

9th AIMS International Conference on



Dynamical Systems, Differential Equations And Applications

9th

Sunday, July 1 -- Thursday, July 5, 2012
Hyatt Regency Grand Cypress
Orlando, Florida, USA

Program



American Institute of
Mathematical Sciences

Department of Mathematics & Statistics
University of North Carolina Wilmington





The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications

July 1 – July 5, 2012

Orlando, Florida, USA

PROGRAM

Organizers:

The American Institute of Mathematical Sciences

Department of Mathematics and Statistics

The University of North Carolina Wilmington

Sponsor:



National Science Foundation

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Yaw Chang	Edwina Johnson
Wei Feng	Semen Koksai
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American Institute of Mathematical Sciences
<http://aimsciences.org>

Welcome to the 9th AIMS Conference

Welcome to Orlando, and to the 9th AIMS Conference. It is a great honor to greet you, as we meet once again to discuss the latest developments in our field of mathematical sciences.

Modern science has become highly competitive. It is our hope that an injection of the human element into our collaborative work will make our research more enjoyable and productive. It is with this backdrop that AIMS was created as an organization, which cultivates a process of intellectual globalization through the highest level of academic communication and interdisciplinary collaboration. Thank you for having made this into a reality.

With more than 1300 participants in attendance this year, you will have the opportunity to forge new friendships as well as meet/rediscover old ones. Certainly, you will find plenty to discuss with each other over the next few days, given our over 70 well-planned special sessions.

It is a great pleasure to acknowledge the financial support from the United States National Science Foundation, and the continuing sponsorship from the University of North Carolina at Wilmington. I would also like to thank the members of the Organizing Committee, chaired by Professor Xin Lu, who played a central role. Their tireless effort and hard work made this extravaganza possible.

Knowing that you are the whole purpose of all AIMS activities, I would like to express my appreciation for your continuous participation and support.

I hope you all have a great time at Orlando.

Sincerely,

Shouchuan Hu
Director of AIMS

From the Organizing Committee

Dear Colleagues and Friends,

On behalf of the Organizing Committee for the 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, I welcome you to the Hyatt Grand Cypress Resort, Orlando, Florida. We are very happy to see that this conference attracted around 1300 mathematicians from 72 countries and becomes the largest AIMS Conference hosted in US.

I would like to express my heartfelt thanks to all members of the Organizing Committee: Dr. Zhaosheng Feng at University of Texas-Pan American, Dr. Semen Koksal at Florida Institute of Technology, my colleagues at UNC Wilmington (Dr. Yaw Chang, Dr. Wei Feng, Dr. Michael Freeze, and Dr. Nolan McMurray), and our wonderful secretary Ms. Edwina Johnson. I also appreciate the efforts made by several of our graduate students, especially Mr. Michael Cowen. This group of organizers worked professionally, enthusiastically, and tirelessly on registrations by participants, invitations and visa issues, NSF grant for travel supports, conference schedules and programs, hotel reservations and transportations, lunch and banquet arrangements, and preparations for the conference proceedings. Without the outstanding commitment of the Organizing Committee, this great event would not have been possible. I also would like to thank the AIMS staff members Ms. Susan Cummins, Ms. Liwei Ning and Mr. Le Qiao for their supports and efforts.

We hope you enjoy your experience at the conference, and have a very pleasant stay at Orlando Florida. Please let us know of any assistance we could further provide.

Sincerely,

Xin Lu

Professor of Mathematics, UNC Wilmington

Chair of the Organizing Committee for the 9th AIMS Conference

Guidelines for the Proceedings of the 9th AIMS Conference at Orlando

The proceedings of the 9th AIMS Conference at Orlando will be published in a two-volume set, with one volume to appear in 2012 and the other in 2013, as AIMS Proceedings. All submissions will be rigorously refereed. All conference participants are offered a discount price of \$70 (40% off regular price), including shipping and handling, for a set of the proceedings, if ordered before July 5, 2012. To enhance the visibility of the proceedings and your published paper in it, please recommend the proceedings to your library since current AIMS journals subscribers will not receive this proceedings unless they order it separately.

All submissions must be original research and will go through a rigorous refereeing process. **Summary/Survey articles will not be considered.** Final form of accepted papers must be in the proceedings' template (AIMS journals template), which is available at

http://aimSciences.org/journals/Tex_prep.htm

- Editors: Wei Feng, Zhaosheng Feng, Xin Lu and others.
- Submissions start on **July 15, 2012** and end on **September 15, 2012**.
- Each paid participant may submit only one paper.
- **Page limit is 10 pages** and additional pages will be charged at **\$100 per page**.

Questions and correspondence should be e-mailed to Dr. Xin Lu at **lux@uncw.edu** or write to

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Department of Mathematics & Statistics
University of North Carolina Wilmington
Wilmington , NC 28403 , U.S.A.

CONFERENCE AT A GLANCE

July 1, Sunday	July 2, Monday	July 3, Tuesday	July 4, Wednesday	July 5, Thursday
8:20 -- 8:50 Opening 8:50 -- 9:40 Dr. Avner Friedman	8:00 – 10:00 Parallel Session 4 (PS4)	8:00 – 10:00 Parallel Session 7 (PS7)	8:00 – 10:00 Parallel Session 10 (PS10)	8:00 – 10:00 Parallel Session.13 (PS13)
9:40 – 10:00 Coffee Break	10:00 – 10:20 Coffee Break	10:00 – 10:20 Coffee Break	10:00 – 10:20 Coffee Break	10:00 – 10:20 Coffee Break
10:00 – 12:00 Parallel Session 1 (PS1)	10:20 – 12:00 Dr. A. J. Majda Dr. A. L. Bertozzi	10:20 – 12:00 Dr. J. M. Sanz-Serna Dr. Michael Dellnitz	10:20 – 12:00 Dr. S. Terracini Dr. Jianhong Wu	10:20 – 12:00 Dr. Yuan Lou Dr. Eduard Feireisl
12:00 – 13:30 Lunch Break				
	12:45 – 13:30 DE Research Discussion	12:45 – 13:30 NSF Panel Discussion		
13:30 – 15:30 Parallel Session 2 (PS2)	13:30 – 15:30 Parallel Session 5 (PS5)	13:30 – 15:30 Parallel Session 8 (PS8)	13:30 – 15:30 Parallel Session 11 (PS11)	13:30 – 15:30 Parallel Session 14 (PS14)
15:30 – 16:00 Coffee Break	15:30 – 16:00 Coffee Break Poster Session	15:30 – 16:00 Coffee Break	15:30 – 16:00 Coffee Break Poster Session	15:30 – 16:00 Coffee Break
16:00 – 18:30 Parallel Session 3 (PS3)	16:00 – 18:30 Parallel Session 6 (PS6)	16:00 – 18:30 Parallel Session 9 (PS9)	16:00 – 18:30 Parallel Session 12 (PS12)	16:00 – 18:30 Parallel Session 15 (PS15)
		19:30 – 21:30 Banquet (optional)		

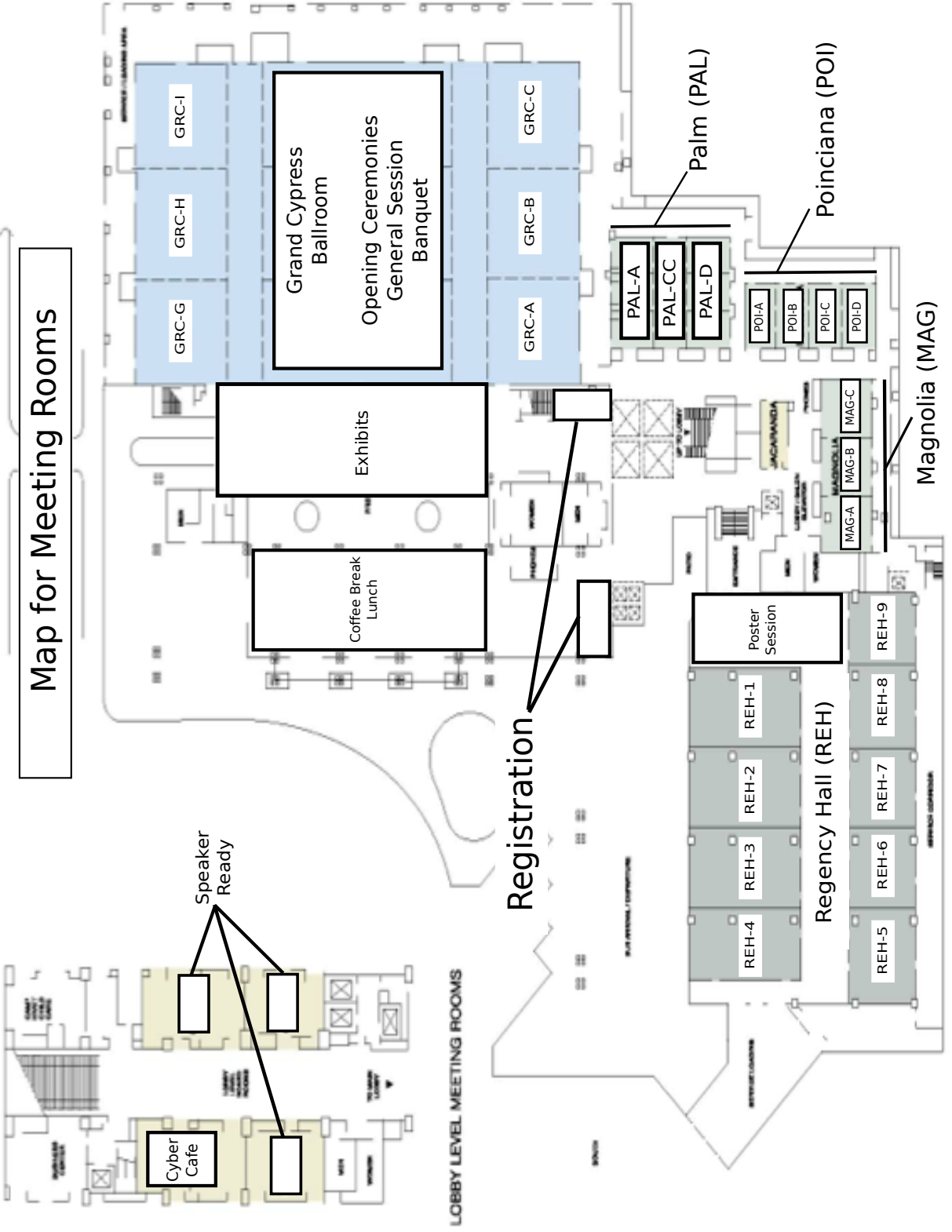
* Round-table meeting: trends and future of DE research, July 2, 12:45-13:30PM, Grand Cypress Ballroom

* Informational meeting with NSF program officers, July 3, 12:45-13:30PM, Grand Cypress Ballroom

Master Schedule

	10:00-12:00	1-1-Jul 13:30-15:30	16:00-18:30	8:00-10:00	2-Jul 13:30-15:30	16:00-18:30	8:00-10:00	3-Jul 13:30-15:30	16:00-18:30	8:00-10:00	4-Jul 13:30-15:30	16:00-18:30	8:00-10:00	5-Jul 13:30-15:30	16:00-18:30
Room	PS01	PS02	PS03	PS04	PS05	PS06	PS07	PS08	PS09	PS10	PS11	PS12	PS13	PS14	PS15
MAG-A	SS13	SS13	SS13	SS13	SS34	SS34	SS45	SS34	SS34	SS68	SS68	SS68	SS68	SS68	SS68
PAL-CC	SS49	SS49	SS49	SS49	SS49	SS49	SS41	SS41	SS41	SS41	SS41	SS61	SS61		
REH-8	SS19	SS19	SS19	SS19	SS27	SS27	SS27	SS27	SS27	SS16	SS16	SS16	SS16	SS16	
REH-2	CS01	CS01	CS07	SS01	SS01	SS21	SS21	SS21	SS21	SS44	SS44	SS44	SS44	SS44	
GRC-B	SS45	SS45	SS45	SS03	SS03	SS03	SS03	SS03	SS04	SS04	SS04	SS04	SS04	SS04	SS04
REH-9	SS28	SS28	SS28	SS28	SS33	SS33	SS33	SS33	SS33	SS32	SS32	SS32	SS32	SS32	SS32
REH-7	SS31	SS31	SS31	SS31	SS37	SS37	SS26	SS26	SS26	SS26	SS43	SS43	SS43	SS43	
GRC-C	SS14	SS14	SS14	SS14	SS14	SS14	SS14	CS07		SS55	SS55	SS55	SS55	SS55	
GRC-A	SS14	SS02	SS02	SS02	SS02	SS02	SS10	SS10	SS10	SS10	SS10	SS10	SS80	SS80	SS80
REH-1	SS73	SS73	SS73	SS22	SS22	SS22	SS22	SS22		SS08	SS08	SS08	SS08		
GRC-H	SS23	SS23	SS23	SS23	SS23	SS23	SS23	SS29	SS29	SS29	SS29	SS29	CS04	CS04	CS04
GRC-I	SS11	SS11	SS11	SS11	SS11	SS17	SS17	SS17	SS17	SS62	SS62	SS62	SS62	SS62	
REH-3	CS02	CS02	CS02	SS77	SS77	SS77	SS81	SS81	SS81	SS77	SS77	SS77	SS01		
POI-A	SS67	SS67	SS67	SS67	SS67	SS67	SS82	SS82	SS82	SS36	SS36	SS36	SS07	SS07	SS07
POI-B	SS79	SS79	SS79	SS79	SS48	SS48	SS48	SS48	SS48	SS51	SS51	SS51	SS07		
PAL-D	SS70	SS70	SS70	SS70	SS70	SS70	SS18	SS18	SS18	SS46	SS46	SS50	SS50	SS50	SS50
GRC-G	SS15	SS15	SS15	SS15	SS15	SS15	SS15	SS15	CS09	CS09	CS09	CS09	SS78	SS78	SS78
REH-6	SS25	SS25	SS25	SS25	SS25	SS25	SS12	SS12	SS12	SS39	SS39	SS39	SS78	SS78	SS78
REH-5	SS24	SS24	SS24	SS24	SS24	SS24	SS24	SS09	SS09	CS06	CS06	SS09			
MAG-C	SS35	SS35	SS35	SS35	SS35	SS35	SS52	SS52	SS52	SS54	SS54	SS54	SS84	SS84	SS84
POI-C	SS05	SS05	SS05	SS30	SS30	SS30	SS58	SS58	SS58	SS47	SS47	SS47	SS47	SS47	SS47
POI-D	SS64	SS64	SS64	SS64	SS75	SS75	SS75	SS75	SS69	SS69		SS69			
PAL-A	SS63	SS63	SS63	SS63	SS76	SS76	SS38	SS38	SS38	SS38	SS38	SS38			
MAG-B	SS72	SS72	SS72	SS72	SS53	SS53	SS38	SS38	SS06	SS06	SS06	SS38	SS57	SS57	SS57
REH-4	CS10	CS10	SS20	SS20	SS20	SS20	SS42	SS42	SS42	SS42	SS42	SS42	SS42	SS42	SS42

Map for Meeting Rooms



vi. LOBBY LEVEL MEETING ROOMS

List of Sessions and Rooms

Plenary Lectures	Grand Cyprus Ballroom
NSF Panel Discussion	Grand Cyprus Ballroom
DE Research Discussion	Grand Cyprus Ballroom

Special Sessions

Special Session 01	Qualitative Studies of PDEs: Entire Solutions and Asymptotic Behavior	REH-2/REH-3
Special Session 02	Nonlinear Evolution PDEs and Interfaces in Applied Sciences	GRC-A
Special Session 03	Mathematics of Social Systems	GRC-B
Special Session 04	Nonlinear PDEs and Control Theory with Applications	GRC-B
Special Session 05	Hybrid Monte Carlo	POI-C
Special Session 06	Dispersal in Heterogeneous Landscape	MAG-B
Special Session 07	Recent Progress in the Mathematical Theory of Compressible and Incompressible Fluid Flows	POI-A
Special Session 08	Propagation Phenomena Appearing in Reaction-Diffusion Systems	REH-1
Special Session 09	Mathematics for Information Processing and Management	REH-5
Special Session 10	Computational and Nonautonomous Dynamics	GRC-A
Special Session 11	Advances in Classical and Geophysical Fluid Dynamics	GRC-I
Special Session 12	Singular Perturbations and Boundary Layer Theory	REH-6
Special Session 13	Global Dynamics in Hamiltonian System	MAG-A
Special Session 14	Mathematical Models in Biology and Medicine	GRC-C
Special Session 15	Nonlinear Evolution Equations, Inclusions and Related Topics	GRC-G
Special Session 16	Reaction Diffusion Equations and Applications	REH-8
Special Session 17	Singular Perturbations	GRC-I
Special Session 18	Qualitative Theory of Evolutionary Equation and its Application	PAL-D
Special Session 19	Waves and Convection	REH-8
Special Session 20	Stochastic-Statistical Modeling of Climate	REH-4
Special Session 21	Dynamical Systems and Spectral Theory	REH-2
Special Session 22	Topological and Variational Methods for Boundary Value Problems	REH-1
Special Session 23	Topological and Combinatorial Dynamics	GRC-H
Special Session 24	Geometric Mechanics	REH-5
Special Session 25	Dynamics in Complex Biological Systems	REH-6
Special Session 26	Qualitative Aspects of Nonlinear Boundary Value Problems	REH-7
Special Session 27	Transport Barriers in Dynamical Systems	REH-8
Special Session 28	Analysis and Numerics of Differential Equations and Dynamical Systems Mathematical Fluid Mechanics	REH-9
Special Session 29	Self-organized Behavior of Nonlinear Elliptic Equations and Pattern Formation of Strongly Interacting Systems	GRC-H
Special Session 30	Recent Developments on Turbulence	POI-C
Special Session 31	Mathematical Models of Cancer and Cancer Therapy	REH-7
Special Session 32	Existence and Multiplicity Results in Elliptic Variational Problems	REH-9
Special Session 33	Nonlinear Elliptic and Parabolic Problems in Mathematical Sciences	REH-9
Special Session 34	Multi-phase Flows in Porous Media and Related Systems	MAG-A
Special Session 35	Qualitative Theory of Nonlinear ODEs and Applications	MAG-C

Special Session 36	Stochastic Partial Differential Equations and their Optimal Control	POI-A
Special Session 37	Mathematical Models and Computations in Cell and Developmental Biology	REH-7
Special Session 38	Bifurcations and Asymptotic Analysis of Solutions of Nonlinear Models	PAL-A
Special Session 39	Polynomial Methods for Differential Equations and Dynamical Systems	REH-6
Special Session 41	New Developments in Qualitative Behavior of Evolutionary PDEs	PAL-CC
Special Session 42	Global or/and Blowup Solutions for Nonlinear Evolution Equations and Their Applications	REH-4
Special Session 43	Stochastic Networks with Applications to Neuroscience	REH-7
Special Session 44	Applications of Chaotic and Stochastic Multiscale Dynamics	REH-2
Special Session 45	Stochastic and Deterministic Dynamical Systems, and Applications	GRC-B/MAG-A
Special Session 46	Discrete/Continuous and Nonstandard Analysis	PAL-D
Special Session 47	Dynamics and Games	POI-C
Special Session 48	Nonlinear Evolution Equations	POI-B
Special Session 49	Growth Models and Interface Dynamics	PAL-CC
Special Session 50	Mathematical Novelties in Inverse Problems in Imaging Sciences	PAL-D
Special Session 51	Ordinal Symbolic Dynamics and Applications	POI-B
Special Session 52	Fractional Differential and Integral Equations, Theory and Applications	MAG-C
Special Session 53	Greedy Algorithms and Tensor Product Representations for High-dimensional Problems	MAG-B
Special Session 54	Dynamics in Complex Networks	MAG-C
Special Session 55	Nonlinear Elliptic and Parabolic Problems	GRC-C
Special Session 57	Nonlinear and Dispersive Partial Differential Equations	MAG-B
Special Session 58	Variational Analysis and Equilibrium Problems	POI-C
Special Session 61	PDE Models for Biological Pattern Formation	PAL-CC
Special Session 62	PDEs and Dynamical Systems, and Their Applications	GRC-I
Special Session 63	Infinite Dimensional Dynamics and Applications	PAL-A
Special Session 64	Analysis of PDEs and Particle Systems: From Life Sciences, Economics and Materials Science	POI-D
Special Session 67	Applied Analysis and Dynamics in Engineering and Sciences	POI-A
Special Session 68	Analysis and Simulations of Nonlinear Systems	MAG-A
Special Session 69	Dissipative Systems and Applications	POI-D
Special Session 70	Modeling and Dynamics of Infectious Diseases	PAL-D
Special Session 72	Special Methods for Solving Systems of Non-linear Differential Equations and their Applications to Sciences and Engineering	MAG-B
Special Session 73	Mathematical Models for Upwelling Ocean Currents and Related Phenomena	REH-1
Special Session 75	Heteroclinic Cycles: Theory and Applications	POI-D

