

CHAOS 2012

**5th Chaotic Modeling and Simulation
International Conference**

PROGRAM



12 – 15 June, 2012

Athens Greece

Introduction

5th Chaotic Modeling and Simulation International Conference

Athens Greece, 12 – 15 June 2012

It is our pleasure to welcome the guests, participants and contributors to the 5th International Conference (CHAOS2012) on Chaotic Modeling, Simulation and Applications. We support the study of nonlinear systems and dynamics in an interdisciplinary research field and very interesting applications will be presented. We intend to provide a widely selected forum to exchange ideas, methods, and techniques in the field of Nonlinear Dynamics, Chaos, Fractals and their applications in General Science and in Engineering Sciences.

The principal aim of CHAOS2012 International Conference is to expand the development of the theories of the applied nonlinear field, the methods and the empirical data and computer techniques, and the best theoretical achievements of chaotic theory as well.

Chaotic Modeling and Simulation Conferences continue to grow considerably from year to year thus making a well established platform to present and disseminate new scientific findings and interesting applications. We thank the committees, the keynote and invited speakers and all the presenters and contributors to the success of this conference.

Athens, May 2012

A handwritten signature in black ink, appearing to read 'Christos H. Skiadas', is displayed on a light gray background.

Christos H. Skiadas
Conference Chair

5th Chaotic Modeling and Simulation International Conference (CHAOS2012)

June 12-15, 2012 Athens Greece

Program

Session / Room	Date / Time	Event	Talk Title / Event
Hotel President	8.30-10.00	Tuesday June 12	Registration
Room 1	10.00-10.20	Opening Ceremony	
Room 1	10.20-11.00	Keynote Session (Chair: D. Sotiropoulos) Professor Ferdinand Verhulst	Torus bifurcations and chaos
	11.00-11.40	Keynote Session (Chair: D. Sotiropoulos) Professor Itamar Procaccia	Quantum Turbulence in Super Fluids
	11.40-12.00		Coffee Break
	12.00-12.45	Keynote Session (Chair: Itamar Procaccia) Professor Anastasios A. Tsonis	A new dynamical mechanism for major climate shifts
	12.45-13.30	Keynote Session (Chair: Itamar Procaccia) Dr. Valentin V. Sokolov	Chaotic interference versus decoherence: external noise, state mixing and quantum-classical correspondence
	12.06.12:13.30-15.00		Lunch
SCS1		SPECIAL AND CONTRIBUTED SESSIONS SCS1	
Room 1	12.06.12:15.00-16.40	Chair: Jan-Olov Aidanpää	Rotor Dynamics/Nonlinear Dynamics
		Florian Thiery, Jan-Olov Aidanpaa	Dynamics of a Jeffcott Rotor with Rigid Blades Rubbing against an Outer Ring
		Jan-Olov Aidanpää	Dynamic similarities of rotors with rubbing blades
		Barbashova T.F., Kugushev E.I., Otradnova L.S.	About motion of a spherical body with numerous impacts on symmetric surfaces

Room 2	12.06.12:15.00-16.40	Chair: M. I. Gomes	Population
		Dumitru D. Deleanu	The Effects of Diffusion of Individuals between Two Single-Species Populations
		Maria de Fatima Brilhante, Maria Ivette Gomes, Dinis Pestana	EXTENSIONS OF VERHULST MODEL IN POPULATION DYNAMICS AND EXTREMES
		Elena Babatsouli	The PCC growth during a child's phonological development
		A. Balyakin, V. Zhulego	2-component model of population growth
		Ayan Sen	STUDY OF A POPULATION MODEL IN A POLLUTED ENVIRONMENT WITH TIME DELAY
Room 3	12.06.12:15.00-16.40	Chair: Anastasios Tsonis	Flows
		Mathias Lemke, Joern Sesterhenn	Numerical analysis of the compressible flow in a sudden expansion
		O.I. Krivosheina, I.V. Zapuskalov, Y.I Khoroshikh, O.B.Zapuskalova	The peculiarities of the cells metabolism due to the flow of liquid throw cell membrane
		Mozhgan Mombeini, Hamid Khaloozadeh	State and Parameter Estimation for the Lorenz System in existence of Colored Noise
		Richard Jones, Sotos Generalis	Transition to Turbulence in Shear Flows without Rotation
		T.E. Karakasidis, T. Fragkou, I.E. Sarris, A. Liakopoulos	RECURRENCE PLOTS ANALYSIS OF A TURBULENT CHANNEL FLOW
	12.06.12:16.40-17.00		Coffee Break
SCS2		SPECIAL AND CONTRIBUTED SESSIONS	
Room 1	12.06.12:17.00-18.30	Chair: D. Angeli	Flows / Convection
		D. Angeli, A. Pagano, M.A. Corticelli, A. Fichera, G.S. Barozzi	Analysis of the bifurcating orbits on the route to chaos in confined thermal convection
		J.P.B. Mota, E. Saadjan	Chaotic advection in a 3-D periodic flow
		Dmitry Zhilenko, Olga Krivonosova	DNS of Inner Boundary Acceleration Influence on the Choice of Flow State in Spherical Layer
		Mozhgan Mombeini, Hamid Khaloozadeh	State and Parameter Estimation for the Lorenz System in existence of Colored Noise
		Alberto Fichera, Arturo Pagano	Extraction of the Dominant Features of Complex Dynamics in Experimental Air-Water Two-Phase Flows

