Thursday, July 5   **13:30PM-15:30PM**   **Parallel Session 14**

Special Session 4	**Nonlinear PDEs and Control Theory with Applications** Organizer(s): Barbara Kaltenbacher, Irena Lasiecka, Petronela Radu, Lorena Bociu	Location **GRC-B**
13:30-14:00	Marcelo M Cavalcanti (State University of Maringá, Brazil) Uniform decay rates for the wave equation with locally distributed nonlinear damping in unbounded domains with finite measure	Abstracts p. 17
14:00-14:30	Lorena Bociu (NC State University, USA) Weak and regular solutions for nonlinear waves with super-critical sources and nonlinear dissipations	Abstracts p. 17
14:30-15:00	Valéria N Domingos Cavalcanti (State University of Maringá, Brazil) A unified theory for damped evolutionary equations	Abstracts p. 18
15:00-15:30	Petronela Radu (University of Nebraska-Lincoln, USA) Instability for nonlinear evolution equations	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**
13:30-14:00	Maria Lukacova (Institute of Mathematics, University Mainz, Germany) Analysis and Simulation of Shear-Dependent non-Newtonian Fluids in Moving Domains	Abstracts p. 32
14:00-14:30	Andro Mikelic (Universite Lyon 1, Institut Camille Jordan, France) Modeling effective pressure interface law between a free fluid and a porous medium	Abstracts p. 33
14:30-15:00	Jiri Neustupa (Czech Academy of Sciences, Institute of Mathematics, Czech Rep) Some new regularity criteria for weak solutions of the Navier-Stokes equations	Abstracts p. 33
15:00-15:30	Elisabetta Rocca (University of Milan, Italy) Evolution of non-isothermal nematic liquid crystals flows	Abstracts p. 33

Special Session 16	**Reaction Diffusion Equations and Applications** Organizer(s): Jerome Goddard, Ratnasingham Shivaji	Location **REH-8**
13:30-14:00	Susmita Sadhu (Southwest Minnesota State University, USA) Asymptotic behavior of the solutions of the BVP governing Marangoni Convection	Abstracts p. 75
14:00-14:30	Nsoki Mavinga (Swarthmore College, USA) Strong Bounded Solutions for Nonlinear Parabolic Equations	Abstracts p. 75
14:30-15:00	Runchang Lin (Texas A&M International University, USA) A balanced finite element method for singularly perturbed reaction-diffusion problems	Abstracts p. 75

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**
13:30-14:00	Salvatore Marano (University of Catania, Italy) Multiple solutions to Dirichlet eigenvalue problems with p-Laplacian	Abstracts p. 144
14:00-14:30	Giovanni Molica Bisci (University of Reggio Calabria, Italy) Variational problems in Geometrical Analysis	Abstracts p. 145
14:30-15:00	Arnaldo S Nascimento (Universidade Federal de Sao Carlos, Brazil) Count and Symmetry of Global and Local Minimizers of the Cahn-Hilliard Energy Functional over Cylindrical Domains.	Abstracts p. 145
15:00-15:30	Addolorata Salvatore (Universita' di Bari, Italy) Symmetric problems in unbounded domains	Abstracts p. 146

Special Session **43**	**Stochastic Networks with Applications to Neuroscience** Organizer(s): Lee DeVille, Georgi Medvedev	Location **REH-7**
13:30-14:00	Duane Q Nykamp (University of Minnesota, USA) The influence of network structure on neuronal network dynamics	Abstracts p. 185
14:00-14:30	Amitabha Bose (New Jersey Institute of Technology, USA) Stochasticity and phase-locking in small neuronal networks	Abstracts p. 183
14:30-15:00	Paul So (George Mason University, Krasnow Institute for Advanced Study, USA) Exact Mean-Field Dynamics for a Heterogeneous Network of Globally Coupled Theta Neurons	Abstracts p. 185

Special Session **44**	**Applications of Chaotic and Stochastic Multiscale Dynamics** Organizer(s): Rafail Abramov, Gregor Kovacic, Ilya Timofeyev	Location **REH-2**
13:30-14:00	Gregor Kovacic (Rensselaer Polytechnic Institute, USA) Dynamics of light interacting resonantly with an active optical medium	Abstracts p. 188
14:00-14:30	Maria K Cameron (University of Maryland, USA) Finding Quasipotential for Nongradient SDE's	Abstracts p. 187
14:30-15:00	Yeojin Chung (Southern Methodist University, USA) Strong collapse turbulence in quintic nonlinear Schroedinger equation.	Abstracts p. 187

