4th Chaotic Modeling and Simulation International Conference (CHAOS2011)

May 31 - June 3, 2011 Agios Nikolaos Crete Greece

Program

Session / Room	Date / Time	Event	Talk Title / Event
Hermes	17.00-20.00	**Monday May 30**	**Registration**
Hermes	8.30-10.00	**Tuesday May 31**	**Registration**
Room 1	10.00-10.40	**Opening Ceremony**	
Room 1	10.40-11.30	**Keynote Session (Chair: D. Sotiropoulos) Professor Ferdinand Verhulst**	**Extension of Poincare's program for integrability and chaos in Hamiltonian systems**
Room 1	11.30-12.00		**Coffee Break**
SCS1		**SPECIAL AND CONTRIBUTED SESSIONS SCS1**	
Room 1	31.05.11: 12.00-13.40	**Chair: G. I. Burde**	**Chaos and solitons**
		G.I. Burde	Spontaneous generation of solitons from steady state {exact solutions to the higher order KdV equations on a half-line}
		Posadas-Castillo C., Garza-González E., Cruz-Hernández C., Alcorta-García E., Díaz-Romero D.A.	Chaotic synchronization of complex networks with Rössler oscillators in Hamiltonian form like nodes
		Vladimir L. Kalashnikov	Dissipative solitons: the structural chaos and the chaos of destruction
		V.Yu.Novokshenov	Tronqu'ee solutions of the Painleve' II equation
		Stefan C. Mancas, Harihar Khanal	2D Erupting Solitons in Dissipative Media
Room 2	31.05.11: 12.00-13.40	**Chair: G. Feichtinger**	**CHAOS and Applications in social and economic life**
		Gustav Feichtinger	Multiple Equilibria, Binges, and Chaos in Rational Addiction Models
		David Laroze, J. Bragard, H Pleiner	Chaotic dynamics of a biaxial anisotropic magnetic particle
		Oleksander Pokutnyi	Chaotic maps in cybernetics
Room 3	31.05.11: 12.00-13.40	**Chair: D. Sotiropoulos**	**Chaos and time series analysis**
		Hannah M. Arnold, Tim Palmer, Irene Moroz	Stochastic Parametrisation and Model Uncertainty in the Lorenz '96 System
		A. Charakopoulos, T.E. Karakasidis, P. Papanicolaou	Detection of jet axis in a horizontal turbulent jet via nonlinear analysis of minimum/maximum temperature time series
		Zoran Rajilic	Angular Momentum Method for Analysis of Irregular Time Series
		Hung Soo Kim, Soo Jun Kim, Gun Haeng Lee, Jung Ki Lee	Investigating Nonlinear Dependence of Time Series Using BDS Statistic
		J.M.V. Grzybowski, E.E.N. Macau, T. Yoneyama	Isochronal synchronization of time-delay and delay coupled chaotic systems
	31.05.11: 13.40-15.00		**Lunch**
Room 1	31.05.11: 15.00-15.50	**Keynote Session (Chair: D. Sotiropoulos) Professor Hansjorg Kielhofer**	**Pattern Formation of the Stationary Cahn-Hilliard Model**
	31.05.11: 15.50-16.10		**Coffee Break**

