DRAFT - Program CHAOS 2020

13th Chaotic Modeling and Simulation International Conference

Turned into Virtual

Tuesday, 9.6.2020

TIME ZONE: CEST – Central European Summer

11:00- 11:30 Preparation, interconnections

11:30 – 12:00
Room 1
Opening Ceremony

12:00-12:40
Plenary Session
Room 1 (PS1)
Chair:
Speaker: Ferdinand Verhulst
Title: Variations on the Fermi-Pasta-Ulam chain, a survey

12:40-13:20
Plenary Session
Room 1 (PS2)
Chair:
Speaker: Nail Akhmediev
Title: Recent advances in rogue wave theory

13:20- 13:30 Preparation, interconnections

13:30-14.45
SCS1
Special and Contributed Sessions

Room 1	Room 2	Room 3
Attractors	**Special Session** **Liutex and Third Generation of Vortex Identification I** **Chair: Yifei Yu**	**Dynamics I**
Bernd Binder Point Cloud Wave Attractor from Discrete Rotation-Translation Sequences on Closed Loops	**Chaoqun Liu** Liutex and Third Generation of Vortex Definition and Identification	**Maricel Agop, Andrei Zală, Dan Dimitriu, Ştefan Irimiciuc, Alina Gavriluț, Gabriel Crumpei, Lucian Eva** Statistical methods and nonlinear dynamics for analyzing brain activity. Theoretical and experimental aspects

Zaamoune Faiza, Tijdani Menacer Design Hidden Bifurcation kind to Multiscroll Chaotic Attractors via Saturated Function Series	**Cheng Liu, Yiding Hu, Decheng Wan** Simulation and Analysis of Breaking Waves in Deep Water	**Jorge Carballido-Landeira** Exploring the spatiotempora dynamics in active nanocompartment systemsl
Vadim Prokopenko Construction of composite chaotic multiattractors containing local chaotic attractors with different spatial orientations	**Dongming Huang, Weihao Zhang** Numerical Simulation of Leakage Flow inside Shroud and Its Interaction with Main Flow in an Axial Turbine	**Aliyu Isah, Jean-Marie Bilbault, Serge-Aurélien Tchakoutio Nguetcho, Stéphane Binczak** Dynamics of the charge transfer through a memristor between two initially charged cells
Jakub Vohryzek, Gustavo Deco, Bruno Cessac, Morten L. Kringelbach and Joana Cabral Ghost attractors in spontaneous brain activity: recurrent excursions into functionally-relevant BOLD phase-locking states	**Sita Charkrit, Chaoqun Liu** Dynamic Mode Decomposition of Liutex to Identify Vortices in Early Flow Transition	**Eva Jurcisinova, Marian Jurcisin, Richard Remecky** Anomalous scaling in the kinematic magnetohydrodynamic turbulence under the influence of helicity in the two-loop approximation
		Zheng luo, Linyao Li, Dong Liang, Mengmeng Du, Ying Wu Energy Efficiency of Cortical Action Potential Generation at Different Temperatures

14:45-15:00 Break

15:00- 15:15 Preparation, interconnections

15:15-16:45
SCS2
Special and Contributed Sessions

Room 1	Room 2	Room 2
Special Session **Extreme nonlinear waves (rogue waves) I** **Chair: Nail Akhmediev**	**Special Session** **Liutex and Third Generation of Vortex Identification II** **Chair: Yiqian Wang**	**Dynamics II**
Roland Schiek On the experimental excitation of modulation instability and Akhmediev breathers	**Hongyi Xu** Hairpin Vortex Formation Mechanisms based on LXC-Liutex Cores in Thermal Turbulent Boundary Layer with Rib-tabulator	**Andreas Sofianos, Constantinos Siettos, Lucia Russo** Analytical and Numerical Bifurcation Analysis of TLR4 Receptor Signaling Chaotic Dynamics
Chong Liu, Nail Akhmediev Breather interaction: Chessboard-like interference patterns and modulation instability	**Yisheng Gao** Sensitivity analysis of volume integral of Liutex in transitional flows	**Edmar Soria** Space-Timbre: a dynamical systems representation of foundational parameters in Electroacoustic Music