Special Session 76	On PDEs from Biology	PAL-A
Special Session 77	The Navier-Stokes Equations and Related Problems	REH-3
Special Session 78	Multiple Time Scale Dynamics with a View Towards Biological Applications	REH-6
Special Session 79	Numerical Methods based on Homogenization and on Two-Scale Convergence	POI-B
Special Session 80	Advances in the Numerical Solution of Non-linear Evolution Equations	GRC-A
Special Session 81	Analysis and Simulation of Multi-scale Problems	REH-3
Special Session 82	Multi-component Integrable Systems, Solitons, and Nonlinear Waves	POI-A
Special Session 84	Theory, Numerics and Applications of Quasi-Periodic and Almost Periodic Schrödinger Operators	MAG-C
Contributed Sessions		
Contributed Session 01	Equations and Qualitative Analysis	REH-2
Contributed Session 02	ODEs and Applications	REH-3
Contributed Session 04	Modelling and Math Biology	GRC-H
Contributed Session 06	Control and Optimization	REH-5
Contributed Session 07	Scientific Computation and Numerical Algorithms	REH-2/GRC-C
Contributed Session 09	PDEs and Applications	GRC-G
Contributed Session 10	Bifurcation and Chaotic Dynamics	REH-4

Poster Sessions

Area near Regency Hall (See Map)

Meeting Rooms

Regency Hall (REH)	Magnolia (MAG)	Grand Cypress (GRC)	Poinciana (POI)
REH-1	MAG-A	GRC-A	POI-A
REH-2	MAG-B	GRC-B	POI-B
REH-3	MAG-C	GRC-C	POI-C
REH-4		GRC-G	POI-D
REH-5	Palm (PAL)	GRC-H	
REH-6	PAL-A	GRC-I	
REH-7	PAL-D	Ballroom	
REH-8	PAL-CC		
REH -9			

Plenary Lectures

Sunday, July 1
Chair: **Andrew Majda**

Location
Grand Cypress Ballroom

8:50-9:40	Avner Friedman (The Ohio State University, USA) Conservation Laws in Mathematical Biology	Abstracts p. 2
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Monday, July 2
Chair: **Jerry Bona**

Location
Grand Cypress Ballroom

10:20-11:05	Andrew Majda (New York University, USA) Lessons in Uncertainty Quantification for Turbulent Dynamical Systems	Abstracts p. 2
11:05-12:00	Andrea Bertozzi (University of California at Los Angeles, USA) Mathematics of Crime	Abstracts p. 1

Tuesday, July 3
Chair: **Manual de Leon**

Location
Grand Cypress Ballroom

10:20-11:05	J. M. Sanz-Serna (Universidad de Valladolid, Spain) Higher-order Averaging and Formal Series for Numerical Integrators	Abstracts p. 3
11:05-12:00	Michael Dellnitz (University of Paderborn, Germany) The Computation of Invariant Sets via Newton's Method	Abstracts p. 1

Wednesday, July 4
Chair: **Yi Li**

Location
Grand Cypress Ballroom

10:20-11:05	Susanna Terracini (Università di Milano Bicocca, Italy) Symbolic Dynamics of the N-centre Problem at Negative Energies	Abstracts p. 3
11:05-12:00	Jianhong Wu (York University, Canada) Adaptive Delay and its Implication for Pattern Storage and Recognition in Nonlinear Biological Systems	Abstracts p. 3

Thursday, July 5
Chair: **Alain Miranville**

Location
Grand Cypress Ballroom

10:20-11:05	Yuan Lou (The Ohio State University, USA) Dispersal in Heterogeneous Landscapes	Abstracts p. 2
11:05-12:00	Eduard Feireisl (Mathematical Institute of the Academy of Sciences of the Czech Republic) Dynamical Systems in Fluid Mechanics	Abstracts p. 1

Sunday, July 1**10:00AM-12:00PM****Parallel Session 1**

Special Session 5	Hybrid Monte Carlo Organizer(s): Elena Akhmatskaya, J. M. Sanz-Serna	Location POI-C
10:00-10:30	Robert D Skeel (Purdue University, USA) Mass Tensor Molecular Dynamics and Hybrid Monte Carlo	Abstracts p. 26
10:30-11:00	Vassilios Stathopoulos (University College London, England) Riemann Manifold Hybrid Monte Carlo and alternative metrics	Abstracts p. 26
11:00-11:30	Martin Burda (University of Toronto, Canada) Hamiltonian Monte Carlo with Endogenous Splitting	Abstracts p. 24
11:30-12:00	J M Sanz-Serna (University of Valladolid, Spain) Hybrid Monte Carlo on Hilbert spaces	Abstracts p. 26

Special Session 11	Advances in Classical and Geophysical Fluid Dynamics Organizer(s): Madalina Petcu, Roger Temam, Shouhong Wang	Location GRC-I
10:00-10:30	Jerry L Bona (University of Illinois at Chicago, USA) A model equation for water waves with dissipation	Abstracts p. 48
10:30-11:00	Mickael Chekroun (UCLA, USA) Invariant Measures for Dissipative Dynamical Systems: Abstract Results and Applications	Abstracts p. 48
11:00-11:30	Bin Cheng (Arizona State University, USA) Singular limits of geophysical fluid dynamics in spherical and bounded domains.	Abstracts p. 48
11:30-12:00	Houssam Chrayteh (Poitiers University, France) Qualitative properties of eigenvectors related to multivoque operators	Abstracts p. 49

Special Session 13	Global Dynamics in Hamiltonian Systems Organizer(s): Rafael de la Llave, Tere.M-Seara	Location MAG-A
10:00-10:30	Vered Rom-Kedar (The Weizmann institute, Israel) A Saddle in a Corner - A Model of Collinear Triatomic Chemical Reactions	Abstracts p. 57
10:30-11:00	Anton Gorodetski (UC Irvine, USA) On stochastic sea of the standard map	Abstracts p. 55
11:00-11:30	Ludovic L Rifford (University of Nice, France) Geometric control and dynamical systems	Abstracts p. 57
11:30-12:00	George Haller (McGill University, Canada) Generalized KAM cuves in time-aperiodic Hamiltonian systems	Abstracts p. 56

Special Session 14	Mathematical Models in Biology and Medicine Organizer(s): Yang Kuang, Bingtuan Li, Jiaxu Li, Andrew Nevai	Location GRC-C
10:00-10:30	Richard Bertram (Florida State University, USA) The Dual Oscillator Model for Pancreatic Islets	Abstracts p. 59
10:30-11:00	Andrea De Gaetano (Cnr Iasi BioMatLab, Italy) Interpretation of the IVGTT by means of a distributed-controller model of the endocrine pancreas	Abstracts p. 60
11:00-11:30	Changbing Hu (University of Louisville, USA) Modeling the distribution of insulin in pancreas	Abstracts p. 61
11:30-12:00	Jiaxu Li (University of Louisville, USA) Modeling impulsive injections of insulin analogues: towards artificial pancreas	Abstracts p. 62

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
10:00-10:30	Nasiruddin N Ahmed (University of Ottawa, Canada) Optimal Feedback Control for Differential Inclusions on Banach Spaces	Abstracts p. 66
10:30-11:00	Stanislaw Migorski (Jagiellonian University, Krakow, Poland) Nonlinear subdifferential inclusions with applications to contact mechanics	Abstracts p. 69
11:00-11:30	Richard J Marchand (Slippery Rock University, USA) Boundary control and hidden trace regularity of a semigroup associated with a beam equation and non-dissipative boundary conditions	Abstracts p. 69
11:30-12:00	Volker Reitmann (St. Petersburg State University, Russia) Asymptotic behavior of solutions to a coupled system of Maxwells equations and a controlled differential inclusion	Abstracts p. 70

Special Session 19	Waves and Convection Organizer(s): Sam Stechmann, Leslie Smith	Location REH-8
10:00-10:30	Samuel Stechmann (University of Wisconsin-Madison, USA) Nonlinear Dynamics and Regional Variations in the MJO Skeleton	Abstracts p. 87
10:30-11:00	Juliana Dias (PSD - ESRL/NOAA, USA) Modulation of shallow water equatorial waves due to a varying equivalent height background	Abstracts p. 84
11:00-11:30	Gerardo Hernandez-Duenas (University of Wisconsin, USA) Minimal models for precipitating organized convection	Abstracts p. 85
11:30-12:00	Leslie Smith (University of Wisconsin, Madison, USA) Tropical cyclogenesis and vertical shear in a moist Boussinesq model	Abstracts p. 87

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
10:00-10:30	Jan P Boronski (Tuskegee University, USA) On dynamics of surface homeomorphisms with invariant continua	Abstracts p. 101
10:30-11:00	John C Mayer (University of Alabama at Birmingham, USA) Central Strips of Sibling Leaves in Laminations of the Unit Disk	Abstracts p. 104
11:00-11:30	Roland Gunesch (TU Darmstadt University, Germany) Ergodic theory and topological intersections as a tool to solve geometrical problems	Abstracts p. 102
11:30-12:00	Byungik Kahng (University of North Texas at Dallas, USA) Devaney Chaos and Singularities of Invertible Piecewise Isometric Dynamics	Abstracts p. 102

Special Session 24	Geometric Mechanics Organizer(s): Tom Mestdag, Manuel de Leon, Frans Cantrijn, Aziz Hamdouni, Dina Razafindralandy, Jean-Claude Zambrini	Location REH-5
10:00-10:30	Anthony M Bloch (University of Michigan, USA) The geometry of integrable and gradient flows and dissipation	Abstracts p. 106
10:30-11:00	David Martin de Diego (ICMAT, Spain) On Discrete mechanics for optimal control theory	Abstracts p. 108
11:00-11:30	Juan Carlos Marrero (University of La Laguna, Spain) Hamilton-Jacobi theory and hamiltonian systems with respect to fiber-wise linear Poisson structures	Abstracts p. 108
11:30-12:00	Jean-Claude Zambrini (GFMUL, Portugal) Stochastic Geometric Mechanics	Abstracts p. 110

Special Session 25	Dynamics in Complex Biological Systems Organizer(s): Bijoy K. Ghosh, Akif Ibraguimov, Qishao Lu, Jianzhong Su	Location REH-6
10:00-10:30	Janet Best (Ohio State University, USA) Dynamics of sleep-wake states: a stochastic process, random graph model	Abstracts p. 112
10:30-11:00	Yixin Guo (Drexel University, USA) Standing and travelling patterns in a neural field model	Abstracts p. 113
11:00-11:30	Jonathan Bell (University of Maryland Baltimore County, USA) Determining the conductance for a neuronal cable model defined on a tree graph via a boundary control method	Abstracts p. 112
11:30-12:00	Yuncheng You (University of South Florida, USA) Robustness of global dynamics for reversible Schnackenberg equations	Abstracts p. 116

Special Session 28	Analysis and Numerics of Differential Equations and Dynamical Systems in Mathematical Fluid Mechanics Organizer(s): Changbing Hu, Ning Ju, Theodore Tachim-Medj	Location REH-9
10:00-10:30	Changbing Hu (University of Louisville, USA) Some mathematical theory of viscous Camassa-Holm equations	Abstracts p. 126
10:30-11:00	Hongjie Dong (Brown University, USA) On a 1D alpha-patch model	Abstracts p. 125
11:00-11:30	Nathan E Glatt-Holtz (Indiana University, USA) Parameter Estimation for Nonlinear Stochastic Partial Differential Equations	Abstracts p. 125
11:30-12:00	Florentina Tone (University of West Florida, USA) On the Long-time Stability of the Implicit Euler Scheme for the 2d Thermohydraulics Equations	Abstracts p. 127

Special Session 31	Mathematical Models of Cancer and Cancer Therapy Organizer(s): Yangjin Kim	Location REH-7
10:00-10:30	Urszula A Ledzewicz (Southern Illinois University, USA) Robustness and sensitivity of optimal protocols for mathematical models for multi-drug cancer treatments	Abstracts p. 141
10:30-11:00	Yang Kuang (Arizona State University, USA) A clinical data validated mathematical model of prostate cancer growth with hormone therapy	Abstracts p. 140
11:00-11:30	Yangjin Kim (KonKuk University, Korea) Signal transduction pathways in the growth and invasion of glioblastoma: A mathematical model	Abstracts p. 140
11:30-12:00	Bei Hu (University of Notre Dame, USA) PDE tumor models - mathematical analysis and numerical method	Abstracts p. 139

Special Session 35	Qualitative Theory of Nonlinear ODEs and Applications Organizer(s): Fabio Zanolin	Location MAG-C
10:00-10:30	Alberto Boscaggin (SISSA - International School for Advanced Studies, Italy) Positive solutions to second order ODEs with indefinite weight: multiplicity and complex dynamics	Abstracts p. 156
10:30-11:00	Lakshmi Burra (JNT University, India) Chaotic dynamics in some pendulum type equations	Abstracts p. 156
11:00-11:30	Francesca Dalbono (CMAF, University of Lisbon, Portugal) Radial solutions of Dirichlet problems with concave-convex nonlinearities	Abstracts p. 157
11:30-12:00	Nicholas J Fewster (UNSW, Australia) Existence of solutions to second order boundary value problems.	Abstracts p. 157

Special Session 45	Stochastic and Deterministic Dynamical Systems, and Applications Organizer(s): Tomas Caraballo, Jose Valero Cuadra, Maria Garrido-Atienza	Location GRC-B
10:00-10:30	Francisco Balibrea (University of Murcia, Spain) Lyapunov exponents for autonomous and non-autonomous systems	Abstracts p. 191
10:30-11:00	Juan V Gutierrez Santacreu (Universidad de Sevilla, Spain) On the global attractor for the Kazhikhov-Smagulov equations	Abstracts p. 192
11:00-11:30	Hyejin Kim (University of Michigan, Ann Arbor, USA) Features of Fast Living: On the Weak Selection for Longevity in Degenerate Birth-Death Processes.	Abstracts p. 193
11:30-12:00	Tomas Caraballo (Universidad de Sevilla, Spain) Asymptotic behaviour of lattice systems perturbed by additive noise	Abstracts p. 191

Special Session 49	Growth Models and Interface Dynamics Organizer(s): Alexander Nepomnyashchy, Tatiana Savin, Amy Novick-Cohen	Location PAL-CC
10:00-10:30	Lavi Karp (ORT Braude College, Israel) Non-uniqueness of quadrature domains	Abstracts p. 207
10:30-11:00	Erik Lundberg (Purdue University, USA) Quadrature domains in interface dynamics	Abstracts p. 208
11:00-11:30	Dmitry Khavinson (University of South Florida, USA) Propagation of singularities of solutions of linear PDE	Abstracts p. 207
11:30-12:00	Michiaki Onodera (Tohoku University, Japan) A moment-preserving flow for surfaces and its applications	Abstracts p. 209

Special Session 63	Infinite Dimensional Dynamics and Applications Organizer(s): James C. Robinson, Yuncheng You	Location PAL-A
10:00-10:30	David Cheban (State University of Moldova, Moldova) Markus-Sell's theorem for infinite dimensional asymptotically almost periodic systems.	Abstracts p. 246
10:30-11:00	Alexey Cheskidov (University of Illinois at Chicago, USA) Uniform global attractor of the 3D Navier-Stokes equations	Abstracts p. 246
11:00-11:30	Mimi Dai (University of California, Santa Cruz, USA) Norm inflation for incompressible magneto-hydrodynamic system in $\dot{B}_{\infty}^{-1,\infty}$	Abstracts p. 246
11:30-12:00	Francesco Di Plinio (Indiana University, USA) Time-dependent attractors for the oscillon equation	Abstracts p. 246

Special Session 64	Analysis of PDEs and Particle Systems: From Life Sciences, Economics and Materials Science Organizer(s): Toyohiko Aiki, Nobuyuki Kenmochi, Adrian Muntean	Location POI-D
10:00-10:30	Nobuyuki Kenmochi (School of Education, Bukkyo University, Japan) Revival Full Model of Human and Economic Activities in Disaster regions	Abstracts p. 251
10:30-11:00	Risei Kano (Kochi University, Japan) Solvability of the tumor invasion model	Abstracts p. 251
11:00-11:30	Michael M Melgaard (Dublin Institute of Technology, Ireland) Solutions to the Kohn-Sham model for heavy atoms	Abstracts p. 252
11:30-12:00	Hiroshi Watanabe (Salesian Polytechnic, Japan) Continuous dependence of entropy solutions to strongly degenerate parabolic equations with discontinuous coefficients	Abstracts p. 253

Special Session 70	Modeling and Dynamics of Infectious Diseases Organizer(s): Abba Gumel, Tufail Malik	Location PAL-D
10:00-10:30	Jane M Heffernan (York University, Canada) The effects of pre-existing immunity on infectious diseases	Abstracts p. 268
10:30-11:00	Miranda I Teboh-Ewungkem (Lafayette College, USA) Heterogeneity in the infectiousness of humans in the dynamics of malaria transmission and control.	Abstracts p. 271
11:00-11:30	Yang Kuang (Arizona State University, USA) Mathematical insights in evaluating effectiveness of interventions for HIV prevention	Abstracts p. 268
11:30-12:00	Tufail Malik (University of Manitoba, Canada) The Impact of an Imperfect Vaccine and Pap Cytology Screening on the Transmission Dynamics of Human Papillomavirus and Cervical Cancer.	Abstracts p. 269

Special Session 72	Special Methods for Solving Systems of Non-linear Differential Equations and their Applications to Sciences and Engineering Organizer(s): Mufid Abudiab	Location MAG-B
10:00-10:30	Guy Bernard (Midwestern State University, USA) Global existence to the Navier-Stokes equations through a diffusive upper solution.	Abstracts p. 272
10:30-11:00	Inkyung Ahn (Korea University, Korea) Ratio-dependent predator-prey model with infection in prey population	Abstracts p. 272
11:00-11:30	Nicolae Tarfulea (Purdue University Calumet, USA) Quasilinear Differential Equations in Exterior Domains and Application	Abstracts p. 274
11:30-12:00	Mufid Abudiab (Texas A&M University-Corpus Christi, USA) Modeling of the Dynamics of Client-Centered Health Care	Abstracts p. 272

Special Session 73	Mathematical Models for Upwelling Ocean Currents and Related Phenomena Organizer(s): David Rivas, Sherry Scott, Anna Ghazaryan	Location REH-1
10:00-10:30	Andrew J Willmott (National Oceanography Centre, England) An overview of models for the opening of coastal polynyas	Abstracts p. 277
10:30-11:00	Paul Choboter (California Polytechnic State University, USA) The effect of bathymetric profile on the structure of coastal ocean upwelling	Abstracts p. 275
11:00-11:30	Kenneth M Golden (University of Utah, USA) Sea ice processes in Antarctic polynyas	Abstracts p. 276
11:30-12:00	David Rivas (CICESE, Mexico) Coastal variability and Lagrangian circulation in Todos Santos Bay and off Baja California during Spring-Summer 2007	Abstracts p. 277

Special Session 79	Numerical Methods based on Homogenization and on Two-Scale Convergence Organizer(s): Emmanuel Frenod	Location POI-B
10:00-10:30	Emmanuel Frenod (Universite de Bretagne Sud et Inria, France) Synthetic introduction to homogenization based numerical methods	Abstracts p. 295
10:30-11:00	Yun Bai (EPFL, Switzerland) Reduced basis finite element heterogeneous multiscale method	Abstracts p. 294
11:00-11:30	Patrick Henning (University of Münster, Germany) Error control for heterogeneous multiscale approximations of nonlinear monotone problems	Abstracts p. 296
11:30-12:00	Zakaria Habibi (Inria Lille, France) Reduced basis method in the numerical homogenization of a nonlinearly coupled system. Application to nuclear waste storage.	Abstracts p. 295

Contributed Session 01	Equations and Qualitative Analysis Chair(s): Yaw Chang	Location REH-2
10:00-10:20	Petre Birtea (West University of Timisoara, Romania) Stability of equilibria for the $\mathfrak{so}(4)$ free rigid body	Abstracts p. 310
10:20-10:40	Luis Franco (Universidad Autonoma Metropolitana - Cuajimalpa, Mexico) Stability of fixed points for periodic Hamiltonian systems.	Abstracts p. 311
10:40-11:00	Cemil Tunc (Yuzuncu Yil University, Turkey) On the stability of solutions of a class of neutral differential equations with multiple deviating arguments	Abstracts p. 312
11:00-11:20	Pai Song (Old Dominion University, USA) An analytical approach to the stability of horizontally sheared flow	Abstracts p. 311

Contributed Session 02	ODEs and Applications Chair(s): Zhaosheng Feng	Location REH-3
10:00-10:20	Stephen Baigent (UCL, England) Geometry of invariant surfaces of Lotka-Volterra systems	Abstracts p. 313
10:20-10:40	Stephen Baigent (UCL, England) Split-Lyapunov stability of Lotka-Volterra system	Abstracts p. 313
10:40-11:00	Kishor J Shinde (Sant Gadge Baba Amravati University, India) Criteria For Determining The Limit Point Case And Limit Circle Case For Singular Sturm-Liouville Differential Operators	Abstracts p. 315
11:00-11:20	Judita Dascal (University of Luxembourg, Luxembourg) Equality problems in a class of conjugate means	Abstracts p. 314
11:20-11:40	Kailash C. Patidar (University of the Western Cape, So Africa) A fitted numerical method to solve a mathematical model describing TB dynamics	Abstracts p. 315
Contributed Session 10	Bifurcation and Chaotic Dynamics Chair(s): Wei Feng	Location REH-4
10:00-10:20	Fatma Aydogmus (Istanbul University, Turkey) Gursey Instantons Under the Quantum Fluctuation in Phase Space	Abstracts p. 332
10:20-10:40	Remy Magloire Etoua (Ecole Polytechnique de Yaounde, Cameroon) The study of the standard families of unfoldings of the nilpotent saddle of codimension 2 and 3 whose x-axis is invariant.	Abstracts p. 332
10:40-11:00	Javier Ros (University of Seville, Spain) A fold-Hopf-like bifurcation in piecewise linear continuous differential systems with symmetry	Abstracts p. 333
11:00-11:20	Virginie De Witte (Ghent University, Belgium) Numerical normal forms for limit cycles	Abstracts p. 332

