Thursday, July 5 **08:00AM-10:00AM** **Parallel Session 13**

Special Session 1	**Qualitative Studies of PDEs: Entire Solutions and Asymptotic Behavior** Organizer(s): Peter Polacik, Eiji Yanagida	Location **REH-3**
8:00-8:30	Michael Winkler (University of Paderborn, Germany) Slowly traveling waves, blow-up at spatial infinity and homoclinic orbits in nonlinear parabolic equations of fast diffusion type	Abstracts p. 5
8:30-9:00	Michinori Ishiwata (Fukushima University, Japan) On the asymptotic behavior of solutions for semiliear parabolic equations involving critical Sobolev exponent	Abstracts p. 4
9:00-9:30	Yihong Du (University of New England, Australia, Australia) Finite Morse index solutions and asymptotics of weighted nonlinear elliptic equations	Abstracts p. 4
9:30-10:00	Eiji Yanagida (Tokyo Institute of Technology, Japan) Asymptotic Behavior of Singular Solutions for a Semilinear Parabolic Equation	Abstracts p. 6

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	Hideo Kubo (Tohoku University, Japan) On the exterior problem for nonlinear wave equations in 2D	Abstracts p. 20
8:30-9:00	Belkacem Said-Houari (KAUST university, Saudi Arabia) Asymptotic behavior of the wave equation with dynamic boundary condition	Abstracts p. 21
9:00-9:30	Daniel Toundykov (University of Nebraska-Lincoln, USA) Carleman estimates and stabilization of hyperbolic systems in absence of geometric observability conditions	Abstracts p. 22
9:30-10:00	Ademir Pazoto (Federal University of Rio de Janeiro, Brazil) Inverse problem for the heat equation and the Schrödinger equation on a tree	Abstracts p. 21

Special Session 7	**Recent Progress in the Mathematical Theory of Compressible and Incompressible Fluid Flows** Organizer(s): Eduard Feireisl, Sarka Necasova	Location **POI-A**
8:30-9:00	Toshiaki Hishida (Nagoya University, Japan) Decay estimates of the Oseen flow in the plane	Abstracts p. 32
9:00-9:30	Trygve K Karper (University of Maryland, USA) Fluid mechanical models of self-organized dynamics	Abstracts p. 32
9:30-10:00	Irena M Lasiecka (University of Virginia, USA) Long time behavior of solutions to nonlinear flow-structure interactions	Abstracts p. 32

Special Session **8**	**Propagation Phenomena Appearing in Reaction-Diffusion Systems** Organizer(s): Hirokazu Ninomiya, Masaharu Taniguchi	Location **REH-1**
8:00-8:30	Yukio Kan-on (Ehime University, Japan) Bifurcation structure of radially symmetric positive stationary solutions for a competition-diffusion system	Abstracts p. 36
8:30-9:00	Zhi-Cheng Wang (Lanzhou University, Peoples Rep of China) Nonplanar traveling wave solutions in Lotka-Volterra competition-diffusion system	Abstracts p. 37
9:00-9:30	Kunimochi Sakamoto (Hiroshima University, Japan) Stability and Bifurcation of Periodic Traveling Waves in a Dispersive System	Abstracts p. 36
9:30-10:00	Hans Weinberger (University of Minnesota, USA) Asymptotic behavior in a 2-allele genetic model with population control	Abstracts p. 38

Special Session **16**	**Reaction Diffusion Equations and Applications** Organizer(s): Jerome Goddard, Ratnasingham Shivaji	Location **REH-8**
8:00-8:30	Paul G Schmidt (Auburn University, USA) On radial solutions of polyharmonic equations with power nonlinearities	Abstracts p. 76
8:30-9:00	Eunkyung Ko (Mississippi State University, USA) Analysis of class of elliptic equations with nonlinear boundary condtions arising in combustion theory	Abstracts p. 74
9:00-9:30	Kristen K Abernathy (Winthrop University, USA) Existence of Solutions to Boundary Value Problems at Full Resonance	Abstracts p. 73
9:30-10:00	Zachary J Abernathy (Winthrop University, USA) On the Solvability of Nonlinear Sturm-Liouville Problems	Abstracts p. 73

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	Kanishka Perera (Florida Institute of Technology, USA) Some Results for Impulsive Problems	Abstracts p. 146
8:30-9:00	Gabriele Bonanno (University of Messina, Italy) A characterization of the mountain pass geometry and applications to nonlinear differential problems	Abstracts p. 142
9:00-9:30	Olimpio H Miyagaki (Universidade Federal de Juiz de Fora, Brazil) Existence and non-existence of solutions for p-laplacian equations with decaying cylindrical	Abstracts p. 145
9:30-10:00	Pasquale Candito (University of Reggio Calabria, Italy) Three solutions for a quasilinear elliptic problem via critical points in open level sets and truncation principle	Abstracts p. 143

