

**Joint Program of the WSES International Conferences:
AITA-AMTA-MCBE-MCBC**

**Skiathos, Greece
September 26-30, 2001**

Wednesday, September 26

8:00-13:00 and 16:00-19:00: Distribution of the Conference Material

Thursday, September 27

Plenary Speech 1: 8:00

**SIGNAL ANALYSIS. WAVELET-BASED METHODS AND
APPLICATIONS**

Prof. Carlos Enrique D' Attellis
University of Buenos Aires - Favaloro University
Buenos Aires, Argentina

After introduce the idea of wavelets and their influence in signal analysis -in particular in two aspects: localization in the time-frequency plane and estimation of parameters in stochastic processes with long-range dependence characteristics-, several applications are considered. They are: detection of epileptic events in electroencephalograms, developmental processes in biology, failure detection in materials or tools, analysis of geomagnetic index.

Session: MCBC I, 9:00 – 11:00

Chair: Alex Karagrigoriou

Decomposition of protein threading problem based on connectivity of 3-D structure

Pierre-Yves Calland, Saïd Hanafi

Computer-aided robust percentile estimation with biochemistry applications

Christodoulos Christodoulou, Alex Karagrigoriou

Attempts to mathematically define a developmental gradient: The isthmic organizer and the postmitotic neuronal migration dynamics in the developing central nervous system

M. Rapacioli, C. D' Attellis, A. Di Miro, T. Spraggon Hernandez, J.L. Ferrán, S.B. Pereyra-Alfonso, V. Sanchez, G. Scicolone, V. Flores

Algorithms for Sorting by Reversals

Filomena de Santis, Ottavio Montone, Nicola Pace

Two different strategies for baker's yeast fermentation process simulation

Celina P. Leão, Filomena O. Soares

Coffee Break 11:00 – 11:30

Session: MCBE I , 11:30 – 13:30

Chair: Alex Karagrigoriou

On the use of model selection in multivariate processes with applications in economics

Alex Karagrigoriou, Sangyeol Lee

Development of ISFT supporting decision-making for company investment policy creation

Izabella V. Lokshina

Evaluation of the Weighted Discrete Choice Method

Richard C. Insinga

Using binary choice models in estimating willingness to pay for improved water

Felipe Perez-Pineda

Session: AITA I , 14:00 – 16:00

Chair: Paolo Rocchi

Redundant Information: A theory for integrated methodologies

Paolo Rocchi

Competitive learning with creation method on the basis of inputs in partition space
Michiharu Maeda, Hiromi Miyajima

Study on the feasibility of piezoelectrically actuated flapping flight
Dragan Cveticanin

Wireless On-Line Information Support of Mobile Users
Peter Mikulecky

An evaluation of texture segmentation techniques for real-time Computer Vision applications
Vergados D., Anagnostopoulos C., Anagnostopoulos I., Kayafas E., Loumos V., Stassinopoulos G.

Route Optimization & Handoff Control in Wireless ATM Networks
Sounoglou M., Vergados D., Protopsaltis N, Theologou M.

Coffee Break 16:00 – 16:30

Session: AMTA I, 16:30 – 18:30
Chair: Axel Nackaerts

Music: A powerful tool for exaltation of the poetic word
Luciano Simoni

Is there an acoustical tradition in western architecture ?
Marc Crunelle

Coupled string guitar models
Axel Nackaerts, Bart De Moor, Rudy Lauwereins

The tempered scale as an optimization process: from Pythagoras to J.S. Bach
Carlos Enrique D'Attellis

Dynamic Wavetable Synthesis
Tom Schouten, Bart Demoor

A voice activity detector in noisy environments using linear prediction and coherence method

Sofia Ben Jebara

18:45: Drink in the Sunset

Friday, September 28

Plenary Speech 2: 8:00

Biological Time Series: methods of analysis and applications

Rita Balocchi

IFC-CNR, Area Ricerca S. Cataldo, 1,
via Moruzzi, Pisa, 56100,
ITALY

In this lecture a description of both classical methods of time series analysis, (linear techniques like Power Spectral Analysis) and recently developed nonlinear techniques (Recurrence Quantification Analysis, Fractal Analysis, others) will be given. After that some of the results we obtain with the above-mentioned techniques applied to real cardiovascular time series recorded in different pathophysiological conditions (heart transplantation, atrial fibrillation, microgravity exposure, others) will be presented.

Session: AMTA II , 9:00 – 11:00

Chair: George Tzanetakis

Automatic Pitch Detection and Midi Conversion for the Singing Voice

António Pinto, Ana Tomé

Audio Analysis using the Discrete Wavelet Transform

George Tzanetakis, George Essl, Perry Cook

Isolated Monosyllabic Marathi Alphabet Recognition

Dharmpal Doye, Trimbak Sontakke

De Natura Sonoris: Sonification of Complex Data

Oded Ben-Tal, Michelle Daniels, Jonathan Berger

Coffee Break 11:00 – 11:30

Session: MCBC II , 11:30 – 13:30

Chair: Rita Balocchi

Biological and statistical evaluation of clusterings of gene expression profiles

Zelmina Lubovac, Björn Olsson, Per Jonsson, Kim Laurio, Magnus L. Andersson

Boundary Forcing as a factor of pattern formation for two-dimensional plankton communities

Ezio Venturino, Alexander Medvinsky

Early Trends in Seizure Onset: a Nonlinear Approach

Santi Chillemi, Rita Balocchi, Michele Barbi, Angelo Di Garbo, Raffaele Farri, Michele Migliore

A Pharmacokinetic-Particle Counter Model of in vivo Bio-assay Systems Predicts Time Dependent Modulation of Polymodal Responses by Binding-Proteins

Ross Barnard and Konstantin G. Gurevich

Session: MCBE II , 14:00 – 16:00

Chair: George Vozikis, E. N. Pistikopoulos

Does Finance appeal to creative students?