Room 2	12.06.12:17.00-18.30	Chair: Dinis Pestana	Fractal
		K. P. Harikrishnan, R. Misra, G. Ambika	Can the multifractal spectrum be used as a diagnostic tool?
		Maria de Fatima Brilhante, Maria Ivette Gomes, Dinis Pestana	EXTENSION OF PANJER'S ITERATIVE PROCEDURES AND MULTIFRACTALS
		Olga P. Abramova, Sergey V. Abramov	Governing the Behaviour of the Deformation Fields of Fractal Quasi-two-dimensional Structures
		Andrey A. Goloborodko, Natalya S. Goloborodko, Tatiana V. Rodionova, Anastasia S. Sutyagina, Petro M. Lytvyn	FRACTAL DIMENSION OF SURFACES OF POLYCRYSTALLINE AND NANOSTRUCTURED SILICON
		O.Yu. Mayorov, V. N. Fenchenko	THE LOCAL INDEX OF FRACTALITY IN THE ANALYSIS OF SHORT RR INTERVAL SERIES IN THE ASSESSMENT OF HEART RATE VARIABILITY
Room 3	12.06.12:17.00-18.30	Chair: I. Kourakis	Plasma
		C. L. Xaplanteris, E. D. Filippaki, I. S. Mistakidis, L. C. Xaplanteris	A Repeating Relation for Electron Velocities in Argon Plasma. An attempt to extend the Perturbation Theory
		Ioannis Kourakis	Solitons and shocks in nonthermal plasmas: nonlinearity beyond the Maxwellian border
		Julio J. Martinell, Diego del-Castillo-Negrete	Transport in a nontwist Hamiltonian with gyroaveraging effects for plasmas with zonal flows
		V. Saxena, I. Kourakis	Poincaré Analysis of Nonlinear Electromagnetic Modes in Electron-Positron Plasmas
	12.06.12: 18.30-19.30		Welcome Reception
		Wednesday June 13	
SCS3		SPECIAL AND CONTRIBUTED SESSIONS SCS3	
Room 1	13.06.12: 9.00-10.40	Chair: I. Procaccia	Turbulent Flows/Waves
		F. C. Miranda, A. Heinrich, J. Brouwer, J. Sesterhenn	Numerical investigation of a turbulent boundary layer with particle in suspension
		F. C. Miranda, A. Heinrich, J. Schulze, J. Sesterhenn	Direct Numerical Simulation of a Turbulent Round Jet with Particle in Suspension
		Olga Krivososova, Dmitry Zhilenko	DNS of Turbulent Flow States Near Their Onset in Wide Spherical Layer

Room 2	13.06.12: 9.00-10.40	Chair: Ioannis Dimotikalis	Pattern Formation
		Gerard Vinsard, Stephane Dufour, Esteban Saatdjian	Chaotic advection in a two-dimensional MHD driven flow
		Gregory Cartland Glover Kaoru Fujimura, Sotos Generalis	Pattern Formation in Volumetrically Heated Fluids
		D. Laroze , D. Urzagasti , M.G. Clerc , S. Coulibaly , H. Pleiner	Localized states in a parametrically driven magnetic wire
		Markos Avlonitis	On the introduction of internal variables in self-organized critical models for earthquakes
		Evgeny Ryzhov, K.V. Koshel	Chaotic advection with a point-vortex pair in a deformation flow
Room 3	13.06.12: 9.00-10.40	Chair: Guoyuan Qi	Pendulum
		André E. Botha, Guoyuan Qi	Analysis of the Triple Pendulum as a Hyperchaotic System
		P.A. Meehan	Chaotic Instabilities in an Inclined Furuta Pendulum
		J. C. Sartorelli, B. Marin, F. A. C. Pereira, W. Lacarbonara	Dynamics of an imperfect parametrically excited double pendulum
		Vinod Patidar, Anjali Sharma and G. Purohit	Bifurcation and chaos in driven simple pendulum under the effect of nonlinear damping
		A.Yu. Shvets, O.M. Makasyeyev	DELAY FACTORS AND CHAOTIZATION OF NON-IDEAL PENDULUM SYSTEMS
Room 1	13.06.12: 10.40-11.30	Keynote Session (Chair: C. H. Skiadas) Dimitrios Sotiropoulos, Elena Babatsouli	Chaos in Language, Arts and Engineering
	11.30-12.00		Coffee Break
SCS4		SPECIAL AND CONTRIBUTED SESSIONS SCS4	
Room 1	13.06.12: 12.00-14.00	Chair: Dinis Pestana	Chaos in Music
		Dr Scott Mc Laughlin	Imperfect balance: Musical composition by exciting periodic and near-chaotic regimes in coupled metal cymbals
		Dr Scott Mc Laughlin	Issues Applications of Chaos in Acoustic Composition
		Eleri Angharad Pound	Circles 9: exploring the tent map through voices
		Pedro Pestana, Dinis Pestana	PHILIP GLASS' FAÇADES – A CASE STUDY ON THE COMPLEXITY OF MUSIC SCORES
		Victor J Law, Mick Donegan, Breege Creaven	Acoustic metrology: from atmospheric plasma to solo percussive Irish dance