SCS2		SPECIAL AND CONTRIBUTED SESSIONS SCS2	
Room 1	31.05.11: 16.10-17.30	**Chair: J. M. Balthazar**	**Chaos, New Materials and Atomic Force Microscope Dynamics and Control**
		Oded Gottlieb, E. Hollander	Chaos and multiple mode spatio-temporal complexity in thermo-visco-elastic systems subject to laser irradiation
		Atila M. Bueno, Jose M. Balthazar, Jose R. C. Piqueira	Simulations of the Frequency Modulated - Atomic Force Microscope (FM-AFM) Nonlinear Control System
		Julio R. Claeyssen, Teresa Tsukazan, Jose M. Balthazar, Rosemaria Copetti	The Timoshenko Model in Atomic Force Microscopy
Room 2	31.05.11: 16.10-17.30	**Chair: Alexander Ramm**	**Chemistry and Chaos**
		Lenka Šebestíková	Buoyantly Unstable Three-Dimensional Chemical Fronts under an Influence of a Liquid Layer Depth
		Min-Ho Lee, Chang Woo Byun, Nark Nyul Choi, Gregor Tanner	Chaotic ionization of planar helium
		Alexey A. Kipriyanov (Jr.), Peter A. Purtov	Magnetic field effects on chemical reactions near the disturbance of stationary states conditions
		Leila Rajaei, Babak Shokri	Microwave heating of the ceramic materials by the Gaussian beam
Room 3	31.05.11: 16.10-17.30	**Chair: G. Orman**	**Data Analysis, Chaotic and Stochastic Modeling**
		George Matalliotakis	An Extended Stochastic Quadratic Model for Modeling Survival Data
		Ioannis Dimotikalis, Sofia G. Archontaki, Panagiotis I. Varelas	Nonlinear Analysis of Shipping Problem
		George Matalliotakis, Christos H. Skiadas	Life table data analysis using dynamic and deterministic models
		L. A. Rassvetalov	Single-partial model of the nonlinear resonant medium
SCS3		**SPECIAL AND CONTRIBUTED SESSIONS SCS3**	
Room 1	31.05.11: 17.30-19.30	**Chair: J. M. Balthazar**	**Chaos, Control and Nonlinear Engineering Applications**
		Angelo Luongo, Daniele Zulli	The Multiple Scales Method for the Analysis of a Double-Zero/Single-Hopf Bifurcation
		Aline S. de Paula, Marcelo A. Savi	Chaos control applied to mechanical systems
		Jose Manoel Balthazar, Jorge Luis Palacios Felix	On Nonlinear and chaotic behavior of a simples portal frame, under excitation of a unbalanced DC motor with limited power supply, coupled to a nonlinear essentially oscillator
		Sideane Mattos De Nadai, Marcio Coelho de Mattos	On the Existence and Stability of Periodic Motions in Harmonically Excited Vibro-Impact Systems
		A.Yu. Shvets, O.M. Makasyeyev	Chaotic oscillations of nonideal flat pendulum systems
		Evgeniy D. Pechuk, Tatyana S. Krasnopolskaya	Construction of Dynamical Systems from Output Regular and Chaotic Signals
Room 2	31.05.11: 17.30-19.30	**Chair: Lech Longa**	**Complex dynamics**
		Nathalie Corson, M.A. Aziz-Alaoui, Stefan Balev, Cyrille Bertelle, Rawan Ghnemat	Morphogenesis and Synchronization of Complex Interaction Networks Dynamics
		Tomáš Veber, Igor Schreiber, Lenka Schreiberová	Study of complex dynamics in an pH-oscillatory chemical reaction
		Karol Trojanowski, Lech Longa	Synchronization in Kuramoto Model with Distance-dependent Delay
		Giuseppe Greco, Rodolfo Rosa, Grigory Beskin, Sergey Karpov, Luana Romano, Corrado Bartolini, Adriano Guarnieri	Non-Linear time series analysis of Gamma-ray burst phenomena.
		Soo Jun Kim, Hui Seong Noh, Chang Won Lee, Hung Soo Kim	Nonlinear Determinism and Noise Effect in Radar Rainfall
Room 3	31.05.11: 17.30-19.30	**Chair: C. H. Skiadas, Co-Chair: I. Dimotikalis**	**Chaotic dynamics**
		Tatiana F. Barbashova, Lina S. Glukhova, Evgeny I. Kugushev	Ball Motion with Rough Surfaces Impacts
		Volodymyr Krasnoholovets, Ivan Gandzha	A sub microscopic description of the formation of crop circles
		Maria de Fatima Brilhante, Maria Ivette Gomes and Dinis Pestana	BetaBoop Brings in Chaos
		Matthias Hoffacker, Paul Gregor Nikolic, Daniel Eichhoff, Andreas Kurz	Influence of the simulation model on the spatial arc resistance distribution of an axially blown switching arc
		Alexander A. Chernitskii	Toroidal electromagnetic waves
		G.M. Bakunov, V.V. Matrosov, and V.D. Shalfeev	Competition of chaotic and automodulation regimes in phase lock loops with the second-order filter and delayed feedback
	31.05.11: 19.30-20.30		**Welcome Reception**

Wednesday June 1

SCS4 — **SPECIAL AND CONTRIBUTED SESSIONS SCS4**

Room 1	01.06.11: 9.00-10.40	**Chair: D. Sotiropoulos**	**Applied Mechanics**
		Chandreshkumar D. Dubey, Vikram Kapila	Wave Fractal Dimension as a Tool for Detecting Cracks in Beam Structures
		Chandreshkumar D. Dubey, Vikram Kapila	Detection and Characterization of Cracks in Beams via Chaotic Excitation and Statistical Analysis
		M. Lampart, J. Zapoměl	Dynamics of the electromechanical system with impact element
		Vyacheslav M. Somsikov	About Principles of creating of the structured particles mechanics
		Ivan A. Radionov	System of induction motor vector control: synergistics approach
Room 2	01.06.11: 9.00-10.40	**Chair: Ioannis Dimotikalis**	**Electronic applications and chaos**
		İhsan Pehlivan, Yılmaz Uyaroğlu, Mehmet Ali Yalçın, Abdullah Ferikoğlu	Analysis and Circuit Realization of A New 3D Chaotic System
		BIRI Venceslas, DOMMANGET Nadine	Chaotic advection for participating medium rendering in computer graphics
		Subodh Pandey, Alpana Pandey	Chaotic Communication: An overview
		Alpana Pandey, Rahul Deshmukh, Anurag Soni	Construction of Chaotic Generator Using Active Devices
		K. Kemih, M. Halimi, M. Ghanes, G. Zhang	An application of chaotic Chua's system for secure chaotic communication based on sliding mode observer and its circuit implementation
Room 3	01.06.11: 9.00-10.40	**Chair: A.G. Bagdoev, Co-Chair: Artem Balyakin**	**Ecology and Economy**
		Nícolas Fernando Gavlak, André Augusto Gavlak	Nonlinear programming methods for solving problems: a recent bibliographic review
		Prithaa Das, Atin Das, Gürsan ÇOBAN	The Chaotic Analysis of Financial Time Series: Classification of Foreign Exchange Rates Series via Their Exponential Divergence Curves
		Vladimir Zhulego, Artem Balyakin	Hierarchical socio-economic model of the ecosystem "Silicon Valley"
		A.G. Bagdoev, H.V. Tokmajyan, G.A. Manukyan, Z.K. Manukyan	The solutions of some extremely problems in economics and physics by methods of linear and nonlinear wave dynamics
		Zhen Wang, Edward L. Inoides, José A. Tapia Granados	Nonlinear detrending in panel models to estimate macroeconomic effects on mortality
Room 1	01.06.11: 10.40-11.30	**Keynote Session (Chair: C. H. Skiadas) Professor Alexander G Ramm**	**Stability of solutions to some evolution problems**
	11.30-12.00		**Coffee Break**