Fetah Benabid Inhibited-Coupling guiding hollow core PCF: A platform for pulse compression.	**Yifei Yu, Pushpa Shrestha, Oscar Alvarez, Chaoqun Liu** Correlation Analysis between vorticity and Liutex (vortex)	**J. Leonel Rocha, S. Carvalho** Information measures and synchronization in regular ring lattices with discontinuous dynamics
Ioannis Kourakis, Ibrahem Elkamash and Brian Reville Electrostatic Rogue Waves in Plasmas	**Xiaorui Bai, Huaiyu Cheng, Bin Ji, Xinping Long** On the comparison of Liutex method with other vortex identification methods in a confined tip-leakage cavitating flow	**Hovik Matevossian, Giorgio Nordo, Giovanni Migliaccio** Biharmonic Problems and their Applications in Engineering and Technology
Margarida Facao, M. Inês Carvalho Extreme solutions of the cubic complex Ginzburg-Landau equation with nonlinear gradient terms		
16:45- 17:00 Preparation, interconnections		
17:00-18:30 SCS3 Special and Contributed Sessions		
Room 1	**Room 2**	**Room 3**
Special Session Extreme nonlinear waves (rogue waves) II Chair: Nail Akhmediev	**Special Session Liutex and Third Generation of Vortex Identification III Chair: Xiaoshu Cai**	**Chaos and Control**
Raphael Jauberteau, Alessandro Tonello, Katarzina Krupa, Fabio Baronio, Guy Millot, Stefan Wabnitz, Vincent Couderc Appearance and Disappearance of 2-D Spatiotemporal Extreme Waves in Quadratic Nonlinear Medium	**Yiqian Wang** Largragian Liutex	**Malika Belouerghi, Tidjani Menacer** Control of a Modified Chua's System using the Routh-Hurwitz Criteria
Katarzyna Krupa, Alessandro Tonello, E. Deliancourt, A.Barthélémy, Guy Millot, Stefan Wabnitz, Vincent Couderc Spatiotemporal nonlinear phenomena in multimode optical fibers	**Yuxian Xia** Liutex in the vortex statistics of 2D turbulent system	**R.J. Escalante-González, Eric Campos** A class of complex systems without equilibria with parametric control
Katarzyna Krupa, Gil Fanjoux, Alexandre Parriaux, Kilian Baudin, Guy Millot Self-stimulated Raman scattering in CO2-filled hollow-core fibers	**Xiangrui Dong** Micro-Ramp Wake Structures Identified by Liutex	**Tatiana F. Filippova** Control for Set-valued Movements of Dynamical Systems under Uncertainty with Applications
Orazio Descalzi Helmut R. Brand	**Jiawei He, Songtao Chen, Weiwen Zhao, Decheng Wan**	**Mounira Kesmia, Soraya Boughaba** Control of Cardiac Alternans

Dissipative Solitons stabilized by nonlinear gradients	Investigation of Flow Structures around Cylinders with High Reynolds Number by Liutex Vortex Identification Methods	
Zhenyun Qin Rogue Waves in Nonlinear Integrable Systems		**Maiya A. Rozhnova, Victor B. Kazantsev, Evgeniya V. Pankratova** Role of the neuronal firing rate in emergence of chaotic brain extracellular matrix dynamics
18:30- 18:45 Preparation, interconnections		
18:45-19:30 **Room 1 (PS3)** **Plenary Session** **Chair:** **Speaker: Jean-Marc Ginoux** **Title: Albert Einstein and the doubling of the deflection of light**		
End of the 1st Day		

