

Tuesday, July 3**08:00AM-10:00AM****Parallel Session 7**

Special Session 3	Mathematics of Social Systems Organizer(s): Andrea Bertozzi	Location GRC-B
8:30-9:00	Chad Topaz (Macalester College, USA) Desert locust dynamics: Behavioral phase change, swarming, and nonlocal models	Abstracts p. 15
9:00-9:30	Seth A Marvel (University of Michigan, USA) Moderation, as an escape from a persistent cycle of ideological revolutions	Abstracts p. 14
9:30-10:00	Manish Kumar (University of Cincinnati, USA) Analysis of a new PDE based Model for Ant Foraging	Abstracts p. 13

Special Session 10	Computational and Nonautonomous Dynamics Organizer(s): Michael Dellnitz, Oliver Junge, Stefan Siegmund	Location GRC-A
8:00-8:30	Gary Froyland (University of New South Wales, Australia) Finite-time transport analysis for nonautonomous deterministic and stochastically perturbed systems	Abstracts p. 44
8:30-9:00	Daniel Karrasch (TU Dresden, Germany) Invariant manifolds in finite-time dynamics	Abstracts p. 45
9:00-9:30	Kathrin Padberg-Gehle (Technische Universitaet Dresden, Germany) Set-oriented numerical analysis of time-dependent transport	Abstracts p. 46
9:30-10:00	Tuhin Sahai (United Technologies Research Center, USA) Designing Scalable Algorithms for Complex Networks	Abstracts p. 46

Special Session 12	Singular Perturbations and Boundary Layer Theory Organizer(s): Makram Hamouda, Chang-Yeol Jung, Roger Temam	Location REH-6
8:00-8:30	Anna L Mazzucato (Penn State University, USA) Vanishing Viscosity Limit for a certain class of channel flows	Abstracts p. 53
8:30-9:00	Daozhi Han (Florida State University, USA) Boundary Layer for a Class of Nonlinear Pipe Flow	Abstracts p. 53
9:00-9:30	Gung-Min Gie (UC Riverside, USA) Boundary layers of the Navier-Stokes equations	Abstracts p. 52
9:30-10:00	Makram Hamouda (Indiana University, USA) Singular perturbations for the Primitive Equations	Abstracts p. 52

Special Session 14	Mathematical Models in Biology and Medicine Organizer(s): Yang Kuang, Bingtuan Li, Jiaxu Li, Andrew Nevai	Location GRC-C
8:00-8:30	Abdul-Aziz Yakubu (Howard University, USA) Infectious Diseases and Demographic Allee Effect	Abstracts p. 65
8:30-9:00	Yanyu Xiao (York University, Canada) On latencies in malaria infections and their impact on the disease dynamics	Abstracts p. 65
9:00-9:30	Quoc T Luu (Stanford Emanuel Radiation Oncology Center, USA) The Relative Biologic Effectiveness versus Linear Energy Transfer curve as a phenotype	Abstracts p. 63
9:30-10:00	Lydia M Bilinsky (Arizona State University, USA) Slow passage through a Hopf bifurcation in spatially extended excitable systems: Some examples from neuroscience	Abstracts p. 59

Special Session 15	Nonlinear Evolution Equations, Inclusions and Related Topics Organizer(s): Mitsuharu Otani, Tohru Ozawa, N. U. Ahmed, S. Migorski, I. I. Vrabie	Location GRC-G
8:00-8:30	Daniela Rosu (Alexandru Ioan Cuza University Iasi & Gh. Asachi Technical University Iasi, Romania) Global existence and exponential stability for a nonlinear delay evolution equation with nonlocal initial condition	Abstracts p. 71
8:30-9:00	Monica-Dana Burlica (Alexandru Ioan Cuza University Iasi & Gh. Asachi Technical University Iasi, Romania) Existence for a class of nonlinear delay reaction-diffusion systems	Abstracts p. 66
9:00-9:30	Takahiro Hashimoto (Aichi Medical University, Japan) Pohozaev-Ôtani type inequalities for weak solutions of some quasilinear elliptic equations in unbounded domains	Abstracts p. 67
9:30-10:00	Tatsuya Watanabe (Kyoto Sangyo University, Japan) Uniqueness and non-degeneracy of ground states of quasilinear Schrodinger equations	Abstracts p. 72

Special Session 17	Singular Perturbations Organizer(s): Freddy Dumortier, Peter De Maesschalck, Martin Wechselberger	Location GRC-I
8:00-8:30	Eric Benoît (Université de La Rochelle, France) Delayed Hopf bifurcation with a focus node transition	Abstracts p. 78
8:30-9:00	Freddy Dumortier (Hasselt University, Belgium) Relaxation oscillations near common slow-fast cycles	Abstracts p. 78
9:00-9:30	Peter De Maesschalck (Hasselt University, Belgium) Slow-fast cycles with singular contact points	Abstracts p. 78
9:30-10:00	Mathieu Desroches (INRIA Paris-Rocquencourt, France) Numerical continuation techniques for planar slow-fast systems	Abstracts p. 78