Sunday, July 1**13:30PM-15:30PM****Parallel Session 2**

Special Session 2	Nonlinear Evolution PDEs and Interfaces in Applied Sciences Organizer(s): Gunduz Caginalp, Maurizio Grasselli, Alain Miranville	Location GRC-A
13:30-14:00	Olivier Goubet (Universite Picardie Jules Verne, France) Attractors for weakly damped wave equations	Abstracts p. 9
14:00-14:30	Filippo Dell'Oro (Politecnico di Milano, Italy) Long-term analysis of strongly damped nonlinear wave equations	Abstracts p. 8
14:30-15:00	Kun Zhao (University of Iowa, USA) Global Dynamics of a Diffuse Interface Model for Solid Tumor Growth	Abstracts p. 11
15:00-15:30	Steven M Wise (University of Tennessee, USA) Efficient Numerical Methods for the Cahn-Hilliard-Brinkman Equation	Abstracts p. 11

Special Session 5	Hybrid Monte Carlo Organizer(s): Elena Akhmatskaya, J. M. Sanz-Serna	Location POI-C
13:30-14:00	Frank J Pinski (University of Cincinnati, USA) An Application of a Hybrid Monte Carlo Method in Path Space	Abstracts p. 26
14:00-14:30	David L Mobley (University of New Orleans, USA) Calculations of binding free energies with molecular simulations: Progress and challenges	Abstracts p. 26
14:30-15:00	Namhee Kim (New York University, USA) Monte Carlo Sampling of RNA 3D Graphs	Abstracts p. 25
15:00-15:30	Elena Akhmatskaya (Basque Centre for Applied Mathematics (BCAM), Spain) Generalized Shadow Hybrid Monte Carlo: from theory to useful tools	Abstracts p. 24

Special Session 11	Advances in Classical and Geophysical Fluid Dynamics Organizer(s): Madalina Petcu, Roger Temam, Shouhong Wang	Location GRC-I
13:30-14:00	Nathan E Glatt-Holtz (Indiana University, USA) New Results for the Stochastic PDEs of Fluid Dynamics	Abstracts p. 49
14:00-14:30	Olivier Goubet (Universite Picardie Jules Verne, France) Viscous asymptotic models for water waves	Abstracts p. 49
14:30-15:00	Chun-Hsiung Hsia (National Taiwan University, Taiwan) Time periodic solutions of the Primitive equations of the large-scale ocean	Abstracts p. 49
15:00-15:30	Honghu Liu (Indiana University, USA) Center manifold reduction for stochastic partial differential equations	Abstracts p. 49

Special Session 13	Global Dynamics in Hamiltonian Systems Organizer(s): Rafael de la Llave, Tere.M-Seara	Location MAG-A
13:30-14:00	Rafael R Ruggiero Rodriguez (PUC-Rio, Brazil) Weak integrability of Hamiltonians in the two torus and rigidity	Abstracts p. 57
14:30-15:00	Marian Gidea (Northeastern Illinois University, USA) Some topological aspects of Aubry-Mather theory	Abstracts p. 55
15:00-15:30	Hsin-Yuan Huang (National Taiwan University, Taiwan) On the Action-Minimizing Triple Collision Orbits in the Planar Three-body Problem	Abstracts p. 56

Special Session 14	Mathematical Models in Biology and Medicine Organizer(s): Yang Kuang, Bingtuan Li, Jiaxu Li, Andrew Nevai	Location GRC-C
13:30-14:00	Urszula A Ledzewicz (Southern Illinois University, USA) Designing optimal combined chemotherapy and immunotherapy protocols for a model of tumor immune interactions under drug pharmacokinetics	Abstracts p. 62
14:00-14:30	Leonid Hanin (Georgia Institute of Technology, USA) Effects of Surgery and Chemotherapy on Growth of Metastases in Prostate Cancer: Evidence from the Natural History of the Disease Reconstructed through Mathematical Modeling	Abstracts p. 60
14:30-15:00	John D Nagy (Scottsdale Community College, USA) Evolution of uncontrolled proliferation and the angiogenic switch in cancer	Abstracts p. 63
15:00-15:30	Svetlana Bunimovich (Ariel University Center, Israel) A mathematical model of Imatinib and Interferonalpha combined treatment of chronic myeloid leukemia	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
13:30-14:00	Dariusz Idczak (University of Lodz, Poland) Fractional Sobolev spaces via Riemann - Liouville derivatives and some imbeddings	Abstracts p. 68
14:00-14:30	Marek Majewski (University of Lodz, Poland) Fractional du Bois-Reymond lemma and it's applications.	Abstracts p. 69
14:30-15:00	Laura Levaggi (Free University of Bolzano, Italy) Existence of sliding motions for nonlinear evolution equations in Banach spaces	Abstracts p. 68
15:00-15:30	Michael E Filippakis (University of Piraeus, Greece) Nodal and multiple constant sign solutions for equations with the p-Laplacian	Abstracts p. 67

Special Session 19	Waves and Convection Organizer(s): Sam Stechmann, Leslie Smith	Location REH-8
13:30-14:00	Shane Keating (Cournot Institute of Mathematical Science, USA) The vertical structure of baroclinic turbulence in the ocean	Abstracts p. 85
14:00-14:30	Dimitrios Giannakis (New York University, USA) Capturing intermittent and low-frequency variability in high-dimensional data through nonlinear Laplacian spectral analysis	Abstracts p. 84
14:30-15:00	Ziemowit Malecha (University of New Hampshire, USA) A multiscale framework for analysis and simulation of the stratified wind-driven ocean surface boundary layer	Abstracts p. 86

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
13:30-14:00	Andrew D Barwell (University of Birmingham, England) Omega-Limit Sets of Quadratic Maps on their Julia Sets	Abstracts p. 101
14:00-14:30	Judy A Kennedy (Lamar University, USA) Bizarre topology is natural in complex dynamical systems	Abstracts p. 103
14:30-15:00	Lori Alvin (University of West Florida, USA) Hofbauer Towers and Inverse Limit Spaces	Abstracts p. 100

Special Session 24	Geometric Mechanics Organizer(s): Tom Mestdag, Manuel de Leon, Frans Cantrijn, Aziz Hamdouni, Dina Razafindralandy, Jean-Claude Zambrini	Location REH-5
13:30-14:00	Ana Bela Cruzeiro (Dep.Mathematics IST and GFMUL, Portugal) Stochastic Euler-Poincaré reduction on Lie groups	Abstracts p. 107
14:00-14:30	Marc Arnaudon (University of Poitiers, France) Generalized Navier-Stokes flows	Abstracts p. 106
14:30-15:00	Christian Leonard (Université Paris Ouest, France) Schrödinger problem and Ricci curvature of graphs	Abstracts p. 108
15:00-15:30	Gazanfer Unal (Yeditepe University, Turkey) Stochastic Methods for Navier-Stokes Equations	Abstracts p. 109

Special Session 25	Dynamics in Complex Biological Systems Organizer(s): Bijoy K. Ghosh, Akif Ibraguimov, Qishao Lu, Jianzhong Su	Location REH-6
13:30-14:00	Jinzhong Lei (Tsinghua University, Peoples Rep of China) Neutrophil dynamics in response to chemotherapy and G-CSF	Abstracts p. 113
14:00-14:30	Thinh T Kieu (Texas Tech University, USA) Equilibria and linearization of the one-dimensional Forchheimer equation for incompressible two-phase flows	Abstracts p. 113
14:30-15:00	Yinghui Gao (BeiHang University, Peoples Rep of China) Bifurcations and chaos in a three dimensional discrete time Lotka-Volterra model	Abstracts p. 113
15:00-15:30	Ying Wu (Xi'an Jiaotong University, Peoples Rep of China) Effect of the channel block on the spatiotemporal dynamics in stochastic Hodgkin-Huxley neuronal networks	Abstracts p. 115

Special Session 28	Analysis and Numerics of Differential Equations and Dynamical Systems in Mathematical Fluid Mechanics Organizer(s): Changbing Hu, Ning Ju, Theodore Tachim-Medj	Location REH-9
13:30-14:00	Anna L Mazzucato (Penn State University, USA) Effective viscosity in dilute suspensions	Abstracts p. 127
14:00-14:30	Andrea Bertozzi (UCLA, USA) Dynamics of particle settling and resuspension in viscous liquids	Abstracts p. 125
14:30-15:00	Y. Charles Li (University of Missouri, USA) On the Arrow of Time	Abstracts p. 126
15:00-15:30	James Kelliher (UC Riverside, USA) Bounded vorticity, bounded velocity (Serfati) solutions to 2D Euler equations	Abstracts p. 126

Special Session 31	Mathematical Models of Cancer and Cancer Therapy Organizer(s): Yangjin Kim	Location REH-7
13:30-14:00	Thomas Hillen (University of Alberta, Canada) Are More Complicated Tumor Control Probability Models Better?	Abstracts p. 139
14:00-14:30	Marisa Eisenberg (Ohio State University, USA) Mechanistic modeling of myoferlin effects on cancer cell invasion	Abstracts p. 138
14:30-15:00	Katarzyna A Rejniak (Moffitt Cancer Research Institute, USA) The interplay between microenvironmental heterogeneity and anticancer drug dynamics: a computational study	Abstracts p. 141
15:00-15:30	Heiko Enderling (Tufts University School of Medicine, USA) Non-Stem Cancer Cell Kinetics Modulate Solid Tumor Progression	Abstracts p. 138

Special Session 35	Qualitative Theory of Nonlinear ODEs and Applications Organizer(s): Fabio Zanolin	Location MAG-C
13:30-14:00	Shaobo Gan (Peking University, Peoples Rep of China) Star flows and singular hyperbolicity	Abstracts p. 157
14:00-14:30	Maurizio Garrione (SISSA - International School for Advanced Studies, Italy) Nonlinear first order systems in the plane with positively homogeneous principal term	Abstracts p. 157
14:30-15:00	Pierpaolo Omari (University of Trieste, Italy) Periodic solutions of the prescribed curvature equation	Abstracts p. 158
15:00-15:30	Saroj Panigrahi (University of Hyderabad, India) Liapunov-type integral inequalities for higher order dynamic equations on time scales	Abstracts p. 158

Special Session 45	Stochastic and Deterministic Dynamical Systems, and Applications Organizer(s): Tomas Caraballo, Jose Valero Cuadra, Maria Garrido-Atienza	Location GRC-B
13:30-14:00	Carey Caginalp (Brown University, USA) Analytical and Numerical Results on Escape of Brownian Particles	Abstracts p. 191
14:00-14:30	Wilfried Grecksch (Martin-Luther-University, Germany) A Fractional Stochastic Schrödinger Equation	Abstracts p. 192
14:30-15:00	Andreas Neuenkirch (University of Mannheim, Germany) SDEs driven by fractional Brownian motion: Continuous dependence on the Hurst parameter	Abstracts p. 193
15:00-15:30	Maria Garrido-Atienza (University of Seville, Spain) Fractional Stochastic Porous Media Equations	Abstracts p. 192

Special Session 49	Growth Models and Interface Dynamics Organizer(s): Alexander Nepomnyashchy, Tatiana Savin, Amy Novick-Cohen	Location PAL-CC
13:30-14:00	Shibin Dai (Michigan State University, USA) Motion of interfaces governed by the Cahn-Hilliard equation with highly disparate diffusion mobility	Abstracts p. 206
14:00-14:30	Darren G Crowdy (Imperial College London, England) Hollow vortices, capillary waves, and double quadrature domains	Abstracts p. 206
14:30-15:00	Baruch Meerson (Hebrew University of Jerusalem, Israel) Velocity fluctuations of noisy reaction fronts	Abstracts p. 208
15:00-15:30	Giovani L Vasconcelos (Federal University of Pernambuco, Brazil) Fingering in a channel and tripolar Loewner evolutions	Abstracts p. 209

Special Session 63	Infinite Dimensional Dynamics and Applications Organizer(s): James C. Robinson, Yuncheng You	Location PAL-A
13:30-14:00	Xinchu Fu (Shanghai University, Peoples Rep of China) Computer assisted rigorous proof of chaos in some infinite dimensional dynamical systems	Abstracts p. 247
14:00-14:30	Eric J Olson (University of Nevada, Reno, USA) Discrete Data Assimilation for the 2D Navier-Stokes Equations	Abstracts p. 247
14:30-15:00	Rana Parshad (King Abdullah University of Science and Technology, Saudi Arabia) global existence and finite time blow up in a class of stochastic non linear wave equations.	Abstracts p. 247
15:00-15:30	Volker Reitmann (St. Petersburg State University, Russia) Embedding of compact invariant sets of dynamical systems on infinite-dimensional manifolds into finite-dimensional spaces	Abstracts p. 247

Special Session 64	Analysis of PDEs and Particle Systems: From Life Sciences, Economics and Materials Science Organizer(s): Toyohiko Aiki, Nobuyuki Kenmochi, Adrian Muntean	Location POI-D
13:30-14:00	Mariya Ptashnyk (University of Dundee, Scotland, UK, Scotland) Elastic properties of a exoskeleton and homogenization of plywood structures	Abstracts p. 252
14:00-14:30	Kota Kumazaki (Tomakomai National College of Technology, Japan) On a mathematical model of moisture transport with a time-dependent porosity in concrete carbonation process	Abstracts p. 251
14:30-15:00	Daniel Onofrei (University of Houston, USA) Qualitative analysis of homogenization.	Abstracts p. 252
15:00-15:30	Noriaki Yamazaki (Kanagawa University, Japan) Optimal control problem of positive solutions to second order impulsive differential equations	Abstracts p. 253

Special Session 67	Applied Analysis and Dynamics in Engineering and Sciences Organizer(s): Thomas C Hagen, Janos Turi	Location POI-A
13:30-14:00	George Avalos (University of Nebraska-Lincoln, USA) Minimal Norm Control Asymptotics and Numerical Approximations for the Null Controllability of Non-Standard Parabolic-Like PDE Dynamics	Abstracts p. 254
14:00-14:30	Constance Schober (University of Central Florida, USA) Stability of Homoclinic Orbits of the Nonlinear Schrödinger Equation	Abstracts p. 257
14:30-15:00	Annalisa Calini (National Science Foundation and College of Charleston, USA) On the stability of closed vortex filaments	Abstracts p. 254
15:00-15:30	Peter Hinow (University of Wisconsin - Milwaukee, USA) Pathogen evolution in switching environments: a hybrid dynamical system approach	Abstracts p. 255

Special Session 70	Modeling and Dynamics of Infectious Diseases Organizer(s): Abba Gumel, Tufail Malik	Location PAL-D
13:30-14:00	Maia Martcheva (University of Florida, USA) Avian Influenza: Modeling and implications for control	Abstracts p. 269
14:00-14:30	Anuj Mubayi (Northeastern Illinois University, USA) Evaluation of Diagnostic Test for Lymphatic Filariasis in Papua New Guinea using a Mathematical Model	Abstracts p. 269
14:30-15:00	Hao Liu (Arizona State University, USA) A data driven spatiotemporal rabies model for skunk and bat interaction in Northeast Texas	Abstracts p. 268
15:00-15:30	Zhisheng Shuai (University of Victoria, Canada) Global Dynamics of Cholera Models with Differential Infectivity	Abstracts p. 271

Special Session 72	Special Methods for Solving Systems of Non-linear Differential Equations and their Applications to Sciences and Engineering Organizer(s): Mufid Abudiah	Location MAG-B
13:30-14:00	James S Sochacki (James Madison University, USA) Polynomial ODEs for Conservation Laws	Abstracts p. 274
14:00-14:30	Devanayagam Palaniappan (Texas A&M University-Corpus Christi, USA) Analysis of a System of Reaction-Diffusion PDE Model	Abstracts p. 274
14:30-15:00	Christopher I Trombley (Texas A&M Corpus Christi, USA) Numerical Solutions for Weak Scattering in a Turbulent Fluid	Abstracts p. 274
15:00-15:30	Christina Martinez (Texas A&M University-Corpus Christi, USA) Approximate Solutions for 1-D Premixed Flame Propagation Model	Abstracts p. 273

Special Session 73	Mathematical Models for Upwelling Ocean Currents and Related Phenomena Organizer(s): David Rivas, Sherry Scott, Anna Ghazaryan	Location REH-1
13:30-14:00	Yan Wang (Rosenstiel School of Marine and Atmospheric Science/ University of Miami, USA) Identification and tracking of coherent Agulhas Current rings	Abstracts p. 277
14:00-14:30	Mohammad Farazmand (McGill University, Canada) Locating coherent structures in turbulent flows using the geodesic theory of transport barriers	Abstracts p. 275
14:30-15:00	Laura A Fiorentino (University of Miami, RSMAS, USA) Using Lagrangian Coherent Structures to understand coastal water quality	Abstracts p. 275
15:00-15:30	Maria J Olascoaga (RSMAS/UM, USA) Lagrangian transport analysis of the surface ocean circulation in the Gulf of Mexico	Abstracts p. 276

Special Session 79	Numerical Methods based on Homogenization and on Two-Scale Convergence Organizer(s): Emmanuel Frenod	Location POI-B
13:30-14:00	Ibrahima Faye (Universite Alioune Diop de Bambey, Senegal) Some numerical Simulations on sand transport	Abstracts p. 295
14:00-14:30	Antoine Rousseau (Inria, France) Numerical simulations of confinement for paralic ecosystems	Abstracts p. 297
14:30-15:00	Heiko H Berninger (Université de Genève, Switzerland) Neutrino Transport in Core Collapse Supernovae by the Isotropic Diffusion Source Approximation	Abstracts p. 294
15:00-15:30	Manel Tayachi (INRIA & LJK, France) Design of a Schwarz coupling method for a di- mensionally heterogeneous problem	Abstracts p. 297

Contributed Session 01	Equations and Qualitative Analysis Chair(s): Yaw Chang	Location REH-2
13:30-13:50	Narknyul Choi (Kumoh National Institute of Technology, Korea) Triple collision dynamics in chaotic photoionization of planar helium	Abstracts p. 310
13:50-14:10	Andrea Cristina Prokopczyk Arita (UNESP - Universidade Estadual Paulista, Brazil) Almost periodicity in hereditary systems of second order	Abstracts p. 311
14:10-14:30	Adam M Fox (University of Colorado, Boulder, USA) Decay and Destruction of Invariant Tori in Volume Preserving Maps	Abstracts p. 310
14:30-14:50	Jaydev Dabas (Indian Institute of Technology Roorkee, India) Existence and uniqueness of solution to an integral boundary value problem for impulsive fractional functional differential equations with infinite delay	Abstracts p. 310
14:50-15:10	Karthikeya Sameer Kumar Mamillapalle (Daytona State College, USA) Existence and uniqueness of bounded solution for nonlinear functional differential equation with anticipation and retardation	Abstracts p. 311

Contributed Session 02	ODEs and Applications Chair(s): Zhaosheng Feng	Location REH-3
13:30-13:50	Abdallah A Badr (Alexandria University, Egypt) Monte - Carlo Galerkin Approximation of Fractional Stochastic Integro-Differential Equation	Abstracts p. 313
13:50-14:10	Dulat D Dzhumabaev (Institute of Mathematics MES of Kazazkstan, Kazakhstan) The parametrization method of research and solving of boundary value problems for integro-differential equations	Abstracts p. 314
14:10-14:30	Dmitriy Chebanov (City University of New York, USA) New class of exact solutions for the equations of motion of a chain of n rigid bodies	Abstracts p. 313
14:30-14:50	Dan Comanescu (West University of Timisoara, Romania) Geometrical dissipation for dynamical systems	Abstracts p. 314
14:50-15:10	Susmita Sadhu (Southwest Minnesota State University, USA) Uniform asymptotic expansions of solutions of a class of singularly perturbed boundary value problems	Abstracts p. 315

Contributed Session 10	Bifurcation and Chaotic Dynamics Chair(s): Wei Feng	Location REH-4
13:30-13:50	John Hogan (University of Bristol, England) Bifurcations of piecewise smooth flows: perspectives, methodologies and open problems	Abstracts p. 332
13:50-14:10	Antonio Palacios (San Diego State University, USA) Bifurcation and Asymptotic Analysis of a Coupled Gyroscope System	Abstracts p. 333
14:10-14:30	Elisabet Vela Felardo (Universidad de Sevilla, Spain) Focus-Center-Limit Cycle Bifurcation in Discontinuous Planar Piecewise Linear Systems Without Sliding	Abstracts p. 333
14:30-14:50	Hong-Kun Zhang (University of Massachusetts Amherst, USA) Diffusions in chaotic billiards	Abstracts p. 333
14:50-15:10	Jonq Juang (National Chiao Tung University, Taiwan) Multi-state and Multi-stage Synchronization of Hindmarsh-Rose Neurons with Excitatory Chemical and Electrical Synapses	Abstracts p. 332

Sunday, July 1

16:00PM-18:30PM

Parallel Session 3

Special Session 2	Nonlinear Evolution PDEs and Interfaces in Applied Sciences Organizer(s): Gunduz Caginalp, Maurizio Grasselli, Alain Miranville	Location GRC-A
16:00-16:30	Franck Boyer (Aix-Marseille Universite, France) Consistent hierarchy of Cahn-Hilliard systems	Abstracts p. 7
16:30-17:00	Elisabetta Rocca (University of Milan, Italy) Degenerating PDE system for phase transitions and damage.	Abstracts p. 10
17:00-17:30	Laurence Cherfils (University of La Rochelle, France) Long-time behavior of the Caginalp system with singular potentials and dynamic boundary conditions	Abstracts p. 8
17:30-18:00	Peter Galenko (German Aerospace Center, Germany) Stability analysis and travelling fronts in the phase field crystal model	Abstracts p. 9
18:00-18:30	Gunduz Caginalp (University of Pittsburgh, USA) Phase Field Models and the Connection Between Microscopic and Macroscopic Anisotropy	Abstracts p. 7