Room 2	13.06.12: 12.00-14.00	Chair: Ferdinand Verhulst	Oscillators / Oscillations
		D.A. Goussis, F. Verhulst	Autoparametric Coupling in Relaxation Oscillations: The Fast/Slow Dynamics and the Chaotic Behavior
		Buncha Munmuangsaen, Banlue Srisuchinwong	Chaos in Modified CFOA-Based Inductorless Sinusoidal Oscillators Using a Diode
		Lipika Kabiraj, Aditya Saurabh, R. I. Sujith,	Recurrence analysis of combustion-driven oscillations
		André E. Botha, Yu. M. Shukrinov	Chaos in Resistively Coupled Josephson Junctions
		Rosangela Follmann , Elbert E. N. Macau , Epaminondas Rosa Jr.	Phase synchronization detection of chaotic noncoherent oscillators
		G. ATTUEL, R. DUBOIS, N. DERVAL, M. HAISSAGUERRE	Assessing atrial fibrillation as a chaotic dynamical state of coupled oscillators
Room 3	13.06.12: 12.00-14.00	Chair: V. Law	Laser Dynamics / Solitons
		E.Cortés, J.Fujioka, R.Pérez-Pascual, R.F:Rodríguez, A.Espinosa, B.A.Malomed	Chaotic solitons in the quadratic-cubic nonlinear Schrodinger equation under nonlinearity management
		Michail Bourmpos, Apostolos Argyris, Dimitris Syvridis	Synchronization of semiconductor lasers with complex dynamics within a multimodal network
		Romain Modeste Nguimdo, Guy Verschaffelt, Jan Danckaert, Guy Van der Sande	Loss of Time-Delay Signature in Chaotic Semiconductor Ring Lasers
		L. Mashal, L. Gelens, G. Van der Sande, S. Beri, G. Verschaffelt, J. Danckaert	Mode hopping in semiconductor ring lasers driven by external noise: experimental and numerical analysis
		Djouher Mallek-Bouras, Abdelamid Kellou, Hervé Leblond, François Sanchez	Quasi periodic dynamical behaviour in High Power Fiber Lasers
	13.06.12: 14.00-15.00		Lunch
Excursion	13.06.12: 15.00-21.00		Half Day Excursion (Museum of Acropolis)

Thursday June 14			
SCS5		SPECIAL AND CONTRIBUTED SESSIONS SCS5	
Room 1	14.06.12: 9.00-10.40	Chair: M. Axenides	Equation Forms and Systems
		Minos Axenides	Integrability as a Gateway to Chaos in Dissipative Nambu Mechanics
		O. Ozgur Aybar, Avadis S. Hacinliyan, Ilknur Kusbeyzi Aybar, Kamer Koseyan, Berc Deruni	Stability and Chaos in a Classical Yang – Mills - Higgs System
		Marilena N. Poulou, Nikolaos Stavrakakis	Uniform Decay for a local Dissipative KGS Type System
		P. D. Varbanets, S. P. Varbanets	Inversive congruential generator with a variable shift
Room 2	14.06.12: 9.00-10.40	Chair: Lucas Illing	Control
		Irmantas Ratas, Kestutis Pyragas	Desynchronization of oscillatory networks by intermittent delayed feedback control
		Marzena Ciszak, Andrea Geltrude, Stefano Euzzor, F. Tito Arcchi, Riccardo Meucci	Control of chaotic spiking and synchronization induced by coupling in electronic and model neurons
		Mustafa Resa Becan	A New Adaptive Sliding Mode Control Law of Chaotic Systems to Synchronization
		Lucas Illing, Cris Panda, and Lauren Shareshian	Isochronal chaos synchronization of delay-coupled optoelectronic oscillators
		Irina A. Manturova, Alexey O. Manturov	COMPARATIVE ANALYSIS OF THE NUMERICAL MODELS OF THE METAL CUTTING BASED ON THE INVESTIGATION OF CONTROL PARAMETERS PLANE STRUCTURE
Room 3	14.06.12: 9.00-10.40	Chair: Olga D. Kreerenko	Synergetics
		Evgeny S. Kreerenko, Olga D. Kreerenko	Synergetic Synthesis of Dynamic Regulator with Asymptotic State Observer of Piecewise-constant Distortion
		Olga D. Kreerenko, Evgeny S. Kreerenko	Synergetic Approach to Aircraft Motion Control Laws Design
		Phuong Nguyen, Kolesnikov A.A.	Synergetics approach to amphibian aircraft nonlinear adaptive regulator design
Room 1	14.06.12: 10.40-11.30	Keynote Session (Chair: D. Sotiropoulos) Oleh Hul, Michał Ławniczak, Szymon Bauch, Adam Sawicki, Marek Kuś, Leszek Sirko	Isoscattering microwave networks

