



Program CHAOS2026

19th Chaotic Modeling and Simulation International

Conference Agios Nikolaos, Crete, Greece 12 - 15 Jun, 2026, Hybrid

Hellenic Mediterranean University, Lakonia Campus

Friday, 12.6.2026

TIME ZONE: EEST – Eastern European Summer Time

8:30 – 10:00
Registration

10:00 – 10:40 -
Room 1
Opening

10:40-11:00
Plenary Session
Room 1
(PS1)

Chair: Christos Skiadas

Speaker: Leszek Sirko

Omer Farooq, Michał Ławniczak, Szymon Bauch, Pavel Kurasov

Institute of Physics, Polish Academy of Sciences, Warsaw, Poland

Title:

Isoscattering Non-Isospectral Quantum Graphs and Microwave Networks

11:00- 11:30
Coffee Break

11:30-13.30

SCS1

Special and Contributed Sessions

Room 1

Chaos Chaotic Modeling
Chair: Richard Remecky

Ilmi Seit-Dzhelil and Aleksandr Shvets

Room 2

Special Session
Complex Nonlinear Dynamics toward
Chaotic Supremacy
Chairs: Fumiyoshi Kuwashima,
Takashi Isoshima

Masafumi Fukunari
(University of Fukui, Japan)

Influence of the delay on the properties of limit sets of a low-dimensional hydrodynamic system	Recent Advances in the Design and Applications of High-Power Terahertz Gyrotrons
Hugo Nicolas Reyes Cardozo, Olivia Trader, Neil Grant, Jenny Magnes Comparing the Chaotic Locomotion of C. elegans in Simulated Microgravity vs. Control Conditions Using the Rosenstein Algorithm	Takashi Isoshima (RIKEN, Japan) Geometrical Control of Functional Node in Two-dimensional Optical Bistable Device toward Chaotic Network Zhongxi Zhang (Fukuoka Institute of Technology, Japan) Controllability of Chaotic Properties under Spectral Constraints in Generalized Boole Transform
Volodymyr Rusyn, Christos H. Skiadas A New Non-Autonomous Chaotic Generator: Circuit Realization and Analysis of the Main Properties	Taira Tsunekawa (Kyoto University, Japan) Forecasting Noisy Chaotic Dynamics: A Robust Deep Learning Approach
Richard Remecky Anomalous scaling and anisotropy persistence in kinematic magnetohydrodynamic turbulence	Fumiyoshi Kuwashima (Otemon Gakuin University Japan) Creation of New Features using Chaos - Highly Efficient THz Wave using Chaotic Supremacy
George Matalliotakis, Christos Skiadas, Stamatia Margariti Application of the Three-Parameter Weibull Model to Greek Population Survival Data: Insights into Age- and Gender-Specific Mortality Patterns	
Tatiana F. Filippova Control Synthesis Problems for Nonlinear Dynamical Systems under Uncertainty	
13:30-14:30 LUNCH	
End of the 1st Day	



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TIME ZONE: EEST – Eastern European Summer Time

9:30 – 10:00

Registration

10:00-11:30

SCS3

Special and Contributed Sessions

Room 1

Room 2

Attractors – Bifurcation - theory

Chair: Jenny Magnes

Dynamical Systems

Chair: Avadis S. Hacinliyan

Aleksandr Gonchenko

Discrete Lorenz attractors of various types in three-dimensional maps with axial symmetry

E. Pineda León, J.R. Martinez Zayas, E. Flores Méndez

Creep strain behaviour in reinforced concrete silos for variable temperatures

Oleksii Horchakov, Aleksandr Shvets

Bifurcations of Maximal Attractors in Non-Ideal Pendulum Dynamical Systems Induced by Time Delay

Oleksiy V. Khavryuchenko

Pears and Peanuts versus Escher Zones: Nonlinear Shape Dynamics in Low-Dimensional Shape Space

Malcolm David Lowe

Chaos Theory and Meaning In Natural Languages

Valery Gaiko

Global Bifurcations, Chaos and Multi-Stability in Polynomial Dynamical Systems

Jenny Magnes, Dimitrios Tzepos, Olivia

Trader, Hugo Nicolás Reyes Cardozo

Lyapunov Exponents as a Pathway to Characterize Biological Parameters through Locomotion

Irma Hacinliyan, Avadis S. Hacinliyan
On Analysis of Music Using Dynamical System Tools

Apostolos Bozikas

Entropy Decomposition in Mortality Modeling

Marco Desogus, Betrice Venturi
ESG, Homoclinic Orbit and Sunspot Indeterminacy in a Resource Optimal Control Model