Special Session 5	Hybrid Monte Carlo Organizer(s): Elena Akhmatskaya, J. M. Sanz-Serna	Location POI-C
16:00-16:30	Antonio M Baptista (Universidade Nova de Lisboa, Portugal) Constant-pH molecular dynamics using stochastic titration: theory and applications	Abstracts p. 24
16:30-17:00	Jesus A Izaguirre (University of Notre Dame, USA) Hybrid Monte Carlo for Long Timestep Langevin Dynamics	Abstracts p. 25
17:00-17:30	Tony Lelièvre (Ecole des Ponts ParisTech, France) Langevin dynamics with constraints	Abstracts p. 25
17:30-18:00	Charles Matthews (University of Edinburgh, Scotland) A Superconvergent Method for Configurational Sampling using Langevin Dynamics	Abstracts p. 25

Special Session 11	Advances in Classical and Geophysical Fluid Dynamics Organizer(s): Madalina Petcu, Roger Temam, Shouhong Wang	Location GRC-I
16:00-16:30	Alain Miranville (Universite de Poitiers, France) Some equations with logarithmic nonlinear terms	Abstracts p. 50
16:30-17:00	James C Robinson (University of Warwick, England) Lower bounds on blow-up solutions of the 3D Navier-Stokes equations	Abstracts p. 50
17:00-17:30	Madalina Petcu (University of Poitiers, France) The two layers Shallow Water equations	Abstracts p. 50
17:30-18:00	Ming-Cheng Shiue (National Chiao Tung University, Taiwan) A numerical study of the boundary value problem for the shallow water equations	Abstracts p. 50

Special Session 13	Global Dynamics in Hamiltonian Systems Organizer(s): Rafael de la Llave, Tere.M-Seara	Location MAG-A
16:00-16:30	Francisco Beron-Vera (RSMAS, University of Miami, USA) Zonal jets as transport barriers in the Earth's stratosphere	Abstracts p. 55
16:30-17:00	Alejandro Luque (Universitat de Barcelona, Spain) Extrapolation of frequencies of quasi-periodic orbits	Abstracts p. 56
17:00-17:30	Eli Shlizerman (University of Washington, USA) Dimension reduction for Hamiltonian dynamics	Abstracts p. 58
17:30-18:00	Renato C Calleja (McGill University, Canada) Theory and computation of Quasi-Periodic solutions	Abstracts p. 55

Special Session 14	Mathematical Models in Biology and Medicine Organizer(s): Yang Kuang, Bingtuan Li, Jiaxu Li, Andrew Nevai	Location GRC-C
16:00-16:30	Sze-Bi Hsu (National Tsing-Hua University, Taiwan) A Refuge-Mediated Apparent Competition Model	Abstracts p. 61
16:30-17:00	Jianhua Wu (Shaanxi Normal University, Peoples Rep of China) Coexistence of the Unstirred Chemostat Model	Abstracts p. 65
17:00-17:30	Miranda I Teboh-Ewungkem (Lafayette College, USA) Optimization of <i>P. falciparum</i> gametocyte sex ratios via competitive and non-competitive strategies: the evolutionary implications	Abstracts p. 64
17:30-18:00	Bingtuan Li (University of Louisville, USA) Traveling Wave Solutions in Delayed Cooperative Systems	Abstracts p. 63

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
16:00-16:30	Jorge A Esquivel-Avila (Universidad Autonoma Metropolitana, Mexico) Dynamic analysis of a nonlinear Timoshenko equation	Abstracts p. 67
16:30-17:00	Akisato Kubo (Fujita Health University, Japan) Existence and Non Existence of Solutions to Initial Boundary Value Problems for Nonlinear Evolution Equations with Strong Dissipation	Abstracts p. 68
17:00-17:30	Masahito Ohta (Tokyo University of Science, Japan) Splitting methods for semilinear evolution equations with applications to nonlinear Schrödinger equations	Abstracts p. 70
17:30-18:00	Kei Matsuura (Waseda University, Japan) Existence of time-periodic solutions for the micropolar fluid equations with the spin-vortex interaction boundary condition	Abstracts p. 69

Special Session 19	Waves and Convection Organizer(s): Sam Stechmann, Leslie Smith	Location REH-8
16:00-16:30	Keith Juiien (University of Colorado at Boulder, USA) Low rossby number heat transport in rotating Rayleigh-Benard convection	Abstracts p. 85
16:30-17:00	Ian Grooms (New York University, USA) A Model of Convective Taylor Columns in Rotating Rayleigh-Benard Convection	Abstracts p. 85
17:00-17:30	David J Muraki (Simon Fraser University, Canada) Rossby Waves in Rotating Shallow Water on the Sphere	Abstracts p. 86
17:30-18:00	Jean-Luc Thiffeault (University of Wisconsin, Madison, USA) Bioconvection revisited	Abstracts p. 87

Special Session 20	Stochastic-Statistical Modeling of Climate Organizer(s): Dimitris Giannakis, John Harlim, Andrew Majda	Location REH-4
16:00-16:30	John Harlim (North Carolina State University, USA) Optimal Filtering of Complex Turbulent Systems with Memory Depth through Consistency Constraints	Abstracts p. 89
16:30-17:00	Ilya Timofeyev (University of Houston, USA) Sub-sampling in Parametric Estimation of Effective Stochastic Models	Abstracts p. 91
17:00-17:30	Jonathan Weare (University of Chicago, USA) Sampling in and out of equilibrium when the tails matter	Abstracts p. 91
17:30-18:00	Radu Herbei (The Ohio State University, USA) A Bayesian approach to parameter estimation and model error quantification of stochastic models for turbulent signals	Abstracts p. 89

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
16:00-16:30	Tomasz J Nowicki (IBM, USA) Tiles in Convex Dynamics. Error Diffusion on Simplices: Invariant Regions, Tessalations and Acuteness	Abstracts p. 104
16:30-17:00	Francois Gautero (Université de Nice - Sophia Antipolis, France) Dynamics on tiling spaces, invariant measures and generalized Thurston semi-norm	Abstracts p. 102
17:00-17:30	Grzegorz M Swirszcz (IBM, USA) Disjunctive cuts, lattice-free sets and mixed-integer programming	Abstracts p. 105
17:30-18:00	Maria F Correia (University of Evora, Portugal) Analysis of an infinite dynamical system using substitution systems	Abstracts p. 102
18:00-18:30	Sandra Vinagre (University of Evora, Portugal) Nonlinearly perturbed heat equation: a symbolic approach	Abstracts p. 105

Special Session 24	Geometric Mechanics Organizer(s): Tom Mestdag, Manuel de Leon, Frans Cantrijn, Aziz Hamdouni, Dina Razafindralandy, Jean-Claude Zambrini	Location REH-5
16:00-16:30	Oscar Fernandez (Wellesley College, USA) Variational Integrators for Hamiltonizable Nonholonomic Systems	Abstracts p. 107
16:30-17:00	Paula P Balseiro (Universidade Federal Fluminense, Brazil) On the geometry of nonholonomic systems	Abstracts p. 106
17:00-17:30	Leonardo J Colombo (ICMAT, Spain) On the geometry of mechanical control systems on Lie groups	Abstracts p. 107
17:30-18:00	Marin Kobilarov (California Institute of Technology, USA) Geometric control of electromagnetic docking	Abstracts p. 108

Special Session 25	Dynamics in Complex Biological Systems Organizer(s): Bijoy K. Ghosh, Akif Ibragimov, Qishao Lu, Jianzhong Su	Location REH-6
16:00-16:30	Qishao Q Lu (Beihang Univ., Peoples Rep of China) Bursting dynamics of pancreatic beta-cells with electrical and chemical couplings	Abstracts p. 113
16:30-17:00	Jian Xu (Tongji University, Peoples Rep of China) Oscillatory Dynamics Induced by Time Delay in an Internet Congestion Control Model with a Ring Topology	Abstracts p. 116
17:00-17:30	Zhuoqin Yang (Beihang University, Peoples Rep of China) Different Bursting patterns in two-parameter bifurcation plane of fast subsystem	Abstracts p. 116

Special Session 28	Analysis and Numerics of Differential Equations and Dynamical Systems in Mathematical Fluid Mechanics Organizer(s): Changbing Hu, Ning Ju, Theodore Tachim-Medj	Location REH-9
16:00-16:30	Daniel X Guo (University of North Carolina Wilmington, USA) Alternating Direction Second Order Method for the Navier-Stokes Equations	Abstracts p. 126
16:30-17:00	Xiaosheng Li (Florida International University, USA) Determination of viscosity in an incompressible fluid	Abstracts p. 126
17:00-17:30	Zhongming Wang (Florida International University, USA) A level set approach for dilute non-collisional fluid-particle flows	Abstracts p. 127
17:30-18:00	Wei Wang (Florida International University, USA) A high order WENO Scheme for detonation waves	Abstracts p. 127

Special Session 31	Mathematical Models of Cancer and Cancer Therapy Organizer(s): Yangjin Kim	Location REH-7
16:00-16:30	Yi Jiang (Georgia State University, USA) Multiscale study of angiogenesis from molecule to tissue	Abstracts p. 140
16:30-17:00	Arnaud Chauviere (University of New Mexico, USA) Cell migration features in glioma growth and invasion: Mathematical modeling and analysis	Abstracts p. 137
17:00-17:30	Peter Hinow (University of Wisconsin - Milwaukee, USA) Modeling the Effects of Drug Binding on the Dynamic Instability of Microtubules	Abstracts p. 139
17:30-18:00	Harsh Jain (Mathematical Biosciences Institute, USA) A Model of Prostate Cancer Progression under Androgen Ablation Therapy	Abstracts p. 139

Special Session 35	Qualitative Theory of Nonlinear ODEs and Applications Organizer(s): Fabio Zanolin	Location MAG-C
16:00-16:30	Alfonso Ruiz-Herrera (University of Granada, Spain) Periodic solutions and chaotic dynamics in 3D equations with applications to Lotka Volterra systems	Abstracts p. 158
16:30-17:00	Nicola Soave (University of Milano-Bicocca, Italy) Symbolic dynamics for the N -centre problem at negative energies	Abstracts p. 159
17:00-17:30	Greg S Spradlin (Embry-Riddle Aeronautical University, USA) An Even Solution to a fourth-order ODE	Abstracts p. 159
17:30-18:00	Gianmaria Verzini (Politecnico di Milano, Italy) Entire Parabolic Trajectories as Minimal Phase Transitions	Abstracts p. 159

Special Session 45	Stochastic and Deterministic Dynamical Systems, and Applications Organizer(s): Tomas Caraballo, Jose Valero Cuadra, Maria Garrido-Atienza	Location GRC-B
16:00-16:30	Carmen Calvo-Jurado (Universidad de Extremadura, Spain) Asymptotic behavior of linear elliptic problems with Dirichlet conditions on random varying domains	Abstracts p. 191
16:30-17:00	David J Simpson (The University of British Columbia, Canada) The Effects of Noise on Sliding Motion	Abstracts p. 194
17:00-17:30	Bixiang Wang (New Mexico Tech, USA) Sufficient and Necessary Criteria for Existence of Pullback Attractors for Non-compact Random Dynamical Systems	Abstracts p. 194

Special Session 49	Growth Models and Interface Dynamics Organizer(s): Alexander Nepomnyashchy, Tatiana Savin, Amy Novick-Cohen	Location PAL-CC
16:00-16:30	Martin E Glicksman (Florida Institute of Technology, USA) Capillary-mediated pattern branching	Abstracts p. 207
16:30-17:00	Matthew Elsey (Courant Institute - New York University, USA) Diffusion-Generated Motion Algorithms for Multiphase Curvature Motion	Abstracts p. 207
17:00-17:30	Amy Novick-Cohen (Technion, Israel) Coarsening and the deep quench obstacle problem	Abstracts p. 208
17:30-18:00	Alexander Nepomnyashchy (Technion - Israel Institute of Technology, Israel) Stationary solutions of the convective Cahn-Hilliard equation	Abstracts p. 208
18:00-18:30	Petr Plechac (University of Delaware, USA) Born-Oppenheimer approximation and accuracy of molecular dynamics	Abstracts p. 209

Special Session 63	Infinite Dimensional Dynamics and Applications Organizer(s): James C. Robinson, Yuncheng You	Location PAL-A
16:00-16:30	Witold Sadowski (University of Warsaw, Poland) 3D Navier-Stokes equations: numerical verification of regularity for bounded sets of initial data	Abstracts p. 248
16:30-17:00	Marco Sammartino (University of Palermo, Italy) Separation and bifurcation phenomena for flows interacting with a boundary	Abstracts p. 248
17:00-17:30	Nick Sharples (University of Warwick, England) On representatives of solutions and those properties independent of the chosen representative.	Abstracts p. 248
17:30-18:00	Mikolaj Sierzeza (University of Warwick, England) Global existence for the critical semilinear heat equation	Abstracts p. 248

Special Session 64	Analysis of PDEs and Particle Systems: From Life Sciences, Economics and Materials Science Organizer(s): Toyohiko Aiki, Nobuyuki Kenmochi, Adrian Muntean	Location POI-D
16:00-16:30	Maria D'orsogna (California State University at Northridge, USA) Stochastic nucleation and growth of particle clusters	Abstracts p. 250
16:30-17:00	Razvan C Fetecau (Simon Fraser University, Canada) Swarm dynamics and equilibria for a nonlocal aggregation model	Abstracts p. 251
17:00-17:30	Joep Evers (Eindhoven University of Technology, Netherlands) Global effect of local anisotropic interactions in crowd dynamics	Abstracts p. 250
17:30-18:00	Yusuke Murase (Meijo University, Japan) Mathematical modeling for brewing process of Sake and its analysis	Abstracts p. 252

Special Session 67	Applied Analysis and Dynamics in Engineering and Sciences Organizer(s): Thomas C Hagen, Janos Turi	Location POI-A
16:00-16:30	Marian Bocea (Loyola University Chicago, USA) Models for growth of heterogeneous sandpiles via Mosco convergence	Abstracts p. 254
16:30-17:00	Brenton LeMesurier (College of Charleston, USA) Conservative time discretization of large, stiff Hamiltonian systems, applied to models of molecular chains and nonlinear optics	Abstracts p. 256
17:00-17:30	Byungik Kahng (University of North Texas at Dallas, USA) Non-linear Discrete-time Singularly-disturbed Control Dynamical Systems and their Steady State Sets	Abstracts p. 256
17:30-18:00	Jigarkumar S Patel (The University of Texas at Dallas, USA) Computational Study of a Dynamic Contact Problem	Abstracts p. 257

Special Session 72	Special Methods for Solving Systems of Non-linear Differential Equations and their Applications to Sciences and Engineering Organizer(s): Mufid Abudiab	Location MAG-B
16:00-16:30	Diane L Denny (Texas A&M University-Corpus Christi, USA) A unique positive solution to a system of nonlinear elliptic equations	Abstracts p. 273
16:30-17:00	Seunghyeon Baek (Korea University, Korea) A spatio-temporal model for tumor-immune interaction and siRNA treatment	Abstracts p. 272
17:00-17:30	Habibolla Latifizadeh (Shiraz University of Technology, Iran) The qualitative study on a new special analytical method for solving wide classes of Non-linear Differential Equations-Reality, potential	Abstracts p. 273

Special Session 73	Mathematical Models for Upwelling Ocean Currents and Related Phenomena Organizer(s): David Rivas, Sherry Scott, Anna Ghazaryan	Location REH-1
16:00-16:30	Andrew J Willmott (National Oceanography Centre, England) Geostrophic adjustment in a polar basin	Abstracts p. 277
16:30-17:00	Grace M Maze (University of Miami, USA) The connection between the Loop Current excursions and the Florida Red Tides	Abstracts p. 276
17:00-17:30	Yonggang Liu (University of South Florida, USA) Seasonality of the circulation on the West Florida Shelf	Abstracts p. 276
17:30-18:00	Sherry E Scott (Marquette University, USA) Individual trajectory complexity methods & an upwelling flow example	Abstracts p. 277

Special Session 79	Numerical Methods based on Homogenization and on Two-Scale Convergence Organizer(s): Emmanuel Frenod	Location POI-B
16:00-16:30	Lei Zhang (Shanghai Jiaotong University, Peoples Rep of China) Numerical homogenization with non-separable scales	Abstracts p. 297
16:30-17:00	Sever Hirstoaga (INRIA Nancy Grand-Est & IRMA Strasbourg, France) Two-Scale Asymptotic-Preserving Particle-in-Cell method for a Vlasov-Poisson system	Abstracts p. 296
17:00-17:30	Seck Diaraf (LMDAN, UCAD, Senegal) Location Problems by shape and topological optimization	Abstracts p.

Contributed Session 02	ODEs and Applications Chair(s): Zhaosheng Feng	Location REH-3
16:00-16:20	Duane Chin-Quee (Florida Institute of Technology, USA) Existence and Uniqueness of Linear Functional Differential Equations with Anticipation	Abstracts p. 313
16:20-16:40	Zhazira K Kadirbayeva (Institute of Mathematics MES of Kazakhstan, Kazakhstan) Criterion of well-posed solvability of linear semi-periodical boundary value problem for system of loaded hyperbolic equations	Abstracts p. 314
16:40-17:00	Enrique Ponce (University of Sevilla, Spain) Limit cycle existence and uniqueness in elementary piecewise linear continuous systems	Abstracts p. 315
17:00-17:20	Scott Kelly (University of North Carolina at Charlotte, USA) Constrained Mechanics and Idealized Models for Aquatic Locomotion	Abstracts p. 314
17:20-17:40	Andrew G Smith (University of Queensland, Australia) Diffusion approximations for Metapopulation Models	Abstracts p. 316

Contributed Session 07	Scientific Computation and Numerical Algorithms Chair(s): Paula Kemp	Location REH-2
16:00-16:20	Elif Demirci (Ankara University, Turkey) A method to solve fractional differential equations	Abstracts p. 323
16:20-16:40	Katharine F Gurski (Howard University, USA) Constructing extensions of nonstandard finite difference schemes	Abstracts p. 323
16:40-17:00	Brian E Moore (University of Central Florida, USA) Conformal Conservation Laws and Geometric Integration for Damped Hamiltonian PDEs	Abstracts p. 324
17:00-17:20	Purnima K Pandit (The M. S. University of Baroda, India) Fully Fuzzy Systems of Linear Equations	Abstracts p. 325
17:20-17:40	Juan-Carlos Diaz-Martin (University of Extremadura, Spain) Complexity Analysis of a Winding Number Algorithm by Iterated Function Methods	Abstracts p. 323
17:40-18:00	Runchang Lin (Texas A&M International University, USA) A Discontinuous Galerkin Least-Squares Finite Element Method for Solving Fisher's Equation	Abstracts p. 324
18:00-18:20	Paula A Kemp (MSU, USA) On Functions having the Fixed Point Property	Abstracts p. 324

Monday, July 2**08:00AM-10:00AM****Parallel Session 4**

Special Session 1	Qualitative Studies of PDEs: Entire Solutions and Asymptotic Behavior Organizer(s): Peter Polacik, Eiji Yanagida	Location REH-2
8:00-8:30	Peter Polacik (University of Minnesota, USA) Convergence for asymptotically autonomous parabolic equations on R^N	Abstracts p. 5
8:30-9:00	Futoshi Takahashi (Osaka City University, Japan) On the number of maximum points of least energy solutions to a two-dimensional Hénon equation with large exponent	Abstracts p. 5
9:00-9:30	Juncheng Wei (Chinese University of Hong Kong, Hong Kong) On Toda System: Classification and Applications	Abstracts p. 5
9:30-10:00	Goro Akagi (Kobe University, Japan) Stability analysis of asymptotic profiles for fast diffusion equations	Abstracts p. 4

Special Session 2	Nonlinear Evolution PDEs and Interfaces in Applied Sciences Organizer(s): Gunduz Caginalp, Maurizio Grasselli, Alain Miranville	Location GRC-A
8:00-8:30	Paolo Podio-Guidugli (University of Rome TorVergata, Italy) A Thermodynamic Format for Phase-Field Modeling	Abstracts p. 10
8:30-9:00	Julien Dambrine (Universite de Poitiers, France) Congestion in cell migration models	Abstracts p. 8
9:00-9:30	Emre Esenturk (Pohang Mathematics Institute, Korea) Vlasov-Poisson System with Diffuse Boundary Conditions	Abstracts p. 8
9:30-10:00	Amy Novick-Cohen (Technion, Israel) The thin film equation with backwards second order diffusion	Abstracts p. 10

Special Session 3	Mathematics of Social Systems Organizer(s): Andrea Bertozzi	Location GRC-B
8:30-9:00	Jean-Pierre Nadal (CNRS, France) Urban social dynamics: “Don’t buy the house, buy the neighborhood”	Abstracts p. 14
9:00-9:30	Mason A Porter (University of Oxford, England) Multi-Stage Complex Contagions	Abstracts p. 15
9:30-10:00	Theodore Kolokolnikov (Dalhousie, Canada) Swarming on random graphs	Abstracts p. 13