SCS5		SPECIAL AND CONTRIBUTED SESSIONS SCS5	
Room 1	01.06.11: 12.00-14.00	**Chair: D. Sotiropoulos**	**Physiology/ Medicine**
		Elena Babatsouli	The Development of a Sound in a Child's Speech: Chaotic or Patterned?
		Olga Dick	Multifractal analysis of the psychorelaxation efficiency for the healthy and pathological human brain
		Elena Babatsouli, Dimitrios Sotiropoulos	Modeling the Development of a Sound in a Bilingual Child's Speech
		George I. Lambrou, Apostolos Zaravinos, Maria Adamaki and Spiros Vlahopoulos	Studying the Non-Linearity of Tumour Cell Populations under Chemotherapeutic Drug Influence
		G. Ambika, V. Resmi, R. E. Amritkar, G. Rangarajan	On a Physical model for Alzheimer's Disease
Room 2	01.06.11: 12.00-14.00	**Chair: Ivan Kosenko**	**Chaotic systems**
		Alpana Pandey, Rahul Deshmukh	Simple Chaos Generator
		Mozugan Mombeini, Ali Khaki Sedigh, Mohammad Ali Nekoui	Analysis of Two Time Scale Property of Singularly Perturbed System on Chaotic Attractor
		Steffen Zeeb, Wolfgang Kinzel	Attractor dimension at the synchronization transition of delayed chaotic systems
		M. Chammem, M. Hamdi, N. Boudriga, K. Trim`eche	Building Multi-dimensional Chaotic Functions for Real-time Encryption of Multimedia Streams
		İhsan Pehlivan, Yılmaz Uyaroğlu, Mehmet Ali Yalçın, Abdullah Ferikoğlu	Four-Scroll Stellate New Chaotic System
		Bella Giovanni, Mattana Paolo, Venturi Beatrice	Stable endogenous cycles in a non-Kaldorian IS-LM model with a negative interest elasticity of savings
Room 3	01.06.11: 12.00-14.00	**Chair: Jerzy Ratajski, Co-Chair: I. Dimotikalis**	**Models and Modeling I**
		Łukasz Szparaga, Jerzy Ratajski	Modeling of nitriding process with the stochastic changes of diffusion coefficient
		Łukasz Szparaga, Jerzy Ratajski	Modeling of the stresses evolution in multilayer PVD coating
		S K Burnwal, A K Ghosh	Modelling & Prediction of Performance Characteristics of an Air Launched High Speed Supercavitating Vehicle
		Gürsan ÇOBAN, Ali H. Büyüklü, Atin Das	Linear Least Squares Estimate of Noise Level in Chaotic Time Series via L-infinity Norm Correlation Sum
		Sara Ebrahimi, Hamid Reza Sahebi	A New Solution for Optimal Control a Non-Linear Model by Transformation to Measure Space
	01.06.11: 14.00-15.00		**Lunch**
Excursion	01.06.11: 15.00-21.00		**Half Day Excursion**

