

Programme Overview

<i>Time</i>	<i>Sunday 16th</i>	<i>Monday 17th</i>	<i>Tuesday 18th</i>	<i>Wednesday 19th</i>	<i>Thursday 20th</i>	<i>Friday 21st</i>
8:30-9:00		Opening				
9:00-9:30		K. Showalter	J. Kurths	T. Geisel	H. Kantz	J. Stark
9:30-10:00		E. Schoell	T. Bountis	M. Berry	K. Kaneko	J. Meiss
10:00-10:30		F. Takens	R. Stoop	J. Yorke	D. Broomhead	I. Booth
10:30-11:00		coffee break	coffee break	coffee break	coffee break	coffee break
11:00-11:30		U. Feudel	H. Swinney	B. Fiedler	P. Grassberger	Parallel sessions
11:30-12:00		S. Fishman	R. Dewar	H. Nijmeijer	R. Ramaswamy	
12:00-12:30		R. Koeberle	T. Tel	A. Ozorio	R. Devaney	
12:30-13:00		E. Ott	A. Arneodo	O. Piro	V. Afraimovich	
13:00-13:40						
13:40-14:30		lunch break	lunch break	lunch break	lunch break	lunch break
14:30-15:00		R. Littlejohn	R. MacKay	A. Politi	Excursion	Y. Lai
15:00-15:30		L. Pecora	M. Thompson	S. Schiff		P. Read
15:30-16:00		A. Pikovsky	T. Sauer	U. Smilansky		P. Ashwin
16:00-16:30		coffee break	coffee break	coffee break		coffee break
16:30-17:00		I. Procaccia	G. Casati	Parallel sessions		W. Ditto
17:00-17:30						H. Fujisaka
17:30-18:00						(M. Kobayashi)
18:00-18:30						
18:30-19:00	Regis- tration and Welco- me Recept.					
19:00-19:30		Poster session				Conference Dinner
19:30-20:00						
20:00-20:30						
20:30-21:00						
21:00-21:30						

Plenary sessions:

Monday 17th

9:00-9:30: Ken Showalter (West Virginia, USA)

“Collective behavior in excitable media: dynamical networks and interacting particle-like waves”

9:30-10:00: Eckehard Schöll (Berlin, Germany)

“Chaos control and beyond - stabilization of unstable states in complex nonlinear systems”

10:00-10:30: Floris Takens (Groningen, Holland)

“Monodromy of integrable Hamiltonian systems”

11:00-11:30: Ulrike Feudel (Oldenburg, Germany)

“Spatio-temporal patterns in simple models of marine systems”

11:30-12:00: Shmuel Fishman (Haifa, Israel)

“Quantum chaos, resonances and atom optics: from experiments to number theory”

12:00-12:30: Roland Koeberle (Sao Paulo, Brasil)

“On distance metrics for spike trains: how to get a "microscope"”

12:30-13:00: Edward Ott (Maryland, USA)

“Coherent behavior of network coupled heterogeneous dynamical systems”

14:30-15:00: Robert Littlejohn (Berkeley, USA)

“Phases, solid angles and the asymptotics of the Wigner $6j$ symbol”

15:00-15:30: Louis Pecora (Washington, USA)

“Synchronization of chaotic systems”

15:30-16:00: Arkady Pikovsky (Potsdam, Germany)

“Mixing-induced global modes in open active flow”

16:30-17:00: Itamar Procaccia (Rehovot, Israel)

“Universal model of finite-Reynolds number turbulent flow in channels and pipes”

Tuesday 18th

9:00-9:30: Jürgen Kurths (Potsdam, Germany)

“Structural and functional clusters of complex brain networks – a network of networks”

9:30-10:00: Tassos Bountis (Patras, Greece)

“A new method for detecting chaos, determining the dimensions of tori and predicting slow diffusion in Hamiltonian systems”

10:00-10:30: Ruedi Stoop (Zürich, Switzerland)

“The physics root of biocomputation”

