Wednesday, July 4 08:00AM-10:00AM Parallel Session 10

Special Session 4	**Nonlinear PDEs and Control Theory with Applications** Organizer(s): Barbara Kaltenbacher, Irena Lasiecka, Petronela Radu, Lorena Bociu	Location **GRC-B**
8:00-8:30	George Avalos (University of Nebraska-Lincoln, USA) Rational decay of structural acoustic dynamics	Abstracts p. 17
8:30-9:00	Thomas Hagen (University of Memphis, USA) Free liquid fibers and films	Abstracts p. 19
9:00-9:30	Louis Tebou (Florida International University, USA) Simultaneous controllability and stabilization of some uncoupled wave and plate equations	Abstracts p. 22
9:30-10:00	Vilmos Komornik (University of Strasbourg, France) Remarks on the Fourier series method	Abstracts p. 20

Special Session 6	**Dispersal in Heterogeneous Landscape** Organizer(s): Robert Stephen Cantrell, Chris Cosner, Yuan Lou, Juan Diego Davila, Alexander Quaas	Location **MAG-B**
8:00-8:30	Chris Cosner (University of Miami, USA) Evolutionary stability of ideal free dispersal strategies: a nonlocal dispersal model	Abstracts p. 28
8:30-9:00	Jerome Coville (INRA, France) Recent advance in heterogeneous nonlocal models for population dynamics	Abstracts p. 29
9:00-9:30	Juan Davila (Universidad de Chile, Chile) A Lane-Emden equation with the fractional Laplacian	Abstracts p. 29
9:30-10:00	Andrew Nevai (Univerisity of Central Florida, USA) The dynamics of resource theft in a spatially continuous habitat	Abstracts p. 31

Special Session 8	**Propagation Phenomena Appearing in Reaction-Diffusion Systems** Organizer(s): Hirokazu Ninomiya, Masaharu Taniguchi	Location **REH-1**
8:00-8:30	Yaping Wu (Capital Normal University, Peoples Rep of China) The Existence and Stability of Traveling Front Solutions for Some Autocatalytic Systems	Abstracts p. 38
8:30-9:00	Mitsunori Nara (Iwate University, Japan) Singular limit of a damped wave equation with bistable nonlinearity	Abstracts p. 36
9:00-9:30	Arnd Scheel (University of Minnesota, USA) Front speeds in reaction-diffusion systems: slow pushed and accelerated pulled fronts	Abstracts p. 37
9:30-10:00	Yoshihisa Morita (Ryukoku University, Japan) Planar standing front waves of the FitzHugh-Nagumo system	Abstracts p. 36

Special Session **10**	**Computational and Nonautonomous Dynamics** Organizer(s): Michael Dellnitz, Oliver Junge, Stefan Siegmund	Location **GRC-A**
8:00-8:30	Oliver Junge (Technische Universitaet Muenchen, Germany) Lazy global feedbacks for quantized nonlinear event systems	Abstracts p. 44
8:30-9:00	Péter Koltai (Technische Universität München, Germany) Global stability design for non-linear dynamical systems	Abstracts p. 45
9:00-9:30	Igor Mezic (UCSB, USA) Mesohyperbolicity and other ergodic theory concepts in nonautonomous dynamical systems	Abstracts p. 45
9:30-10:00	Carsten Hartmann (Institut für Mathematik, Freie Universität Berlin, Germany) Accelerating molecular dynamics: some ideas from robust and risk-sensitive control	Abstracts p. 44

Special Session **16**	**Reaction Diffusion Equations and Applications** Organizer(s): Jerome Goddard, Ratnasingham Shivaji	Location **REH-8**
8:00-8:30	Georg Hetzer (Auburn University, USA) A Reaction-Diffusion Problem with Nonlocal Reaction	Abstracts p. 74
8:30-9:00	Ratnasingham Shivaji (University of North Carolina at Greensboro, USA) Infinite semipositone problems with asymptotically linear growth forcing terms	Abstracts p. 76
9:00-9:30	Lakshmi S Kalappattil (Mississippi State University, USA) An existence result for an infinite semipositone problem	Abstracts p. 74
9:30-10:00	Dagny Butler (Mississippi State University, USA) Existence of Alternate Steady States in a Phosphorous Cycling Model	Abstracts p. 73