Special Session 11	Advances in Classical and Geophysical Fluid Dynamics Organizer(s): Madalina Petcu, Roger Temam, Shouhong Wang	Location GRC-I
8:00-8:30	Xiaoming Wang (Florida State University, USA) Fluctuation-dissipation theory with time periodic forcing	Abstracts p. 51
8:30-9:00	Eric R Simonnet (CNRS, France) Near-equilibrium behavior of 2-D stochastic Navier-Stokes equations	Abstracts p. 50
9:00-9:30	Roger Temam (Indiana University, USA) The Zakharov-Kuznetsov equation of plasma physics: The case of a bounded domain	Abstracts p. 51
9:30-10:00	Theodore Tachim Medjo (Florida International University, USA) Pullback attractors for the 2D Primitive equations of the ocean.	Abstracts p. 50

Special Session 13	Global Dynamics in Hamiltonian Systems Organizer(s): Rafael de la Llave, Tere.M-Seara	Location MAG-A
8:00-8:30	Laurent Niederman (Université Paris Sud & Observatoire de Paris, France) Generic super-exponential stability of invariant tori in Hamiltonian systems	Abstracts p. 57
8:30-9:00	Alex Haro (Universitat de Barcelona, Spain) Singularity theory for non-twist KAM tori: A methodology	Abstracts p. 56
9:00-9:30	Jean Pierre J Marco (Université Paris 6, France) Hyperbolic cylinders and KAM tori in nearly integrable systems on A^3	Abstracts p. 57
9:30-10:00	Florentino Borondo (Universidad Autonoma de Madrid, Spain) Poincare-Birkhoff theorem in quantum mechanics	Abstracts p. 55

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	Wan-Tong Li (Lanzhou University, Peoples Rep of China) Global Bifurcation Branch of a Spatially Heterogeneous Cooperative System with Cross-Diffusion	Abstracts p. 62
8:30-9:00	Zhaosheng Feng (University of Texas-Pan American, USA) A Degenerate Parabolic System	Abstracts p. 60
9:00-9:30	Nemanja Kosovalic (York University, Canada) Age Structured Population Model with State Dependent Time Delay	Abstracts p. 62
9:30-10:00	Wanbiao Ma (University of Science and Technology Beijing, Peoples Rep of China) Theoretical and Numerical Analysis of a Class of Dynamics Models Describing Eutrophication of Lake Guishui	Abstracts p. 63

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	Vasile Staicu (University of Aveiro, Portugal, Portugal) Multiple positive solutions for periodic problems with concave terms	Abstracts p. 71
8:30-9:00	Jerzy J Motyl (University of Zielona Gora, Poland) Stochastic delay inclusions with noncontinuous multifunctions	Abstracts p. 70
9:00-9:30	Mariusz Michta (University of Zielona Gora and Opole University, Poland, Poland) Fuzzy stochastic differential equations-different approaches and recent results.	Abstracts p. 69
9:30-10:00	Lourdes Tello (Universidad Politecnica de Madrid, Spain) On a nonstandard nonlinear parabolic problem for the coupling surface – deep ocean temperatures with latent heat and coalbedo terms.	Abstracts p. 71

Special Session 19	Waves and Convection Organizer(s): Sam Stechmann, Leslie Smith	Location REH-8
8:00-8:30	Paul Milewski (University of Bath, England) Internal solitary waves in two-layer flows with shear.	Abstracts p. 86
8:30-9:00	Esteban G Tabak (New York University, Courant Institute, USA) The diurnal cycle and the meridional extent of the tropics	Abstracts p. 87
9:00-9:30	Roberto Camassa (UNC, USA) Multi-modal dynamics in parallel and wave-induced stratified shear layers	Abstracts p. 84

Special Session 20	Stochastic-Statistical Modeling of Climate Organizer(s): Dimitris Giannakis, John Harlim, Andrew Majda	Location REH-4
8:30-9:00	Shane Keating (Courant Institute of Mathematical Science, USA) Stochastic data assimilation methods for estimating ocean eddy heat transport	Abstracts p. 89
9:00-9:30	Georg Gottwald (University of Sydney, Australia) Stochastic homogenization for an energy conserving multi-scale toy model of the atmosphere	Abstracts p. 89
9:30-10:00	Eric J Kostelich (Arizona State University, USA) A digital filtering framework for the Local Ensemble Transform Kalman Filter	Abstracts p. 90

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	Johnny Henderson (Baylor University, USA) Multiple solutions for a nonlocal perturbed elliptic problem of p-Kirchhoff type	Abstracts p. 96
8:30-9:00	Nickolai Kosmatov (University Of Arkansas at little Rock, USA) A fourth-order functional problem at resonance	Abstracts p. 97
9:00-9:30	Wong S James (The University of Hong Kong, Hong Kong) Solvability of Second Order Multi-Point Boundary Value Problems at Resonance	Abstracts p. 96
9:30-10:00	Marlene Frigon (University of Montreal, Canada) On a notion of category depending on a functional and an application to Hamiltonian systems	Abstracts p. 96

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
8:00-8:30	Jaroslav Smital (Silesian University, Czech Rep) Distributonal chaos – recent progress and open problems	Abstracts p. 104
8:30-9:00	Francisco Balibrea (University of Murcia, Spain) Li-Yorke chaos in rational difference equations	Abstracts p. 100
9:00-9:30	Marta Stefankova (Mathematical Institute of the Silesian University in Opava, Czech Rep) Strange chaotic triangular maps	Abstracts p. 105
9:30-10:00	Mohammad Javaheri (Siena College, USA) Maximally transitive semigroups of matrices	Abstracts p. 102

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	Mehdi Rafie-Rad (University of Mazandaran, Iran) Projective symmetry in Randers spaces	Abstracts p. 109
8:30-9:00	Dina Razafindralandy (LEPTIAB, France) Lie group theory in turbulence	Abstracts p. 109
9:00-9:30	Xiang Yu (Sichuan University, Peoples Rep of China) Twisted Angles for Central Configurations Formed By Two Twisted Regular Polygons	Abstracts p. 110
9:30-10:00	Marx Chhay (LOCIE, University of Savoie, France) Some applications of some geometric integrators	Abstracts p. 106

Special Session 25	Dynamics in Complex Biological Systems Organizer(s): Bijoy K. Ghosh, Akif Ibraguimov, Qishao Lu, Jianzhong Su	Location REH-6
8:00-8:30	David Swigon (University of Pittsburgh, USA) Mathematical modeling of immune response to influenza infection	Abstracts p. 115
8:30-9:00	Chuan Xue (Ohio State University, USA) Multiscale analysis of bacterial chemotaxis	Abstracts p. 116
9:00-9:30	Judy Day (University of Tennessee, USA) Complex Immune Responses: Modeling & Control	Abstracts p. 112
9:30-10:00	Julia Arciero (Indiana University-Purdue University Indianapolis, USA) Investigating bacteria-immune dynamics in premature infants	Abstracts p. 111

Special Session 28	Analysis and Numerics of Differential Equations and Dynamical Systems in Mathematical Fluid Mechanics Organizer(s): Changbing Hu, Ning Ju, Theodore Tachim-Medj	Location REH-9
8:00-8:30	Animikh Biswas (University of North Carolina-Charlotte, USA) Gevrey regularity for dissipative equations with applications to decay.	Abstracts p. 125
8:30-9:00	Zhiwu Lin (Georgia Institute of Technology, USA) Invariant manifolds of Euler equations	Abstracts p. 126
9:00-9:30	Xinwei Yu (University of Alberta, Canada) Global regularity results for 2D generalized MHD equations	Abstracts p. 128
9:30-10:00	Madalina Petcu (University of Poitiers, France) On the exponential decay of the power spectrum and the finite dimensionality for the solutions of the three dimensional primitive equations	Abstracts p. 127

Special Session 30	Recent Developments on Turbulence Organizer(s): Eleftherios Gkioulekas, Michael Jolly	Location POI-C
8:00-8:30	Eleftherios Gkioulekas (University of Texas-Pan American, USA) Energy and potential enstrophy flux constraints in the two-layer quasi-geostrophic model	Abstracts p. 134
8:30-9:00	Leslie Smith (University of Wisconsin, Madison, USA) Characterizing the layer thickness in unit- and small-aspect-ratio rotating Boussinesq turbulence	Abstracts p. 135
9:00-9:30	Hussein Aluie (Los Alamos National Lab, USA) Non-linear cascades in rotating stratified Boussinesq flows	Abstracts p. 133
9:30-10:00	Benno Rumpf (Southern Methodist University, USA) A new instability that breaks the spatial homogeneity symmetry in wave turbulence	Abstracts p. 135

Special Session 31	Mathematical Models of Cancer and Cancer Therapy Organizer(s): Yangjin Kim	Location REH-7
8:00-8:30	David Basanta (H. Lee Moffitt Cancer Center & Research Institute, USA) An agent based evolutionary model of prostate cancer	Abstracts p. 137
8:30-9:00	Andrea De Gaetano (Cnr Iasi BioMatLab, Italy) Stochastic Differential models of tumor spheroid growth	Abstracts p. 138
9:00-9:30	Seongwon Lee (Pohang University of Science and Technology, Korea) A Mathematical Model of Lung Cancer Progression	Abstracts p. 141
9:30-10:00	Duan Chen (Mathematical Biosciences Institute, USA) Hypoxia Inducible Factors mediate the inhibition of cancer by GM-CSF: A mathematical model	Abstracts p. 137

Special Session 63	Infinite Dimensional Dynamics and Applications Organizer(s): James C. Robinson, Yuncheng You	Location PAL-A
8:30-9:00	Jose Valero (Universidad Miguel Hernandez, Spain) On the structure of the global attractor for reaction-diffusion equations	Abstracts p. 248
9:00-9:30	Alejandro Vidal-Lopez (University of Warwick, England) Moments and the Navier-Stokes equations	Abstracts p. 249
9:30-10:00	Shi Yanling (Southeast University, Peoples Rep of China) Quasi-Periodic Solutions for 1 Dimensional Generalized Boussinesq Equation	Abstracts p. 249

Special Session 64	Analysis of PDEs and Particle Systems: From Life Sciences, Economics and Materials Science Organizer(s): Toyohiko Aiki, Nobuyuki Kenmochi, Adrian Muntean	Location POI-D
9:00-9:30	Takeshi T Fukao (Kyoto University of Education, Japan) Abstract theory of the variational inequality and the Lagrange multiplier	Abstracts p. 251
9:30-10:00	Toyohiko Aiki (Japan Women's university, Japan) One-dimensional concrete carbonation problem with nonlinear Henry's law	Abstracts p. 250

Special Session 67	Applied Analysis and Dynamics in Engineering and Sciences Organizer(s): Thomas C Hagen, Janos Turi	Location POI-A
8:30-9:00	Jin Wang (Old Dominion University, USA) Analyzing viscous effects on wave motion	Abstracts p. 258
9:00-9:30	Shihchung Chiang (Chung Hua University, Taiwan) Numerical Optimal Unbounded Control with A Singular Integro-Differential Equation as a Constraint	Abstracts p. 255
9:30-10:00	Janos Turi (University of Texas at Dallas, USA) Critical Excitation and Control of Variational Inequalities	Abstracts p. 257

Special Session 72	Special Methods for Solving Systems of Non-linear Differential Equations and their Applications to Sciences and Engineering Organizer(s): Mufid Abudiab	Location MAG-B
8:00-8:30	Muhammad D Khan (Lahore University of Management Science, Pakistan) Conservation laws of some evolution equations via non variational approach	Abstracts p. 273
8:30-9:00	Sami Shahin (Southwest Minnesota State Univesity, USA) A Reaction-Diffusion Model of Bovine Viral Diarrhea Virus (BVDV) Infection	Abstracts p. 274
9:00-9:30	Chaudry M Khalique (North-West University, Mafikeng Campus, So Africa) Solutions and Conservation Laws of a Coupled Kadomtsev-Petviashvili System	Abstracts p. 273
9:30-10:00	Wonlyul Ko (Korea university, Korea) The enzyme-catalysed reaction-diffusion system	Abstracts p. 273

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	Maria Schonbek (UCSC, USA) On questions of decay for solutions to Liquid Crystals	Abstracts p. 289
8:30-9:00	Mimi Dai (University of California, Santa Cruz, USA) Some Properties of Solutions to Liquid Crystal Systems	Abstracts p. 287
9:00-9:30	Francesco Di Plinio (Indiana University, USA) Well-posedness of the Euler equations in planar convex domains	Abstracts p. 287
9:30-10:00	Shu Wang (Beijing University of Technology, Peoples Rep of China) On a New 3D Model for Incompressible Euler and Navier-Stokes Equations	Abstracts p. 290

Special Session 79	Numerical Methods based on Homogenization and on Two-Scale Convergence Organizer(s): Emmanuel Frenod	Location POI-B
8:00-8:30	Molei Tao (California Institute of Technology, USA) Multiscale Geometric Integration of Deterministic and Stochastic Systems	Abstracts p. 297
8:30-9:00	Frederic Legoll (Ecole Nationale des Ponts et Chaussees, France) Variance reduction methods in stochastic homogenization	Abstracts p. 296
9:00-9:30	John Harlim (North Carolina State University, USA) Filtering partially observed multiscale systems with heterogeneous multiscale methods based reduced climate models	Abstracts p. 295
9:30-10:00	Pingbing Ming (AMSS, Peoples Rep of China) An Efficient Higher-order Heterogeneous Multiscale Methods for Elliptic Problems and Related Issue	Abstracts p. 297

Monday, July 2

13:30PM-15:30PM

Parallel Session 5

Special Session 1	Qualitative Studies of PDEs: Entire Solutions and Asymptotic Behavior Organizer(s): Peter Polacik, Eiji Yanagida	Location REH-2
13:30-14:00	Kazuhiro Ishige (Tohoku University, Japan) Sharp decay estimates of L^q -norms for nonnegative Schrödinger heat semigroups	Abstracts p. 4
14:00-14:30	Wolfgang Reichel (Karlsruhe Institute of Technology (KIT), Germany) Ground state solutions of the nonlinear Schroedinger equation with interface	Abstracts p. 5
14:30-15:00	Ken-Ichi Nakamura (Kanazawa University, Japan) Existence and asymptotic stability of periodically growing solutions of nonlinear parabolic equations	Abstracts p. 5

Special Session 2	Nonlinear Evolution PDEs and Interfaces in Applied Sciences Organizer(s): Gunduz Caginalp, Maurizio Grasselli, Alain Miranville	Location GRC-A
13:30-14:00	Frederic Abergel (Ecole Centrale Paris, France) Stationary free surface flows in three dimensions	Abstracts p. 7
14:00-14:30	Dalibor Pražák (Charles University, Prague, Czech Rep) Time regularity and uniqueness of non-Newtonian binary fluid mixtures	Abstracts p. 10
14:30-15:00	Ciprian Gal (Florida International University, USA) Global Solutions for the 2D NS-CH model for a two-phase flow of viscous, incompressible fluids with mixed partial viscosity and mobility	Abstracts p. 9
15:00-15:30	Stefano Bosia (Politecnico di Milano, Italy) Diffuse interface Cahn-Hilliard-Ladyzhenskaya models with singular potentials	Abstracts p. 7

Special Session 3	Mathematics of Social Systems Organizer(s): Andrea Bertozzi	Location GRC-B
13:30-14:00	Daniel Balagué (Universitat Autònoma de Barcelona, Spain) Stationary states for the aggregation equation with power law attractive-repulsive potentials	Abstracts p. 12
14:00-14:30	David Uminsky (UCLA, USA) Pattern formation under nonlocal social interaction	Abstracts p. 16
14:30-15:00	Thomas Laurent (UCR, USA) Aggregation via Newtonian Potential and Aggregation Patches	Abstracts p. 13
15:00-15:30	Razvan C Fetecau (Simon Fraser University, Canada) A mathematical model for flight guidance in honeybee swarms	Abstracts p. 12

Special Session 11	Advances in Classical and Geophysical Fluid Dynamics Organizer(s): Madalina Petcu, Roger Temam, Shouhong Wang	Location GRC-I
13:30-14:00	Djoko Wirosoetisno (Durham University, England) Navier-Stokes equations on the beta-plane and the sphere	Abstracts p. 51
14:00-14:30	Aimin Huang (Indiana University Bloomington, USA) The Linearized 2D Inviscid Shallow Water Equations in a Rectangle: Boundary Conditions and Well-Posedness	Abstracts p. 49
14:30-15:00	Antoine Rousseau (Inria, France) Quasi-hydrostatic modelling in geophysical fluid dynamics	Abstracts p. 50
15:00-15:30	Shouhong Wang (Indiana University, USA) Dynamic Transition Theory for Thermohaline Circulation	Abstracts p. 51

Special Session 14	Mathematical Models in Biology and Medicine Organizer(s): Yang Kuang, Bingtuan Li, Jiaxu Li, Andrew Nevai	Location GRC-C
13:30-14:00	Yun Kang (Arizona State University, USA) Multiple attractors in intraguild predation models with generalist/specialist predator	Abstracts p. 61
14:00-14:30	Xinyu Song (Xinyang Normal University, Peoples Rep of China) Periodic solutions of a predator-prey system with nonmonotonic response function and impulsive harvesting	Abstracts p. 64
14:30-15:00	Andrew Nevai (University of Central Florida, USA) A PDE model for predator-prey dynamics with a resource subsidy	Abstracts p. 64
15:00-15:30	Jonathan Forde (Hobart and William Smith Colleges, USA) Mathematical Models of the Role of Immune Exhaustion in Hepatitis B and Delta Coinfection	Abstracts p. 60

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
13:30-14:00	Ioan I Vrabie (Al. I. Cuza University, Romania) Nonlinear delay evolution inclusions with nonlocal conditions on the initial history	Abstracts p. 72
14:00-14:30	Popescu Marius (Al. I. Cuza University of Iasi, Romania, Romania) Viability of a time dependent closed set with respect to a semilinear delay evolution inclusion	Abstracts p. 70
14:30-15:00	Arian Novruzzi (University of Ottawa, Canada) Regularity and Singularities of Optimal Convex Shapes in the Plane	Abstracts p. 70
15:00-15:30	Govindan E Trivellore (Instituto Politecnico Nacional, Mexico) Robust feedback stabilization of solutions of stochastic evolution equations with delay	Abstracts p. 71

Special Session 20	Stochastic-Statistical Modeling of Climate Organizer(s): Dimitris Giannakis, John Harlim, Andrew Majda	Location REH-4
13:30-14:00	Stamen Dolaptchiev (Goethe-University Frankfurt, Germany) Stochastic subgrid-scale parameterization designed for a finite-difference model discretization	Abstracts p. 88
14:00-14:30	Themistoklis Sapsis (New York University, USA) Blended reduced subspace algorithms for uncertainty quantification	Abstracts p. 90
14:30-15:00	Michal Branicki (Courant Institute, NYU, USA) Quantifying uncertainty for predictions with model error in non-Gaussian systems with intermittency	Abstracts p. 88
15:00-15:30	Juan M Restrepo (University of Arizona, USA) How do you determine whether the Earth is Warming Up?	Abstracts p. 90

Special Session 22	Topological and Variational Methods for Boundary Value Problems Organizer(s): John R. Graef, Lingju Kong, Bo Yang	Location REH-1
13:30-14:00	Lingju Kong (University of Tennessee at Chattanooga, USA) On a discrete fourth order periodic boundary value problem	Abstracts p. 96
14:00-14:30	Saroj Panigrahi (University of Hyderabad, India) Oscillation results for fourth order nonlinear mixed neutral differential equations	Abstracts p. 98
14:30-15:00	Yu Tian (Beijing University of Posts and Telecommunications, China; Baylor University, USA (visitor scholar), Peoples Rep of China) Applications of variational methods to anti-periodic boundary value problem for second-order differential equations	Abstracts p. 98
15:00-15:30	Min Wang (University of Tennessee at Chattanooga, USA) Fractional boundary value problems with integral boundary conditions	Abstracts p. 99

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
13:30-14:00	William R Ott (University of Houston, USA) Memory loss for time-dependent dynamical systems	Abstracts p. 104
14:00-14:30	Keonhee Lee (Chungnam National University, Korea) Robust Dynamics of C^1 -Generic Diffeomorphisms	Abstracts p. 103
14:30-15:00	Manseob Lee (Mokwon University, Korea) Shadowable chain transitive sets of C^1 -vector fields	Abstracts p. 103

Special Session 24	Geometric Mechanics Organizer(s): Tom Mestdag, Manuel de Leon, Frans Cantrijn, Aziz Hamdouni, Dina Razafindralandy, Jean-Claude Zambrini	Location REH-5
13:30-14:00	Manuel de Leon (Instituto de Ciencias Matematicas, ICMAT, Spain) Hamilton-Jacobi theory for classical field theories	Abstracts p. 107
14:00-14:30	Luca Vitagliano (DipMat, University of Salerno, Italy) A very general Hamilton-Jacobi theorem	Abstracts p. 110
14:30-15:00	Miguel Vaquero (ICMAT, Spain) Hamilton-Jacobi Theory for Singular Lagrangians	Abstracts p. 110
15:00-15:30	Edith Padron (University of La Laguna, Spain) An extension of the Marsden-Weinstein reduction process to the symplectic algebroid setting	Abstracts p. 109

Special Session 25	Dynamics in Complex Biological Systems Organizer(s): Bijoy K. Ghosh, Akif Ibraguimov, Qishao Lu, Jianzhong Su	Location REH-6
13:30-14:00	Lake R Ritter (Southern Polytechnic State University, USA) Foam cell formation in atherogenesis	Abstracts p. 114
14:00-14:30	Richard Schugart (Western Kentucky University, USA) Using a Mathematical Model to Analyze the Treatment of a Wound Infection with Oxygen Therapy	Abstracts p. 114
14:30-15:00	Jianzhong Su (University of Texas at Arlington, USA) A Model for Foreign Body and its Stability Analysis	Abstracts p. 114
15:00-15:30	Indika B Wijayasinghe (Texas Tech University, USA) Eye/Head Movement Dynamics Satisfying the Donders Law	Abstracts p. 115