Special Session 18	Qualitative Theory of Evolutionary Equation and its Application Organizer(s): Xiaojie Hou, Yi Li, Wei-Ming Ni, YuanWei Qi, Yaping Wu	Location PAL-D
8:00-8:30	Jurgen O Batt (Munich University, Germany) Flat Stationary Solutions of the VLASOV-POISSON System (Flat Galaxies)	Abstracts p. 81
8:30-9:00	Zhifu Xie (Virginia State University, USA) Turing instability in a three species food chain model	Abstracts p. 83
9:00-9:30	Chunshan Zhao (Georgia Southern University, USA) Some estimates of solutions to a quasilinear elliptic Dirichlet problem with large diffusion	Abstracts p. 83
9:30-10:00	Kun Zhao (University of Iowa, USA) Non pattern formation in a chemo-repulsion problem	Abstracts p. 83

Special Session 21	Dynamical Systems and Spectral Theory Organizer(s): David Damanik	Location REH-2
9:00-9:30	Tatiana Rodrigues (UNESP, Brazil) Fractals and Dynamic	Abstracts p. 93
9:30-10:00	Alex Haro (Universitat de Barcelona, Spain) Quasi-Periodic Schrödinger Operators beyond the Almost Mathieu	Abstracts p. 93

Special Session 22	Topological and Variational Methods for Boundary Value Problems Organizer(s): John R. Graef, Lingju Kong, Bo Yang	Location REH-1
8:00-8:30	Zengji Du (Xuzhou Normal University, Peoples Rep of China) A note on a third-order multi-point boundary value problem at resonance	Abstracts p. 95
8:30-9:00	Guangwa Wang (Jiangsu Normal University, Peoples Rep of China) Existence, location and approximation results for some nonlinear boundary value problems	Abstracts p. 99
9:00-9:30	John R Graef (University of Tennessee at Chattanooga, USA) Existence of Nontrivial Solutions to Systems of Multi-point Boundary Value Problems	Abstracts p. 96
9:30-10:00	Jeffrey T Neugebauer (Eastern Kentucky University, USA) Extremal points for an nth order three point boundary value problem	Abstracts p. 97

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
8:00-8:30	Sergey Bezuglyi (Institute for Low Temperature Physics, Ukraine) Aperiodic Cantor dynamics	Abstracts p. 101
8:30-9:00	James Keesling (University of Florida, USA) Infinite-dimensional topology and the Hilbert-Smith Conjecture	Abstracts p. 103
9:00-9:30	Dominik Kwietniak (Jagiellonian University in Krakow, Poland) On almost specification and average shadowing properties	Abstracts p. 103
9:30-10:00	Piotr Oprocha (Polish Academy of Sciences, Poland) Weak product recurrence and related properties	Abstracts p. 104

Special Session 24	Geometric Mechanics Organizer(s): Tom Mestdag, Manuel de Leon, Frans Cantrijn, Aziz Hamdouni, Dina Razafindralandy, Jean-Claude Zambrini	Location REH-5
8:00-8:30	Dmitry Zenkov (North Carolina State University, USA) Variational Principles for Hamel's Equations	Abstracts p. 110
8:30-9:00	Tom Mestdag (Ghent University, Belgium) Involutive distributions and dynamical systems of second-order type	Abstracts p. 108
9:00-9:30	Gerard Thompson (University of Toledo, USA) Invariant metrics on Lie groups	Abstracts p. 109

Special Session 26	Qualitative Aspects of Nonlinear Boundary Value Problems Organizer(s): Marta Garcia-Huidobro, Raul Manasevich, James Ward	Location REH-7
8:00-8:30	David G Costa (University of Nevada Las Vegas, USA) On positive solutions for a class of Caffarelli-Kohn-Nirenberg type equations	Abstracts p. 117
8:30-9:00	Cristian Bereanu (Institute of Mathematics Simion Stoilow, Romania) Variational methods for nonlinear perturbations of the mean curvature operator in Minkowski space	Abstracts p. 117
9:00-9:30	Hossein Tehrani (UNLV, USA) On some connecting orbits for a class of singular second order Hamiltonian systems	Abstracts p. 119
9:30-10:00	Junfang Li (University of Alabama at Birmingham, USA) A mean curvature type of geometric parabolic equation	Abstracts p. 118