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	M. N Nkashama (University of Alabama at Birmingham, USA) Eigenvalue-curves and nonlinear second order elliptic equations with nonlinear boundary conditions	Abstracts p. 119
8:30-9:00	Sudhakar G Pandit (Winston-Salem State University, USA) Nonlinear Periodic Boundary Value Problems via Initial Value Problems: Generalized Quasilinear Techniques	Abstracts p. 119
9:00-9:30	Raul Manasevich (University of Chile, Chile) Sign changing solutions with compact support for a nonlinear equation with a p-Laplace operator	Abstracts p. 118

Special Session **29**	**Self-organized Behavior of Nonlinear Elliptic Equations and Pattern Formation of Strongly Interacting Systems** Organizer(s): Susanna Terracini, Jun-cheng Wei	Location **GRC-H**
8:30-9:00	Benedetta Noris (Universita' degli Studi di Milano-Bicocca, Italy) Convergence of minimax and continuation of critical points for singularly perturbed systems	Abstracts p. 131
9:00-9:30	Peter Polacik (University of Minnesota, USA) Nonnegative solutions of elliptic equations and their nodal structure	Abstracts p. 131
9:30-10:00	Xiaofeng Ren (George Washington Unviersity, USA) A double bubble solution in a ternary system with long range interaction	Abstracts p. 131

Special Session **32**	**Existence and Multiplicity Results in Elliptic Variational Problems** Organizer(s): G. Bonanno, S. Carl, S. A. Marano, D. Motreanu	Location **REH-9**
8:00-8:30	Andrzej Szulkin (Stockholm University, Sweden) A concentration phenomenon for a semilinear elliptic equation	Abstracts p. 146
8:30-9:00	Nikolaos S Papageorgiou (National Technical University,Athens, Greece) Multiplicity Theorems for (p,2) Equations	Abstracts p. 145
9:00-9:30	Sergiu Aizicovici (Ohio University, USA) Multiple solutions for a class of superlinear Neumann problems	Abstracts p. 142
9:30-10:00	Roberto Livrea (University of Reggio Calabria, Italy) Some recent existence and multiplicity results for second order Hamiltonian systems	Abstracts p. 144

Special Session **36**	**Stochastic Partial Differential Equations and their Optimal Control** Organizer(s): Wilfried Grecksch	Location **POI-A**
8:00-8:30	Michael Roeckner (University of Bielefeld, Germany) Regularization of Ordinary and Partial Differential Equations by Noise	Abstracts p. 161
8:30-9:00	Max von Renesse (Univ. Leipzig, Germany) Ergodic Properties of Stochastic Curve Shortening Flow	Abstracts p. 163
9:00-9:30	Jose Valero (Universidad Miguel Hernandez, Spain) Random attractors for multivalued lattice dynamical systems with multiplicative noise	Abstracts p. 162
9:30-10:00	Vo V Anh (Queensland University of Technology, Australia) Diffusion in heterogeneous domains	Abstracts p. 160

Special Session **39**	**Polynomial Methods for Differential Equations and Dynamical Systems** Organizer(s): Stephen Lucas, James Stanley Sochacki, Roger Thelwell, Paul Warne	Location **REH-6**
8:30-9:00	James S Sochacki (James Madison University, USA) Mathematical Modeling Problems That Are Polynomial ODEs	Abstracts p. 171
9:00-9:30	Alexander Gofen (The Smith-Kettlewell Eye Research Institute, USA) The Unifying View on Ordinary Differential Equations and Automatic Differentiation, yet with a Gap to Fill	Abstracts p. 171
9:30-10:00	Stephen Lucas (James Madison University, USA) Different Differential Equations with the Same Solution	Abstracts p. 171