Special Session 27	Transport Barriers in Dynamical Systems Organizer(s): George Haller, Wenbo Tang	Location REH-8
13:30-14:00	Jean-Luc Thiffeault (University of Wisconsin, Madison, USA) Moving walls accelerate mixing	Abstracts p. 124
14:00-14:30	Michael Allshouse (MIT, USA) Transport Barrier Detection via Braid Theory	Abstracts p. 120
14:30-15:00	Mark A Stremler (Virginia Tech, USA) Topological chaos in systems 'stirred' by almost-cyclic sets	Abstracts p. 124
15:00-15:30	Sanjeeva Balasuriya (Connecticut College, USA) Explicit stable and unstable manifolds in a class of unsteady 2D and 3D flows	Abstracts p. 120

Special Session 30	Recent Developments on Turbulence Organizer(s): Eleftherios Gkioulekas, Michael Jolly	Location POI-C
13:30-14:00	Marija Vucelja (Courant Institute of Mathematical Sciences, USA) Fractal contours of scalar in smooth flows	Abstracts p. 136
14:00-14:30	Animikh Biswas (University of North Carolina-Charlotte, USA) Maximal spatial analyticity radius for the Navier-Stokes equations	Abstracts p. 133
14:30-15:00	Vincent R Martinez (Indiana University-Bloomington, USA) Dissipative length scales of the Navier-Stokes equations	Abstracts p. 135
15:00-15:30	Alexey Cheskidov (University of Illinois at Chicago, USA) Analytical approach to intermittency in turbulence	Abstracts p. 133

Special Session 33	Nonlinear Elliptic and Parabolic Problems in Mathematical Sciences Organizer(s): Yoshihisa Morita, Junping Shi	Location REH-9
13:30-14:00	Carlos V Rocha (Instituto Superior Tecnico, Portugal) Connection Graphs for Sturm Attractors of S^1 -Equivariant Parabolic Equations	Abstracts p. 149
14:00-14:30	Yihong Du (University of New England, Australia, Australia) Evolution and long-time behavior of the free boundary in nonlinear Stefan problems	Abstracts p. 147
14:30-15:00	Hayato Chiba (Kyushu university, Japan) Reduction of parabolic PDEs	Abstracts p. 147
15:00-15:30	Shinya Okabe (Mathematical Institute, Tohoku University, Japan) Long time existence of shortening-straightening flow for non-closed planar curves with infinite length	Abstracts p. 149

Special Session 34	Multi-phase Flows in Porous Media and Related Systems Organizer(s): David Ambrose, Xiaoming Wang, Steven Wise	Location MAG-A
13:30-14:00	Ying Sun (Drexel University, USA) 3-D pore-scale resolved model for coupled species/charge/fluid transport in a vanadium redox flow battery	Abstracts p. 154
14:00-14:30	Milton C Lopes Filho (IMECC-UNICAMP, Brazil) Stability of 2D incompressible flows under 3D perturbations	Abstracts p. 153
14:30-15:00	Antoine Mellet (University of Maryland, USA) Liquid Drops sliding down an inclined plane	Abstracts p. 153

Special Session 35	Qualitative Theory of Nonlinear ODEs and Applications Organizer(s): Fabio Zanolin	Location MAG-C
13:30-14:00	Gabriele Bonanno (University of Messina, Italy) A local minimum theorem and applications to nonlinear ordinary differential problems	Abstracts p. 156
14:00-14:30	Pasquale Candito (University of Reggio Calabria, Italy) Existence and multiplicity of solutions for a Dirichlet boundary value problem	Abstracts p. 156
14:30-15:00	Antonia Chinnì (University of Messina, Italy) Existence results of solutions for $p(x)$ -Laplacian elliptic Dirichlet problems	Abstracts p. 157
15:00-15:30	Giuseppina D'Agui (DiSIA, University of Messina, Italy) Mixed boundary value problems with Sturm-Liouville equations	Abstracts p. 157

Special Session 37	Mathematical Models and Computations in Cell and Developmental Biology Organizer(s): Anna Cai, Ching-Shan Chou, Qing Nie	Location REH-7
13:30-14:00	Alexandra Jilkine (University of Arizona, USA) A Stochastic Density-Dependent Switch Drives Spontaneous Cell Polarization	Abstracts p. 164
14:00-14:30	Jinzhi Lei (Tsinghua University, Peoples Rep of China) PDCD5-regulated cell fate decision after UV-irradiation induced DNA damage	Abstracts p. 164
14:30-15:00	Doron Levy (University of Maryland, USA) Mathematical Models for Phototaxis	Abstracts p. 164
15:00-15:30	Xinfeng Liu (University of South Carolina, USA) Mathematical modeling and computational studies for cell signaling with scaffolds	Abstracts p. 164

Special Session 48	Nonlinear Evolution Equations Organizer(s): Alex Himonas, Gerson Petronilho	Location POI-B
13:30-14:00	Peter Topalov (Northeastern University, USA) Generic non self-adjoint Zakharov-Shabat operators	Abstracts p. 205
14:00-14:30	Katelyn J Grayshan (University of Notre Dame, USA) Analysis of the b-family equation	Abstracts p. 203
14:30-15:00	Seungly Oh (University of Kansas, USA) Smoothing results for Korteweg de-Vries equations on \mathbf{R} and \mathbf{T}	Abstracts p. 204
15:00-15:30	Ming Chen (University of Pittsburgh, USA) Illposedness of a weakly dispersive Boussinesq system	Abstracts p. 202

Special Session 53	Greedy Algorithms and Tensor Product Representations for High-dimensional Problems Organizer(s): Virginie Ehrlacher, Tony Lelievre	Location MAG-B
13:30-14:00	Reinhold Schneider (TU Berlin, Germany) Optimization in hierarchical tensor formats	Abstracts p. 221
14:30-15:00	Antonio Falco (Universidad de Alicante, Spain) Geometric Structures in Tensor Representations	Abstracts p. 220
15:00-15:30	Bernard G Haasdonk (University of Stuttgart, Germany) The POD-Greedy Method: Convergence Rates and Applications	Abstracts p. 220

Special Session 67	Applied Analysis and Dynamics in Engineering and Sciences Organizer(s): Thomas C Hagen, Janos Turi	Location POI-A
13:30-14:00	Qingwen Hu (The University of Texas at Dallas, USA) Global stability lobes of turning processes with state-dependent delay	Abstracts p. 256
14:00-14:30	Lorena Bociu (NC State University, USA) Linear models for fluid-elasticity interactions	Abstracts p. 254
14:30-15:00	Saroj P Pradhan (University Of Central Oklahoma, USA) Stability Analysis of Human Respiratory System with both Central and Peripheral control	Abstracts p. 257
15:00-15:30	Florian Rupp (TU Munich, Germany) On the Jellyfish Joyride: Mathematical Analysis of Catastrophes in Maritime Ecosystems	Abstracts p. 257

Special Session 70	Modeling and Dynamics of Infectious Diseases Organizer(s): Abba Gumel, Tufail Malik	Location PAL-D
13:30-14:00	Olivia F Prosper (University of Florida, USA) Impact of Enhanced Malaria Control on the Competition Between Plasmodium falciparum and Plasmodium vivax	Abstracts p. 270
14:00-14:30	Abdessamad Tridane (ASU, USA) Mathematical analysis of a virus dynamics model with general incidence rate and cure rate	Abstracts p. 271
14:30-15:00	Paul L Salceanu (University of Louisiana, Lafayette, USA) Robust uniform persistence and competitive exclusion in a nonautonomous multistrain SIR epidemic model with disease-induced mortality	Abstracts p. 270
15:00-15:30	Abba Gumel (University of Manitoba, Canada) Backward Bifurcations in Disease Transmission Models	Abstracts p. 267

Special Session 75	Heteroclinic Cycles: Theory and Applications Organizer(s): Peter Ashwin, Pascal Chossat, Reiner Lauterbach	Location POI-D
13:30-14:00	Claire M Postlethwaite (University of Auckland, New Zealand) Resonance of robust heteroclinic networks	Abstracts p. 281
14:00-14:30	Michael Field (Houston, USA) Heteroclinic cycles in complex systems	Abstracts p. 280
14:30-15:00	Maciej Krupa (Université Le Havre/INRIA, France) Asymptotic stability of robust heteroclinic cycles	Abstracts p. 280
15:00-15:30	Sofia Castro (University of Porto, Portugal) Stability and dynamics along a heteroclinic network	Abstracts p. 279

Special Session 76	On PDEs from Biology Organizer(s): Alexander Lorz	Location PAL-A
13:30-14:00	Pierre-Emmanuel Jabin (University of Maryland, USA) Selection-Mutation dynamics	Abstracts p. 283
14:00-14:30	Tommaso Lorenzi (Politecnico di Torino, Italy) Asymptotic dynamics in structured populations endangered by global warming and habitat shrinking	Abstracts p. 283
14:30-15:00	Marco Morandotti (Carnegie Mellon University, USA) Self-propulsion in viscous fluids through shape deformation	Abstracts p. 283
15:00-15:30	Sebastien Motsch (CSCAMM, University of Maryland, USA) Hydrodynamic models of self-organized dynamics	Abstracts p. 283

Special Session 77	The Navier-Stokes Equations and Related Problems Organizer(s): Sarka Necasova, Reimund Rautmann, Werner Varnhorn	Location REH-3
13:30-14:00	Tomas Schonbek (Florida Atlantic University, USA) The Fractional Laplacian in an Exterior Domain	Abstracts p. 289
14:00-14:30	Juergen Saal (Center of Smart Interfaces, TU Darmstadt, Germany) Maximal regularity on cross-sections implies maximal regularity on a cylinder	Abstracts p. 288
14:30-15:00	Hi Jun Choe (Yonsei University, Korea) Maximum Modulus Estimate in Nonstationary Stokes System	Abstracts p. 287
15:00-15:30	Ken Abe (University of Tokyo, Japan) The L^∞ -Stokes semigroup in exterior domains	Abstracts p. 286

Monday, July 2**16:00PM-18:30PM****Parallel Session 6**

Special Session 2	Nonlinear Evolution PDEs and Interfaces in Applied Sciences Organizer(s): Gunduz Caginalp, Maurizio Grasselli, Alain Miranville	Location GRC-A
16:00-16:30	Günther Grün (University of Erlangen-Nuernberg, Germany) On thermodynamically consistent schemes for two-phase flow with mass density contrast and species transport	Abstracts p. 9
16:30-17:00	Michele Coti Zelati (Indiana University, USA) Approximation of multivalued attractors and applications to the Navier-Stokes equations	Abstracts p. 8
17:00-17:30	Brice Doumbe (Universite de Poitiers, France) Attractors for a Caginalp phase-field model type on the whole space R^3	Abstracts p. 8
17:30-18:00	Haydi Israel (Poitiers University, France) A fourth order Cahn-Hilliard type equation	Abstracts p. 9
18:00-18:30	Irena M Lasiecka (University of Virginia, USA) Wellposedness of finite energy solutions ton supersonic flow structure interactions	Abstracts p. 10

Special Session 3	Mathematics of Social Systems Organizer(s): Andrea Bertozzi	Location GRC-B
16:00-16:30	Martin B Short (UCLA, USA) Social interactions on networks: self-excitation, third-party inhibition, and the link with game theory	Abstracts p. 15
16:30-17:00	Scott McCalla (UCLA, USA) Paladins as predators: Invasive waves in a spatial evolutionary adversarial game	Abstracts p. 14
17:00-17:30	Yves van Gennip (University of California, Los Angeles, USA) Community detection among street gangs and Gamma-convergence on graphs	Abstracts p. 16
17:30-18:00	Kristina Lerman (USC Information Sciences Institute, USA) Rethinking Network Analysis: Topology, Dynamics and Network Structure	Abstracts p. 13

Special Session 14	Mathematical Models in Biology and Medicine Organizer(s): Yang Kuang, Bingtuan Li, Jiaxu Li, Andrew Nevai	Location GRC-C
16:00-16:30	Lih-Ing W Roeger (Texas Tech University, USA) Dynamically Consistent Discrete-time SI, SIS, and SIR Epidemic Models	Abstracts p. 64
16:30-17:00	Abdessamad Tridane (ASU, USA) Epidemic model as controlled switched system	Abstracts p. 64
17:00-17:30	Ana Vivas-Barber (Adams State College, USA) Integro-Differential Age-Structured System for the SAIQR Influenza Model	Abstracts p. 65
17:30-18:00	Sarah Hews (Hampshire College, USA) Mathematical models of immunological tolerance and immune activation following prenatal infection with hepatitis B virus	Abstracts p. 61

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
16:00-16:30	Kazuo Kobayasi (Waseda University, Japan) Well-posedness for anisotropic degenerate parabolic equations with non-homogeneous boundary conditions	Abstracts p. 68
16:30-17:00	Masahiro Kubo (Nagoya Institute of Technology, Japan) A new class of nonlinear evolution equations	Abstracts p. 68
17:00-17:30	Goro Akagi (Kobe University, Japan) Doubly nonlinear parabolic equations with variable exponents	Abstracts p. 66
17:30-18:00	Shun Uchida (Waseda University, Japan) Periodic solutions of some double-diffusive convection systems based on Brinkman-Forchheimer equation	Abstracts p. 71

Special Session 20	Stochastic-Statistical Modeling of Climate Organizer(s): Dimitris Giannakis, John Harlim, Andrew Majda	Location REH-4
16:00-16:30	Dimitrios Giannakis (New York University, USA) Quantifying Long-Range Predictability and Model Error through Data Clustering and Information Theory	Abstracts p. 89
16:30-17:00	Grant Branstator (NCAR, USA) Using Stochastic Models to Diagnose the Origins of Leading Atmospheric Zonal Modes	Abstracts p. 88
17:00-17:30	Samuel Stechmann (University of Wisconsin-Madison, USA) A stochastic model for tropical rainfall and extreme events	Abstracts p. 91
17:30-18:00	Omar M Knio (Duke University, USA) Sparse Adaptive Polynomial Chaos Representations for Ocean General Circulation Models	Abstracts p. 90

Special Session 21	Dynamical Systems and Spectral Theory Organizer(s): David Damanik	Location REH-2
16:00-16:30	Thomas Chen (University of Texas at Austin, USA) Derivation of NLS from an interacting Bose gas in $d = 3$ via Klainerman-Machedon type spaces	Abstracts p. 92
16:30-17:00	Christian H Sadel (University of California, Irvine, USA) Absolutely continuous spectrum and ballistic behavior for the Anderson model on the Bethe strip	Abstracts p. 94
17:00-17:30	Milivoje Lukic (Rice University, USA) Jacobi matrices with decaying oscillatory coefficients	Abstracts p. 93
17:30-18:00	Rafael del Rio (IIMAS-UNAM, Mexico) Inverse Problems for Jacobi Operators	Abstracts p. 92
18:00-18:30	Mira Shamis (IAS & Princeton Univ., USA) Anderson localization for non-monotone Schroedinger operators	Abstracts p. 94

Special Session 22	Topological and Variational Methods for Boundary Value Problems Organizer(s): John R. Graef, Lingju Kong, Bo Yang	Location REH-1
16:00-16:30	Feliz Minhos (University of Evora, Portugal) Existence and multiplicity of solutions in fourth order BVPs with unbounded nonlinearities	Abstracts p. 97
16:30-17:00	Wenyong Feng (Trent University, Canada) A class of decomposable nonlinear operators and its applications in BVP	Abstracts p. 95
17:00-17:30	Abdulkadir Dogan (Abdullah Gul University, Turkey) Existence of multiple positive solutions for p -Laplacian multipoint boundary value problem on time scales	Abstracts p. 95
17:30-18:00	Joao Fialho (CIMA - UE, Portugal) Generalized upper and lower solutions on fourth order Lidstone problems	Abstracts p. 95
18:00-18:30	Daniel M Maroncelli (North Carolina State University, USA) Two-point boundary value problems with Impulses.	Abstracts p. 97

Special Session 23	Topological and Combinatorial Dynamics Organizer(s): Lluís Alsedà, Francisco Balibrea Gallego, Piotr Oprocha	Location GRC-H
16:00-16:30	Primitivo Acosta-Humanez (Universidad del Norte, Colombia) Simple Permutations with order $4n + 2$	Abstracts p. 100
16:30-17:00	Christopher Bernhardt (Fairfield University, USA) Periods of periodic orbits for vertex maps on graphs	Abstracts p. 101
17:00-17:30	Deborah M King (University of Melbourne, Australia) A Lower Bound for the Maximum Topological Entropy of $4k+2$ -cycles	Abstracts p. 103
17:30-18:00	Lluís Alsedà (Universitat Autònoma de Barcelona, Spain) Topological and algebraic reducibility for patterns on trees	Abstracts p. 100
18:00-18:30	Louis Block (University of Florida, USA) Patterns, Topological Transitivity, and Entropy	Abstracts p. 101

Special Session 24	Geometric Mechanics Organizer(s): Tom Mestdag, Manuel de Leon, Frans Cantrijn, Aziz Hamdouni, Dina Razafindralandy, Jean-Claude Zambrini	Location REH-5
16:00-16:30	François J Gay-Balmaz (Ecole Normale Supérieure de Paris, France) Invariant higher-order variational problems and computational anatomy	Abstracts p. 107
16:30-17:00	Modesto Salgado (Universidad de Santiago de Compostela, Spain) Newtonoids vector fields and conservation laws on the Lagrangian k -symplectic formalism	Abstracts p. 109
17:00-17:30	Joris Vankerschaver (University of California, San Diego, USA) The geometry of multi-Dirac structures	Abstracts p. 110
17:30-18:00	Elisa Lavinia Guzmán Alonso (University of La Laguna, Spain) Lagrangian submanifolds and Classical field theories of first order on Lie algebroids	Abstracts p. 107

Special Session 25	Dynamics in Complex Biological Systems Organizer(s): Bijoy K. Ghosh, Akif Ibragimov, Qishao Lu, Jianzhong Su	Location REH-6
16:00-16:30	Daniel M Abrams (Northwestern University, USA) A mathematical model for the origin of left-handedness	Abstracts p. 111
16:30-17:00	Masatoshi Shiino (Showa Pharmaceutical University, Japan) 1. Control of attractors in nonlinear dynamical systems using external noise/ 2. Effects of noise on synchronization phenomena	Abstracts p. 114
17:00-17:30	Lixia Duan (North China Univ. of Tech., Peoples Rep of China) Bursting Oscillation in the Pre-Bötzinger Complex	Abstracts p. 112
17:30-18:00	Anuraj A Singh (Graphic Era University, Dehradun, India) Complexity in a Leslie-Gower delayed Prey-predator Model	Abstracts p. 114

Special Session 27	Transport Barriers in Dynamical Systems Organizer(s): George Haller, Wenbo Tang	Location REH-8
16:00-16:30	James D Meiss (University of Colorado, USA) Transport in Transitory Dynamical Systems	Abstracts p. 122
16:30-17:00	Themistoklis Sapsis (New York University, USA) Inertial manifold dimensionality and finite-time instabilities in transient turbulent flows	Abstracts p. 123
17:00-17:30	Sherry E Scott (Marquette University, USA) Investigating fluid flows via Individual Trajectory Complexity Methods	Abstracts p. 123
17:30-18:00	A D Kirwan (SMSP, University of Delaware, USA) OUT OF FLATLAND: 3D Aspects of Lagrangian Coherent Structures in Oceanography	Abstracts p. 122

Special Session 30	Recent Developments on Turbulence Organizer(s): Eleftherios Gkioulekas, Michael Jolly	Location POI-C
16:00-16:30	Natalia Vladimirova (University of New Mexico, USA) Phase transitions in optical turbulence	Abstracts p. 135
16:30-17:00	Mohammad Farazmand (McGill University, Canada) Geodesic detection of coherent vortices in two-dimensional turbulence	Abstracts p. 134
17:00-17:30	Evelyn M Lunasin (University of Michigan, USA) Optimal stirring strategies with fixed energy, fixed power or fixed palenstrophy constraint	Abstracts p. 134
17:30-18:00	Adam Larios (Texas A&M University, USA) Recent Numerical Results for the 3D MHD-Voigt Model and Related Models	Abstracts p. 134
18:00-18:30	Michael S Jolly (Indiana University, USA) Bounds on energy, enstrophy for the 2D NSE with single mode forcing	Abstracts p. 134

Special Session 33	Nonlinear Elliptic and Parabolic Problems in Mathematical Sciences Organizer(s): Yoshihisa Morita, Junping Shi	Location REH-9
16:00-16:30	Jann-Long Chern (Central University, Taiwan) Uniqueness of Solutions in a Gravitational Gauge Field Theory with Coexistence of Vortices and Antivortices	Abstracts p. 147
16:30-17:00	Steven D Taliaferro (Texas A&M University, USA) Isolated Singularities of Nonlinear Polyharmonic Inequalities	Abstracts p. 150
17:00-17:30	Yasuhito Miyamoto (Tokyo Institute of Technology, Japan) Stable patterns and Morse index one solutions	Abstracts p. 148
17:30-18:00	Ping Liu (College of William and Mary, USA) Bifurcation from a Degenerate Simple Eigenvalue	Abstracts p. 148
18:00-18:30	Necibe Tuncer (University of Tulsa, USA) Diffusion Driven Instabilities on Evolving Surfaces	Abstracts p. 150