SCS6		Thursday June 2 SPECIAL AND CONTRIBUTED SESSIONS SCS6	
Room 1	02.06.11: 9.00-10.40	**Chair: D. Sotiropoulos**	**Music**
		Vaggelis D. Sotiropoulos	A Narrative for Chaotic Octet
		Pedro Pestana	Creating Interactive Music with Fractals
		Pedro Pestana	Lindenmeyer Systems and the Harmony of Fractals
		Scott Mc Laughlin	Non-linear Process and Metaphor in Experimental Music
		Dimitrios A. Sotiropoulos	The Music of a Chaotic Sound Machine
Room 2	02.06.11: 9.00-10.40	**Chair: Vic Law**	**Plasma Chaos and Electromagetism**
		O. Yu. Melchaeva, S.B. Turuntaev	A study of seismicity chaotic behavior under powerful electromagnetic action
		R. Romain, D. Hennequin, P. Verkerk	Vlasov-Fokker-Planck description of the magneto-optical trap
		C.L.Xaplanteris, E.Filippaki, I.S. Mistakidis	Collision Frequency leads the Plasma in a Chaotic State. Influence on the Conductivity.
		R. Shabani, S. Tariverdilo, G. Rezazadeh, A.P. Agdama	Nonlinear vibrations and chaos in electrostatic torsional actuators
		Leila Rajaei- Babak Shokri-WSedighe Mirabotalebi	The dissipation effects on Transition of Electromagnetic Wave Through a Warm Overdense Plasma Layer
Room 3	02.06.11: 9.00-10.40	**Chair: Anatoly Kolesnikov**	**Synergetics I**
		Alexandr A. Kolesnikov	Power invariants for theory of synthesis of oscillation systems
		Alexey S. Mushenko	Synergetics approach to aircraft spatial motion nonlinear control: special control laws
		Andrew A. Kuzmenko	Synergetics approach to vessel turbine drive shaft frequency nonlinear adaptive control design
		Anatoly A. Kolesnikov, Anastasia S. Kapustina	Synergetics method of system synthesis for data chaotic-dynamics processing and securing
		Andrey N. Popov, Sergey P. Kostyukov	Synergetics synthesis of control systems for processes of in-flight refueling
Room 1	02.06.11: 10.40-11.30	**Keynote Session (Chair: D. Sotiropoulos) Professor Marisa Faggini**	**Chaos Theory: Implications for Economic Analysis**
	02.06.11: 11.30-12.00		**Coffee Break**

SCS7		SPECIAL AND CONTRIBUTED SESSIONS SCS7	
Room 1	02.06.11: 12.00-13.40	**Chair: Marcin Molski**	**Chaos and nonlinear systems/ Fractals**
		James McCulloch	Fractal Market Time
		Marcin Molski	Biological growth in the fractal space-time with temporal fractal dimension
		Xiaoshu Lu, Derek Clements-Croome, Martti Viljanen	Application of Fractal Geometry in Architectural Design
		Xiaoshu Lu, Charles Kibert, Martti Viljanen	Application of Chaos and Complexity Models in Sustainable Building Simulation
		L. Kavitha, F.M. Moukam Kakmeni, A. Muniyappan, S. Jayanthi, D. Gopi	Chaotic dynamics in microtubulin dimers
Room 2	02.06.11: 12.00-13.40	**Chair: N. Jevtic**	**Data Analysis, Chaos and Forms**
		Yang Zhang	Discriminant analysis applied to the disruption prediction on Tokamak
		E. Roulin, U. S. Freitas, C. Letellier	Toward a reliable use of the nonlinearity detection and the noise titration technique
		V. M. Marković, A. Z. Ivanović, S. R. Anić, Ž. D. Čupić, Lj. Z. Kolar-Anić	"Structures" of deterministic chaos
		Marco Berardi, Luciano Lopez	Numerical Methods for Discontinuous Singularly Perturbed Differential Systems
		Reza Nadimi, Hamed Shakouri G., Jamshid S. Aram	Factor Analysis (FA) as ranking and an Efficient Data Reducing approach for decision making units: SAFA Rolling & Pipe Mills Company case study
Room 3	02.06.11: 12.00-13.40	**Chair: Anatoly Kolesnikov**	**Synergetics II**
		Tatiana A. Motienko	Synergistics approach to aircraft actuators control
		Tatiana A. Kolesnikova, Natalia A. Kolesnikova	The problem of risk management for society of risk: social invariants
		Anatoly A. Kolesnikov	Scientific school of Southern Federal University (Russia) of nonlinear dynamics and system synthesis
		Anatoly A. Kolesnikov	The theory of integral adaptation of nonlinear systems on invariant manifolds: the worst disturbances
		Gennady E. Veselov	Robotics systems group control synthesis: synergetics approach
		O.D. Kreerenko	Research of stability and controllability performance of nonlinear multidimensional dynamic object
	02.06.11: 13.40-15.00		**Lunch**
Room 1	02.06.11: 15.00-15.40	**Keynote Session (Chair: N. Katopodes) Dr. Vic Law**	**Decoding of atmospheric pressure plasma emission signals for process control**
Room 1	02.06.11: 15.40-16.20	**Keynote Session (Chair: Nikolas Geroliminis) Professor L. Sirko**	**Simulation of quantum graphs by microwave networks**
	02.06.11: 16.20-16.40		**Coffee Break**

