Tuesday, July 3   **16:00PM-18:30PM**   **Parallel Session 9**

Special Session **4**	**Nonlinear PDEs and Control Theory with Applications** Organizer(s): Barbara Kaltenbacher, Irena Lasiecka, Petronela Radu, Lorena Bociu	Location **GRC-B**
16:00-16:30	Roberto Triggiani (University of Virginia, USA) An Inverse Problem for the ultrasound equation: uniqueness and stability	Abstracts p. 22
16:30-17:00	Jameson Graber (University of Virginia, USA) The wave equation with abstract nonlinear acoustic boundary conditions	Abstracts p. 19
17:00-17:30	Maurizio Grasselli (Politecnico di Milano, Italy) Asymptotic behavior of solutions to nematic liquid crystal models	Abstracts p. 19
17:30-18:00	Francesca Bucci (Universita' degli Studi di Firenze, Italy) Algebraic Riccati equations with unbounded coefficients lacking analyticity of the free dynamics semigroup	Abstracts p. 17

Special Session **6**	**Dispersal in Heterogeneous Landscape** Organizer(s): Robert Stephen Cantrell, Chris Cosner, Yuan Lou, Juan Diego Davila, Alexander Quaas	Location **MAG-B**
16:00-16:30	Lee Altenberg (BioSystems, Elsevier Journal, USA) A New Inequality on the Spectral Bound of Resolvent Positive Operators that Unifies Results on the Evolution of Dispersal	Abstracts p. 28
16:30-17:00	King-Yeung Lam (Ohio State University, USA) PDE vs ODE Dynamics	Abstracts p. 30
17:00-17:30	Alan E Lindsay (University of Arizona, USA) Optimization of the persistence threshold in spatial envirnoments with localized patches.	Abstracts p. 30
17:30-18:00	Daniel S Munther (York University, Canada) Dynamics of a three species competition model	Abstracts p. 31
18:00-18:30	Daniel P Ryan (NIMBioS, University of Tennessee, USA) A Cross-diffusion Model for Avoidance Behavior in an Intraguild Predation Community	Abstracts p. 31

Special Session **9**	**Mathematics for Information Processing and Management** Organizer(s): Jianhong Wu, Zongben Xu	Location **REH-5**
16:00-16:30	Wenying Feng (Trent University, Canada) Network utility optimization and effect to response time	Abstracts p. 40
16:30-17:00	Jane M Heffernan (York University, Canada) The influence of Media on social behaviour in an Influenza pandemic	Abstracts p. 40
17:00-17:30	Jimmy Huang (York University, Canada) Beyond Traditional Search: Probabilistic Approaches and Their Applications	Abstracts p. 40
17:30-18:00	Hanna K Jankowski (York University, Canada) Estimating a density in the presence of interval censoring	Abstracts p. 40

Special Session **10**	**Computational and Nonautonomous Dynamics** Organizer(s): Michael Dellnitz, Oliver Junge, Stefan Siegmund	Location **GRC-A**
16:00-16:30	James C Robinson (University of Warwick, England) The dynamics of non-autonomous Lotka-Volterra ODEs	Abstracts p. 46
16:30-17:00	Langa Jose A (Seville University, Spain) Characterization of pullback attractors	Abstracts p. 44
17:00-17:30	Guangwa Wang (Jiangsu Normal University, Peoples Rep of China) Sacker-Sell spectrum and Lyapunov spectrum for random dynamical systems	Abstracts p. 47

Special Session **12**	**Singular Perturbations and Boundary Layer Theory** Organizer(s): Makram Hamouda, Chang-Yeol Jung, Roger Temam	Location **REH-6**
16:00-16:30	James Kelliher (UC Riverside, USA) Some recent results on an extended Navier-Stokes system	Abstracts p. 53
16:30-17:00	Marco Sammartino (University of Palermo, Italy) From vortex layers to vortex sheets	Abstracts p. 54
17:00-17:30	Navnit D Jha (Rajiv Gandhi Institute of Petroleum Technology, India) Nonpolynomial spline finite difference scheme for nonlinear singular boundary value problems with singular perturbation and its mechanization	Abstracts p. 53
17:30-18:00	Galina Bizhanova (Institute of Mathematics, Kazakhstan) On the boundary value problem for the parabolic equation with a small parameter	Abstracts p. 52