Special Session 27	Transport Barriers in Dynamical Systems Organizer(s): George Haller, Wenbo Tang	Location REH-8
8:00-8:30	George Haller (McGill University, Canada) Geodesic Theory of Transport Barriers	Abstracts p. 122
8:30-9:00	Francisco Beron-Vera (RSMAS, University of Miami, USA) Uncovering the Lagrangian skeletons of oceanic and atmospheric flows	Abstracts p. 120
9:00-9:30	Maria J Olascoaga (RSMAS/UM, USA) Predicting Instabilities in Environmental Pollution Patterns using LCS-Core Analysis	Abstracts p. 122
9:30-10:00	Michael G Brown (RSMAS, University of Miami, USA) KAM-like Lagrangian Coherent Structures in geophysical flows	Abstracts p. 121

Special Session 33	Nonlinear Elliptic and Parabolic Problems in Mathematical Sciences Organizer(s): Yoshihisa Morita, Junping Shi	Location REH-9
8:00-8:30	Kunimochi Sakamoto (Hiroshima University, Japan) Turing type instabilities in diffusion systems	Abstracts p. 149
8:30-9:00	Junping Shi (College of William and Mary, USA) Time Delay Induced Instabilities and Hopf Bifurcations in General Reaction-Diffusion Systems	Abstracts p. 150
9:00-9:30	Kanako Suzuki (College of Science, Ibaraki University, Japan) Stability of patterns in some reaction-diffusion systems with the diffusion-driven instability	Abstracts p. 150
9:30-10:00	Ying Su (University of Western Ontario, Canada) Spatially inhomogeneous time-periodic solutions in delayed Nicholson's blowflies model	Abstracts p. 150

Special Session 38	Bifurcations and Asymptotic Analysis of Solutions of Nonlinear Models Organizer(s): Jann-Long Chern, Yoshio Yamada, Shoji Yotsutani	Location PAL-A
8:00-8:30	Shingo S Takeuchi (Shibaura Institute of Technology, Japan) On a generalized Jacobian elliptic function associated with p -Laplacian	Abstracts p. 168
8:30-9:00	Tohru T Wakasa (Kyushu Institute of Technology, Japan) Exact solutions for bifurcation problems of some reaction diffusion systems	Abstracts p. 169
9:00-9:30	Shoji Yotsutani (Ryukoku University, Japan) Structure and stability of stationary solutions to a cross-diffusion equation	Abstracts p. 169

Special Session 41	New Developments in Qualitative Behavior of Evolutionary PDEs Organizer(s): Ryo Ikehata, Grozdna Todorova	Location PAL-CC
8:00-8:30	Aissa Guesmia (Lorraine University, France) On the stabilization of Timoshenko systems with finite memory	Abstracts p. 174
8:30-9:00	Belkacem Said-Houari (KAUST university, Saudi Arabia) Global existence and asymptotic behavior of solutions of thermoelasticity of second sound	Abstracts p. 175
9:00-9:30	Shuji Yoshikawa (Ehime University, Japan) Asymptotic profiles for the isothermal Falk-Konopka system of shape memory alloys with weak damping	Abstracts p. 176
9:30-10:00	Marcelo M Cavalcanti (State University of Maringá, Brazil) Uniform decay rate estimates for Schrödinger and Plate equations with nonlinear locally distributed damping	Abstracts p. 173

Special Session 42	Global or/and Blowup Solutions for Nonlinear Evolution Equations and Their Applications Organizer(s): George Chen, Ming Mei	Location REH-4
8:00-8:30	Christian Stinner (University of Paderborn, Germany) Refined asymptotics for the infinite heat equation with homogeneous Dirichlet boundary conditions	Abstracts p. 181
8:30-9:00	Rui Huang (South China Normal University, Peoples Rep of China) Two-dimensional curved fronts in a periodic shear flow	Abstracts p. 178
9:00-9:30	Ming Mei (Champlain College-St.-Lambert, Canada) Traveling Waves For Nonlocal Dispersion Equation	Abstracts p. 180
9:30-10:00	Sergey S Shmarev (University of Oviedo, Spain) On a class of doubly nonlinear parabolic equations with nonstandard growth: existence, blow-up and vanishing	Abstracts p. 180

Special Session 45	Stochastic and Deterministic Dynamical Systems, and Applications Organizer(s): Tomas Caraballo, Jose Valero Cuadra, Maria Garrido-Atienza	Location MAG-A
8:00-8:30	Alain Miranville (Universite de Poitiers, France) Some generalizations of the Cahn-Hilliard equation	Abstracts p. 193
8:30-9:00	Maurizio Grasselli (Politecnico di Milano, Italy) Cahn-Hilliard equations with memory effects	Abstracts p. 192
9:00-9:30	Michael Roeckner (University of Bielefeld, Germany) Localization of Solutions to Stochastic Porous Media Equations: Finite Speed of Propagation	Abstracts p. 193