Special Session **41**	**New Developments in Qualitative Behavior of Evolutionary PDEs** Organizer(s): Ryo Ikehata, Grozdena Todorova	Location **PAL-CC**
8:00-8:30	Marcello DAbbicco (University of Bari, Italy) Global existence and sharp decay estimates for the semilinear wave equation with time-dependent damping	Abstracts p. 173
8:30-9:00	Claudio A Fernandez (P. Universidad Catolica de Chile, Chile) Regularity of solutions for a third order differential equation	Abstracts p. 173
9:00-9:30	Hiroshi Takeda (Fukuoka Institute of Technology, Japan) Higher order expansion of solutions to damped wave equations	Abstracts p. 176
9:30-10:00	Ahmad Z Fino (Lebanese University & Lebanese International University, Lebanon) Finite time blow-up for damped wave equations with nonlinear memory and space-dependent potential	Abstracts p. 174

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	Maria Michaela M Porzio (Universitá degli Studi di Roma, Italy) On decay estimates for solutions of some parabolic equations	Abstracts p. 180
8:30-9:00	Le Dung (University of Texas San Antonio, USA) Everywhere regularity for cross diffusion systems involving p-Laplacian: the degenerate case	Abstracts p. 178
9:00-9:30	Jean C Cortissoz (Universidad de los Andes, Colombia) On the behavior of certain nonlinear parabolic equations with periodic boundary conditions	Abstracts p. 177
9:30-10:00	Daniela D Giachetti (University of Rome Sapienza, Italy) Existence and blow-up results for fast diffusion equations with nonlinear lower order terms	Abstracts p. 178

Special Session **44**	**Applications of Chaotic and Stochastic Multiscale Dynamics** Organizer(s): Rafail Abramov, Gregor Kovacic, Ilya Timofeyev	Location **REH-2**
8:00-8:30	Lisa Rogers (NYU, USA) The Neurochemical Dynamics of the Mammalian Sleep-Wake Regulatory Network	Abstracts p. 189
8:30-9:00	Andrea K Barreiro (Southern Methodist University, USA) Low-dimensional descriptions of neural networks	Abstracts p. 186
9:00-9:30	Lee DeVille (University of Illinois, USA) Stochastic dynamics on networks	Abstracts p. 188
9:30-10:00	Victor Barranca (Rensselaer Polytechnic Institute, USA) Compressed Sensing in Retinal Image Processing	Abstracts p. 186

Special Session **46**	**Discrete/Continuous and Nonstandard Analysis** Organizer(s): Kiyoyuki Tchizawa, Imme van den Berg	Location **PAL-D**
8:00-8:30	Luis Albuquerque (Universidade Aberta, Portugal) Smooth models of discontinuous systems	Abstracts p. 195
8:30-9:00	Rachid R Bebbouchi (Laboratory of Dynamical Systems, USTHB, Algiers, Algeria) The Osgood Integral: an extraordinary tool	Abstracts p. 195
9:00-9:30	Eric Benoît (Université de La Rochelle, France) How to find infinitesimals in a big genetic-metabolic model?	Abstracts p. 195
9:30-10:00	Shuya Kanagawa (Tokyo City University, Japan) Error Estimation for Approximate Solutions of SDE	Abstracts p. 195

Special Session **47**	**Dynamics and Games** Organizer(s): Alberto Pinto, Michel Benaim	Location **POI-C**
8:30-9:00	João Almeida (Polytechnic Institute of Bragança, Portugal) Anosov and renormalized circle diffeomorphisms	Abstracts p. 198
9:00-9:30	João Almeida (Polytechnic Institute of Bragança, Portugal) Anosov diffeomorphisms and golden tilings	Abstracts p. 198
9:30-10:00	Cisem Bektur (Loughborough University, England) Performance of Investment Strategies in the Absence of Correct Beliefs	Abstracts p. 198