Special Session **17**	**Singular Perturbations** Organizer(s): Freddy Dumortier, Peter De Maesschalck, Martin Wechselberger	Location **GRC-I**
16:00-16:30	Hayato Chiba (Kyushu university, Japan) Blow-up of vector fields and Painleve equations	Abstracts p. 78
16:30-17:00	Renato Huzak (Hasselt University, Belgium) Limit cycles in slow-fast codimension 3 saddle and elliptic bifurcations	Abstracts p. 79
17:00-17:30	Joseph L Shomberg (Providence College, USA) Global Attractors for Damped Semilinear Wave Equations with a Robin–Acoustic Boundary Perturbation	Abstracts p. 80
17:30-18:00	Vincent Naudot (Florida Atlantic University, USA) Reinjected Horseshoes	Abstracts p. 79

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**
16:00-16:30	Anna R Ghazaryan (Miami University, USA) Traveling waves in high Lewis number combustion model	Abstracts p. 82
16:30-17:00	Guangyu Zhao (University of Connecticut, USA) Time Periodic Traveling Wave Solutions for Periodic Advection-Reaction-Diffusion Systems	Abstracts p. 83
17:00-17:30	Fengxin Chen (University of Texas at San Antonio, USA) Traveling Waves for Nonlocal Evolution Systems	Abstracts p. 81
17:30-18:00	Lorna S Almocera (University of the Philippines, Cebu, Philippines) Limiting behavior dynamics of a two-predator one-prey population system with a Beddington-DeAngelis functional response	Abstracts p. 81
18:00-18:30	Xiaojie Hou (UNCW, USA) Traveling fronts for a nonlocal reaction diffusion system	Abstracts p. 82

Special Session **21**	**Dynamical Systems and Spectral Theory** Organizer(s): David Damanik	Location **REH-2**
16:00-16:30	Mihai Stoiciu (Williams College, USA) Spectral Applications of McMullen's Hausdorff Dimension Algorithm	Abstracts p. 94
16:30-17:00	Darren C Ong (Rice University, USA) Orthogonal Polynomials on the Unit Circle with Almost Periodic Recursion Coefficients	Abstracts p. 93
17:00-17:30	Zhenghe Zhang (Northwestern University, USA) Positive Lyapunov Exponents for Quasiperiodic Szego cocycles	Abstracts p. 94
17:30-18:00	David Damanik (Rice University, USA) Subshifts and Low Regularity Potentials	Abstracts p. 92

Special Session **26**	**Qualitative Aspects of Nonlinear Boundary Value Problems** Organizer(s): Marta Garcia-Huidobro, Raul Manasevich, James Ward	Location **REH-7**
16:00-16:30	Monica Lazzo (University of Bari, Italy) Convergence versus periodicity in a dynamical system arising in the study of a higher-order elliptic PDE	Abstracts p. 118
16:30-17:00	Marta Garcia Huidobro (Pontificia Universidad Catolica de Chile, Chile) Boundary blow up of nonnegative solutions of some elliptic systems	Abstracts p. 117
17:00-17:30	Paul G Schmidt (Auburn University, USA) Oscillatory entire solutions of polyharmonic equations with subcritical growth	Abstracts p. 119
17:30-18:00	Satoshi Tanaka (Okayama University of Science, Japan) On the nonuniqueness of positive solutions for a class of superlinear problems	Abstracts p. 119
18:00-18:30	Carmen Cortazar (P. Universidad Catolica de Chile, Chile) On bound state solutions with a prescribed number of sign changes	Abstracts p. 117