Special Session 48	Nonlinear Evolution Equations Organizer(s): Alex Himonas, Gerson Petronilho	Location POI-B
8:00-8:30	Lavi Karp (ORT Braude College, Israel) Local existence of solutions of self gravitating relativistic perfect fluids	Abstracts p. 204
8:30-9:00	Dambaru Bhatta (University of Texas-Pan American, USA) Nonlinear Evolution Equation for Magneto-Convective Flow in an Active Mushy Layer	Abstracts p. 202
9:00-9:30	Mihaela M Ifrim (University of California, Davis, USA) Enhanced Lifespan of Smooth Solutions of a Burgers-Hilbert Equation	Abstracts p. 204
9:30-10:00	Curtis A Holliman (University of Alabama at Birmingham, USA) Next Generation Sequencing and Differential Gene Expression	Abstracts p. 204

Special Session 52	Fractional Differential and Integral Equations, Theory and Applications Organizer(s): Eduardo Cuesta, Mokhtar Kirane, Onur Alp Ilhan	Location MAG-C
8:30-9:00	Alex Sepulveda (Universidad de La Frontera, Chile) Almost periodic mild solutions to evolutions equations with stepanov almost periodic coefficients	Abstracts p. 219
9:00-9:30	Herme Soto (Universidad de La Frontera, Chile) Some results to evolutions equations with stepanov-like pseudo-almost periodic coefficients	Abstracts p. 219
9:30-10:00	Eva Kaslik (Institute e-Austria Timisoara, Romania) Differences between fractional- and integer-order dynamics	Abstracts p. 218

Special Session 58	Variational Analysis and Equilibrium Problems Organizer(s): Patrizia Daniele	Location POI-C
8:00-8:30	Stephen M Robinson (University of Wisconsin-Madison, USA) Local structure in a class of variational problems	Abstracts p. 237
8:30-9:00	Jose M Cruz (University of Connecticut, USA) Supply Chain Networks with Corporate Financial Risks and Trade Credits under Economic Uncertainty	Abstracts p. 235
9:00-9:30	Carmela Vitanza (University of Messina, Italy) A brief overview on a variational approach for the study of an economic equilibrium problem	Abstracts p. 237
9:30-10:00	Patrizia Daniele (University of Catania, Italy) Electric and Economic Supply Chains: a variational formulation	Abstracts p. 235

Special Session 75	Heteroclinic Cycles: Theory and Applications Organizer(s): Peter Ashwin, Pascal Chossat, Reiner Lauterbach	Location POI-D
8:00-8:30	Pietro-Luciano Buono (University of Ontario Institute of Technology, Canada) Robust Heteroclinic Cycles in Delay-Differential Equations	Abstracts p. 279
9:00-9:30	Gregory Faye (INRIA Sophia-Antipolis, France) Bifurcation of a heteroclinic network in a problem of pattern formation in the Poincaré disk	Abstracts p. 280
9:30-10:00	Tsuyoshi Chawanya (Osaka University, Japan) Characteristic features of the heteroclinic networks with a child-cycle	Abstracts p. 280

Special Session 81	Analysis and Simulation of Multi-scale Problems Organizer(s): Xiao-Ping Wang, Yang Xiang	Location REH-3
8:00-8:30	Yana Di (Institute of Computational Mathematics, Chinese Academy of Sciences, Peoples Rep of China) Numerical simulations of the suspended particle in a shear flow with slipping	Abstracts p. 302
8:30-9:00	Jie Liao (East China University of Science and Technology, Peoples Rep of China) Lattice Boltzmann Method for Helmholtz Equation	Abstracts p. 302
9:00-9:30	Liping Liu (Rutgers University, USA) A new approach to energy bounds for heterogeneous media	Abstracts p. 302

Special Session 82	Multi-component Integrable Systems, Solitons, and Nonlinear Waves Organizer(s): Stephen Anco, Yue Liu, Changzheng Qu	Location POI-A
8:00-8:30	Feride Tiglay (Fields Institute, Canada) Generalized Euler-Poincaré Equations on Lie Groups and Homogeneous Spaces, Orbit Invariants and Applications	Abstracts p. 306
8:30-9:00	Alex Himonas (University of Notre Dame, USA) The Cauchy problem for the Novikov equation	Abstracts p. 305
9:00-9:30	Changzheng Qu (Ningbo University, Peoples Rep of China) Integrability, wave breaking and peakons for a modified μ -Camassa-Holm equation	Abstracts p. 306
9:30-10:00	Dajun Zhang (Shanghai University, Peoples Rep of China) Semi-discrete AKNS system: Hamiltonian structures and applications	Abstracts p. 307