	14.06.12: 11.30-12.00		Coffee Break
SCS6		SPECIAL AND CONTRIBUTED SESSIONS SCS6	
Room 1	14.06.12: 12.00-13.40	Chair: Banlue Srisuchinwong	Control / Delay
		Soraia Moradi, Ali Khaki Sedigh, Nastaran Vasegh	A Multi-Input Multi-Output Delayed Feedback Controller for Stabilizing Periodic Solutions of the Lorenz System
		Viet Thanh Pham, Mattia Frasca, Riccardo Caponetto, Thang Manh Hoang, Luigi Fortuna	Control and Synchronization of Fractional-Order Differential Equations of Phase-Locked Loop
		Viktor Novicenko, Kestutis Pyragas	Analytical expression for the period of orbits stabilized by extended delayed feedback control
		Phocharavidh Phuphatana, Banlue Srisuchinwong	Chaos in Reduced-Delay Anti-Symmetric-Case Piecewise-Linear Delay Differential Equations
Room 2	14.06.12: 12.00-13.40	Chair: S. Saini	Scattering / Communication
		Dimitrios Dellaportas	Thermal Emission, Density and Light Scattering in water
		K. K. SAINI, SANJU SAINI	SEMICLASSICAL CROSS SECTION FOR A CLASSICALLY CHAOTIC SCATTERING SYSTEM: CASE STUDY
		MEFLAH Mabrouk	A Similar Nonlinear Telegraph Problem Governed by Lamé System
		Tatyana V. Danilova, Alexey O. Manturov	The Complex Dynamics of the Photocurrent in the Input Circuits of Low-noise Optical Signals Amplifiers
		Sanju Saini, Dr. J.S.Saini	Genetic optimized self tuning fuzzy logic controller
Room 3	14.06.12: 12.00-13.40	Chair: Ilknur Kusbeyzi Aybar	Economy / Society
		Ilknur Kusbeyzi Aybar	Shadow Prices and Lyapunov Exponents
		MSc. Gisela Biacchi Emanuelli, Flávia da Luz Mazzardo	Butterfly Effect and National Defence Policy: An Essay about World Peace or Chaos
		Nilufer Alan, Ilknur Kusbeyzi Aybar, O. Ozgur Aybar, Avadis S. Hacinliyan	Chaotic Trend Possibility in the Gold Market
		Palina. P. Tkachova	Genre as the mechanism of preservation and development of cultural memory: from chaos to system

	14.06.12: 13.40-15.00		Lunch
SCS7		SPECIAL AND CONTRIBUTED SESSIONS	
Room 1	14.06.12: 15.00-16.20	Chair: Ihor Lubashevsky	Complex Dynamics / Chaos
		Arkady Zgonnikov, Ihor Lubashevsky	Complex Dynamics of Multiparticle System Governed by Bounded Rationality
		Ihor Lubashevsky, Dmitry Parfenov	Complex Dynamics and Phase Transitions Caused by Fuzzy Rationality
		Christoforos Somarakis, John S. Baras	Chaos in the Cucker-Smale Dynamics
		Fangyue Chen, Guanrong Chen, Weifeng Jin	For Cellular Automata, Transitivity implies Chaos
Room 2	14.06.12: 15.00-16.20	Chair: Y. Dimotikalis	Neural Networks
		Panayotis G. Michaelides, Angelos Vouldis, Panayiotis Tarnaras and Efthymios G. Tsionas	A non-linear Neural Network filter: Evidence from business cycles in Europe (1960-2009)
		Thang Van Chu, Viet Thanh Pham, Mattia Frasca, Thang Manh Hoang, Luigi Fortuna	Implementation of CNN-Based Viterbi Algorithm Using FPGA
		Michail F. Stepanov, Andrew M. Stepanov	Application of planning artificial neural networks in solver of tasks of intellectual self-organizing automatic-control systems
		Ke Qin, B. J. Oommen	Ideal Chaotic Pattern Recognition Using the Modified Adachi Neural Network
Room 3	14.06.12: 15.00-16.20	Chair: S. Saini	Bifurcation / Attractors
		Zacharias Roupas	Phase Space Geometry and Chaotic Attractors in the Dissipative Decomposition
		David N. Cheban, Cristiana Mammana	Chaotic Attractors of Control Systems
		Bhooshan Rajpathak, Harish Pillai, Santanu Bandyopadhyay	Analysis of 1-D Linear Piecewise-smooth Discontinuous Map
		Boichuk A.A., Pokutnyi A.A.	Bifurcation theory for boundary value problems in Banach space
Room 4	14.06.12: 15.00-16.20	Chair: Anatoly Kolesnikov	Nonlinear dynamics and chaos in engineering applications I
		Anatoly A. Kolesnikov (Prof)	From system synthesis to the foundation of system physics

		Anatoly Kolesnikov (Prof.), Yakov Romm (Prof.), Sergei Bulanov	Comparative analysis of planet stability motion basing on classic and synergetics laws of gravity
		V.L. Zakovorotny (Prof.), Pham Dinh Tung	The reorganization of the dynamic system interacting with the cutting process, during its evolution
		Ivan M. Pershin (Prof.)	Exploring of distributive information fields
		Gennady Veselov (Prof.), Arsenyi Nikiforov	Synergetic approach to control of "wheel – electric drive" system
		Alexander Kolesnikov (Ph.D.)	The method of synergetic synthesis of nonlinear electromechanical oscillators
	14.06.12: 16.20-16.40		Coffee Break
SCS8		SPECIAL AND CONTRIBUTED SESSIONS	
Room 1	14.06.12: 16.40-18.40	Chair: D. Sotiropoulos	Chaotic Maps / Bifurcation
		Pei Li, Lequan Min, Shuangshuang Han, Geng Zhao	Two Novel Two-Dimensional Chaos Maps and Chaos-Based Bit Commitment
		Goki Ikeda, Kazuyuki Aihara, Takuji Kousaka	Calculation Method of Bifurcation Point for an Impact Oscillator with Periodic Function
		Olga E. Dick, Boris V. Krylov	Bifurcation Analysis of Nociceptive Neurons
		Maria Stavloulaki, Dimitrios Sotiropoulos	The energy of chaotic logistic-like maps
		S. Nicholson, E. Kim	A Master equation approach to deciphering non-detailed balance systems
		Anton S. Sheludko, Vladimir I. Shiryayev	Application of chaotic maps as a basis for high-fidelity sensor data decomposition
Room 2	14.06.12: 16.40-18.40	Chair: A. Krawiecki	Chaotic Dynamics / Intermittency
		I.V. Zapuskalov, O.I. Krivosheina, Y.I Khoroshikh, O.B.Zapuskalova	The Principles of functioning of the "peripheral heart"
		A. Krawiecki	On-off intermittency in the Ising model with temperature randomly varying in time
		Beloshapka V.Ya., Semenova K.S., Platkov V.Ya.	Determinate chaos in the dynamics of individual dislocations
		Dariusz Grzelczyk, Jan Awrejcewicz	Non-Regular Vibrations of Mechanical Clutch System Excited by Wear and Thermal Phenomena

