Sameh

Clock Distribution in RNS-based VLSI Systems

Daniel Gonzalez, Antonio Garcia, Graham A. Jullien, Javier Ramirez, Luis Parrilla, Antonio Lloris

Intrusion Detection System using Rough Classification Algorithm

M. P. Coutinho, I. P. Coutinho, G. Lambert-Torres, L. E. Borges da Silva

A BIST Algorithm to Integrate Scheduling and Allocation in High-Level Test Synthesis

Laurence Tianruo Yang

VCI Interface Methodology in rapid prototyping Platform with PCI NoC

S. Ouadjaout D. Houzet

A new approach to image segmentation using genetic algorithm with mathematical morphology

Kahlouche Souhila, Achour Karim, Mehdi Benkhelif

GA-based integrated scheduling with a new crossover

Yan Li

An Orthogonal and Fault-Tolerant Subsystem for High-Precision Clock Synchronization in CAN Networks

Guillermo Rodriguez-Navas, Julian Proenza

Room A

Time: 15:00-17:00

SESSION: Hardware Systems and Engineering Applications II

Chair: Laurence Tianruo Yang

Versatile spaces for the use of the information technology in education

Soledad Mateos Blanco, Jose Gomez Galan

Education and Virtual Reality

Jose Gomez Galan

Hardware and software testing

L. T. Yang, J. Muzio

**A Rapid PCI NoC Prototyping Platform with VCI Interfaces
Methodology**

Salim Ouadjaout, Dominique Houzet

**Flexibility, speed and accuracy in vliw architectures simulation and
modeling**

Ivano Barbieri, Massimo Bariani, Alberto Cabitto, Marco Raggio

**An Analysis Method of Program Traceability to the Specification
through Program Construct Formalization**

Satou Tadamasa, Kishimoto Yorinori

Binary Image Coding Algorithm Using Tactile Data Information

R. Benhadj, K.Ouazzane

Coffee Break 17:00 – 17:30

Room A

Time: 17:30-19:30

SESSION: Control and Robotics II

Chair: Leonarda Carnimeo

Exponential controller for robot manipulators

Fernando Reyes

Supervisory process control based on trained experience: combining bayes-statistics, fuzzy-vagueness and adaptive control

Stefan Enk, Eike Muhlenfeld

Structured Logic Processors Based Self Learning Fuzzy Neural Network

Mohamed S. Ibrahim

Personal identification using fingerprint verification technique

Arun Gaikwad, Navnath Pasalkar

Synthesis of a cellular nonlinear network for a fuzzy associative memory in stereoscopic vision

Leonarda Carnimeo, Antonio Giaquinto

Evaluation of object segmentation algorithms as components of autonomous video based robot systems

Stefan Florczyk

3D measurement for mechanical parts in neuro-vision system

Yingen Xiong, Francis K. H. Quek

Saturday, June 15: 20:30 Banquet

Sunday, June 16

Departure from Andalucia Playa. Departure from Spain.

See you again in the same conference series in June of 2003.