Special Session **27**	**Transport Barriers in Dynamical Systems** Organizer(s): George Haller, Wenbo Tang	Location **REH-8**
16:00-16:30	Kathrin Padberg-Gehle (Technische Universitaet Dresden, Germany) Finite-time entropy: a probabilistic approach for measuring nonlinear stretching in dynamical systems	Abstracts p. 123
16:30-17:00	Wenbo Tang (Arizona State University, USA) Lagrangian coherent structures and eddy diffusion	Abstracts p. 124
17:00-17:30	Gary Froyland (University of New South Wales, Australia) Transport in Time-dependent Dynamical Systems: Finite-time Coherent Sets	Abstracts p. 121
17:30-18:00	Carl P Dettmann (University of Bristol, England) Escape and diffusion through small holes	Abstracts p. 121

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**
16:00-16:30	Theodore Kolokolnikov (Dalhousie, Canada) Hot-spot solutions in a model of crime	Abstracts p. 130
16:30-17:00	Alan E Lindsay (University of Arizona, USA) Concentration behaviour in biharmonic equations of MEMS.	Abstracts p. 130
17:00-17:30	Julian Lopez-Gomez (Complutense University of Madrid, Spain) The effects of alliances in competing species models	Abstracts p. 130
17:30-18:00	Hideki Murakawa (Kyushu University, Japan) Triple-junctions in a strong interaction limit of a three-component system	Abstracts p. 130

Special Session **33**	**Nonlinear Elliptic and Parabolic Problems in Mathematical Sciences** Organizer(s): Yoshihisa Morita, Junping Shi	Location **REH-9**
16:00-16:30	Shin-Hwa Wang (National Tsing Hua University, Taiwan) On global bifurcation of bifurcation curves of some multiparameter problems	Abstracts p. 150
16:30-17:00	Chan-Gyun Kim (College of William and Mary, USA) Multiple Positive Solutions for p-Laplacian Equation with Allee Effect Growth Rate	Abstracts p. 147
17:00-17:30	Jun Zhou (College of William and Mary, USA) Qualitative analysis of a diffusive predator-prey model with modified Leslie-Gower and Holling-type II schemes	Abstracts p. 151
17:30-18:00	Tomoyuki Miyaji (Kyoto University, Japan) Bifurcation analysis for the Lugiato-Lefever equation in two space dimensions	Abstracts p. 148

Special Session **34**	**Multi-phase Flows in Porous Media and Related Systems** Organizer(s): David Ambrose, Xiaoming Wang, Steven Wise	Location **MAG-A**
16:00-16:30	Iain R Moyles (University of British Columbia, Canada) Capillary Driven Viscous Fingering in Buckley-Leverett Models	Abstracts p. 153
16:30-17:00	Nikolai V Chemetov (CMAF / University of Lisbon, Portugal) Solvability of a generalized Buckley-Leverett model	Abstracts p. 152
17:00-17:30	Paul G Papatzacos (University of Stavanger, Norway) Thermal compositional model based on the diffuse interface assumption	Abstracts p. 154
17:30-18:00	Xiaoqiang Wang (Florida State University, USA) Two phase fluid flows with biological microstructures	Abstracts p. 155

Special Session **38**	**Bifurcations and Asymptotic Analysis of Solutions of Nonlinear Models** Organizer(s): Jann-Long Chern, Yoshio Yamada, Shoji Yotsutani	Location **PAL-A**
16:00-16:30	Masaharu Nagayama (Kanazawa university, Japan) The jamming of camphor boats in a circular water channel	Abstracts p. 168
16:30-17:00	Kousuke Kuto (University of Electro-Communications, Japan) Bifurcation structure of steady-states to a reaction-diffusion-advection system in surface chemistry	Abstracts p. 167
17:00-17:30	Sachiko Ishida (Tokyo University of Science, Japan) Global existence in sub-critical cases for 1-D quasilinear degenerate Keller-Segel systems	Abstracts p. 166
17:30-18:00	Yoichi Enatsu (Waseda University, Japan) Asymptotic behavior of solutions of epidemic models with delays	Abstracts p. 166