Room 3	14.06.12: 16.40-18.40	Chair: Anastasios Tsonis	Chaos Theory
		G.P. Pavlos	Complexity, chaos and unification of the physical theory
		G.P. Pavlos	Modern Physical Theory, Tsallis Statistics and Complexity. Theoretical and experimental verifications
		Sam Sade	Chaos or Directive Theory
		Shijun Liao	Chaos: a bridge between micro-level uncertainty and macroscopic randomness
Room 4	14.06.12: 16.40-18.40	Chair: Anatoly Kolesnikov	Nonlinear dynamics and chaos in engineering applications II
		Alexey Mushenko (Ph.D)	Nonlinear control of aircraft spatial motion with chaotic dynamics
		Andrew A. Kuzmenko (PhD), Anton G. Proskurin	Water turbine nonlinear control design: synergetics approach
		Popov Andrei (Ph.D)	Synergetic Synthesis of Energy Saving Control Systems for Electromechanical Processes
		Radionov Ivan	Synergistic synthesis of induction motor vector control system
		Andrew Sclyarov	Tracked robot adaptive control in undefined environment
PS	14.06.12: 18.40-19.00	POSTER SESSION	POSTER SESSION
		<i>The list is at the end of the program</i>	
	14.06.12: 21.00-00.30		Farewell Dinner
		Friday June 15	
SCS9		SPECIAL AND CONTRIBUTED SESSIONS	
Room 1	15.06.12: 9.00-11.30	Chair: Carla Pinto	Nonlinear dynamics in Society and Economy
		Robert W. Isenhowera, Vivek Kanta, Till D. Frank, Carla M. A. Pinto, Claudia Carello, M. T. Turvey	The Role of Symmetry in the Equivalence of Human Odometry by Walk and Run
		Maria G. Lydaki	Modeling and analysis of travel time data

		Yiannis Dimotikalis	Nonlinear Analytics and Local Forecasting of Crete Tourism: Real and Web Data
		Carla M.A. Pinto, A. Mendes Lopes, J.A. Tenreiro Machado	Double power law behavior in everyday phenomena
		Robert Sumi, Zoltan Toroczkai, Tamas Tel, Maria Ercsey-Ravasz	Chaotic phase transition in an analog approach to constraint satisfaction
Room 2	15.06.12: 9.00-11.30	Chair: Lequan Min	Dynamical Systems / Models and Modeling
		Hongyan Zang, Lequan Min, Geng Zhao	Generalized Chaos Synchronization Theorems for Bidirectional Array Differential and Discrete Systems with Applications
		Justine Yasappan, Angela Jimenez-Casas, Mario Castro	Chaotic behavior of the closed loop Thermosyphon model with memory effects
		Lidia Dzierzbicka, Jaromir Jakacki, Maciej Janecki, Artur Nowicki	The Baltic Sea coupled ice-ocean model
		Stevan Mačešić, Vladimir M. Marković, Branislav Stanković, Vladana Vukojević, Željko Čupić, Ljiljana Kolar-Anić	Modeling of the chaotic states in the Hypothalamic-Pituitary-Adrenal (HPA) axis activity
		Gregory S. Duane	Supermodeling by Synchronization of Alternative Climate Models
		Valerii V. Grytsay	The chaos structure of strange attractors within a mathematical model of metabolism of a cell
Room 3	15.06.12: 9.00-11.30	Chair: Gabriel V. Orman	Stochastic
		Davide Faranda, Valerio Lucarini, Giorgio Turchetti, Sandro Vaienti	Extreme Value distributions in stochastically perturbed dynamical systems
		Gabriel V. Orman, Irinel Radomir	New aspects in approximation of a Markov chain by a solution of a stochastic differential equation
		Oluleye Hezekiah BABATUNDE, E AYOOLA	On Numerical Simulation of a Class of Stochastic Differential Equation with Boundary Values
		G. Matalliotakis, C. H. Skiadas, G. Tselikos	Analysis of life table data of Sweden
		EDMAR OLIVARES SORIA	FM Synthesis modulated by Context Sensitive Stochastic L-Systems
Room 4	15.06.12: 9.00-11.30	Chair: Anatoly Kolesnikov	Nonlinear dynamics and chaos in engineering applications III