Program - CHAOS 2020

13th Chaotic Modeling and Simulation International Conference

9 - 12 June 2020, Florence, Italy

Turned into Virtual

Wednesday, 10.6.2020

TIME ZONE: CEST – Central European Summer

11:30- 12:00 Preparation, interconnections

12:00-13:30
SCS4
Special and Contributed Sessions

Room 1	Room 2	Room 3
Special Session **Nonlinear Localization in Lattices I** **Chair: Juan F.R. Archilla**	**Special Session** **Liutex and Third Generation of Vortex Identification IV** **Chair: Yisheng Gao**	**Maps**
Sergej Flach The Wonderful World of Flatbands: From Basics of Compact Localized States to Caging of Classical and Quantum Interactions	**Xiaoshu Cai, Xiangrui Dong and Wu Zhou** Experimental Study on vortex structures in turbulent boundary layer by Liutex identification	**Shunji Kawamoto** Limit Cycle Analysis for 2-D Time-Dependent Logistic Maps
Yosuke Watanabe Observation of propagation of nonlinear localized oscillations in a mass-spring chain with excitation and attenuation ends	**Pengxin Cheng, Nan Gui, Xingtuan Yang, Jiyuan Tu, Shengyao Jiang** A comparison of Liutex with other vortex identification methods on the multiphase flow past a cylinder using LBM on GPU	**Domenico Lippolis, Kensuke Yoshida** Eigenfunctions of the Perron-Frobenius operator for uniformly hyperbolic area-preserving maps
Yusuke Doi, Reiichiro Wada, Akihiro Nakatani Dynamics of Discrete Breathers in Normal Modes in a Symmetric Lattice	**Xuan Trieu, Chaoqun Liu** Liutex and Proper Orthogonal Decomposition for Vortex Structure in the Wake of Micro Vortex Generator	**André M. McDonald, Michaël A. van Wyk** Estimation of Ergodic Maps with Unified Power Spectra from Causal Sequences of State Density Functions
Masayuki Kimura, Yamato Mogi, Shinji Doi Localized modes induced by distributed impurities in resonant circuit arrays	**Pushpa Shrestha, Chaoqun Liu** Comparison between Q, Δ, λ2, λci and Liutex Criteria	**Belqassim Bouteghrine, Camel Tanougast, Said Sadoudi** Application of New 4-D Chaotic Map for Secure IP-Communication
Masayuki Sato, Masato Sakai, A. J. Sievers		**María Muñoz-Guillermo** On the complexity of the q-deformed logistic map

Management of intrinsic localized modes in a driven nonlinear cyclic electrical transmission line		
Yuriy A. Kosevich, Alexander P. Chetverikov, Yusuke Doi Localization of negative-effective-mass electron by supersonic kink in 1D lattice		
13:30- 13:45 Preparation, interconnections		
13:45-14:30 Room 1 (PS4) Plenary Session Chair: Speaker: Nikolay V. Kuznetsov Title: Theory of hidden oscillations (Dedicated to Gennady Alekseevich Leonov (1947-2018))		
14:30- 15:00 Break		
15:00- 15:15 Preparation, interconnections		
15:15-16:00 SCS5 Special and Contributed Sessions		
Room 1	**Room 2**	**Room 3**
Theory	**Special Session Liutex and Third Generation of Vortex Identification V Chair: Hongyi Xu**	**Generator**
Vyacheslav M. Somsikov The evolution and breaking symmetry in the physics	**Kan Xie, Jiahui Song** Numerical Study on influence of vortex structure of jet in crossflow in axisymmetric transonic nozzle	**Volodymyr Rusyn** Pulse chaotic Chua's generator
Vyacheslav Somsikov, Svetlana Azarenko Problems of creating an evolutionary picture of the world	**Xiangyang Xu, Wennan Zou** No vortex in flows with straight streamlines—Some comments on real Schur forms of velocity gradient ∇v	**S. Varbanets, Ya. Vorobyov** Inversive generators of second order
Alexander V. Sosnitsky, Anatoly I. Shevchenko The Universe multiphase meta-reduction: The Harmon (Mandala), continuum (Prana), discretization, formalization, knowledge, cognition, condensation and Absolute Nothing	**Yang Huang, Decheng Wan** Application of Liutex for Analysis of Complex Wake Flow Characteristics of Wind Turbine	**Zongchao Qiao, Ina Taralova, Mazen Saad, Safwan El Assad** Chaotic generator design for encryption purposes
	Zhen Ren, Weiwen Zhao, Decheng Wan Visualization of Complex Flow Field of Ship Self-Propulsion and Zigzag Manoeuvrability	**Margarida Facao, M. Inês Carvalho** Extreme solutions of the cubic complex Ginzburg-Landau equation with nonlinear gradient terms