Special Session **41**	**New Developments in Qualitative Behavior of Evolutionary PDEs** Organizer(s): Ryo Ikehata, Grozdena Todorova	Location **PAL-CC**
16:00-16:30	Ming Mei (Champlain College-St.-Lambert, Canada) Best asymptotic profile for bipolar hydrodynamic model of semiconductors	Abstracts p. 174
16:30-17:00	Fábio Natali (Universidade Estadual de Maringá, Brazil) Orbital Stability of Periodic Waves	Abstracts p. 175
17:00-17:30	To Fu Ma (ICMC - University of Sao Paulo, Brazil) Attractors for a class of Kirchhoff-Boussinesq models with memory	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**
16:00-16:30	Yang Zhijian (Zhengzhou University, Peoples Rep of China) Longtime dynamics for an elastic waveguide model	Abstracts p. 182
16:30-17:00	Gao Jia (University of Shanghai for Science and Technology, Peoples Rep of China) On solvability for a class of quasilinear elliptic equations with superlinear growth in weighted spaces	Abstracts p. 178
17:00-17:30	Changming Song (Zhongyuan University of Technology, Peoples Rep of China) Cauchy problem for the damped singularly perturbed Boussinesq-type equation	Abstracts p. 181

Special Session **48**	**Nonlinear Evolution Equations** Organizer(s): Alex Himonas, Gerson Petronilho	Location **POI-B**
16:00-16:30	Karen Yagdjian (University of Texas-Pan American, USA) Global existence of the scalar field in de Sitter spacetime	Abstracts p. 205
16:30-17:00	John Holmes (University of Notre Dame, USA) Well-posedness of the generalized Burgers equation in analytic Gevrey spaces	Abstracts p. 204
17:00-17:30	Alex Himonas (University of Notre Dame, USA) The initial Value problem of a periodic KdV equation	Abstracts p. 203
17:30-18:00	David Karapetyan (University of Notre Dame, USA) New ill-posedness results for the boussinesq equation	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**
16:00-16:30	Svetlin Georgiev (Sofia University, Bulgaria) Global existence of the solutions of a class fractional - differential equations with a Legendre derivative	Abstracts p. 217
16:30-17:00	Namjip Koo (Chungnam National University, Korea) Lyapunov stability for differential systems of fractional order	Abstracts p. 218
17:00-17:30	Eduardo Cuesta (University of Valladolid, Spain) On the applications of Volterra equations in image processing and restoration	Abstracts p. 217
17:30-18:00	Onur Alp Ilhan (Erciyes University, Turkey) Solvability of Some Partial Integral Equations in Hilbert Space	Abstracts p. 217
18:00-18:30	Sara Moradi (Chalmers University of Technology, Sweden) A theory of non-local linear drift wave transport	Abstracts p. 218

Special Session **58**	**Variational Analysis and Equilibrium Problems** Organizer(s): Patrizia Daniele *Extended Session*	Location **POI-C**
16:00-16:30	Scott W Greenhalgh (University of Guelph, Canada) Evolution solutions of network problems: a hybrid dynamical system approach	Abstracts p. 236
16:30-17:00	Maria Bernadette Donato (University of Messina, Italy) The infinite dimensional Lagrange multiplier rule for convex optimization problems	Abstracts p. 236
17:00-17:30	Sabu Nicholas (Indian Institute of Space Science and Technology, India) Two-dimensional approximation of three dimensional piezoelectric membrane shells using gamma convergence	Abstracts p. 236
17:30-18:00	Laura Scrimali (University of Catania, Italy) A quasi-variational approach to the joint implementation of environmental projects	Abstracts p. 237
18:00-18:30	Monica G Cojocaru (University of Guelph, Canada) Generalized Nash Games and Evolutionary Variational Inequalities	Abstracts p. 235
18:30-19:00	Monica Milasi (University of Messina, Italy) A generalized quasi-variational inequality for an economic equilibrium problem	Abstracts p. 236

Special Session **69**	**Dissipative Systems and Applications** Organizer(s): Georg Hetzer, Wenxian Shen, Lourdes Tello	Location **POI-D**
16:00-16:30	Le Dung (University of Texas San Antonio, USA) Regularity for strongly coupled parabolic systems via homotopy	Abstracts p.
16:30-17:00	Juan Francisco Padial (Universidad Politecnica de Madrid, Spain) On a nonlocal Bernoulli-type problem with unknown measure data	Abstracts p.
17:00-17:30	Dmitry Glotov (Auburn University, USA) On the local behavior of solutions to thin-film Ginzburg-Landau equations near vortices	Abstracts p.
17:30-18:00	Alfonso C Casal (Universidad Politecnica de Madrid, Spain) Some results on Hopf type bifurcation in delayed complex Ginzburg-Landau equations	Abstracts p.