		Sergey Sclyarov	Application of synergetic approach to group control with decentralized strategy designed for robotics systems
		Vladimir Utkin (Prof.)	Classification and Recognition on the Basis of Nucleoagglomeration
		I.V. Boyev (Prof.)	O.A. Akhverdova, Personality and Chaos
		Tatyana Kolesnikova (Ph.D), Nataliya Kolesnikova	Problem of harmonization for labour payment systems: the concept of "golden section"
		Marina V. Maximova (Ph.D)	The cognitive aspects of the concept of system in synergetics
	15.06.12: 11.30-12.00		Coffee Break
SCS10		SPECIAL AND CONTRIBUTED SESSIONS	
Room 1	15.06.12: 12.00-13.40	Chair: G. Pavlos	Time Series / Cryptography
		G.P. Pavlos, M.N. Xenakis, L.P. Karakatsanis, G. Sirakoulis, A.C. Iliopoulos, M. Athanasiou, I. Vogiatzis, E.G. Pavlos	Tsallis Non-extensive statistic and nonlinear time series analysis
		Apostolos P. Leros , Antonios S. Andreatos	A Steganography Telecom System using a Chua Circuit Chaotic Noise Generator for data cryptography
		George Makris, Ioannis Antoniou	Cryptography with Chaos
Room 2	15.06.12: 12.00-13.40	Chair: T.E. Karakasidis	Flows / Waves
		A.D. Fragkou, T.E. Karakasidis, P. Papanicolaou, A. Liakopoulos	NON LINEAR CORRELATIONS REVEALED BY CROSS RECURRENCE PLOT ANALYSIS: APPLICATION IN A TURBULENT JET
		H. Sabbagh	Spatiotemporal chaos due to spiral waves core expansion
		Nastaran Vasegh	Optimal chaos control of current-carrier plasma with OGY method

Room 3	15.06.12: 12.00-13.40	Chair: Y. Dimotikalis	Fractals
		Vassileios Drakopoulos, Polychronis Manousopoulos	Height Field Representation and Compression Using Fractal Interpolation Surfaces
		Vladimir Chernov	Discrete Orthogonal Transforms for Pre-fractal Domains
		Vinoth Thomas, Sobhana Shankar, Gopika Gopal, Pramod, S., Rao, K.S.	Chaotic and linear spatial patterns in the sieve tubes of <i>Hevea brasiliensis</i>
		Valerii S. Abramov	Inverse Structural States of the Deformation Field of a Fractal Quantum Dot
	15.06.12: 13.40-15.00		Lunch
SCS11		SPECIAL AND CONTRIBUTED SESSIONS	
Room 1	15.06.12: 15.00-17.00	Chair: Borys A. Biletskyy	Chemical Chaos / Biology
		Momina Bashir, G. M. Peerzada, Nadeem Bashir	Kinetic studies on the interaction of Acetaminophen with some radical scavenging drugs in a Belousov-Zhabotinsky reaction
		Raguotis Romas	Noise and nonlinear transport treatment by Monte Carlo method in n-type GaAs crystal
		Spirov, A.V.: Holloway, D.M.	Variable patterning in fruit fly embryos due to basins of attraction in underlying gene regulatory dynamics
		Borys A. Biletskyy	DECLARATIVE FRAMEWORK FOR SIMULATION OF INTRACELLULAR PROCESSES
		Muhammad Sadiq, Jean-Sebastien Lecomte, Mohammed Cherkaoui	Nanoindentation for Measuring Individual Phase Mechanical Properties of Sn-Ag-Cu Lead-Free Solders Incorporating Pileup Effects
Room 2	15.06.12: 15.00-17.00	Chair: Lequan Min	Communication
		Guoyuan Qi, Dennis Luke Owuor, André E. Botha	Robustness and Bit Error Rate Performance of Qi Hyper Chaos Based Encryption
		Anis Naanaa, Safya Belghith	Performance Analysis of Time Hopping Ultra Wide Band System Using Chaotic vs. Conventional system
		Lequan Min, Tianyu Chen, Hongyan Zang	Analysis of FIPS 140-2 Test and Chaos-Based Pseudorandom Number Generator
		J.C. Sibel, S. Reynal, D. Declercq	Evidence of chaos in the Belief Propagation for LDPC codes

Room 3	15.06.12: 15.00-17.00	Chair: Alexander F. Kholtygin	Astronomy / Astrophysics
		Alexander F. Kholtygin	Chaos and its regularization in the stellar wind
		Bernd Binder	Expansion-Rotation-Rotation Chaotic Modelling with Geometric Singularities in 2 and 3 Dimensions
		Shiuan-Ni Liang, Boon Leong Lan	Newtonian and special-relativistic probability densities for a low-speed system
		Christos H Skiadas, Charilaos Skiadas	Exploring the stability of the Galaxy forms
		Zoran Rajilic	Spread of the Angular Momentum and Sensitivity to Initial Conditions
		Alexander M. Krot	Explanation of forms of planetary orbits in the Solar system and estimation of angular shift of the Mercury' perihelion based on the statistical theory of gravitating spheroidal bodies
	15.06.12: 17.00-17.30	Closing Ceremony	
Excursion	16.06.12	Saturday June 16	Excursion to Delphi
		<i>Continued from Thursday June 14</i>	
PS	14.06.12: 18.40-19.00	POSTER SESSION	POSTER SESSION
		Simona Băcăiță, Borsos Zoltan, Cătălina Peptu, Gabriela Andrei, Marcel Popa, Maricel Agop	MODELLING OF DRUG RELEASE PROCESS THROUGH WEIERSTRASS TYPE FUNCTIONS
		Dan G. Dimitriu, Silviu Gurlui, Maricel Agop	Modeling of a Scenario of Transition to Chaos in Plasma through Sub-harmonic Bifurcation
		Maricel Agop, Dan G. Dimitriu, Silviu Gurlui	Negative Differential Resistance of the Discharge Plasma through Fractal Space-Time Theory
		Silviu Gurlui, Dan G. Dimitriu, Maricel Agop, Mariana Osiac, Oana Pompilian, Cristian Focsa	Patterns in Laser Ablation Plasma Plume through Fractal Space-time Theory
		Caroline G. L. Martins, Luis C. de Oliveira, M. Roberto, I. L. Caldas, R. Egydio de Carvalho	Robust Tori-Like Lagrangian Coherent Structures
		Alexandros Papacharalamous, Eleni I. Vlahogianni, Ph.D.	Fitting Microscopic Traffic Flow data to a Stochastic Cusp Catastrophe model