DJEGHBAL Hayat and MEFLAH Mabrouk
Numerical Approximation of Stochastic Elliptic PDES with Random Inputs

Lubomir L. Traikov; Deniz R. Barzanov, Ivan G. Antonov;

	Todor G. Bogdanov; Bilyana L. Piperkova; Hristina Nocheva; Dimitar Bakalov; Akira Ushiyama; Chiodji Ohkubo Application of CFD and Nonlinear dynamics in the analysis of the influence of hyperlipidaemia on the regulation of microcirculation
11:30- 12:00 Coffee Break	
12:00-14:00 SCS4 Special and Contributed Sessions	
<u>Room 1</u>	<u>Room 2</u>
Special session LAFIM of HMU Accounting and Financial Management Chair: Christos Floros	Models Chair: Ivan G. Grabar
Christianna Chimonaki , Maria Grydaki, Christos Lemonakis, Christos Floros Determinants of Audit Fees in the UK and the USA	Ivan G. Grabar, Yuri O. Kubrak Anomalous Brownian dynamics of a point in a field of several central forces localized in a small region
Efthalia Tambouratzi, Eleftherios Charamis, Vasilakakis Konstantinos Performance budgeting as a tool of monitoring and improving Public Sector's Administration: The case of Greece	Ivan G. Grabar, Yuri O. Kubrak, Olena S. Kilnitska, Maryna I. Yareмова Quantitative models of phase transitions Competition-monopoly
Ioannis Chatziantonioua, David Gabauer, and Eun Young Oh Interdependencies across cryptocurrency sectors: New evidence from DCC-GARCH R2 decomposed connectedness measures	Vladimir L. Kalashnikov, A. Rudenkov, E. Sorokin I. T. Sorokina Adiabatic Theory of Strongly Chirped Dissipative Solitons
Nikolaos Petrakis, Christos Lemonakis, and Christos Floros The effect of ECB's non-conventional measures on bank lending: Evidence from covid-19 pandemic period	Mirza Muradl, Dr. *Özgür Gültekin A Nonlinear Stochastic Population Model with Allee Effect and Behavioral Fear Effect
Manos Mamatzakis A Hybrid Bayesian Framework for Analysing a Bank's Decision-Making Under Uncertainty	Alexander M. Krot Investigation of the instability and dispersion of waves in plasma and gas-dust space media

Ioannis Aggelakis Transfer Pricing as Financing Tool and Specific Issues that Arise	Vyacheslav M. Somsikov The equation of evolution and the physical content of the concept of entropy
14:00-15:00 LUNCH	
15:00 - 21:00 Excursion to the traditional village "Kritsa" ending with a Greek "Meze" in a local Taverna	
End of the 2nd Day	

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19th Chaotic Modeling and Simulation International Conference <i>Agios Nikolaos, Crete, Greece 12 - 15 Jun, 2026, Hybrid</i>	
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Sunday, 14.6.2026	
TIME ZONE: EEST – Eastern European Summer Time	
10:30 - 11:30 Registration	
9:30-11:30 SCS5 Special and Contributed Sessions	
<u>Room 1</u>	<u>Room 2</u>
Nonlinear Chair: Siavash H. Sohrab	Theory Chair: George Atsalakis
Siavash H. Sohrab Invariant Model of Boltzmann Statistical Mechanics and Generalized Thermodynamics	Engin Kandiran, A S . Hacınliyan A Fractional-Order Dynamics of Societal Sustainability: A Study on Memory Effects and Predictability in the HANDY Model
TOUHAMI Radia and MEFLAH Mabrouk Ergodic Properties of the Solution of Stochastic Fractional Heat Equation Driven by Fractional Brownian Sheet with Hurst Parameter	Wojciech Szumiński and Jaume Llibre Lyapunov Integrability Test (LIT): A Numerical Method for Detecting First Integrals in Dynamical Systems