Special Session **51**	**Ordinal Symbolic Dynamics and Applications** Organizer(s): Jose Maria Amigo, Karsten Keller	Location **POI-B**
8:00-8:30	Bernd Pompe (Inst. Physics, Univ. Greifswald, Germany, Germany) LE–Statistic: A Versatile Tool in Ordinal Time Series Analysis	Abstracts p. 216
8:30-9:00	Taichi T Haruna (Kobe University, Japan) Permutation Approach to Finite-Alphabet Stationary Stochastic Processes Based on the Duality between Values and Orderings	Abstracts p. 214
9:00-9:30	Kohei Nakajima (University of Zurich, Switzerland) Local information dynamics via permutation-information theoretic approach	Abstracts p. 215
9:30-10:00	Mariano Matilla-Garcia (UNED, Spain) Symbolic Analysis: Inference basis for constructing Hypotheses	Abstracts p. 215

Special Session **54**	**Dynamics in Complex Networks** Organizer(s): Juan A. Almendral, Miguel Romance	Location **MAG-C**
8:00-8:30	Mary Luz Mouronte (Universidad Carlos III de Madrid, Spain) Robustness in the urban transportation network of Madrid	Abstracts p. 224
8:30-9:00	Miguel Romance (Rey Juan Carlos University, Spain) Controlling structural properties of complex networks: Centrality Measures	Abstracts p. 224
9:00-9:30	Regino R Criado (Universidad Rey Juan Carlos, Spain) Some structural properties of multilevel networks	Abstracts p. 223
9:30-10:00	My T Thai (University of Florida, USA) Dynamic Community Structures Analysis	Abstracts p. 225

Special Session **55**	**Nonlinear Elliptic and Parabolic Problems** Organizer(s): Julian Lopez-Gomez	Location **GRC-C**
8:00-8:30	Antonio Suarez (Univ. Sevilla, Spain) An elliptic system with chemotaxis term and nonlinear boundary conditions	Abstracts p. 229
8:30-9:00	Santiago S Cano-Casanova (Universidad Pontificia Comillas, Spain) Positive Solutions of semilinear boundary value problems of logistic type with nonlinear mixed boundary conditions	Abstracts p. 226
9:00-9:30	Salome Martinez (Universidad de Chile, Chile) Steady state analysis for a relaxed cross diffusion model	Abstracts p. 228
9:30-10:00	Patrick Q Guidotti (UC Irvine, USA) A Forward-Backward regularization of the Perona-Malik Equation	Abstracts p. 227

Special Session **62**	**PDEs and Dynamical Systems, and Their Applications** Organizer(s): Soo Kyung Joo, Jinhae Park, Tuoc Van Phan	Location **GRC-I**
8:00-8:30	Linlin Su (Worcester Polytechnic Institute, USA) Propagation of the Advantageous Genes in a Population with Multiple Alleles at a Locus	Abstracts p. 244
8:30-9:00	Truyen Nguyen (University of Akron, USA) Regularity of solutions to the linearized Monge-Ampère equation	Abstracts p. 243
9:00-9:30	Xiaodong Yan (University of Connecticut, USA) Liouville Theorem for higher order elliptic systems	Abstracts p. 245
9:30-10:00	Nung Kwan Aaron Yip (Purdue University, USA) Crystalline Surface Diffusion	Abstracts p. 245

Special Session **68**	**Analysis and Simulations of Nonlinear Systems** Organizer(s): Wei Feng, Zhaosheng Feng	Location **MAG-A**
8:00-8:30	Y. Charles Li (University of Missouri, USA) On the Paradoxes of Enrichment and Pesticides	Abstracts p. 261
8:30-9:00	Jiaxu Li (University of Louisville, USA) Intravenous glucose tolerance test model and its global stability	Abstracts p. 261
9:00-9:30	Sukanya Basu (Grand Valley State University, USA) Some Computational Challenges in Analyzing Global Dynamics of Certain Nonlinear Discrete Dynamical Systems	Abstracts p. 259
9:30-10:00	Abiti Adili (NMT, USA) pullback attractor for the stochastic FitzHugh-Nagumo system on unbounded domains	Abstracts p. 259