Special Session 43	**Stochastic Networks with Applications to Neuroscience** Organizer(s): Lee DeVille, Georgi Medvedev	Location **REH-7**
8:00-8:30	Juan G Restrepo (University of Colorado, USA) Criticality and dynamic range in network cascading processes	Abstracts p. 185
8:30-9:00	Takashi Nishikawa (Clarkson University, USA) Network structure and synchronization of coupled oscillators	Abstracts p. 184
9:00-9:30	Stefano Boccaletti (Center for Biomedical Technology - UPM, Spain) Emergence of computation in random networks	Abstracts p. 183
9:30-10:00	Ernesto Estrada (University of Strathclyde, Scotland) Communicability Distance in Networks	Abstracts p. 184

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	Sebastien Motsch (CSCAMM, University of Maryland, USA) A traffic model for pedestrian and its comparison with experimental data	Abstracts p. 188
8:30-9:00	Ilya Timofeyev (University of Houston, USA) From Stochastic to Coarse-grained Models of Pedestrian Traffic	Abstracts p. 189
9:00-9:30	Marija Vucelja (Courant Institute of Mathematical Sciences, USA) Irreversible Monte Carlo algorithms for efficient sampling	Abstracts p. 190
9:30-10:00	Katherine A Newhall (Courant Institute, NYU, USA) Magnetization reversal in thin film magnetic elements	Abstracts p. 189

Special Session 47	**Dynamics and Games** Organizer(s): Alberto Pinto, Michel Benaim	Location **POI-C**
8:30-9:00	Tania Oliveira (LIAAD UP, Portugal) A game theoretical approach to human decision	Abstracts p. 199
9:00-9:30	Steven Perkins (University of Bristol, England) Asynchronous Stochastic Approximation for Learning in Stochastic Games	Abstracts p. 200
9:30-10:00	Alberto Pinto (LIAAD UP, Portugal) Uncertainty effects in resort prices	Abstracts p. 200

Special Session **50**	**Mathematical Novelties in Inverse Problems in Imaging Sciences** Organizer(s): Alexandru Tamasan	Location **PAL-D**
8:00-8:30	Xiaosheng Li (Florida International University, USA) Partial data inverse problems in unbounded domains	Abstracts p. 211
8:30-9:00	Amir Moradifam (University of Toronto, Canada) A convergent algorithm for the hybrid problem of reconstructing conductivity from minimal interior data	Abstracts p. 211
9:00-9:30	Shari Moskow (Drexel University, USA) Inverse Born Series for the Calderon Problem	Abstracts p. 211
9:30-10:00	Loc H Nguyen (École Normale Supérieure, Paris, France) Quantitative thermo-acoustic imaging: An exact reconstruction formula	Abstracts p. 211

Special Session **55**	**Nonlinear Elliptic and Parabolic Problems** Organizer(s): Julian Lopez-Gomez	Location **GRC-C**
8:00-8:30	Fabio Zanolin (University of Udine, Italy) Pairs of nodal solutions for a class of super-sublinear problems	Abstracts p. 231
8:30-9:00	Yoshie Sugiyama (Osaka City University, Japan) Measure valued solutions of the 2D Keller-Segel system	Abstracts p. 229
9:00-9:30	Andrea Tellini (Complutense University of Madrid, Spain) Theoretical and numerical analysis of complex bifurcation diagrams related to a class of superlinear indefinite problems	Abstracts p. 230
9:30-10:00	Susanna S Terracini (University of Milano-Bicocca, Italy) Entire solutions for competition-diffusion systems and a priori estimates	Abstracts p. 230

Special Session **57**	**Nonlinear and Dispersive Partial Differential Equations** Organizer(s): Netra Khanal, Juan-Ming Yuan	Location **MAG-B**
8:30-9:00	Ugur G Abdulla (Florida Institute of Technology, USA) Regularity of Infinity for Elliptic Equations With Measurable Coefficients and its Consequences	Abstracts p. 232
9:00-9:30	Kazuo Yamazaki (Oklahoma State University, USA) Recent results on the Serrin-type regularity criteria for Navier-Stokes and related equations	Abstracts p. 233
9:30-10:00	Ming-Cheng Shiue (National Chiao Tung University, Taiwan) An initial boundary value problem for one-dimensional shallow water magnetohydrodynamics in the solar tachocline	Abstracts p. 233

Special Session 61	**PDE Models for Biological Pattern Formation** Organizer(s): Thomas Hillen, Michael Winkler	Location **PAL-CC**
8:00-8:30	Alexander Lorz (University Pierre et Marie Curie - Paris 6 (UPMC), France) Coupled Chemotaxis-Fluid Models	Abstracts p. 238
8:30-9:00	Zhian Wang (Hong Kong Polytechnic University, Hong Kong) Competing effects of attraction vs repulsion in chemotaxis	Abstracts p. 239
9:00-9:30	Dariusz D Wrzosek (University of Warsaw, Poland) Reaching a maximal density threshold in some models of chemotaxis.	Abstracts p. 239
9:30-10:00	Tomomi Yokota (Tokyo University of Science, Japan) On the solvability of generalized degenerate chemotaxis models	Abstracts p. 240