Special Session **81**	**Analysis and Simulation of Multi-scale Problems** Organizer(s): Xiao-Ping Wang, Yang Xiang	Location **REH-3**
16:00-16:30	Yang Xiang (Hong Kong University of Science and Technology, Hong Kong) A continuum model for the dynamics of dislocation arrays	Abstracts p. 304
16:30-17:00	Xianmin Xu (Chinese Academy of Sciences, Peoples Rep of China) Some mathematical analysis for wetting on chemically patterned surfaces	Abstracts p. 304
17:00-17:30	Xiaodong Yan (University of Connecticut, USA) Minimizers and Meissner states for nonself-dual Chern-Simons-Higgs energy	Abstracts p. 304
17:30-18:00	Peiyong Wang (Wayne State University, USA) Some Uniqueness Problems In Free Boundary Problems Associated With Degeneracy	Abstracts p. 303

Special Session 82	**Multi-component Integrable Systems, Solitons, and Nonlinear Waves** Organizer(s): Stephen Anco, Yue Liu, Changzheng Qu	Location **POI-A**
16:00-16:30	Kivilcim Alkan (Brock University, Canada) Inelastic Curve Flows in 2-3 Dimensional Minkowskian Space	Abstracts p. 305
16:30-17:00	Ahmed M Ahmed (Brock University, Canada) Multi-component soliton equations	Abstracts p. 305
17:00-17:30	Emmanuel Yomba (California State University at Northridge, USA) Painleve and Lax pair tests for the integrability of a two-component nonlinear Schro dinger equations with variable coefficients and its nonautonomous solitons	Abstracts p. 306
17:30-18:00	Zuo-nong Zhu (Shanghai Jiao Tong University, Peoples Rep of China) On continuous limits theory and integrability for a semidiscrete system	Abstracts p. 307
18:00-18:30	Fubao Zhang (Southeast University, Peoples Rep of China) The existence of ground states for quasilinear asymptotically periodic Schrodinger equations	Abstracts p. 307

Contributed Session 09	**PDEs and Applications** Chair(s): Zhaosheng Feng	Location **GRC-G**
16:00-16:20	Dana Bereanu (Institute of Mathematics "Simion Stoilow" and Military Technical Academy, Romania) Topological methods for boundary value problems involving discrete vector ϕ-Laplacians	Abstracts p. 326
16:20-16:40	Igor Balsim (Kingsborough Community College-CUNY, USA) Applications of Mixed Boundary conditions and Sturm Liouville Equations in Atherosclerosis	Abstracts p. 326
16:40-17:00	Hyejin Kim (University of Michigan, Ann Arbor, USA) The Boundary Harnack Principle for Second Order Elliptic Equations with Unbounded Drift	Abstracts p. 328
17:00-17:20	Ricardo P Silva (University of the State of Sao Paulo, Brazil) A homogenization problem for a thin domain with a highly oscillating boundary	Abstracts p. 330
17:20-17:40	Marcone Pereira (Universidade de Sao Paulo, Brazil) Attractors for semilinear parabolic problems with concentrated and oscillating terms on the boundary	Abstracts p. 329
17:40-18:00	Atul Kumar (Lucknow University, India) Analytical approach of one - dimensional solute transport through inhomogeneous semi-infinite porous domain for unsteady flow: Dispersion being proportional to square of velocity	Abstracts p. 328
18:00-18:20	Dilip Kumar Jaiswal (Lucknow University, India) Temporal Dispersion along uniform flow in one-Dimensional Porous Media	Abstracts p. 328