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	Alain Miranville (Universite de Poitiers, France) A Cahn-Hilliard model with dynamic boundary conditions	Abstracts p. 153
16:30-17:00	Maurizio Grasselli (Politecnico di Milano, Italy) Cahn-Hilliard-Navier-Stokes systems with nonlocal interactions	Abstracts p. 153
17:00-17:30	Franck Boyer (Aix-Marseille Universite, France) Numerical methods for some phase-field models	Abstracts p. 152
17:30-18:00	Shibin Dai (Michigan State University, USA) Functionalized Cahn-Hilliard equation: competitive evolution of bilayers and pores	Abstracts p. 152

Special Session 35	Qualitative Theory of Nonlinear ODEs and Applications Organizer(s): Fabio Zanolin	Location MAG-C
16:00-16:30	Roberto Livrea (University of Reggio Calabria, Italy) Existence and multiplicity results for second order differential problems	Abstracts p. 158
16:30-17:00	Giovanni Molica Bisci (University of Reggio Calabria, Italy) Existence results for parameterized Emden-Fowler equations	Abstracts p. 158
17:00-17:30	Donglun Wu (Sichuan University, Peoples Rep of China) Unbounded Solutions for a Class of Singular Hamiltonian Systems	Abstracts p. 159
17:30-18:00	Fabio Zanolin (University of Udine, Italy) The Poincare'-Birkhoff "twist theorem": some remarks and recent applications to ODEs	Abstracts p. 159

Special Session 37	Mathematical Models and Computations in Cell and Developmental Biology Organizer(s): Anna Cai, Ching-Shan Chou, Qing Nie	Location REH-7
16:00-16:30	Wing Cheong Lo (The Ohio State University, USA) Robust Budding Site Selection and Cell Polarization in Yeast Cells	Abstracts p. 165
16:30-17:00	Richard Schugart (Western Kentucky University, USA) Quantifying Parameters for a Mathematical Model on the Interaction of Matrix Metalloproteinases and Their Inhibitors in a Wound	Abstracts p. 165
17:00-17:30	Muhammad H Zaman (Boston University, USA) Modeling cell-cell and cell-matrix interactions in single and collective motion in 3D	Abstracts p. 165

Special Session 48	Nonlinear Evolution Equations Organizer(s): Alex Himonas, Gerson Petronilho	Location POI-B
16:00-16:30	Gerson Petronilho (University Federal of Sao Carlos, Brazil) Well-posedness and regularity of the periodic gKdV equation	Abstracts p. 205
16:30-17:00	Ryan C Thompson (University of Notre Dame, USA) Nonuniform continuity of the solution map for CH type equations	Abstracts p. 205
17:00-17:30	Melissa Davidson (University of Notre Dame, USA) Continuity Properties of the Solution Map for the Generalized Reduced Ostrovsky Equation	Abstracts p. 203
17:30-18:00	Rafael Barostichi (Universidade Federal de São Carlos, Brazil) Ovsianikov's theorem for autonomous equations and applications	Abstracts p. 202

Special Session 49	Growth Models and Interface Dynamics Organizer(s): Alexander Nepomnyashchy, Tatiana Savin, Amy Novick-Cohen	Location PAL-CC
16:00-16:30	Markus W Abel (University of Nancy - LEMTA, Germany) driven free-standing foam films	Abstracts p. 206
16:30-17:00	Eldad Bettelheim (Hebrew University of Jerusalem, Israel) 1D Integrable systems and 2D hydrodynamics	Abstracts p. 206
17:00-17:30	Avraham Y Klein (Hebrew University in Jerusalem, Israel) Topological transitions in interface dynamics of evaporating thin films	Abstracts p. 207
17:30-18:00	Alexander Nepomnyashchy (Technion - Israel Institute of Technology, Israel) Particle growth in a subdiffusive medium	Abstracts p. 208
18:00-18:30	Tatiana Savin (Ohio University, USA) Interface dynamics and singularities	Abstracts p. 209

Special Session 53	Greedy Algorithms and Tensor Product Representations for High-dimensional Problems Organizer(s): Virginie Ehrlicher, Tony Lelievre	Location MAG-B
16:00-16:30	Jose Arturo Infante Acevedo (CERMICS - ENPC, France) Applications in Mathematical Finance of a greedy algorithm for solving high-dimensional partial differential equations.	Abstracts p. 221
16:30-17:00	Moulay Abdellah Chkifa (laboratoire Jacques Louis Lions, France) Sparse adaptive Taylor approximation algorithms for parametric and stochastic elliptic PDEs	Abstracts p. 220
17:00-17:30	Virginie Ehrlicher (Ecole des Ponts ParisTech, France) Greedy algorithms for non symmetric linear problems with uncertainty	Abstracts p. 220
17:30-18:00	Christian Rieger (Institute for Numerical Simulation, University of Bonn, Germany) Regularized reconstruction with series kernels	Abstracts p. 221

Special Session 67	Applied Analysis and Dynamics in Engineering and Sciences Organizer(s): Thomas C Hagen, Janos Turi	Location POI-A
16:00-16:30	Shaun Ceci (Le Moyne College, USA) The Navier-Stokes flow of a liquid jet with moving free surface	Abstracts p. 255
16:30-17:00	David Lehotzky (Budapest University of Technology and Economics, Hungary) Stability analysis of the delayed oscillator subjected to digital feedback control	Abstracts p. 256
17:00-17:30	Hongqiu Chen (University of Memphis, USA) Analysis on stability of solitary-wave solutions for a system of nonlinear dispersive equations	Abstracts p. 255
17:30-18:00	Henri Schurz (Southern Illinois University, USA) Stochastic Wave and Heat Equations with Cubic Nonlinearity and Additive Space-time Noise in 2D	Abstracts p. 257

Special Session 70	Modeling and Dynamics of Infectious Diseases Organizer(s): Abba Gumel, Tufail Malik	Location PAL-D
16:00-16:30	Giuseppe G Mulone (University of Catania, Italy) Mathematical models of binge drinking, heroin epidemics, anorexia and bulimia	Abstracts p. 270
16:30-17:00	Adnan Khan (Lahore University of Management Sciences, Pakistan) Modeling Recent Outbreaks of Dengue Fever in Pakistan	Abstracts p. 268
17:00-17:30	Xiaotian Wu (York University, Canada) The Impact of Temperature on the Establishment of Lyme disease Tick Vector Ixodes Scapularis	Abstracts p. 271
17:30-18:00	Ronald E Mickens (Clark Atlanta University, USA) General Comments on the Construction of Mathematical Models for Predator-Prey Interactions	Abstracts p. 269
18:00-18:30	Salisu S Garba (University of Pretoria, So Africa) Mathematical Analysis of Chikungunya Model with Time Delay	Abstracts p. 267

Special Session 75	Heteroclinic Cycles: Theory and Applications Organizer(s): Peter Ashwin, Pascal Chossat, Reiner Lauterbach	Location POI-D
17:00-17:30	Juergen Knobloch (TU Ilmenau, Germany) Dynamics of codimension one homoclinic cycles	Abstracts p. 280
17:30-18:00	Philippe Beltrame (Université d'Avignon, France) Bifurcation of robust heteroclinic cycles in spherically invariant systems with $\ell = 3, 4$ mode interaction	Abstracts p. 279

Special Session 76	On PDEs from Biology Organizer(s): Alexander Lorz	Location PAL-A
16:00-16:30	Kevin J Painter (Heriot-Watt University, Scotland) Spatio-temporal chaos in models for chemotaxis	Abstracts p. 284
16:30-17:00	Nancy Rodriguez (Stanford University, USA) On Global Well-Posedness for Reaction-Advection-Diffusion Systems for Chemotaxis with Growth and Crime Patterns	Abstracts p. 284
17:00-17:30	Jesus Rosado Linares (UCLA, USA) Continuum limits for discrete models of collective behavior	Abstracts p. 284
17:30-18:00	Marie-Therese Wolfram (University of Vienna, Austria) Individual based and mean-field modelling of direct aggregation	Abstracts p. 284
18:00-18:30	Jorge P Zubelli (IMPA, Brazil) On Inverse Problems for some Structured Population PDEs	Abstracts p. 285

Special Session 77	The Navier-Stokes Equations and Related Problems Organizer(s): Sarka Necasova, Reimund Rautmann, Werner Varnhorn	Location REH-3
16:00-16:30	Jan Stebel (Institute of Mathematics of the AS CR, Czech Rep) Compressible Navier-Stokes equations with slip boundary conditions in time dependent domains	Abstracts p. 289
16:30-17:00	Ondrej Kreml (Institute of Mathematics, Academy of Sciences of the Czech Rep., Czech Rep) On the steady equations for compressible radiative gas	Abstracts p. 288
17:00-17:30	Tomasz Piasecki (University of Warsaw, Poland) On a stationary compressible flow with slip - inflow boundary conditions	Abstracts p. 288

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 Schrödinger 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 Roegner (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

Tuesday, July 3

13:30PM-15:30PM

Parallel Session 8

Special Session 3	Mathematics of Social Systems Organizer(s): Andrea Bertozzi	Location GRC-B
13:30-14:00	Maria D'orsogna (California State University at Northridge, USA) An adversarial evolutionary game for criminal behavior	Abstracts p. 12
14:00-14:30	Nancy Rodriguez (Stanford University, USA) Hotspot Invasion: Traveling Wave Solutions to a Reaction-Diffusion Model for Criminal Behavior	Abstracts p. 15
14:30-15:00	George Mohler (Santa Clara University, USA) Filtering and estimation of self-exciting Cox processes with applications to social systems	Abstracts p. 14
15:00-15:30	Alethea Barbaro (UCLA Mathematics, USA) Modeling Social Dynamics	Abstracts p. 12

Special Session 6	Dispersal in Heterogeneous Landscape Organizer(s): Robert Stephen Cantrell, Chris Cosner, Yuan Lou, Juan Diego Davila, Alexander Quaas	Location MAG-B
13:30-14:00	Donald L DeAngelis (University of Miami, USA) Fish Biomass Production and Dispersal across a Seasonally Flooded Marsh	Abstracts p. 29
14:00-14:30	William F Fagan (University of Maryland, USA) Linking Individual Movements and Population Patterns in Dynamic Landscapes	Abstracts p. 29
14:30-15:00	Samuel M Flaxman (University of Colorado Boulder, USA) Evolutionary Ecology of Habitat Selection by Predators and Prey	Abstracts p. 29
15:00-15:30	Salome Martinez (Universidad de Chile, Chile) Asymptotic behavior of a nonlocal inhomogeneous equation	Abstracts p. 31

Special Session 9	Mathematics for Information Processing and Management Organizer(s): Jianhong Wu, Zongben Xu	Location REH-5
13:30-14:00	Ai Ling Amy Poh (Meiji University, Malaysia) ELECTRE ranking approach for benchmarking analysis in marketing sector	Abstracts p. 39
14:00-14:30	Aijun An (York University, Canada) Discovering Most collaborative Teams of Experts in Social Networks	Abstracts p. 39
14:30-15:00	Zhiping Chen (Xi'an Jiaotong University, Peoples Rep of China) Time consistent multiperiod risk measure under generalized convex framework	Abstracts p. 39
15:00-15:30	Dazhi Chong (Old Dominion University, USA) Firm Clustering using Standard-Based Financial Statements	Abstracts p. 39

Special Session 10	Computational and Nonautonomous Dynamics Organizer(s): Michael Dellnitz, Oliver Junge, Stefan Siegmund	Location GRC-A
13:30-14:00	Matthew West (University of Illinois at Urbana-Champaign, USA) Multiscale time evolution for Markov jump particle systems	Abstracts p. 47
14:00-14:30	Lee DeVille (University of Illinois, USA) Multiscaling and Coarse-graining for Coagulation Processes in High Dimension	Abstracts p. 43
14:30-15:00	Eric Darve (Stanford, USA) Macro-state models for protein modeling	Abstracts p. 43
15:00-15:30	Sina Ober-Blobaum (University of Paderborn, Germany) On the development and analysis of variational integrators for multirate dynamical systems	Abstracts p. 45

Special Session 12	Singular Perturbations and Boundary Layer Theory Organizer(s): Makram Hamouda, Chang-Yeol Jung, Roger Temam	Location REH-6
13:30-14:00	Roger Temam (Indiana University, USA) Convection-diffusion equation with small viscosity in a circle	Abstracts p. 54
14:00-14:30	Chang-Yeol Jung (UNIST, Korea) Singularly perturbed convection-diffusion equations on a circle domain	Abstracts p. 53
14:30-15:00	Fernanda F Cipriano (GFM-UL and FCT New University of Lisbon, Portugal) Boundary layer problem: Navier-Stokes equations and Euler equations	Abstracts p. 52
15:00-15:30	Tuoc V Phan (University of Tennessee, USA) Navier-Stokes Equations in Critical Spaces: Existence and Stability of Steady State Solutions	Abstracts p. 53

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
13:30-14:00	Michinori Ishiwata (Fukushima University, Japan) Variational problems associated with Trudinger-Moser inequalities in unbounded domains	Abstracts p. 68
14:00-14:30	Yusuke Yamauchi (Waseda University, Japan) Life span of positive solutions for a semilinear heat equation with non-decaying initial data	Abstracts p. 72
14:30-15:00	Junichi Harada (Waseda University, Japan) Asymptotic behavior of blow-up solutions for the heat equations with nonlinear boundary conditions	Abstracts p. 67
15:00-15:30	Joep Evers (Eindhoven University of Technology, Netherlands) Leadership in crowd dynamics: modelling via two-scale interactions	Abstracts p. 67

Special Session 17	Singular Perturbations Organizer(s): Freddy Dumortier, Peter De Maesschalck, Martin Wechselberger	Location GRC-I
13:30-14:00	Anna R Ghazaryan (Miami University, USA) Gasless combustion fronts with heat loss	Abstracts p. 79
14:00-14:30	Emily P Harvey (Montana State University, USA) Using geometric singular perturbation techniques to analyse models of intracellular calcium dynamics	Abstracts p. 79
14:30-15:00	Alexandre Vidal (University of Evry, France) Mixed-Mode Oscillations in a multiple time scale phantom bursting system	Abstracts p. 80
15:00-15:30	Andrey Shilnikov (GSU, USA) Interval mappings for slow-fast models of neurons	Abstracts p. 80

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
13:30-14:00	Yuanwei Qi (UCF, USA) Traveling Waves of Thermal Diffusivity System-Existence and Stability	Abstracts p. 82
14:00-14:30	Zhisheng Shuai (University of Victoria, Canada) A Graph-Theoretic Approach to Global Stability Problems in Some Discrete Diffusion Models	Abstracts p. 83
14:30-15:00	Joaquin Rivera (Colgate University, USA) Spreading Speed, Traveling Waves and Linear Determinacy for STDs Models	Abstracts p. 82
15:00-15:30	Yi Li (Wright State University and Xi'an Jiaotong University, USA) Multiple Solutions to an Elliptic Problem Related to Vortex Pairs	Abstracts p. 82

Special Session 21	Dynamical Systems and Spectral Theory Organizer(s): David Damanik	Location REH-2
13:30-14:00	Anton Gorodetski (UC Irvine, USA) Properties of the IDS of the Fibonacci Hamiltonian	Abstracts p. 92
14:00-14:30	William Yessen (UC Irvine, USA) Spectral analysis of tridiagonal Fibonacci Hamiltonians	Abstracts p. 94
14:30-15:00	Roberta Fabbri (Universita' di Firenze, Italy) Spectral properties for the quasi-periodic Schroedinger equation	Abstracts p. 92
15:00-15:30	Helge Krueger (Caltech, USA) Recent developments for skew-shiftSchroedinger operators	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
13:30-14:00	Jesus Rodriguez (North Carolina State University, USA) Existence Analysis for Nonlocal Sturm-Liouville Boundary Value Problems	Abstracts p. 98
14:00-14:30	Joseph Paultet (Penn State Erie, USA) Boundary value problems governing fluid flow and heat transfer over an unsteady stretching sheet	Abstracts p. 98
14:30-15:00	Jeffrey W Lyons (Texas A&M University - Corpus Christi, USA) Boundary Data Smoothness for Solutions of nth Order Nonlocal Boundary Value Problems	Abstracts p. 97
15:00-15:30	Pengfei Yuan (Sichuan University, Peoples Rep of China) New periodic solutions for N-body-type problems with prescribed energies	Abstracts p. 99

Special Session 26	Qualitative Aspects of Nonlinear Boundary Value Problems Organizer(s): Marta Garcia-Huidobro, Raul Manasevich, James Ward	Location REH-7
13:30-14:00	Alberto Montero (P. Universidad Católica de Chile, Chile) On the energy of the current vector of a complex valued function in \mathbb{R}^3	Abstracts p. 118
14:00-14:30	Ricardo Enguiça (Centro de Matematica e Aplicacoes Fundamentais, Portugal) Nonlocal maximum principles and applications	Abstracts p. 117
14:30-15:00	Ignacio Guerra (Universidad de Santiago de Chile, Chile) Solutions for a semilinear elliptic equation in dimension two with supercritical growth.	Abstracts p. 118
15:00-15:30	Mariel Saez (Pontificia Universidad Catolica, Chile) Hyperbolic fractional Laplacian	Abstracts p. 119

Special Session 27	Transport Barriers in Dynamical Systems Organizer(s): George Haller, Wenbo Tang	Location REH-8
13:30-14:00	Shawn Shadden (IIT, USA) Maximal stretching surfaces as potential platelet activation pathways	Abstracts p. 123
14:00-14:30	Melissa A Green (Syracuse University, USA) Using LCS to study the transition vortex shedding on a cylinder in cross-flow	Abstracts p. 121
14:30-15:00	Amir BozorgMagham (Virginia Tech University, USA) Lagrangian coherent structures, biological invasions, and limits of forecasting	Abstracts p. 120
15:00-15:30	Emily Shuckburgh (British Antarctic Survey, England) Mapping unstable manifolds using floats in a Southern Ocean field campaign	Abstracts p. 123

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
13:30-14:00	Nicholas D Brubaker (University of Delaware, USA) On a prescribed mean curvature equation in modeling MEMS	Abstracts p. 129
14:00-14:30	Juan Davila (Universidad de Chile, Chile) Solutions with point singularities for a MEMS equation with fringing field	Abstracts p. 129
14:30-15:00	Veronica Felli (University of Milano-Bicocca, Italy) Singularity of eigenfunctions at the junction of shrinking tubes	Abstracts p. 129
15:00-15:30	Ignacio Guerra (Universidad de Santiago de Chile, Chile) Solutions for a semilinear elliptic equations involving critical exponents.	Abstracts p. 130

Special Session 33	Nonlinear Elliptic and Parabolic Problems in Mathematical Sciences Organizer(s): Yoshihisa Morita, Junping Shi	Location REH-9
13:30-14:00	Arnd Scheel (University of Minnesota, USA) Wavenumber selection in closed reaction-diffusion systems	Abstracts p. 149
14:00-14:30	Yoshihisa Morita (Ryukoku University, Japan) Gradient-like property of a reaction-diffusion system with mass conservation	Abstracts p. 148
14:30-15:00	Hirokazu Ninomiya (Meiji University, Japan) Diffusion-induced blowup and bifurcation from infinity of reaction-diffusion systems	Abstracts p. 148
15:00-15:30	Yoshihito Oshita (Okayama University, Japan) Dynamics for an evolution equation describing micro phase separation	Abstracts p. 149

Special Session 34	Multi-phase Flows in Porous Media and Related Systems Organizer(s): David Ambrose, Xiaoming Wang, Steven Wise	Location MAG-A
13:30-14:00	Shuwang Li (Illinois Institute of Technology, USA) A rescaling scheme and its applications to free boundary problems	Abstracts p. 153
14:00-14:30	Mark Sussman (Florida State University, USA) A Coupled Level Set-Moment of Fluid Method for Incompressible Two-Phase Flows	Abstracts p. 154
14:30-15:00	David M Ambrose (Drexel University, USA) Removing the stiffness from 3D interfacial flow with surface tension	Abstracts p. 152
15:00-15:30	Michael Siegel (NJIT, USA) A nonstiff boundary integral method for 3D interfacial flow with surface tension	Abstracts p. 154

Special Session 38	Bifurcations and Asymptotic Analysis of Solutions of Nonlinear Models Organizer(s): Jann-Long Chern, Yoshio Yamada, Shoji Yotsutani	Location PAL-A
13:30-14:00	Minoru Murai (Ryukoku University, Japan) Structure and blow up phenomena for plane closed elastic curves	Abstracts p. 167
14:00-14:30	Yoshitsugu Kabeya (Osaka Prefecture University, Japan) Structures of positive solutions to nonlinear elliptic equations on the hyperbolic space	Abstracts p. 167
14:30-15:00	Soohyun Bae (Hanbat National University, Korea) On positive solutions of semilinear elliptic equations with supercritical exponent	Abstracts p. 166
15:00-15:30	Yong-Li Tang (National Center for Theoretical Sciences, Taiwan) Structural analysis of solutions to nonlinear systems of elliptic partial differential equations	Abstracts p. 168