11:00-11:30: Harry Swinney (Texas, USA)

“Dynamical systems invariant curves as barriers to pollutant transport in oceanic flows”

11:30-12:00: Robert Dewar (Canberra, Australia)

“The MHD equilibrium problem in nonaxisymmetric toroidal plasma confinement systems”

12:00-12:30: Tamás Tél (Budapest, Hungary)

“Leaking dynamical systems”

12:30-13:00: Alain Arneodo (Lyon, France)

“From DNA sequence analysis to the experimental confirmation of the influence of genome long-range correlations on the nucleosomal structure of eukaryotic chromatin”

14:30-15:00: Robert MacKay (Warwick, UK)

“Examples of chaos”

15:00-15:30: Michael Thompson (Aberdeen, UK)

“The role of DNA mechanics in biological processes”

15:30-16:00: Tim Sauer (Fairfax, USA)

“Reconstructing sparsely-connected dynamical networks”

16:30-17:00: Giulio Casati (Como, Italy)

“Classical and quantum chaos and understanding and control of heat flow”

Wednesday 19th

9:00-9:30: Theo Geisel (Göttingen, Germany)

“Levydemics”

9:30-10:00: Michael Berry (Bristol, UK)

“Blue skies and tsunamis: two of Nature's wave singularities”

10:00-10:30: James Yorke (Maryland, USA)

Simple systems where most trajectories fail to have Lyapunov exponents

11:00-11:30: Bernold Fiedler (Brown, USA)

“A brief journey from the pendulum to Sturm attractors”

11:30-12:00: Henk Nijmeijer (Eindhoven, Holland)

“Network synchronization with(out) time delay”

12:00-12:30: Alfredo Ozorio de Almeida (Rio de Janeiro, Brasil)

“Semiclassical evolution of dissipative Markovian systems”

12:30-13:00: Oreste Piro (Palma de Mallorca, Spain)

T.B.A.

14:30-15:00: Antonio Politi (Florence, Italy)

“Characterizing chaos by means of covarian Lyapunov vectors”

15:00-15:30: Steven Schiff (Pennsylvania, USA)

“Pattern formation and control of spatiotemporal neuronal dynamics”

15:30-16:00: Uzy Smilansky (Rehovot, Israel)

“Can one count the shape of a drum?”

Thursday 20th

9:00-9:30: Holger Kantz (Dresden, Germany)

T.B.A.

9:30-10:00: Kunihiko Kaneko (Tokyo, Japan)

“Biologically inspired dynamical systems”

10:00-10:30: David Broomhead (Manchester, UK)

“Chemistry in fractal spaces”

11:00-11:30: Peter Grassberger (Jülich, Germany)

“Subgraph sampling, motif search and twinning in protein interaction networks”

11:30-12:00: Ram Ramaswamy (New Delhi, India)

“Effective mechanisms for the synchronization of stochastic oscillators”

12:00-12:30: Robert Devaney (Boston, USA)

“Chaotic explosions in singularly perturbed rational maps”

12:30-13:00: Valentin Afraimovich (Potosi, Mexico)

“Modeling sequential dynamics in networks of active elements”

Friday 21st

9:00-9:30: Jaroslav Stark (London, UK)

“Stochastic Bursting in Gene Expression”

9:30-10:00: James Meiss (Boulder, USA)

“Normal forms for volume-preserving maps”

10:00-10:30: Ian Booth (Aberdeen, UK)

“Darwin's rules OK? Stochastic events in bacterial physiology”

14:30-15:00: Ying Cheng Lai (Arizona, USA)

“Noise-induced superpersistent chaotic transients”

15:00-15:30: Peter Read (Oxford, UK)

“Synchronizing baroclinic chaos - in models and experiments”

15:30-16:00: Peter Ashwin (Exeter, UK)

“Networks of states for globally coupled oscillators”

16:30-17:00: William Ditto (Florida, USA)

T.B.A.