16:00- 16:15 Preparation, interconnections		
16:15-17:45 SCS6 Special and Contributed Sessions		
Room 1	**Room 2**	**Room 3**
Special Session Nonlinear Localization in Lattices II Chair: Juan F.R. Archilla	**Special Session Liutex and Third Generation of Vortex Identification VI Chair: Wennan Zou**	**Plasma**
Aleksandr Shelkan, Mihail Klopov, Vladimir Hizhnyakov Increased mobility of discrete breather in lattices with odd inter-site and on-site anharmonic potentials	**Charles Nottage** Visualization of The Batchelor Vortex with Liutex and Liutex Core Line Methods	**Dan G. Dimitriu, Sebastian Popescu, Maricel Agop** Double Layer in Plasma as an Interface Generated through the Interaction of Two Fractal Fluids
Irina Koroleva (Kikot), Nina Breitman (Rayzan), Margarita Kovaleva, Yuli Starosvetsky Analysis of discrete breathers in the mass-in-mass chain in the state of acoustic vacuum	**Vishwa Patel, Yonghua Yan, Xiangrui Dong, Chaoqun Liu** Correlation Analysis between low frequency shock oscillation and Liutex in SBLI	**Dan G. Dimitriu, Sebastian Popescu, Maricel Agop** Chaotic states of Plasma Triggered by the Nonlinear Dynamics of Simple and Multiple Double Layers
Juan F.R. Archilla, F. Michael Russell, Santiago Medina-Carrasco Localized waves in silicates. What we know from experiments?	**Xiaoping Chen, Renfei Kuang, and Shaorong Wang** Application Modified Liutex-Omega method to High-Temperature Supersonic Turbulent Channel Flows	**V J Law, D P Dowling** Application of microwave oven plasma reactors for the formation of carbon-based nanomaterials
Sergey V. Dmitriev, Igor A. Shepelev, Elena A. Korznikova Supersonic crowdions and voidions	**Xiang Li, Qun Zheng, Bin Jiang** A Classification and criterion of Vortex Boundary based on Eigenvector	**Julio J. Martineli, Nikolay Kryukov** Study of turbulent transport in magnetized plasmas with flow using symplectic maps
Vladimir Hizhnyakov, Vadim Boltrushko Singular amplification of low-frequency fluctuations in optical spectra of 4He quantum liquid		**Ioannis Kourakis, Ibrahem Elkamash, Michael McKerr, Theodoros Horikis and Dimitri J Frantzeskakis** Coupled State Formation in Plasma Waves
17:45- 18:00 Preparation, interconnections		
18:00-18:45 Room 1 (PS5) Plenary Session Chair: Speaker: Elena Babatsouli Title: Order in disordered speech data		
18:45- 19:00 Preparation, interconnections		

19:00-20:00 SCS7 Special and Contributed Sessions		
Room 1	**Room 2**	**Room 3**
Astronomy	**Special Session** **Liutex and Third Generation of Vortex Identification VII** **Chair: Xiangrui Dong**	**Nano**
Valeriy S. Abramov Higgs boson and Higgs field in fractal models of the Universe: active femtoobjects, new Hubble constants, solar wind, heliopause	**Weiwen Zhao, Decheng Wan*** Vortex Identification for Study of Flow Past Stationary and Oscillating Cylinder	**Alexandr Valyaev, Sergey Petrov, Alexei Valiaev Gurgen Aleksanyan** Ways to Accelerate Nanotechnologies Implementation in the Health Care System
Paniveni U. Shankar Supergranulation – A Chaotic Phenomenon	**Jie Chen, Guoyu Wang, Biao Huang, Qin Wu** Numerical investigation of the cavitation vortex interaction around a twisted hydrofoil with emphasis on the vortex identification method	**Alexandr Valyaev, Sergey Petrov, Aleksey Valiaev, Oleg Apanasyuk** Application of Special Nanomaterials in Medicine
Nada Jevtic A nonlinear search for delta□Scuti-like pulsations across the whole frequency spectrum	**Xiaoyang Zhao, Jie Chen, Biao Huang, Guoyu Wang** The identification of tip leakage vortex of an axial flow waterjet pump by using Omega method and Liutex	**Philippe Beltrame** Selective transport of airborne microparticles in a microgravity environment
	Yumeng Tang, Yangwei Liu Comparison of Vortex Identification Methods for Corner Separation flow in a Compressor Cascade	
End of the 2nd Day		