Special Session **47**	**Dynamics and Games** Organizer(s): Alberto Pinto, Michel Benaim	Location **POI-C**
13:30-14:00	Jerome Renault (TSE-GREMAQ, Universite Toulouse, France) A distance for belief spaces	Abstracts p. 200
14:00-14:30	Jerome Renault (TSE-GREMAQ, Universite Toulouse, France) Long-term values in Markov Decision Processes and Repeated Games	Abstracts p. 200
14:30-15:00	Zibo Xu (Hebrew University of Jerusalem, Israel) Evolutionary Stability in multiple-move games	Abstracts p. 201
15:00-15:30	Jorge P Zubelli (IMPA, Brazil) Project Evaluation and Hedging in Incomplete Markets using Historical Prices	Abstracts p. 201

Special Session **50**	**Mathematical Novelties in Inverse Problems in Imaging Sciences** Organizer(s): Alexandru Tamasan	Location **PAL-D**
13:30-14:00	Leonid Pestov (Immanuel Kant Baltic Federal University, Russia) Inverse problem of determining an absorbtion coefficient and a speed of sound in the wave equation by the BC method	Abstracts p. 212
14:00-14:30	Kui Ren (University of Texas at Austin, USA) Reconstruction strategies in quantitative photoacoustic tomography	Abstracts p. 212
14:30-15:00	Greg S Spradlin (Embry-Riddle Aeronautical University, USA) Existence of a Minimizer for the Weighted Least Gradient Problem	Abstracts p. 212
15:00-15:30	Jeong-Rock Yoon (Clemson University, USA) Viscoelasticity in magnetic resonance elastography	Abstracts p. 212

Special Session **55**	**Nonlinear Elliptic and Parabolic Problems** Organizer(s): Julian Lopez-Gomez	Location **GRC-C**
13:30-14:00	Julian Lopez-Gomez (Complutense University of Madrid, Spain) An optimal algebraic invariant to detect any changes of the topological degree	Abstracts p. 227
14:00-14:30	Robert Stephen Cantrell (University of Miami, USA) Exporing the evolutionary advantages of quasi-linear dispersal	Abstracts p. 226
14:30-15:00	Chris Cosner (University of Miami, USA) Global bifurcation of solutions for crime modeling equations	Abstracts p. 226
15:00-15:30	Yuan Lou (Ohio State University, USA) On the dependence of the population size on the dispersal rate	Abstracts p. 227

Special Session **57**	**Nonlinear and Dispersive Partial Differential Equations** Organizer(s): Netra Khanal, Juan-Ming Yuan	Location **MAG-B**
13:30-14:00	Natanael Karjanto (Sungkyunkwan University, Korea) Exploiting bifurcations in waveguide arrays for light detectors	Abstracts p. 232
14:00-14:30	Dipendra Regmi (Oklahoma State University, USA) Global regularity results for the 2D MHD equations with horizontal dissipation and horizontal magnetic diffusion	Abstracts p. 233
14:30-15:00	Hongqiu Chen (University of Memphis, USA) Long-wave limit of periodic solutions of nonlinear wave equations	Abstracts p. 232
15:00-15:30	Juan-Ming Yuan (Providence Univ., Taiwan) Fifth-order complex Korteweg-de Vries type equations	Abstracts p. 234

Special Session **62**	**PDEs and Dynamical Systems, and Their Applications** Organizer(s): Soo Kyung Joo, Jinhae Park, Tuoc Van Phan	Location **GRC-I**
13:30-14:00	Jongmin Han (Kyung Hee University, Korea) Asymptotics of Maxwell-Chern-Simons vortices on the unit disc	Abstracts p. 242
14:00-14:30	Yaniv Almog (LSU, USA) Global stability of the normal state of superconductors under the effect of strong electric current	Abstracts p. 241
14:30-15:00	Huiqiang Jiang (University of Pittsburgh, USA) On the singular limit of thim film equations with small Born repulsion force	Abstracts p. 242
15:00-15:30	B.R. Nagaraj (TIFR Centre for Applicable Mathematics, India) $W^{1,p}$ bound and compactness at $p* = \frac{np}{n-p}, 1 \leq p < n$	Abstracts p. 243