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	Se-Hyun Ku (Chungnam National University, Korea) Lyapunov functions, attractors and shadowing property in set-valued dynamics	Abstracts p. 242
8:30-9:00	Hahng-Yun Chu (Chungnam National University, Korea) Recurrences, limit sets and shadowing property in dynamical systems	Abstracts p. 241
9:00-9:30	Shouhong Wang (Indiana University, USA) Dynamic Transitions and Pattern Formations for Cahn-Hilliard Model with Long-Range Repulsive Interactions	Abstracts p. 244
9:30-10:00	Rolf Ryham (Fordham University, USA) Mathematical Analysis and Diffusive Interface Modeling of Membrane Movements	Abstracts p. 244

Special Session 68	**Analysis and Simulations of Nonlinear Systems** Organizer(s): Wei Feng, Zhaosheng Feng	Location **MAG-A**
8:00-8:30	Jerry L Bona (University of Illinois at Chicago, USA) Local and global well-posedness for KdV-systems	Abstracts p. 259
8:30-9:00	Antonio Vitolo (University of Salerno, Italy) Entire and blow-up solutions: from semilinear to fully nonlinear elliptic equations	Abstracts p. 262
9:00-9:30	Kanadpriya Basu (University of South Carolina, USA) Mathematical Modeling with reaction-diffusion-advection systems and its application in biology	Abstracts p. 259
9:30-10:00	Tian Jing (The University of Texas-Pan American, USA) Exact Solutions of the Burgers-Huxley Equation	Abstracts p. 260

Special Session **78**	**Multiple Time Scale Dynamics with a View Towards Biological Applications** Organizer(s): Mathieu Desroches, Maciej Krupa, Alexandre Vidal	Location **REH-6**
8:00-8:30	Alexandre Vidal (University of Evry, France) Mixed-Mode Oscillations in a model of hormone secretion : insight into the variability of GnRH surge-to-pulse transition	Abstracts p. 293
8:30-9:00	Rodica Curtu (University of Iowa, USA) Canards and Hopf mechanisms in a model for perceptual rivalry	Abstracts p. 291
9:00-9:30	Maciej Krupa (Université Le Havre/INRIA, France) Canards and MMOs in coupled oscillator systems	Abstracts p. 292
9:30-10:00	Nick Benes (Boston University, USA) Torus Canards in R^3	Abstracts p. 291

Special Session **80**	**Advances in the Numerical Solution of Nonlinear Evolution Equations** Organizer(s): Mechthild Thalhammer	Location **GRC-A**
8:00-8:30	Ionut Danaila (LMRS, University of Rouen, France) High-order numerical methods for the stationary Gross-Pitaevskii equation	Abstracts p. 300
8:30-9:00	Daniel O Marahrens (DAMTP, University of Cambridge, England) Optimal bilinear control of Gross-Pitaevskii equations	Abstracts p. 301
9:00-9:30	Begona Cano (Universidad de Valladolid, Spain) Projected explicit Lawson methods for the integration of Schrödinger equation	Abstracts p. 299
9:30-10:00	David Cohen (Karlsruhe Institute of Technology, Germany) Exponential integrators for nonlinear Schrödinger equations over long times	Abstracts p. 299

Special Session **84**	**Theory, Numerics and Applications of Quasi-Periodic and Almost Periodic Schrodinger operators** Organizer(s): Charles Fulton	Location **MAG-C**
8:00-8:30	Maxim Zinchenko (University of Central Florida, USA) Perturbations of Finite Gap Jacobi Matrices Beyond the Szego Class	Abstracts p. 309
8:30-9:00	Rajinder Mavi (University of California, Irvine, USA) Quasiperiodic Operators with rough potentials	Abstracts p. 308
9:00-9:30	Charles T Fulton (Florida Institute of Technology, USA) Computation of the Spectral Density Function for Periodic Potentials	Abstracts p. 308
9:30-10:00	Charles T Fulton (Florida Institute of Technology, USA) Computation of Spectral Functions for Tridiagonal Jacobi Matrices	Abstracts p. 308

Contributed Session **04**	**Modelling and Math Biology** Chair(s): Wei Feng and Michael Cowen	Location **GRC-H**
8:00-8:20	Guillermo Abramson (Instituto Balseiro - Centro Atomico Bariloche, Argentina) Oscillations in epidemic models: The role of infection and recovery times	Abstracts p. 317
8:20-8:40	Adam Stinchcombe (Courant Institute, NYU, USA) The Randomness of Gene Expression	Abstracts p. 320
8:40-9:00	Christopher Strickland (Colorado State University, USA) Modeling the Nonlocal Dispersal of Invasive Plant Species in Heterogeneous Landscapes	Abstracts p. 321
9:00-9:20	Stanca Ciupe (Virginia Tech, USA) Can activation of latently infected cells reduce the size of the HIV reservoir?	Abstracts p. 317
9:20-9:40	Alexandra Jilkine (University of Arizona, USA) Mathematical Model for Mutation Acquisition in Tumorigenesis	Abstracts p. 318
9:40-10:00	Michael Cowen (University of North Carolina Wilmington, USA) The Stability Analysis and Impact of Predator Mortality Rate on Age-structured Models	Abstracts p. 317