Program - CHAOS 2020

13th Chaotic Modeling and Simulation International Conference

9 - 12 June 2020, Florence, Italy

Turned into Virtual

Thursday, 11.6.2020

TIME ZONE: CEST — Central European Summer

11:30- 12:00 Preparation, interconnections

12:00-13:30
SCS8
Special and Contributed Sessions

Room 1	Room 2	Room 3
Special Session **Identification and control of thermonuclear plasmas dynamics I** **Chair: Teddy Craciunescu and Andrea Murari**	**Special Session** **Liutex and Third Generation of Vortex Identification VIII** **Chair:** Charles Nottage	**Special Session** **Chaos in Nonideal Dynamical Systems** **Chair: Aleksandr Shvets**
Andrea Murari et al. Introduction to identification and control of thermonuclear plasmas	**Yiwei Wang, Rundi Qiu, Renfang Huang, Chenguang Huang** Liutex application in the cavitating flows around a three-dimensional bulletdimensional bullet	**Aleksandr Shvets** Overview of Scenarios of Transition to Chaos in Nonideal Dynamic Systems
Emmanuele Peluso et al. Assessing the effectiveness of synchronisation experiments in magnetic confinement fusion: information theoretic and recurrence criteria	**Oscar Alvarez, Yifei Yu, Pushpa Shrestha, Chaoqun Liu** Visualizing Liutex Core Using Liutex line and Liutex tubes	**Aleksandr Shvets, Serhii Donetskyi** Identification of Hidden and Rare Attractors in Some Electroelastic Systems with Limited Excitation
Teddy Craciunescu et al. Image based methods to investigate causality between time series relevant for plasma fusion diagnostics	**Yumeng Tang, Yangwei Liu** Study of Vortex Structure in a Linear Compressor Cascade Using Liutex and Local Trace Criterion	**Tatyana Krasnopolskaya, Evgeniy D. Pechuk, Tatyana P. Konovalyuk** Oscillating System under Limited Excitation from Generator or Wave Field
Riccardo Rossi Neural computation for the assessment of correlations between quantities in large multimachine databases	**Yufan Wang, Weihao Zhang** Analysis of Vortex Evolution in Turbine Rotor Tip Region Based on Liutex Method	**Tatyana Krasnopolskaya, Evgeniy D. Pechuk, Mariia O. Rudnytska**

		Cardiorespiratory System as Nonideal System with Limited Excitation
		Evgeniy D. Pechuk, Tatyana S. Krasnopolskaya, Mariia O. Rudnytska Cardiorespiratory System as Nonideal System with Limited Excitation
13:30- 13:45 Preparation, interconnections		
13:45-14:30 **Room 1 (PS6)** **Plenary Session** **Chair:** **Speaker: Mark Edelman** **Title: Evolution of Systems with Power-Law Memory: Do We Have to Die?**		
14:30- 15:00 Break		
15:00- 15:15 Preparation, interconnections		
15:15-16:00 **Room 1 (PS7)** **Plenary Session** **Chair:** **Speaker: Banlue Srisuchinwong** **Title: A Simplest 1-BJT-Based Chaotic Hyperjerk Circuit: Its Minimized Damping for Maximized Attractor Dimension, and Hidden Attractors**		
16:00- 16:15 Preparation and Interconnections		
16:15-17:30 **SCS9** **Special and Contributed Sessions**		
Room 1	**Room 2**	**Room 3**
Special Session **Identification and control of thermonuclear plasmas dynamics II** **Chair: Teddy Craciunescu and Andrea Murari**	**Models I**	**Special Session** **Chair: Beatrice Venturi**
F. Pisano, B. Cannas, A. Fanni, A. Murari et al. Edge Localised Modes: evidence of chaotic dynamics?	**Anuraj Singh** Bifurcation and Chaos in a Discrete Prey-Predator Model	**William A. Barnett, Giovanni Bella, Taniya Ghosh, Paolo Mattana, Beatrice Venturi** Shilnikov Chaos, Low Interest Rates, and New Keynesian Macroeconomics
J. Vega, A. Murari et al. Predicting the dynamics of nonlinear instabilities: disruptions in Tokamaks	**Sudhir Singh** N-Rogue Waves in a New (2+1)-Dimensional Integrable Boussinesq Model	**Marco Desogus, Beatrice Venturi** Systemic effects of the credit crunch. A dynamic mathematical model
A.M. Croitoru, F. Spineanu, M. Vlad	**Shunji Kawamoto**	**Beatrice Venturi**