17:00-17:30: Hirokazu Fujisaka (Kyoto, Japan), represented by Miki U. Kobayashi

“Large deviation statistics and level dynamics”

Parallel sessions:

Wednesday 19th

Session A: Dynamical Systems: Theory and Applications I

16:30-16:50: Scott T. Hayes (U.S. Army RDECOM, USA)

“Random process and chaotic dynamics”

16:50-17:10: Ivan Djurek (Faculty of EE and Computing, Zagreb, Croatia)

“Experimental evidence of the period-3 window in the chaotic state”

17:10-17:30: Ina Taralova (IRCCyN, Ecole Central de Nantes, France)

“Chaos amplitude prediction in a class of transmission systems modeled by piece-wise linear maps”

17:30-17:50: Prabhakar G. Vaidya (National Institute of Advanced Studies, Bangalore, India)

“Separating a mixture of chaotic signals using symbolic dynamics”

17:50-18:10: Arunas Tamasevicius (Semiconductor Physics Institute, Lithuania)

“Improving chaos controller”

18:10-18:30: Gabor Csernak (HAS-BUTE Research Group on Dynamics, Hungary)

“Chaotic behaviour of linear systems under digital control”

18:30-18:50: Charalampos Skokos (IMCCE, Observatory of Paris, France)

“The generalized alignment index method of chaos detection: theory and applications”

Session B: Time series analysis (predictability, interaction, directionality, parameter space reconstruction, order patterns)

16:30-16:50: Frank Kwasniok (University of Exeter, UK)

“Regime predictability in nonlinear dynamical systems”

16:50-17:10: Milan Palus (Institute of Computer Science Prague, Czech Republic)

“Interactions in complex systems”

17:10-17:30: Karsten Keller (University of Luebeck, Germany)

“Distribution of ordinal patterns”

17:30-17:50: Dimitry Mukhin (Institute of Applied Physics of RAS, Russia)

“Parameter space structure reconstruction of unknown dynamical system from time series”

17:50-18:10: Kathrin Henschel (FDM, University Freiburg, Germany)

“Graphical models meet Neuroscience: About direct directed interactions”

18:10-18:30: Masoud Ziabakhsh Deilami (Iran University of Science and Technology, Iran)

“Feedback control of spatiotemporal chaos”

18:30-18:50: Alan J. Fenwick (QinetiQ, USA)

“A selective review of active sensing with chaotic signals”

Session C: Modelling and applications

16:30-16:50: Alessandro Rizzo (DIEES, Universita degli Studi di Catania, Italy)

“SEIR disease spreading in mobile agents”

16:50-17:10: Stefano Lenzi (Polytechnic University of Marche, Ancona, Italy)

“A discrete-time model for the pedestrians-induced lateral vibrations of footbridges”

17:10-17:30: Richard Clement (University College London)

“Fixed point analysis of an eye movement”

17:30-17:50: Eugen Gheorghiu (International Centre of Biodynamics, Romania)

“Non-linear analysis of cell cycle”

17:50-18:10: Igor V Melnikov (Optolink Ltd, Zelenograd, Moscow, Russia)

“Slow light dynamics and defect excitations”

18:10-18:30: Nastaran Vasegh (K.N. Toosi University of Technology, Iran)

“Bifurcation approach to delayed feedback”

Session D: Non-hyperbolicity, topology, bifurcations

16:30-16:50: Kevin Mitchell (University of California, Merced, USA)

“The topology of nested tangles”

16:50-17:10: Marc Lefranc (CNRS & Universite de Lille, France)

“Alternative determinism principle for topological analysis of chaos”

17:10-17:30: Victoriano Carmona (University of Sevilla, Spain)

“Saddle-node bifurcation of invariant cones in the three-dimensional piecewise linear systems”

17:30-17:50: David I Rosas Almeida (Universidad Autonoma de Baja California, Mexico)

“Control of codimension one bifurcations”

17:50-18:10: Enrique Ponce (University of Sevilla, Spain)