Michal Hnatič Dominik Husz, Matej Kecer, Tomáš Lučivjanský, Lukáš Mižišin Two-Loop Renormalization of the Incompressible Toner–Tu Model	Atsalaki Ioanna, Atsalakis George Interpretable chaotic time series forecasting using a Type-2 fuzzy inference
Volodymyr Bondarenko, Maksym Shyshov, Iryna Kovalevska, Viktor Pochepov & Ivan Sheka Use of Multi-factor Modeling to Determine the Parameters for Rational Composite Support in Difficult Mining-geological Conditions	Simone Caramel Topological Robustness and Collective Synchronization in the Proteome: A Deterministic Chaos Model based on Feigenbaum-Fibonacci Universal Constants
Berc Deruni, Ali Cihan Keles, and Engin Kandiran Collective Dynamics and Pattern Relay in Multiplex Time-Delayed Oscillator Networks	Rodica Luca Tudorache, Alexandru Tudorache Existence of Solutions to a Hadamard Fractional Boundary Value Problem at Resonance
Georges Sarafopoulos, Despoina Terzopoulou Stability and chaos in a heterogeneous duopoly game with generalized profits and R&D efforts	Nikos Kounoupas, Yiannis Dimotikalis and Christos H. Skiadas A.L.I.G.N.E.D. Framework: A Supervised GenAI Approach for Aligning H5P Learning Activities with Public-Sector Digital Skills Gaps
11:30-12:00 Coffee Break	
12:00-14:00 SCS6 Special and Contributed Sessions	
<u>Room 1</u>	<u>Room 2</u>
Nonlinear Chair: Nicolò Pecora	Theory Chair: Asher Yahalom
Anna Agliari, Fernando Bignami, Nicolò Pecora Nonlinear dynamics of a simple behavioral model of inflation	Asher Yahalom and Natalia Puzanov Feedback Stabilization Applied to Heart Rhythm Dynamics Using an Integro- Differential Method
Livio Fenga When Supply Chains Meet Chaos: Nonlinear Dynamics of Commercial Traffic in London	M.M. Khoshyaran, J.P. Lebacque Bifurcation and stability in transportation dynamics
Devasmito Das, Ina Taralova, and Jean-Jacques Loiseau Adaptive Fuzzy Sliding Mode Control for Fractional-Order Rossler System Using Grunwald-Letnikov Fractional Integrals	D. I. Palade. M. Pomarjanschi Learning Turbulent Transport in Tokamaks from the Chaos of Test-Particle Simulations
ΔΕΝ ΑΝΟΙΓΕΙ Philippe Beltrame, Pierre Trontin Chaos as the Key: Unlocking Selective airborne Microparticle Transport	Ivan V. Kazachkov Modelling and Computer Simulation of the Turbulent Two-Phase Jets of Nano fluids

Ali Cihan Keles, Efe Ali Mert, and Tutku Dilara Yilmaz DNA-Based One-Time Pad Encryption Method Using Mandelbrot Set and Chaotic Systems	Alberto Tufaile, Adriana Pedrosa Biscaia Tufaile A Statistical Mechanics Model of the Crown Flash Phenomenon
Teddy Craciunescu, Andrea Murari, Riccardo Rossi, Michela Gelfusa Multifractal Analysis for Fusion Plasma Disruption Prediction	BECHOUA Hana and MEFLAH Mabrouk Stochastic Balance Laws Perturbed by Levy Noise and the Malliavin Calculus
George Matalliotakis, Christos Skiadas, Stamatia Margariti Application of the First Exit Time Model-IM to Survival (Raw) Data for the U.S. Population	George Matalliotakis, Christos Skiadas, Stamatia Margariti Stochastic Modeling of Survival in the Australian Population: Comparative Analysis of the First Exit Time and Deterministic Weibull Model
14:00-15:00 Lunch	
15:00-15:40 Room 1 (PS2) Plenary Session Chair: Christos H Skiadas Speaker: Andrew Walcott Beckwith Physics Department, Chongqing University, College of Physics, Chongqing University Huxi Campus, No. 44 Daxuechen Nanlu, Shapinba District, Chongqing 401331, People's Republic of China Title: What is a way to introduce a huge flux of energy in the initial onset of inflation? i.e. Use of modified HUP and Torsion and a possible link to quantum number n meant to unify Black holes, and a quantum universe and its links to chaotic dynamics	
20:00 - 24:00 Farewell Dinner Greek food and music	
End of the 3rd Day	



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10:30 - 11:00

Registration

Room 1

11:00-11:45

(PS3)

Plenary Session

Chair: Leszek Sirko

Speaker: Bo-Wen Shen

San Diego State University

Title:

Turning Points, Tipping Points, and Regime Shifts: A Potential-Based Analysis of the Non-dissipative Lorenz Model, the Nonlinear Schrödinger Equation, and Energy-Balance Models

11:45- 12.15

LUNCH

12:15-13:00

(PS4)

Plenary Session

Chair: Leszek Sirko

Speaker: Wieslaw M. Macek

¹*Institute of Physical Sciences, Faculty of Mathematics and Natural Sciences, Cardinal Stefan Wyszyński University, Warsaw, Poland*

²*Space Research Centre, Polish Academy of Sciences, Warsaw, Poland*

Title:

From Homogeneity to Multifractality in the Galaxy Distribution

13:00-13:30

Closing Ceremony

End of the Conference