Special Session **69**	**Dissipative Systems and Applications** Organizer(s): Georg Hetzer, Wenxian Shen, Lourdes Tello	Location **POI-D**
8:00-8:30	King-Yeung Lam (Ohio State University, USA) Faster vs Slower Diffusers	Abstracts p. 265
8:30-9:00	Xiaoxia Xie (Auburn University, Peoples Rep of China) Approximations of Random Dispersal Operators by Nonlocal Dispersal Operators	Abstracts p. 266
9:00-9:30	Liang Kong (Auburn University, USA) Positive Stationary Solutions and Spreading Speeds of KPP Equations in Locally Spatially Inhomogeneous Media	Abstracts p. 265
9:30-10:00	Aijun Zhang (University of Kansas, USA) Spatial Spread and Front Propagation Dynamics of Nonlocal Monostable Equations in Periodic Habitats	Abstracts p. 266

Special Session **77**	**The Navier-Stokes Equations and Related Problems** Organizer(s): Sarka Necasova, Reimund Rautmann, Werner Varnhorn	Location **REH-3**
8:00-8:30	Chérif Amrouche (Université de Pau et des Pays de l'Adour, France) L^p-Theory for Stokes and Navier-Stokes Equations with Non Standard Boundary Conditions	Abstracts p. 286
8:30-9:00	Hyeong-Ohk Bae (Ajou University, Korea) Boundary Regularity for the Steady Stokes Type Flow with Shear Thickening Viscosity	Abstracts p. 286
9:00-9:30	Paul Deuring (Universite du Littoral, France) Pointwise decay of incompressible flows around rigid bodies	Abstracts p. 287
9:30-10:00	Maria U Specovius-Neugebauer (University of Kassel, Germany) (Almost) every thing you always wanted to know about the Helmholtz decomposition but were afraid to ask.	Abstracts p. 289

Contributed Session **06**	**Control and Optimization** Chair(s): Ellina Grigorieva	Location **REH-5**
8:00-8:20	Murat M Adivar (Izmir University of Economics, Turkey) Dual representations of cones and functions on mixed domains	Abstracts p. 322
8:20-8:40	Ellina Grigorieva (Texas Woman's University, USA) Analytical Methods in Optimal Control of HIV treatment	Abstracts p. 322
8:40-9:00	Luis A Melara (Shippensburg University, USA) Optimal Control in the Treatment of Retinitis Pigmentosa	Abstracts p. 322
9:00-9:20	Syed Mohd Rizwan (caledonian College of Engineering, Oman) Reliability modeling and analysis of a desalination plant system	Abstracts p. 322

Contributed Session **09**	**PDEs and Applications** Chair(s): Zhaosheng Feng	Location **GRC-G**
8:00-8:20	Ismail T Ali (Kuwait University, Kuwait) Solving certain PDE's using a generalized Hankel transform	Abstracts p. 326
8:20-8:40	Xiaoyun Cai (Nanjing University, Peoples Rep of China) Global regularity for the initial value problem of a 2-D Kazhikhov-Smagulov type model	Abstracts p. 327
8:40-9:00	Rehana Naz (Lahore School of Economics, Pakistan) A Complex Noether Approach for derivation of conservation laws for Partial differential equations in complex field	Abstracts p. 329
9:00-9:20	Adnan H Sabuwala (California State University, Fresno, USA) Spectrally Matched Optimal Grids for Receiver-Targeted PDE Problems	Abstracts p. 330
9:20-9:40	Canan C Unlu (Istanbul University, Turkey) Approximate analytical solution of reaction-diffusion Brusselator system with fractional time derivative	Abstracts p. 331
9:40-10:00	Sumit K Vishwakarma (Indian School of Mines, Dhanbad, India) Influence of gravity and initial stress on the Torsional wave propagation in a Substratum over a dry sandy Gibson gibson half space	Abstracts p. 331