“Discontinuous piece-wise smooth systems and boundary equilibrium bifurcations”

Friday 21st

Session E: Pattern formation, fluid dynamics, spatiotemporal chaos

11:00-11:20: Fred Feudel (Institute of Physics, University of Potsdam, Germany)

“Pattern formation in central forced spherical shell convection”

11:20-11:40: Irene Moroz (Oxford University, UK)

“Unstable periodic orbits in dynamos”

11:40-12:00: Dominic Merkt (Brandenburg University of Technology, Germany)

“Formation of stationary patterns in thin liquid films”

12:00-12:20: Ibere L. Caldas (University of Sao Paulo)

“Chaotic magnetic fields in plasmas”

12:20-12:40: Oleg Bakunin (Turbulence Theory Laboratory, RRC Kurchatov Institute, Russia)

“Reconstruction of flow topology and percolation scalings”

12:40-13:00: Peter Vorobieff (University of Mexico, Mexico)

“Chaos in low Reynolds number multiphase flows”

13:00-13:20: Fabio Biancalana (Cardiff University, UK)

“Gap solitons in spatiotemporal photonic crystals”

13:20-13:40: Gian-Luca Oppo (University of Strathclyde, UK)

“Energy localization and walls in nonlinear lattices and BEC”

Session F: Synchronisation, complex networks

11:00-11:20: Murilo Baptista (Max-Planck Institute, Dresden, Germany)

“Transmission of information in active channels”

11:20-11:40: Andreas Amann (Tyndall National Institute Cork, Ireland)

“Complex networks based on Few Mode Lasers”

11:40-12:00: Thilo Gross (Princeton University, USA)

“Epidemic dynamics on an adaptive network”

12:00-12:20: Ned J. Corron (U.S. Army RDECOM, USA)

“Time shifts and correlations in synchronized chaos”

12:20-12:40: Uchechukwu E. Vincent (Olabisi Onabanjo, University Nigeria)

“Synchronization, multistability and basin crisis in coupled oscillators”

12:40-13:00: Xingang Wang (National University of Singapore, Singapore)

“Unstationary pattern in complex networks”

13:00-13:20: Federico Esposti (Politecnico di Milano, Bioingegneria, Italy)

“Synchronization of MEA neuronal networks”

13:20-13:40: David C. Roberts (Los Alamos National Laboratory, USA)

“Solving the Kuramoto model of a self-synchronizing, finite population of globally coupled oscillators”

Session G: Conservative systems, quantum chaos

11:00-11:20: Florentino Borondo (Universidad Autonoma de Madrid, Spain)

“Homoclinic motions in quantum mechanics”

11:20-11:40: Igor Khovanov (Physics Department, Lancaster University, UK)

“Influence of chaotic structure on escape”

11:40-12:00: Flavio M. de Aguiar (Universidade Federal de Pernambuco, Brasil)

“Quantum irrational triangular billiards”

12:00-12:20: Rosa M. Benito (Universidad Politécnica de Madrid, Spain)

“Arnold web in 3D molecular systems”

12:20-12:40: Ekaterina Pavlovskaya (University of Aberdeen, UK)

“An archetypal oscillator for smooth and discontinuous dynamics”

Session H: Dynamical Systems: Theory and Applications II

11:00-11:20: Georg Gottwald (The University of Sydney, Australia)

“On a normal form for excitable media”

11:20-11:40: Tatsuo Yanagita (Aihara Complexity Modelling Project, ERATO, Japan)

“Pulse dynamics in a coupled excitable system”

11:40-12:00: John A G Roberts (School of Mathematics, UNSW, Sydney, Australia)

“Order, chaos, symmetry over finite fields”

12:00-12:20: Nithin Nagaraj (National Institute of Advanced Studies, India)

“A non-linear dynamical systems approach to source compression for constrained sources”

12:20-12:40: Dipanjan Roy (The University of Texas at Arlington, USA)

“Physics of generalized Lorenz models”