SCS8		SPECIAL AND CONTRIBUTED SESSIONS SCS8	
Room 1	02.06.11: 16.40-18.40	**Chair: Alexey V. Tepin**	**Models and Modeling II**
		F. Muzika, I. Schreiber	Influence of activator-inhibitor transport ratio on Turing patterns in three coupled CSTRs with glycolytic oscillatory reaction
		Carel Olivier	The direct scattering of the parametrically driven nonlinear Schrödinger equation
		Mozugan Mombeini	Chaotic Behavior with Fast Dynamics Modeling
		Asish Pallapothu, Anuj Kr. Garg, Rohit Singh Alawa, Santosh Kr. Burnwal, A.K. Ghosh	Modeling and Simulation of possible Controlled and Un-Controlled Launch Modes of a Stratospheric Airship
		Boris Khots, Dmitriy Khots	Hamilton equations of general relativity in Observer's Mathematics
		José C. Sartorelli, Felipe A C Pereira, Eduardo Colli	Period adding model of the bubble formation dynamics
Room 2	02.06.11: 16.40-18.40	**Chair: N. Katopodes**	**Fluid dynamics**
		Korniy Kostkin	Fluid mixing in finite vortex structures
		Amr Mandour, Mohamed Fayed, Hamid Ait Abderrahmane, Hoi Dick Ng, Lyes Kadem, Georgios H. Vatistas	Symmetry-Breaking of Interfacial Polygonal Patterns and Synchronization of Traveling Waves within a Hollow-Core Vortex
		A. Warnock, S. Rimer, B. Wang, A. Stefanopoulou, N. Katopodes	Nonlinear Effects of Actuator Induced Turbulence in a Controlled Flow System
		Ž. D. Čupić, A. Z. Ivanović, S. R. Anić, G.Schmitz, V. M. Marković, Lj. Z. Kolar-Anić	Critical manifold of an oscillatory reaction model with more than one fast variable
		Diego Angeli, Arturo Pagano, Mauro A. Corticelli, and Giovanni S. Barozzi	Routes to chaos in confined thermal convection arising from a cylindrical heat source
		Andrew Newton, Eun-jin Kim	Transport suppression via shear in turbulent flows
Room 3	02.06.11: 16.40-18.40	**Chair: Anatoly Kolesnikov**	**Synergetics III**
		Victor M. Kureychik, Veronika I. Pisarenko	Dynamics of modern educational space in context of synergetic ideas
		Marina Maksimova	Fractality as a modern concept of synergetics
		Vilor L. Zakovorotny	Methods of tribosystem synergetics control
		Kuznetsova D., Sibgatullin I.	Chaos and intermittency in penetrative convection
		Leonty K. Samoylov	Optimization of programs of interrogation of sensors in digital control systems
PS	02.06.11: 18.40-19.00	**POSTER SESSION**	**POSTER SESSION**
		Zygmunt Bak	Excitations in the net fractal systems
		R. Raguotis	Electron-electron Collisions and Drift Velocity Fluctuations in n-GaAs at T=80 K
		Lidia Dzierzbicka, Jaromir Jakacki, Maciej Janecki, Artur Nowicki	Modeling of Baltic Sea ecosystem using POP model
		Sanjay Kumar, R. P. Sharma	Numerical study of kinetic Alfvén wave excitation by magnetosonic wave in high beta plasmas
		Maria S. Papadopoulou, Ioannis M. Kyprianidis, Ioannis N. Stouboulos	Chaotic Dynamics of Coupled Nonlinear Circuits in Ring Connection
		Christoforos Somarakis, John S. Baras	Chaos On A Simple Rational Planar Map
		Luana Romano, Giuseppe Greco, Pierpaolo Pattitoni, Rodolfo Rosa	Evidence of Deterministic Behavior in the Financial Markets: Classification of Underlying Dynamics
	02.06.11: 21.00-00.30		**Farewell Dinner**

Friday June 3, TEI Buildings

SCS9 — **SPECIAL AND CONTRIBUTED SESSIONS SCS9**

Room 1	03.06.11: 9.00-11.30	**Chair: V. Tokmajyan, Co-Chair: A. Bagdoev**	**Nonlinear dynamics**
		I. Starchenko, D. Dushenin, O. Borisova, T. Momot	Analysis of multichannel EEG data by nonlinear dynamics methods
		Iryna V. Musatenko	Chaotic behavior in nonlinear system
		Alexander G. Bagdoev, Vache H. Tokmajyan	The application of nonlinear wave dynamics methods to problem of Benar in horizontal layers of fluid and to semiconductors
		G. Bagdoev, Egiazar V. Vardanyan	The discussion of possibilities of application of methods of linear and nonlinear wave dynamics to probabilities determination in wandering problems
		S. Tariverdilo, R. Shabani, F. Gahramanian, S. Mahjouri	Nonlinear Vibrations and Chaos in Floating Roofs
		E. Azroul, M. EL Lekhlifi	On Some Nonlinear Elliptic Problems with non standard growths
		S.G. Karitskaya	Mathematical model operation of processes photinduced unstable stabilities in solutions of anthraquinone

Room 2	03.06.11: 9.00-11.30	**Chair: J. Gwinner**	**Dynamical Systems**
		Tomasz NOWICKI, Grzegorz SWIRSZCZ	Chaos dynamics in an error diffusion model
		J. Gwinner	Towards efficient solution of nonsmooth dynamical systems
		Constantinos Alexopoulos and Vassileios Drakopoulos	On the Computation of the Kantorovich Distance for Images
		Genri E. Norman, Vladimir V. Stegailov	Chaotic and dynamic properties of many-particle classical dynamical systems
		M. B. BENBOUBKER, E. AZROUL	On some p(x) - quasilinear problem in non variational case
		Mustafa Resa Becan	Sliding Mode Control with Boundary Layer For Chaotic Dynamical Systems