Sequence of random wave excitations and minimum entropy production in tokamak plasma	Interaction of Limit Cycles for the FitzHugh-Nagumo Model	Chaos and Global Indeterminacy in an Environmental Economic Growth Model
Dragos Palade, Madalina Vlad, Florin Spineanum Turbulent transport control by tokamak plasma rotation	**lknur Kusbeyzi Aybar** Hopf bifurcation analysis for the Fitzhugh-Nagumo model of a spiking neuron	**Beatrice Venturi, Danilo Liuzzi** Growth, Sustainability and Ggreen Poverty Traps In a Simple Integrated Model
M.V. Korovina, I.N. Smirnov, V.Yu. Smirnov On the asymptotics of the solution of a Klein-Gordon-Fock equation with a variable coefficient for the Laplacian	**Ilknur Kusbeyzi Aybar, Brigita Fercec, O. Ozgur Aybard, Masa Dukaric** **Limit cycles of the Schnakenberg chemical reaction model**	

17:30- 17:45 Preparation, interconnections

17:45-19:00
SCS10
Special and Contributed Sessions

Room 1	Room 2	Room 3
Bifurcation and Chaos I	**Models II**	**Risk**
Elias D. Tsirbas, Frangiskos V. Topalis, Evangelos N. Skoubris Switching Frequency Bifurcations in a LED Boost Driver	**Bo-Wen Shen** Homoclinic Orbits and Solitary Waves within the Non-dissipative Lorenz Model and KdV Equation	**Alexander Valyaev, Gurgen Aleksanyan, Alexey Valyaev, Oleg Arkhipkin** Statistic Methods for Assessments of Risks and Damages at Nuclear Power Plants
Mauricio Diaz Furstenberg family with IP set in Distributional Chaos	**Bo-Wen Shen, Roger A. Pielke Sr., Xubin. Zeng, Jong-Jin Baik, Tiffany A.L. Reyes, Sara Faghih-Naini, Robert Atlas, Jialin Cui** Is Weather Chaotic? Coexistence of Chaos and Order within a Generalized Lorenz Model Country	**Alexandr Valyaev, Aleksey Valiaev, Oleg Apanasyuk** Integrated Emergency Management and Risks for Mass Casualty Emergencies
Yaşar Selim Bahçeci, Fatih Özkaynak A New Substitution Box Structure Based on Nose–Hoover Chaotic System	**Özgür Gültekin, Çağatay Eskin** Effect of Harvesting on Extinction Time in a Stochastic Population Model	**V J Law, D P Dowling** Saint Elmo's fire: its formation and measurement on both natural and artificial structures
Julio Rodriguez, Max-Olivier Hongler How chaotic dynamics drive a vintage grill-room spite	**Arkady Kitover** On solvability of the equation $\lambda f - w(f \circ \phi) = g$	**Vasily Lubashevskiy** Principle of reactive-decision making in urban recovery after disaster under uncertainty of resilience boundaries
	S. F. Pellegrino Numerical methods for the nonlocal wave equation of the peridynamics	

19:00- 19:15 Preparation, interconnections		
19:15-20:00 **SCS11** **Special and Contributed Sessions**		
Room 1	**Room 2**	**Room 3**
Bifurcation and Chaos II	**Special Session** **Liutex and Third Generation of Vortex Identification IX** **Chair: Yangwei Liu**	**Data Analysis I**
Lev Kuzmin, Elena Efremova Application of ultrawideband chaotic signals for wireless ranging	**Changpeng Guo；Yongfu Wu; Zhongxing Liu; Dapeng Zhang** Study on eddy current of all-oxygen reheating furnace based on Liutex vortex recognition method	**Christopher Gonzalez, Claudia Lainscsek, Terrence Sejnowski, Christophe Letellier** Assessing observability from recorded data using Delay Differential Analysis (DDA)
Nikolai A. Magnitskii Traveling waves and spatio-temporal chaos in nonlinear partial differential equations		**Radim Panis, Martin Kološ, Zdeněk Stuchlík** Determination of chaotic behaviour in time series generated by charged particle motion
Andrzej Gecow Life evolves in experimentally confirmed 'half-chaos' of not fully random networks, but not 'on the edge of chaos'		
End of the 3rd Day		