12:40-13:00: Kishor Bhat (National Institute of Advanced Studies, India)

“Period 3 implies ergodicity”

13:00-13:20: Ravi Arkalgud (University of Aberdeen, UK)

“An analysis of a two cylinder-fluid interaction at critical gap spacing by a cell boundary element method”

Poster Session: Monday 17th, 19:00-21:30

(Foyer of Fraser-Noble Building)

P1: Murilo Baptista (Max-Planck Institute Dresden, Germany)

“Poincare recurrence and measure of hyperbolic and nonhyperbolic chaotic attractors”

P2: Flavio M. de Aguiar (Universidade Federal de Pernambuco, Brasil)

“Spin waves in driven nanooscillators”

P3: Charalampos Skokos (IMCCE, Observatory of Paris, France)

“Studying the dynamics of particle accelerators by the Frequency Map Analysis method using multi-bpm data”

P4: Shahverdiev E.M. (Sch.of Electronics, Wales Univ.Bangor, UK)

“Synchronization regimes in chaotic multiple time delay external cavity semiconductor lasers”

P5: Shahverdiev E.M. (Sch.of Electronics, Wales Univ.Bangor, UK)

“Chaos synchronization in multiple time delay electrooptical semiconductor lasers”

P6: Igor Schreiber (Institute of Chemical Technology, Prague, Czech Republic)

“Analysis of complex oscillatory dynamics of a pH oscillator”

P7: Nikola Popovic (University of Edinburgh, UK)

“Canard-induced mixed-mode oscillations in a family of three time-scale systems”

P8: Jorge Duarte (Instituto Superior de Engenharia Lisboa, Portugal)

“Ecological complexity: chaos in a three species food chain model”

P9: Arette F. Taylor (University of Leeds, UK)

“Desynchronisation regimes in globally coupled chemical oscillators”

P10: Elbert Macau (INPE - National Institute for Space Research, Brasil)

“Efficient chaotic based satellite power supply subsystem”

P11: Gian-Luca Oppo (University of Strathclyde, UK)

“Dynamics of a cavity soliton laser”

P12: Gian-Luca Oppo (University of Strathclyde, UK)

“Nonlinear dynamics of optical devices with intra-cavity photonic crystals”

P13: Eugeny Loskutov (Institute of Applied Physics of RAS, Russia)

“MCMC method for Bayesian reconstruction of dynamical systems from noisy chaotic time series of arbitrary duration”

P14: Sergio Roberto Lopes (Universidade Federal do Paraná, Brasil)

“Onset of spatiotemporal chaos in a nonlinear system”

P15: Javier Ros (University of Seville, Spain)

“Coexistence of chaotic attractors and stable equilibrium points in Chua's circuit”

P16: Carsten Allefeld (Institute for Frontier Areas of Psychology and Mental Health, Freiburg, Germany)

“Detecting synchronization clusters in multivariate time series via coarse-graining of finite-state Markov processes”

P17: Mattia Frasca (University of Catania, Italy)

“Experimental synchronization of single-transistor chaotic circuits”

P18: Yoshito Hirata (ERATO, JST/The University of Tokyo, Japan)

“Testing nonlinearity in data with trends”

P19: Inés P. Mariño (Universidad Rey Juan Carlos, Madrid, Spain)

“Estimation of a chaotic CO₂ laser”

P20: M. Kohout (Institute of Chemical Technology Prague, Czech Republic)

“Study of spatiotemporal patterns in three-way catalytic converter using stoichiometric network analysis”

P21: Sandro Ely de Souza Pinto (Universidade Estadual de Ponta Grossa, Brasil)

“Extinction in a two species competition”

P22: Michael Alexandrovich Spiridonov (Urals State Technical University-UPI, Russia)

“Structure and properties of oxide melts”

P23: Irina G. Kosnyreva (Ural Institute of State Fire Service, Russia)

“Integral mathematical model of fire”

P24: Gouhei Tanaka (University of Tokyo, Japan)