Kam C. Chan, Connie Shum

Network Applications in the Insurance Industry

Ernest Goss, George Vozikis, Timothy Mescon

The Explicit Model-based Control Law for Process Systems via Parametric Programming

V.Sakizlis , V. Dua, E.N. Pistikopoulos, J.D. Perkins

Analytic Assessment of Index Formulae Inaccuracies

Raphael Yehezkael

Coffee Break 16:00 – 16:30

Session: AITA II , 16:30 – 18:30

Chair: Santi Chillemi

Providing personalized information services by developing intelligent recommender systems

Wei-Po Lee, Chih-Hung Liu

Ada Lovelace's Poetical science

Betty Alexandra Toole

Synthesis of a nonlinear cryptosystem based on the synchronization of chaotic circuits via a one-dimensional signal

Donato Cafagna, Leonarda Carnimeo

Quantitative analysis of human communication processes

Giovanna Morgavi

Views of a Memory Cell

Walter Dosch, Annette Stuempel

A natural language approach for distance learning: the case of the 'explanation question'

Vassiliki Bouki

Saturday, September 29

Session: MCBE III , 8:00 – 9:00

Chair: Michele Barbi

A Fuzzy Evolutionary Approach To Investment Decision

T. Van Le

A terminology database to support classification

Tor Bjelland

Some reflections on the matrix that appear in the problem of canonical correlation

R. J. B. de Sampaio, M. A. B. Candido

Session: AITA III , 9:00 – 11:00

Chair: Rita Balocchi

A Solution to the LQ-Problem with Finite Final Time

C. Botan, A. Onea, F. Ostafi

Semantics for fuzzy disjunctive programs with similarity

Dusan Guller

Medical Knowledge as a Relational Network

Jose Ramon Alvarez, Rafael Martinez, Jose Mira, Ana E. Delgado

Dynamical Systems: A Framework for Man Machine Interaction

Ioannis Iossifidis, Axel Steinhage

Coffee Break 11:00 – 11:30

Session: AITA IV , 11:30 – 13:30

Chair: Themis Panayiotopoulos

On VDSL performance and hardware implications for Single Carrier Modulation Transceivers

Sven Haar, Roland Zukunft, Thomas Magesacher

ISM and Learning Process

Vasilis S. Belessiotis, Nikos Alexandris, Themis Panayiotopoulos

The use of the Virtual Agent SimHiman in the ISM scenario system

Vasilis S. Belessiotis, Spyros Vosinakis, Themis Panayiotopoulos

Implementation Processing of the UNI Signaling for the Optical Network

Hee-Sung Chae

Intercarrier interference analysis for OFDM Systems in non-stationary channels

Fethi Tlili, Ammar Bouallegue

Session: MCBC III , 14:00 – 16:00

Chair: Rita Balocchi

Stochastic resonance in a sinusoidally forced LIF model with noisy threshold

Michele Barbi, Santi Chillemi, Angelo Di Garbo

Volatility at different delays to characterize the HRV behavior at rest and after head down test

Rita Balocchi, Claudio Michelassi, Jacopo M. Legramante, Gianfranco Raimondi, Santi Chillemi

Electromagnetic Dyadic Green's Function for a Moving Human Torso Model

S. M. S. Reyhani

Models of Antenna-Head Interactions by Electromagnetic Green's Dyadic Function Approach

S. M. S. Reyhani

An algebraic method applied to insulin delivery regulation

Michael Foursov, Christianne Hespel, Jean-Pierre Hespel, Edouard Monnier

Coffee Break 16:00 – 16:30

Session: MCBC IV , 16:30 – 18:50

Chair: Alex Karagrigoriou

Exploring the human genome data in SWISS-PROT and TrEMBL

Sergio Contrino, Youla Karavidopoulou

Definition of developmental locus property in terms of space-dependent changes in dynamics of developmental mechanisms: The postmitotic neuronal migration in the developing central nervous system

Melina Rapacioli, Silvia Gigola, Carlos D' Attellis, José Luis Ferrán, Susana B. Pereyra-Alfonso, Viviana Sanchez, Gabriel Scicolone, Vladimir Flores

Protein Secondary Structure Prediction using Logical Analysis of Data

Jacek Blazewicz, Peter L. Hammer, Piotr Lukasiak

Identification of neuritic branching in dissociated cell cultures

Silvia Maria Farani Costa, João Marcelo de Oliveira, Luciano Marques Arantes, Nathalia Lopes Vieira Peixoto, Francisco Javier Ramirez Fernandez

Probing neuronal excitability in culture with multielectrode arrays

Nathalia Peixoto, Mirella Ghirardi, Javier Ramirez

Mental States Discrimination by Independent Component Analysis and LVQ Neural Networks

José L. Matín, Luciano Boquete, Manuel Mazo, Sira E. Palazuelos

19:00: Banquet (with Greek folklore dances)