Room 3	03.06.11: 9.00-11.30	**Chair: C. H. Skiadas, Co-Chair: I. Dimotikalis**	**Biology and Chaos**
		Alena Nováková, Lenka Schreiberová, Igor Schreiber	Study of nonlinear behaviour of glucose – glucose oxidase – ferricyanide reaction
		Martin Číp, Lenka Schreiberová, Igor Schreiber	Dynamics of the Reaction Glucose - Catalase – Glucose Oxidase - Hydrogen Peroxide
		Nikolay N. Zavalishin	Dynamics of exploited partially open trophic chains of a resource-consumer type with possible omnivory effect
		Valerii I. Grytsay	Strange Attractors in a Biochemical Process
		Isabel C. Lastra, José S. Millan	Taxonomic identification of foraminifers for oil reservoir in diffusion-limit growth of seashore at Campeche, Mexico
		Boris Palamarchuk	Structural resonances of Strong Blast
		I.V, Belysheva, I.V. Mursenkova	Experimental research of space distribution of the surface discharge glow structures inside the supersonic boundary layer

Room 4	03.06.11: 9.00-11.30	Chair: Dimitrios A. Sotiropoulos	Bifurcation/Transportation
		Armando Bazzani, Nikolas Geroliminis	Collective behaviors of congested transportation networks: Instabilities, Transient states, Congestion Spreading
		Camille Poignard	Creating chaos from a family of vector fields on R^n admitting a Hopf bifurcation
		Hassène Gritli, Nahla Khraeif, Safya Belghith	Falling of a Passive Compass-Gait Biped Robot Caused by a Boundary Crisis
		Om Prakash	Bifurcation Analysis of Multibody Parafoil-Payload System
		Palina P. Tkachova	Bifurcation processes in the literature: from chaos to self-organizing
		Dimitrios A. Sotiropoulos	Bifurcation of Generalized Logistic Maps
		Narjes Shojaati, Naser Nematbakhsh	Design of the software process model in accordance with standard of the chaos model

Room 5	03.06.11: 9.00-11.30	Chair: Manolis Christodoulou	Applied and Theoretical Mechanics
		Kyriakos G. Vamvoudakis, Manolis A. Christodoulou	Adaptive Backstepping Neural Network Control for Mechanical Pumps
		Pavel Pokorny	Elastic Pendulum
		Hernández-Zapata, Sergio, Ruiz-Chavarría, Gerardo, Reyes-De-La-Cruz, Jorge Luis,	Study on the vorticity in a cavitation process produced by a centrifugal pump
		Klimina L.A., Lokshin B.Ya., Samsonov V.A., Selyutskiy Yu.D.	Combined influence of electro-mechanical parameters and inertial properties on the dynamics of VAWT and VAHT
		Marat Z. Dosaev, Liubov A. Klimina, Boris Ya. Lokshin, Vitaly A. Samsonov, Yury D. Selyutskiy	Nonlinearities in Dynamic Model of Small Wind Power Generator
		Alexander M. Krot	A model of forming planetary orbits in the Solar system based on the statistical theory of spheroidal bodies
		Mohammad Mahdi Doustdar, Mohammad Mojtahedpoor	A Numerical Study on the Effect of Injection Velocity on Fuel Droplets Sizing in a Three-Dimensional Side-Dump Combustor

Room 6	03.06.11: 9.00-11.30	Chair: M. Gitterman	Deterministic Chaos
		J. Buryk, A. Krawiecki, T. Buchner	Deterministic coherence resonance in systems with on-off intermittency and delayed feedback
		M. Gitterman	Order-chaos transitions and resonances induced by the perodic perturbations
		Gábor Licskó, Gábor Csernák	Chaos in a simply formulated dry-friction oscillator
		Rosangela Follmann, Elbert E. N. Macau, Epaminondas Rosa Jr.	Phase synchronization detection of chaotic noncoherent oscillators
		S. Sh. Alaviani	Chaos Synchronization and Chaos Control Based on Kannan Mappings