“Bifurcation analysis of a hybrid system and its application to biomedical science”

P25: Ajay Sharma (Fundamental Physics Society)

“Universal equality of masses of nucleon”

P26: Eduardo Piña (Universidad Autónoma Metropolitana, Mexico)

“Periodic orbits of the three body problem”

P27: Kishor G. Bhat (National Institute of Advanced Studies, India)

“Chance from chaos”

P28: Nithin Nagaraj (National Institute of Advanced Studies, India)

“Switching of non-linear dynamical systems and its effect on roundoff induced periodicity with applications to pseudo-random number generation”

P29: Diana A. Mendes (IBS - ISCTE Business School Lisbon, Portugal)

“Dynamics and control in an implicitly defined matching labor market model”

P30: Alejandro Perez (Universidad de los Andes, Colombia)

“Multi-soliton solutions of the vector NLS equation”

P31: Alfonso Arturo Castrejon-Pita (AOPP, University of Oxford, UK)

“Chaos synchronization in baroclinic systems”

P32: Karsten Ahnert (University of Potsdam, Germany)

“Traveling waves in phase lattices”

P33: Federico Cantini (CNR Institute of Clinical Physiology, Pisa, Italy)

“Modeling the sinoatrial node response to subthreshold electrical stimulation in presence of the baroreflex control loop”

P34: David Urminsky (University of Edinburgh, UK)

“On the reliability of escape times for the 3-Body problem”

P35: Steffen Tietsche (University of Potsdam, Germany)

“Transmission through a one-dimensional DNSE lattice with random potential”

P36: Niall Mangan (Clarkson University/ LANL, USA)

“Intermittency in nonlinear dynamics: AC driven vortices”

P37: Eulalie Joelle Ngamga (University of Potsdam, Germany)

“Recurrence analysis of strange nonchaotic dynamics”

P38: Nayyer Iqbal (School of Mathematical Sciences ,GCU,PAK)

“Open loop control of Lyapunov exponents at fixed points of a nonlinear oscillator”

P39: Daniel Leeman (University of Aberdeen, UK)

“Effects of noise in chaotic scattering”

P40: Rodrigo Frehse Pereira (Universidade Federal do Paraná, Brasil)

“Periodic orbits analysis of UDV”

P41: Elena Tamaseviciute (Vilnius University, Lithuania)

“Stabilization of unstable periodic orbits”

P42: Guillermo Fernandez-Garcia (University of Santiago de Compostela, Spain)

“BZ patterns driven by Faraday flows”

P43: Luz Marina Reyes (Universidad de Los Andes, Venezuela)

“Social gas”

P44: Sergey Tikhomirov (Saint Petersburg State University, Russia)

“Shadowing in actions of some Abelian groups”

P45: Prabhakar G. Vaidya (National Institute of Advanced Studies, Bangalore, India)

“Explaining the measurements of trans spectral coherence in chaotic signals using the theory of time delay embedding”

P46: Prabhakar G. Vaidya (National Institute of Advanced Studies, Bangalore, India)

“Embedding in higher dimensions causes ambiguity for the problem of determining equations from data”

P47: Eduardo G. Altmann (MPIPKS-Dresden, Germany)

“Relation between recurrence and escape times in leaked dynamical systems”

P48: Elena Sitnikova (University of Aberdeen, UK)

“Chaotic behaviour of the pseudoelastic discontinuous oscillator”

P49: James Ing (University of Aberdeen, UK)

“Experimental verification of the bifurcation structure for a bilinear oscillator”

P50: Aicko Yves Schumann (MLU Halle-Wittenberg, Germany)

“Multivariate phase rectified signal averaging for study of complex inter-related time series”

P51: Bryan W. Horton (University of Aberdeen, UK)

“Dynamics of the elliptically excited pendulum”

P52: Michael Alexandrovich Spiridonov (Urals State Technical University-UPI, Russia)

“Interrelation of concentrations fluctuations of structure and properties in silicate melts”