		Branislav Stanković, Stevan Mačešić, Ana Ivanović, Slobodan Anić, Željko Čupić, Ljiljana Kolar-Anić	Complex dynamic states in the model for hydrogen peroxide decomposition
		Jokar, M., Zarabi, M.	Life Expectancy and age specific life table Parameter of Green-lacewing, <i>Chrysoperla carnea</i> (step.) (Chrysopidae: Neuroptera) on four diet
		A. Boulouiz, M. Mekkaoui, A. Sabbar	Calculation of enthalpies of mixing of liquid Bi-In-Sn-Zn quaternary alloys relevant for Pb-free soldering
		Jasvinder Singh Virdi	Two-dimensional Complex Invariants for Non-Hermitian PT - symmetric Hamiltonian Systems
		A.V. Ignatenko	Numerical modelling the chaotic ionization of the Rydberg atoms in an electromagnetic field
		T.A. Florko	Studying chaotic features for atomic systems in an crossed dc magnetic and ac electric fields by analysis of recurrence spectra: Li atom
		D.M. Sonechkin, N.N. Ivashchenko, V.M. Kotlyakov, N.V. Vakulenko	On the bifurcation inducing the Pleistocene glacial cycle lengthening
		Debasis Mukherjee	Hopf bifurcation in an eco-epidemic model
		Farhad Khellat	Bifurcation of fractional power piecewise smooth map
		Sergey Gonchenko	Towards scenarios of chaos appearance in three-dimensional maps
		G. Hernández, E. Chavira	Bismuth based superconducting nano-wires crystal structure simulation
		Greta Augat Abib, Marcio Eisencraft	Digital chaos-based communication system performance under additive noise
		Sanghamitra Debroy, Dr. M.K.Mondal	Chaos Based Fast Secure Communication Scheme Using Logistic Map
		Andrew Sclyarov	Tracked robot adaptive control in undefined environment
		Ensieh Nobakhti, Ali Khaki Sedigh	A Multi-Parameter Extension of OGY Chaos Control Method
		Leila Hoseinzadeh, Mohammad Shahrokhi	Comparison of different control laws for a chaotic and oscillatory bioreactor
		S. Debroy, M. K. Mandal	Synchronisation of Logistic Map Based on Linear Control Method
		Uday Sherikar	PROCESS AUTOMATION: UNDERRUN PROTECTION DEVICE ANALYSIS PER REGULATION
		Eva Kaslik, Seenith Sivasundaram	Chaos and chaotic synchronization in fractional-order neural networks with delays

		GINOUX Jean-Marc., CHUA Leon	Local Activity and Edges of Chaos in Three Dimensional Dynamical Systems
		Aishwarya R. Patange	PROCESS AUTOMATION TOOL FOR COMMERCIAL VEHICLE CABIN STRENGTH ANALYSIS AS PER REGULATION
		Andre Augusto Gavlak	Land cover change mapping trough a non-linear satellite imagery classification method
		Paolo Mattana, Giovanni Bella	Global Indeterminacy and Chaos in a New Keynesian Monetary Model with Investment
		De-Zheng Sun, Jin Liang, Xiu-Qun Yang	The Role of Nonlinear Dynamics in the Tropical Pacific Climate Change
		S. RIHANI, M. KIRANE, A KESSAB	Local, global existence and blow-up of solutions for a nonlocal in time nonlinear heat equation
		Alireza Keshavarzi, James Ball	Three dimensional fractal scaling of flow around a circular bridge pier
		Anatoliy K. Prykarpatsky, Denis Blackmore	New Vortex Invariants in Magneto-hydrodynamics and a related Helicity Theorem
		Hossein Shahverdi, Arian Nasiri	Chaotic behavior investigation of an airfoil with cubic nonlinearity under steady and quasi-steady incompressible flows
		Yuri Gaponenko, Alexander Nepomnyashchy, Valentina Shevtsova	Effect of forced air flow on thermocapillary convection in liquid bridges
		C. Stan, C. P. Cristescu, D. E. Creanga, M. Racuciu	MULTIFRACTAL APPROACH OF MAGNETO-STRUCTURAL PROPERTIES OF FERROMAGNETIC FLUIDS
		Dr. Tamara Ovchinnikova, O. F. Vasiliev, G. G. Chernykh	Mathematical modelling of the penetration of a turbulent layer in stably stratified fluid
		Andrey A. Goloborodko, Natalya S. Goloborodko, Tatiana V. Rodionova, Anastasia S. Sutyagina, Petro M. Lytvyn	FRACTAL DIMENSION OF SURFACES OF POLYCRYSTALLINE AND NANOSTRUCTURED SILICON
		A.V. Loboda	Quantum chaos and bi-stability effect in a populations dynamics for resonant levels of atomic ensembles in a laser pulse
		A. Alimoradi, M. Esfahanian	Brake Force Division Optimization at Two Kind of Intercity Bus by D Dynamic Modeling & Simulation in MSC.ADAMS/Car
		A. I. Mussa	Magnetohydrodynamics (MHD) propulsion system "Mathematical Models, Analytic and Simulation"