TEI	03.06.11: 11.30-12.00	Coffee Break

SCS10		SPECIAL AND CONTRIBUTED SESSIONS SCS10	
Room 1	03.06.11: 12.00-13.40	**Chair: M. Christodoulou, Co-Chair: I. Dimotikalis**	**Simulation**
		John Kastl	Simulation of Content-Driven Cosmic Expansion
		Borys A. Biletskyy	Simulation of Intracellular Processes
		Sunil Sharma, A.K.Ghosh	Simulation and Control of Highly Maneuverable Aircraft under Turbulent Atmosphere using Nonlinear Dynamics Inversion Technique
Room 2	03.06.11: 12.00-13.40	**Chair: George Atsalakis**	**Neural Networks**
		Tomas Gotthans, Zdenek Hrubos, Jiri Petrzela	Analogue circuitry realization of neuron network
		Eva Kaslik, Seenith Sivasundaram	Projective synchronization of different chaotic discrete-time neural networks with delays, based on impulsive controller
		Atsalakis George, Tsakalaki Katerina, Skiadas Christos	Forecasting semiconductor sales by a neuro-fuzzy technique
		Rosangela S. Cintra, Haroldo F. de Campos Velho	Data assimilation with Artficial Neural Networks and SPEEDY AGCM: First Results
Room 3	03.06.11: 12.00-13.40	**Chair: N. Jevtic**	**Physics**
		N. Jevtic, W. Nilsen, P. Stine, J. S. Schweitzer	Using Average Mutual Information to Guide Nonlinear Noise Reduction
		K.P. Harikrishnan, R. Misra, G. Ambika	Search for Deterministic Non Linearity in the Light Curves of the Black Hole System GRS 1915+105
		Massimo Materassi, Emanuele Tassi	Algebrizing friction: a brief look at the Metriplectic Formalism
		Kais Feltekh, Zouhair Ben Jemaa	Robustness To Frequency Attacks of a Chaos Based Spread Spectrum Watermarking Algorithm
		Abdulwahab GIWA, Süleyman KARACAN	Modeling and Simulation of a Reactive Packed Distillation Column Using Delayed Neural Networks
Room 4	03.06.11: 12.00-13.40	**Chair: Georgios Vatistas**	**Chaos and Nonlinear Dynamics II**
		Alexander Burov, Ivan Kosenko	Dumb-Bell of Variable Length in an Elliptic Orbit: Relative Equilibria, Periodicity, and Chaos
		Carla M.A. Pinto	Exotic features in two coupled rings of cells
		Georgios H. Vatistas, Hamid Ait-Abderrahmane, Amr Mandour, Mohamed Fayed	On the wave velocity of N-vortex ensembles in ring formation
		José Luis del Río-Correa	Shannon´s Entropy and Dimensions in Multifractals
		Helaine C. M. Furtado, Haroldo F. Campos Velho, Elbert E. N. Macau	Data assimilation by variational method in diferential equations
Room 5	03.06.11: 12.00-13.40	**Chair: D. Sotiropoulos**	**Spatio/temporal system**
		Anton A. Krents, Dmitry A. Anchikov, Nonna E. Molevich	Spatio-temporal Chaos in the transverse Section of wide Aperture detuned Laser
		Lopes, S. R., Galuzio, P. P., Viana, R. L.	The Onset of Turbulence in a Spatiotemporally Chaotic System
		André Augusto Gavlak, Talita Oliveira Assis	The nonlinear evolution of spatial-temporal deforestation patterns
		Anis Naanaa, Safya Belghith	Improvement Performance of TH-UWB System Using Spatiotemporal Chaotic Sequences
		Andrey Shilnikov, Roberto Barrio	Painting chaos: universality of parameter patterns of systems with the Lorenz attractor
Room 6	03.06.11: 12.00-13.40	**Chair: Massimo Materassi**	**Hydrodynamics/ Fluids/Power Generator**
		Massimo Materassi	Metriplectic Framework for the Visco-resistive Magneto-Hydrodynamics
		Luc PASTUR, François Lusseyran, Thierry Faure, Christophe Letellier	Mode-competition in flow-oscillations investigated by means of symbolic-dynamics
		S.B. Turuntaev	Chaotic behavior of seismicity induced by fluid injectons
		Lijun Xia, Adrian Wing-Keung Law, Adrian Yeo, Anthony G. Fane, Chong Ma	Chaotic Aeration FOR a MEMBRANE Reactor
		H.Meglouli Y.Naoui	Study for a mechanism aided by asynchronous actuator powered by asynchronous diesel generator
		Fairouz BETTAYEB, Maamer Hakem	Dual Wavelet energy approach -regression analysis for exploring steel micro structural behavior
TEI	03.06.11: 13.40-15.00		**Lunch**