Program - CHAOS 2020

13th Chaotic Modeling and Simulation International Conference

9 - 12 June 2020, Florence, Italy

Turned into Virtual

Friday, 12.6.2020

TIME ZONE: CEST – Central European Summer

11:30- 12:00 Preparation, interconnections

12:00-13:30
SCS12
Special and Contributed Sessions

Room 1	Room 2	Room 3
Fractals I	**Optics – Models - Methods**	**Data Analysis II**
Alexander A. Potapov, Dmitriy S. Klyuev, Anatoly M. Neshcheret, Oleg V. Osipov Opportunities for using strip and fractal antennas based on chiral metamaterials in 5G networks	**Adriana Pedrosa Biscaia Tufaile, Alberto Tufaile** Hysteresis loops, dynamical systems and magneto optics	**Volodymyr Rusyn, Christos H. Skiadas, Aceng Sambas** Software realization, analysis and experimental investigation of equivalent inductance
Olga P. Abramova, Andrii V. Abramov Qubits and fractal structures with elements of the cylindrical type	**Alberto Tufaile, Adriana Pedrosa Biscaia Tufaile** Halo dynamics: from rainbows to black holes	**O.M. Kiselev** Stochastic properties of two-wheeled robot on soft surfaces
Maricel Agop, Alina Gavriluț, Lucian Eva, Gabriel Crumpei Fractal atomicity, a fundamental concept in the dynamics of complex systems	**Alberto Tufaile, Michal Snyder, Timm A. Vanderelli, Adriana Pedrosa Biscaia Tufaile** Investigating dynamical systems using Optic-Fluidics	**W.M. Macek, P. Figura, S. Górka** Analysis of Reconnection in the Magnetosphere on Kinetic Scales
Elena S. Alekseeva, Alexander A. Potapov, Alexander E. Rassadin On Approximate Conformal Mappings for Domains with Fractal Boundaries	**Alina Gavriluț** Atoms and pseudo-atoms in quantum measure theory	**Zhengce Zhang** Asymptotic behavior of solutions for a parabolic free boundary problem with nonlinear gradient absorption
Nilufar A. Azamova, Alexander A. Potapov, Alexander E. Rassadin On the Dirichlet Problem with Fractal Boundary Condition	**Siavash H. Sohrab** Connecting Bernoulli and Schrödinger Equations and its Impact on Quantum-Mechanic Wave Function and Entanglement Problems	**B. Gunduza, O. Yenilmez, O. Ozgur Aybar** Qualitative analysis of a chaotic circuit with complex dynamics
	Farzaneh Boroumand, Hassan Doosti, Mohammad Taghi	**B. Gunduza, O. Yenilmez, O. Ozgur Aybar**

	Shakeri, Nino kordzakhia, Mehdi Salehi Tilted Nadaraya-Watson Nonparametric Regression Estimator	Qualitative analysis of a chaotic circuit with complex dynamics

13:30- 13:45 Preparation, interconnections

13:45-15:15
SCS13
Special and Contributed Sessions

Room 1	Room 2	Room 3
Fractals II	**System I**	**Sequence and Game Theory**
Vasileios Drakopoulos, DuYong Pak, SongIl Ri Generalised univariable fractal interpolation functions	**Asher Yahalom, Natalia Puzanov** Time Dependent Stabilization of a Hamiltonian System	**Michele Castelluzzo, Alessio Perinelli, Leonardo Ricci** Generation of surrogates of spike-like chaotic sequences
Matteo Nicolini Fractal Dimension of Braided Rivers from Detailed Two-Dimensional Hydrodynamic Simulations	**M.M. Khoshyaran, J.P. Lebacque** Interregional network competition and dynamical systems	**Dimitrios Dellaportas, Anna Alexandratou Rigorous** Scattering for Spheres of Arbitrary Size. A non-Linear Sequence
Alexander A. Potapov, Dmitriy S. Klyuev, Anatoly M. Neshcheret, Oleg V. Osipov Fractal antennas based on biisotropic and bianisotropic chiral metamaterials	**Alexander M. Krot** A model of stabilization of chaotic wave processes in complex dynamical systems from the point of view of the matrix decomposition theory	**Georges Sarafopoulos, Kosmas Papadopoulos** Dynamics of a Bertrand Duopoly Game with Differentiated Goods, Heterogeneous Expectations and Relative Profit Maximization
Caio M. Vicentini, Cristina P. de Campos, Werner Ertel-Ingrisch, Diego Perugini, Leila S. Marques, Donald B. Dingwell Unravelling a Large Magmatic Province	**Anatolij K. Prykarpatski** A symmetry analysis of differential systems on functional manifolds	**Georges Sarafopoulos, Kosmas Papadopoulos** On a Cournot Dynamic Game with Cost Uncertainty and Relative Profit Maximization
Didier Samayoa Ochoa The topological Hausdorff dimension and improved oil recovery on Menger sponge and Cantor Tartan	**B.I. Usama, S. Morfu, M. Rossé, P. Marquié, J.M. Bilbault** Vibrational Resonance in inhomogeneous and space-dependent nonlinear damped systems	**Yiannis Dimotikalis** Distributions of Max Entropy Frontier on Portfolio Selection