		Dit Papa Lamine NDao	If The Computer PC Can Draw An Ideal Subject Known With The Cardiac Model VI NON Autonomous
		Iryna V. Musatenko	Chaotic behavior in nonlinear model
		M. Waly, Amr. Sharawy, K.Wahba	Dynamic Model of Normal Intraocular Pressure
		Manish Dev Shrimali	Amplitude death in Hindmarsh-Rose model of neurons
		Mr. SaiKrishna PS, Dr.Ramkrishna Pasumarthy	SIMULATION OF A THERMAL POWER PLANT MODEL IN A CLOUD ENVIRONMENT
		CHETAN MEHTA, MATTHEW MILLER	Data Analysis and Chaos
		K. K. SAINI, SANJU SAINI	The Duffing Oscillator and Chaos Generators: their complexity & case study
		Yu.V. Dubrovskaya	Chaotic features in a decay of the multipole giant resonances in nuclei
		A.A. Svinarenko	Spectroscopy of autoionization and multiphoton resonances in spectra of the lanthanide atoms in an electric field: Quantum fluctuations and chaos
		Boris Khots, Dmitriy Khots	The basis of Quantum Mechanics in Observer's Mathematics
		D.E. Sukharev	Quantum-chaotic features in X-ray spectroscopy of the heavy kaonic atoms
		I.N. Serga	Spectroscopy of heavy pionic atoms with electromagnetic and strong pi-N interaction and quantum chaos
		O.Yu.Khetselius	Parity non-conservation in atoms and nuclei and dynamical enhancement of weak interaction: Quantum Chaos
		A.V. Glushkov, G.P.Prepelitsa, O.Yu. Khetselius, Yu.Ya. Bunyakova	Non-linear prediction method in short-range forecast of atmospheric pollutants: Low-dimensional chaos
		Giuseppe Maino	Nuclei at the Edge of Chaos
		Matthew Marko, Xiujian Li, Jiangjun Zheng , Chee Wei Wong	Monte Carlo Modelling of Soliton Pulse Timing Jitter in Silicon Nanowire Waveguides
		Tapas Kumar Sinha, Joseph Mathew	Long Wave Length Soliton Solutions of Nonlinear Differential Equations
		Tchavdar T. Marinov, Rossitza S. Marinova	Soliton Solution as Inverse Problem for Coefficient Identification
		A.V.Glushkov	Atomic and nuclear physics with manifestation of stochastic behaviour, photon-correlation effects, quantum chaos and entanglement

		Juan Andrés López Barreras, Juan Manuel Bernal Iniesta, Gil Arturo Quijano Vega, José María López Barreras, Aida Berenice Saldaña Hernández	A mathematical model for the allocation to evaluate the process of accreditation through stochastic dynamic programming heuristics recombinant
		G.P.Prepelitsa, A.V. Glushkov, V.M. Kuzakon, E.P.Solyanikova, A.A. Svinarenko	Chaos theory methods in modeling of interaction of the non-linear vibrational systems on the basis of temporal series analyses (application to semiconductor quantum generators)
		Alexander A. Boichuk, Oleksander A. Pokutnyi	Dichotomy and boundary value problems on the whole line
		Alexander M. Shayduk, Sergey A. Ostanin, Evgeni R. Yusupov	Experimental detection of the average motor unit action potential frequency in the chaotic electromyographic signal
		E. P. Prokopev	ABOUT POSSIBLE VARIOUS FORMS OF WORLD REASON
		E.P.Prokopev	PROSPECTS OF DEVELOPMENT OF A PROBLEM OF PHYSICS, CHEMISTRY AND TECHNOLOGY OF ANTIMATTER
		Lizeth Torres, Cristina Verde, G. Besançon, D. Georges	A Nonlinear Observer Approach for Parameter Estimation in Chaotic Systems
		Nikolay Serov	CHAOTIC ONTOLOGY OF COLOR
		Sachin Nalawade	Influence of recycled aggregate on flexural behaviour of reinforced concrete beams
		Vernygora Olena	BOUND DISCREPANCY OF THE COMPOUND INVERSIVE CONGRUENTIAL SEQUENCE OF PRN's
		Zarine K. Manukyan	Chaotic Invariants for Action Recognition
		NEDJMA Samira, DJIDJELLI Hocine, BOUKERROU Amar	DEINKED AND ACETYLATED FIBER OF NEWSPAPERS
		Bejoy Varghese, S.Rajesh, B.K.Goswami, V.M.Nandakumaran,	Semiconductor Laser Dynamics with Optoelectronic delay feedback
		Sharypov O.V., Anufriev I.S.	The generalized KdV-Burgers' equation: description of instability in a reacting two-phase medium