Special Session **68**	**Analysis and Simulations of Nonlinear Systems** Organizer(s): Wei Feng, Zhaosheng Feng	Location **MAG-A**
13:30-14:00	Hongqiu Chen (University of Memphis, USA) Initial -boundary-value problem of systems of nonlinear dispersive equations	Abstracts p. 260
14:00-14:30	Michail D Todorov (Technical University of Sofia, Bulgaria) Investigation of the Long-Time Evolution of Localized Solutions of a Dispersive Wave System	Abstracts p. 262
14:30-15:00	Treena Basu (University of South Carolina, USA) A fast finite difference method for fractional diffusion equations	Abstracts p. 259
15:00-15:30	Xiaohui Wang (University of Texas-Pan American, USA) Models and Applications for Minority Health Studies	Abstracts p. 263

Special Session **78**	**Multiple Time Scale Dynamics with a View Towards Biological Applications** Organizer(s): Mathieu Desroches, Maciej Krupa, Alexandre Vidal	Location **REH-6**
13:30-14:00	Wondimu W Teka (Florida State University, USA) The Dynamics Underlying Pseudo-Plateau Bursting in a Pituitary Cell Model	Abstracts p. 293
14:00-14:30	Andrey Shilnikov (GSU, USA) Bifurcations of bursting polyrhythms in plausible 3-cell motifs	Abstracts p. 292
14:30-15:00	Georgi S Medvedev (Drexel University, USA) Shaping bursting by electrical coupling and noise	Abstracts p. 292
15:00-15:30	William E Sherwood (University of Utah, USA) Transitional isochron portraits in biological models with multiple time-scales	Abstracts p. 292

Special Session **80**	**Advances in the Numerical Solution of Nonlinear Evolution Equations** Organizer(s): Mechthild Thalhammer	Location **GRC-A**
13:30-14:00	Winfried Auzinger (Vienna University of Technology, Austria) Defect and local error of exponential splitting schemes	Abstracts p. 299
14:00-14:30	Frederic Legoll (Ecole Nationale des Ponts et Chaussees, France) A micro-macro parareal algorithm with application to singularly perturbed ordinary differential equations	Abstracts p. 301
14:30-15:00	Tony Lelievre (Ecole des Ponts ParisTech, France) Some recent mathematical contributions to multiscale modelling for polymeric fluids	Abstracts p. 301
15:00-15:30	Richard Kowar (University of Innsbruck, Austria) On the causality of real-valued semigroups and diffusion	Abstracts p. 300

Special Session **84**	**Theory, Numerics and Applications of Quasi-Periodic and Almost Periodic Schrodinger operators** Organizer(s): Charles Fulton	Location **MAG-C**
13:30-14:00	Stefanie Thiem (Chemnitz University of Technology, Germany) Electronic Transport in Golden-Mean and Silver-Mean Labyrinth Tilings	Abstracts p. 308
14:00-14:30	Mira Shamis (IAS & Princeton Univ., USA) Positivity of the Lyapunov exponent from crude estimates on the density of the states	Abstracts p. 308

Contributed Session **04**	**Modelling and Math Biology** Chair(s): Wei Feng and Michael Cowen	Location **GRC-H**
13:30-13:50	Henry Shum (University of Pittsburgh, USA) Modelling the effects of flagellar hook compliance on bacterial motility	Abstracts p. 320
13:50-14:10	Dane Taylor (University of Colorado, USA) Complex macroscopic behavior in systems of phase oscillators with adaptive coupling	Abstracts p. 321
14:10-14:30	Theodore E Galanthay (University of Colorado, Boulder, USA) Dynamics of evolution in two-patch ecological models	Abstracts p. 318
14:30-14:50	Olawale S Obabiyi (University of Ibadan, Nigeria) A Note on Age-character-Dependent Model in Population dynamics	Abstracts p. 319
14:50-15:10	Ulrich Parlitz (Max Planck Institute for Dynamics and Self-Organization, Germany) State and parameter estimation for nonlinear models	Abstracts p. 319
15:10-15:30	Laurent Pujo-Menjouet (University of Lyon, France) How interactions between mathematicians and biologists lead to new hypothesis on prion formation	Abstracts p. 319