15:15- 15:30 Break

15:30-16:15
Room 1 (PS8)
Plenary Session
Chair:
Speaker: Riccardo Meucci

Title: Recent Advances in Controlling Chaos		
16:15- 16:30 Preparation, interconnections		
16:30-18:00 SCS14 Special and Contributed Sessions		
Room 1	**Room 2**	**Room 3**
Special Session Chaos in Josephson Nanostructures Chair: Yury M. Shukrinov	**System II**	**Society and Economy**
André E. Botha, Veronika Hajnová, Yury M. Shukrinov Analysis of Bifurcations in a Model of Coupled Josephson Junctions: Some Challenges for Standard Numerical Continuation Methods	**Usama B. Ibrahim, S. Morfu, M. Rosse, P. Marquie, J.M. Bilbault** Vibrational Resonance in inhomogeneous and space-dependent nonlinear damped systems	**Luca Grilli, Domenico Santoro** A Statistical Ensemble Based Approach for Entropy in Cryptocurrencies Markets
G. Filatrella, C. Barone, C. Guarcello, S. Pagano, A. Piedjou, V. Pierro Analysis of thermal and quantum escape times of Josephson junctions for signal detection	**Shunzeng Wang Jun Jiang, Ling Hong** Unveiling the Characteristics of Stick-slip Oscillations in A Piecewise Smooth Rotor/stator Rubbing System	**Harold M Hastings, Tai Young-Taft** Empirical scaling and dynamical regimes for GDP: challenges and opportunities
A.Janalizade Javan, M. R. Kolahchi Fractal basin boundaries on to chaos in a Josephson junction model	**Berenice Rojo-Garibaldi, Manuel Contreras-López, Matías Carvajal, David Alberto Salas-de-León, Julyan H. E. Cartwright** Nonlinear Analysis of El Niño-Southern Oscillation Events from Coastal Temperature Time Series in the Eastern South Pacific: Implications for the Regional Bioclimate System	**Caroline Lima, Walter Aliaga, Juan Lazo** Characterization of the Dynamic Behavior of the Net Present Value (NPV) in the Oil Market
Yury Shukrinov, Andre Botha, Mohammad Kolahchi Chaos in Josephson nanostructures: short review	**Minos Axenides, Emmanuel Floratos, Dimitrios Katsinis, Georgios Linardopoulos** M-Theory as a dynamical system generator	**Konstantina Founta, Loukas Zachilas** Battle of Salamis: Greeks were destined to win
Jasmina Tekić, Andre Botha, Petar Mali**, and Yuri M.Shukrinov** The ac driven Frenkel-Kontorova model: from Shapiro steps to chaos	**Rodica Luca Tudorache** Existence of Solutions for a System of Fractional Boundary Value Problems	**Malcolm David Lowe** Visualizing Languages as Networks of Meaning
Claudio Guarcello, Davide Valenti, Bernardo Spagnolo, Vincenzo Pierro, Giovanni Filatrella Josephson-based Threshold Detector for Lévy-Distributed Fluctuations	**Denis G. Zakharov** Influence of Intrinsic Currents of Pyramidal Cells on the Weak PING Rhythm	**Ihor Lubashevsky** Two Types of Consciousness and Phase Transitions Between Them

18:00- 18:10 Preparation, interconnections
18:10-18:50 **Plenary Session** **Room 1 (PS9)** **Chair:** **Speaker: Wieslaw M. Macek** **Title: Reconnection and Turbulence in Space Plasmas on Kinetic Scales**
18:50-19:30 **Plenary Session** **Room 1 (PS10)** **Chair:** **Speaker: Leszek Sirko, Szymon Bauch, Małgorzata Białous, Vitalii Yunko, Pavel Kurasov, Jiri Lipovsky, Michał Ławniczak** **Title: What can we learn from the spectra of quantum graphs and microwave networks?**
19:30-20:00 **Room 1** **Closing Ceremony**
End of the Conference