SCS11		SPECIAL AND CONTRIBUTED SESSIONS SCS11	
Room 1	03.06.11: 15.00-17.00	**Chair: Mikhail V. Zakrzhevsky Co-Chair: Yuncai Wang**	**Optics and Chaos/ laser**
		Mikhail V. Zakrzhevsky	BIFURCATION THEORY OF Nonlinear Dynamics and CHAOS BASED ON NEW topological CONCEPTS
		S. Takougang Kingni, G. Van der Sande, I. V. Ermakov, J. Danckaert	Dynamical behaviour of semiconductor ring laser subject to incoherent optical feedback
		D. Hennequin, P. Verkerk	Synchronization in non dissipative optical lattices
		I. V. Ermakov, S. Takougang Kingni, Otti D'Huys, J. Danckaert, G. Van der Sande	Synchronization of two semiconductor ring lasers working in chaotic regime: Applications to chaos-based optical communications
		V.M.Nandakumaran, M R Parvathy	Synchronization, Hysteresis and Bifurcations in Multimode Nd: YAG Lasers
		Yuncai Wang, Anbang Wang, Mingjiang Zhang	Ultrahigh-bandwidth chaos generation using fiber ring resonator seeded with chaotic light
Room 2	03.06.11: 15.00-17.00	**Chair: Manolis Christodoulou**	**Stochastic control of chaos**
		Kyriakos G. Vamvoudakis, Manolis A. Christodoulou	Adaptive Control of Mixed-Interlaced forms
		Mozugan Mombeini, Ali Khaki Sedigh, Mohammad Ali Nekoui	Adaptive control of the singularly perturbed chaotic systems based on the scale time estimation by keeping chaotic property
		Mozugan Mombeini	OGY Control on First Order Approximation of the Slow Manifold
		V. Resmi, G. Ambika, R.E. Amritkar	Amplitude death in Mackey-Glass time delay systems
		A. Tongen, R. Thelwell, D. Becerra-Alonso	The Chaotic Sandwheel
		Ivan M. Pershin	Control methods for informational systems with distributed parameters
		A. Heydari, M. Tavakoli	Control of Chaos in SIRC Model
Room 3	03.06.11: 15.00-17.00	**Chair: Gabriel V. Orman**	**Stochastic / Chaotic systems**
		Pavel Varbanets, Sergey Varbanets	Linear-inversive congruential generator of PRN's
		I.N. Sinitsyn, V.V. Belousov	Informational Technologies for Quasilinear Research of Stochastic and Chaotic Systems
		Gabriel V. Orman, Irinel Radomir	Some Problems of Convergence and Approximation in Random Systems Analysis
		Christos Skiadas, Charilaos Skiadas	Stochastic Modeling of Life Table Data: Recent Findings
		Randa Herzallah, David Lowe	Pinning control for stochastic systems with functional uncertainty
		Ioannis Dimotikalis	Nonlinear Forecasting of European Business Cycle Indicators
Room 4	03.06.11: 15.00-17.00	**Chair: Rabih Sultan**	**Control of oscillations and chaos**
		Farah Zaknoun, Mazen Al-Ghoul, Rabih Sultan	pH Oscillations in the Bromate-Sulfite-Perchloric Acid Reaction
		Benjamin Ambrosio, Nathalie Corson, M.A. Aziz-Alaoui	Dynamics and coupling of ODE and PDE FitzHugh-Nagumo neuron models
		Mohamed Ould Moussa, Ziad Moumni, Olivier Doare, Cyril Touze, Wael Zaki	Nonlinear oscillations and chaotic response of Shape Memory Alloys
		Mikhail D. Starostenkov, Aleksandra S. Chapligina, Ludmila A. Popova	The research of phase transformations order-disorder in CuAu and Cu Pt alloys of equiatomic compositions

Room 5	03.06.11: 15.00-17.00	**Chair: D. Sotiropoulos**	**Miscellaneous**
		Gianluca Martelloni, Emanuele Massaro, Franco Bagnoli	Particle based method for shallow landslides: modeling sliding surface lubrication by rainfall
		Maria Ivette Gomes, Dinis Pestana, Pedro Pestana	Ser-Pinski Rides Again
		V.I.Grafutin, E.P.Prokopev, Yu.V.Funtikov, D.S.Zvezhinskiy	Studying of radiating infringements in the semiconductor compounds irradiated gamma-quanta and protons by method of positron annihilation spectroscopy
		Darrell Mann	Innovation from chaos: emergent contradictions, triz and complex systems theory
		Narjes Shojaati, Naser Nematbakhsh	Proven complex dynamics of software engineering
		A.Yu. Shvets, V.A. Sirenko	Peculiarities of transition to chaos in nonideal hydrodynamics systems
Room 6	03.06.11: 15.00-17.00	**Chair: Vic Law**	**Quantum chaos**
		V.D. Rusov, E.P.Linnik, V.A. Tarasov, T.N. Zelentsova, I.V. Sharf, S.A. Chernezhenko, O.A. Byegunova, P.A. Molchynikolov	"Quantum" Chaos and Stability Condition of Soliton-like Waves of Nuclear Burning in Neutron-Multiplicating Media
		Adam Rycerz	Random matrix theory and quantum chaos in weakly-disordered graphene nanoakes
		Yuncai Wang, Anbang Wang, Bingjie Wang, Mingjiang Zhang	Applications of chaotic laser correlation ranging technology
		S. Barland, C. Bonatto, M. Feyereisen, M. Giudici, C. Masoller, J. Rios Leite, J.R. Tredicce	Rogue waves in laser with injected signal
		Lock Yue Chew	Quantum-Classical Correspondence through Entanglement Dynamics
		V.V.Gafiychuk, I.D.Popovych	Mathematical modeling of impluse laser ablation process of metal target
		Andrew Beckwith, Fangyu Li	Is Octonionic Quantum Gravity relevant near the Planck Scale? – If Gravity Waves are generated by changes in the geometry of the early universe, how can we measure them?
TEI	03.06.11: 17.00-17.30	**Closing Ceremony**	
Excursion	04.06.11	**Saturday June 4**	**Excursion to Knossos**