Special Session 41	New Developments in Qualitative Behavior of Evolutionary PDEs Organizer(s): Ryo Ikehata, Grozdena Todorova	Location PAL-CC
13:30-14:00	Hiroyuki Takamura (Future University Hakodate, Japan) The final problem on the optimality of the general theory for nonlinear wave equations and related topics.	Abstracts p. 175
14:00-14:30	Petronela Radu (University of Nebraska-Lincoln, USA) Existence and blow-up of solutions for nonlinear wave equations	Abstracts p. 175
14:30-15:00	Hideo Kubo (Tohoku University, Japan) Global existence for critical nonlinear massless Dirac equations with null structure in 3D	Abstracts p. 174
15:00-15:30	Hideo Nakazawa (Chiba Institute of Technology, Japan) Uniform resolvent estimates for Helmholtz equation in an exterior domain and their application to scattering problems	Abstracts p. 175

Special Session 42	Global or/and Blowup Solutions for Nonlinear Evolution Equations and Their Applications Organizer(s): George Chen, Ming Mei	Location REH-4
13:30-14:00	Priyanjana Dharmawardane (Kyushu University, Japan) Decay property of regularity-loss type for quasi-linear hyperbolic systems of viscoelasticity	Abstracts p. 177
14:00-14:30	Seiro Omata (Kanazawa University, Japan) Mathematical and computational aspects of problems involving adhesion, detachment, and collision	Abstracts p. 180
14:30-15:00	Zhixian Yu (University of Shanghai for Technology and Science, Peoples Rep of China) Existence of monotone traveling waves for a delayed non-monotone population model on 1-D lattice	Abstracts p. 182
15:00-15:30	Fengxin Chen (University of Texas at San Antonio, USA) Structure of Principal Eigenvectors and Genetic Diversity	Abstracts p. 177

Special Session 48	Nonlinear Evolution Equations Organizer(s): Alex Himonas, Gerson Petronilho	Location POI-B
13:30-14:00	Jaime Angulo Pava (University of Sao Paulo, Brazil) Linear instability of Periodic Traveling Waves for Nonlinear Dispersive Models	Abstracts p. 202
14:00-14:30	Martha Patricia Dussan Angulo (University of Sao Paulo, Brazil) Solutions of Björling problem for timelike surface and the homogeneous wave equation	Abstracts p. 203
14:30-15:00	Daniel da Silva (University of Rochester, USA) Generalized Wave Maps on the Sphere	Abstracts p. 203
15:00-15:30	Anahit Galstyan (University of Texas-Pan American, USA) Cauchy Problem for some hyperbolic equations of mathematical cosmology	Abstracts p. 203

Special Session 52	Fractional Differential and Integral Equations, Theory and Applications Organizer(s): Eduardo Cuesta, Mokhtar Kirane, Onur Alp Ilhan	Location MAG-C
13:30-14:00	Aissa Guesmia (Lorraine University, France) Asymptotic stability of abstract dissipative systems with infinite memory	Abstracts p. 217
14:00-14:30	Hossein H Jafari (University of Mazandaran, So Africa) Solving Fractional Riccati differential equations using modified variational iteration method	Abstracts p. 217
14:30-15:00	Angela Jimenez-Casas (Universidad Pontifica Comillas de Madrid, Spain) Finite-dimensional behavior in a thermosyphon with a viscoelastic fluid	Abstracts p. 218
15:00-15:30	Muhammad Mustafa (King Fahd University of Petroleum and Minerals, Saudi Arabia) Exponential decay in thermoelastic systems with boundary delay	Abstracts p. 219

Special Session 58	Variational Analysis and Equilibrium Problems Organizer(s): Patrizia Daniele	Location POI-C
13:30-14:00	Annamaria Barbagallo (University of Naples "Federico II", Italy) A variational formulation for dynamic market equilibrium problems with excesses	Abstracts p. 235
14:00-14:30	Sofia Giuffrè (Mediterranea University of Reggio Calabria, Italy) A survey on duality theory in elastic-plastic torsion problem	Abstracts p. 236
14:30-15:00	Tina Wakolbinger (WU (Vienna University of Economics and Business), Austria) The influence of technical, market and legislative factors on e-waste flows	Abstracts p. 237
15:00-15:30	Fuminori Toyasaki (York University, Canada) A Variational Inequality Formulation of Economic Network Equilibrium Models with Nonlinear Constraints	Abstracts p. 237

Special Session 75	Heteroclinic Cycles: Theory and Applications Organizer(s): Peter Ashwin, Pascal Chossat, Reiner Lauterbach	Location POI-D
13:30-14:00	Alexandre A Rodrigues (Sciences Faculty Oporto University, Portugal) Heteroclinic Phenomena	Abstracts p. 282
14:00-14:30	Irma Tristan (University of California San Diego, Mexico) Timing Control of Networks with Switching Dynamics	Abstracts p. 282
14:30-15:00	Thorsten Riess (University of Konstanz, Germany) Heteroclinic bifurcations near non-reversible homoclinic snaking	Abstracts p. 282
15:00-15:30	Alexander Lohse (University of Hamburg, Germany) On relations between the stability index and attraction properties of heteroclinic cycles	Abstracts p. 281

Special Session 81	Analysis and Simulation of Multi-scale Problems Organizer(s): Xiao-Ping Wang, Yang Xiang	Location REH-3
13:30-14:00	Pingbing Ming (AMSS, Peoples Rep of China) Well-posedness of A Generalized Peierls-Nabarro Model	Abstracts p. 302
14:00-14:30	Weiying Ren (New York University, Singapore) A seamless multiscale method and its application to complex fluids	Abstracts p. 303
14:30-15:00	Phanish Suryanarayana (Georgia Institute of Technology, USA) Coarse-graining Kohn-Sham Density Functional Theory	Abstracts p. 303
15:00-15:30	Xiaoping Wang (Hong Kong University of Science and Technology, Hong Kong) Efficient numerical methods for the phase field simulation of moving contact line problem	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
13:30-14:00	Stephen Anco (Brock University, Canada) Multi-component soliton equations from geometric curve flows	Abstracts p. 305
14:00-14:30	Ming Chen (University of Pittsburgh, USA) C^3 ill-posedness of the gravity-capillary problem	Abstracts p. 305
14:30-15:00	Byungsoo Moon (University of Texas at arlington, USA) Wave breaking and global existence for the generalized periodic two-component Hunter-Saxton system	Abstracts p. 306
15:00-15:30	Xu Junxiang (Southeast University, Peoples Rep of China) On small quasi-periodic perturbation of two-dimensional hyperbolic-type degenerate nonlinear systems	Abstracts p. 306

Contributed Session 07	Scientific Computation and Numerical Algorithms Chair(s): Paula Kemp	Location GRC-C
13:30-13:50	Dominic Kohler (Technical University Munich, Germany) Uncertainty Quantification with Probabilistic Cellular Automata	Abstracts p. 324
13:50-14:10	Eucharia C Nwachukwu (University of Port Harcourt, Nigeria) Determining important parameters in the dynamics of a three-compartment model of abiotic nutrient pool, autotroph and detritus.	Abstracts p. 324
14:10-14:30	Eucharia C Nwachukwu (University of Port Harcourt, Nigeria) Sensitivity analysis of a mathematical ecology model.	Abstracts p. 324
14:30-14:50	Andrei Bourchtein (Pelotas State University, Brazil) Time-splitting scale-selective numerical scheme for atmospheric modeling	Abstracts p. 323
14:50-15:10	Stefanie Thiem (Chemnitz University of Technology, Germany) Modeling the Thermal Conductance of Phononic Crystal Plates	Abstracts p. 325

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 environments 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	Wenyong 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 Wechsberger	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 Almcera (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, Grozdna 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 <i>*Extended Session</i>	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 Scimali (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.264
16:30-17:00	Juan Francisco Padiá (Universidad Politécnica de Madrid, Spain) On a nonlocal Bernoulli-type problem with unknown measure data	Abstracts p.265
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.264
17:30-18:00	Alfonso C Casal (Universidad Politécnica de Madrid, Spain) Some results on Hopf type bifurcation in delayed complex Ginzburg-Landau equations	Abstracts p.264

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

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 (University 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 University, 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 Roekner (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 (Università 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) <i>L^p</i> -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

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13:30PM-15:30PM

Parallel Session 11

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	Pedro M Jordan (U.S. Naval Research Laboratory, USA) Nonlinear Poroacoustic Flow in Rigid Porous Media	Abstracts p. 20
14:00-14:30	Ivan C Christov (Princeton University, USA) Dissipative acoustic solitons	Abstracts p. 18
14:30-15:00	Antonio Gaudiello (Universita' degli Studi di Cassino e del Lazio meridionale, Italy) The polarization in a ferroelectric thin film: local and nonlocal limit problems	Abstracts p. 19
15:00-15:30	Mikil Foss (University of Nebraska-Lincoln, USA) Partial Continuity for Parabolic Systems	Abstracts p. 18

Special Session 6	Dispersal in Heterogeneous Landscape Organizer(s): Robert Stephen Cantrell, Chris Cosner, Yuan Lou, Juan Diego Davila, Alexander Quaas	Location MAG-B
13:30-14:00	Jimmy Garnier (Aix-Marseille Université, France) Accelerating solutions in integro-differential equations	Abstracts p. 30
14:00-14:30	Nestor D Guillen (UCLA, USA) On pointwise estimates for non-local elliptic equations	Abstracts p. 30
14:30-15:00	Hector A Chang Lara (University of Texas at Austin, USA) Regularity for solutions of non local parabolic equations	Abstracts p. 28

Special Session 8	Propagation Phenomena Appearing in Reaction-Diffusion Systems Organizer(s): Hirokazu Ninomiya, Masaharu Taniguchi	Location REH-1
13:30-14:00	Bendong Lou (Tongji University, Peoples Rep of China) Semilinear Solutions in a Sector for a Curvature Flow Equation	Abstracts p. 36
14:00-14:30	Shimojo Masahiko (Hokkaido University, Japan) Convergence and blow-up of solutions for a complex-valued heat equation with a quadratic nonlinearity	Abstracts p. 37
14:30-15:00	Jian Fang (York University, Canada) Monotone traveling waves of the nonlocal Fisher-KPP equation	Abstracts p. 35
15:00-15:30	Tohru T Wakasa (Kyushu Institute of Technology, Japan) Precise asymptotic formulas of critical eigenfunctions for 1D bistable reaction diffusion equations	Abstracts p. 37

Special Session 9	Mathematics for Information Processing and Management Organizer(s): Jianhong Wu, Zongben Xu	Location REH-5
13:30-14:00	Deyu Meng (Xi'an Jiaotong University, Peoples Rep of China) A divide-and-conquer approach to effective and efficient L1 norm matrix factorization	Abstracts p. 40
14:00-14:30	Seyed Moghadas (York University, Canada) Agent-Based Modelling Frameworks for developing public health policies	Abstracts p. 41
14:30-15:00	Yang Mu (University of Massachusetts, USA) Tensor regression model for Crime Prediction	Abstracts p. 41
15:00-15:30	Zhou Zhang (School of Management, Xi'an Jiaotong University, Peoples Rep of China) An improved model of anonymous entity resolution in the public sector	Abstracts p. 42

Special Session 10	Computational and Nonautonomous Dynamics Organizer(s): Michael Dellnitz, Oliver Junge, Stefan Siegmund	Location GRC-A
13:30-14:00	Ken J Palmer (Providence University, Taiwan) Rigorous Connecting Orbits from Numerics	Abstracts p. 46
14:00-14:30	Stephen Lucas (James Madison University, USA) Simple Heteroclinic Orbit Examples in the Plane	Abstracts p. 45
14:30-15:00	Gianni Arioli (Politecnico di Milano, Italy) A computer assisted enclosure for invariant manifolds	Abstracts p. 43
15:00-15:30	Mirko Hessel-von Molo (University of Paderborn, Germany) Computing invariant sets with Newton-type iterations: towards a covering approach	Abstracts p. 44

Special Session 16	Reaction Diffusion Equations and Applications Organizer(s): Jerome Goddard, Ratnasingham Shivaji	Location REH-8
13:30-14:00	Abdur Raheem (Indian Institute of Technology, Kanpur, India) A study of delayed cooperation diffusion system with Dirichlet boundary conditions	Abstracts p. 75
14:00-14:30	Maya Chhetri (UNC Greensboro, USA) Existence and Nonexistence of Positive Solutions For a Special Class of Elliptic Systems	Abstracts p. 73
14:30-15:00	Inbo Sim (University of Ulsan, Korea) Existence of solutions for degenerate elliptic $p(x)$ -Laplacian	Abstracts p. 77
15:00-15:30	Eun Kyoung Lee (Pusan National University, Korea) Existence of the second positive solution for a p -Laplacian problem	Abstracts p. 75

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
13:30-14:00	Hugo Tavares (University of Lisbon, Portugal) Optimal partition problems involving Laplacian eigenvalues	Abstracts p. 131
14:00-14:30	Gianmaria Verzini (Politecnico di Milano, Italy) Natural constraints in variational methods and superlinear Schroedinger systems	Abstracts p. 132
14:30-15:00	Juncheng Wei (Chinese University of Hong Kong, Hong Kong) Qualitative properties and existence results for an nonlinear elliptic system	Abstracts p. 132
15:00-15:30	Matthias Winter (Brunel University, England) Spiky Patterns in a Consumer Chain Model	Abstracts p. 132

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	Shibo Liu (Xiamen University, Peoples Rep of China) Standing waves of nonlinear Schrodinger equation	Abstracts p. 144
14:00-14:30	Petru Jebelean (West University of Timisoara, Romania) Multiple critical orbits for a class of lower semicontinuous functionals	Abstracts p. 144
14:30-15:00	Michael M Melgaard (Dublin Institute of Technology, Ireland) Elliptic variational problems with nonlocal operators	Abstracts p. 144
15:00-15:30	Antonia Chinnì (University of Messina, Italy) Multiple solutions for Dirichlet problems involving the $p(x)$ -Laplace operator	Abstracts p. 143

Special Session 36	Stochastic Partial Differential Equations and their Optimal Control Organizer(s): Wilfried Grecksch	Location POI-A
13:30-14:00	Hans-Joerg Starkloff (University of Applied Sciences Zwickau, Germany) Generalized polynomial chaos expansion and the solution of random pdes	Abstracts p. 162
14:00-14:30	Antje Mugler (Brandenburg University of Technology Cottbus, Germany) On random partial differential equations	Abstracts p. 161
14:30-15:00	Martin Sauer (Department of Mathematics, TU Darmstadt, Germany) Kolmogorov Equations for Randomly Forced Fluids	Abstracts p. 162
15:00-15:30	Christian F Roth (Martin-Luther-University Halle-Wittenberg, Germany) A Maximum Principle for a Distributed Stochastic Optimal Control Problem	Abstracts p. 162

Special Session 38	Bifurcations and Asymptotic Analysis of Solutions of Nonlinear Models Organizer(s): Jann-Long Chern, Yoshio Yamada, Shoji Yotsutani	Location PAL-A
13:30-14:00	Hidemitsu Wadade (Gifu University, Japan) On the sharp constant for the weighted Trudinger-Moser type inequality of the scaling invariant form	Abstracts p. 168
14:00-14:30	Chun-Hsiung Hsia (National Taiwan University, Taiwan) Dynamical bifurcation of the two dimensional Swift-Hohenberg equation with odd periodic condition	Abstracts p. 166
14:30-15:00	Tien-Tsan Shieh (National Chiao-Tung University, Taiwan) Bifurcation analysis for the superconducting/normal phase transition of the Ginzburg-Landau system	Abstracts p. 168
15:00-15:30	Hans Koch (The University of Texas at Austin, USA) Non-symmetric low-index solutions for symmetric boundary value problems	Abstracts p. 167

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
13:30-14:00	Jun-Sheng Duan (Shanghai Institute of Technology, Peoples Rep of China) Fast generation algorithms for the Adomian polynomials	Abstracts p. 170
14:00-14:30	Richard D Neidinger (Davidson College, USA) Efficient Recurrence Relations for Univariate and Multivariate Taylor Series Coefficients	Abstracts p. 171
14:30-15:00	Saroj Aryal (University of Wyoming, USA) Sparse Moment Sequences	Abstracts p. 170
15:00-15:30	Joseph D Rudmin (James Madison University, USA) Padé Approximants and Pole Extraction Near Singular Points.	Abstracts p. 171

Special Session 41	New Developments in Qualitative Behavior of Evolutionary PDEs Organizer(s): Ryo Ikehata, Grozdna Todorova	Location PAL-CC
13:30-14:00	Ruy Charão (Federal University of Santa Catarina, Brazil) Energy decay of a magnetoelastic system in an exterior 3-D domain	Abstracts p. 173
14:00-14:30	Ryo Ikehata (Hiroshima University, Japan) Energy decay estimates for wave equations with a fractional damping	Abstracts p. 174
14:30-15:00	Grozdna Todorova (University of Tennessee, USA) Generalized diffusion phenomenon in Hilbert space	Abstracts p. 176

Special Session 42	Global or/and Blowup Solutions for Nonlinear Evolution Equations and Their Applications Organizer(s): George Chen, Ming Mei	Location REH-4
13:30-14:00	Weihua Ruan (Purdue University Calumet, USA) Viscosity Solutions of a Class of Degenerate Quasilinear Parabolic Equations	Abstracts p. 180
14:00-14:30	Chi-Tien Lin (Providence University, Taiwan) Numerical study for long-time solutions for some hyperbolic conservation laws with nonlinear term	Abstracts p. 179
14:30-15:00	Xiongfeng Yang (Shanghai Jiao Tong University, Peoples Rep of China) Global existence and asymptotic behavior of the solutions to the three dimensional bipolar Euler-Poisson systems	Abstracts p. 181
15:00-15:30	Koji Kikuchi (Shizuoka University, Japan) An analysis in the space of BV functions for the equation of motion of a vibrating membrane with a “viscosity” term	Abstracts p. 179

Special Session 43	Stochastic Networks with Applications to Neuroscience Organizer(s): Lee DeVille, Georgi Medvedev	Location REH-7
13:30-14:00	Georgi S Medvedev (Drexel University, USA) The geometry of spontaneous spiking in neuronal networks	Abstracts p. 184
14:00-14:30	Eli Shlizerman (University of Washington, USA) Competing spatiotemporal neural codes in the olfaction of the <i>Manduca sexta</i> moth	Abstracts p. 185
14:30-15:00	Stephen Berning (University of Illinois, USA) Dynamics of a Stochastic Neuronal Network Model with Inhibitory Neurons	Abstracts p. 183
15:00-15:30	Andrea K Barreiro (Southern Methodist University, USA) Modeling collective neural activity: when are pairwise maximum entropy methods good enough?	Abstracts p. 183

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	Kevin K Lin (University of Arizona, USA) Faster Dynamic Monte Carlo via Markov Couplings	Abstracts p. 188
14:00-14:30	Yi Sun (University of South Carolina, USA) A Multiscale Method for Epitaxial Growth	Abstracts p. 189
14:30-15:00	Arjun Beri (Mathematical Biosciences Institute, USA) A general Method for Parametric Estimation of Stochastic Volatility Models	Abstracts p. 186
15:00-15:30	Rafail V Abramov (University of Illinois at Chicago, USA) A simple linear response closure approximation for slow dynamics of a multiscale system	Abstracts p. 186

Special Session 46	Discrete/Continuous and Nonstandard Analysis Organizer(s): Kiyoyuki Tchizawa, Imme van den Berg	Location PAL-D
13:30-14:00	Shigeaki Nagamachi (Tokushima University, Japan) Relativistic quantum field theory with a fundamental length	Abstracts p. 196
14:00-14:30	Kiyoyuki Tchizawa (Institute of Administration Engineering, Ltd., Japan) On relative stability in 4-dimensional canard	Abstracts p. 196
14:30-15:00	Imme I van den Berg (University of Evora, Portugal) Transitions between discreteness and continuity of all orders of regularity.	Abstracts p. 196
15:00-15:30	Keita Yokoyama (Pennsylvania State University, USA) A proof-theoretic approach for Nonstandard Analysis	Abstracts p. 196

Special Session 47	Dynamics and Games Organizer(s): Alberto Pinto, Michel Benaim	Location POI-C
13:30-14:00	Helena Ferreira (LIAAD, Portugal) Nash equilibria in a platonic idealized psychological model	Abstracts p. 198
14:00-14:30	Helena Ferreira (LIAAD, Portugal) Bayesian-Nash equilibria in a cave psychological model	Abstracts p. 198
14:30-15:00	James Keesling (University of Florida, USA) Application of Queueing Theory to Emergency Care	Abstracts p. 199
15:00-15:30	Jay Kovats (Florida Institute of Technology, USA) The $W^{2,p}$ Regularity for Solutions of the Simplest Isaacs Equations	Abstracts p. 199

Special Session 51	Ordinal Symbolic Dynamics and Applications Organizer(s): Jose Maria Amigo, Karsten Keller	Location POI-B
13:30-14:00	Ulrich Parlitz (Max Planck Institute for Dynamics and Self-Organization, Germany) Nonlinear Signal Analysis and Classification using Ordinal Patterns	Abstracts p. 216
14:00-14:30	Grzegorz Graff (Gdansk University of Technology, Poland) Analysis of heart rate asymmetry by ordinal patterns	Abstracts p. 214
14:30-15:00	Roberto A Monetti (Max Planck Institute for extraterrestrial Physics, Germany) Information Measures to Characterize the Coupling Complexity between Dynamical System Components	Abstracts p. 215
15:00-15:30	David Arroyo (Universidad Autonoma de Madrid, Spain) Event detection, multimodality and non-stationarity: order patterns, a tool to rule them all?	Abstracts p. 213

Special Session 54	Dynamics in Complex Networks Organizer(s): Juan A. Almendral, Miguel Romance	Location MAG-C
13:30-14:00	Rosa M Benito (Universidad Politecnica de Madrid, Spain) Dynamics in a social network surrounding an online political protest	Abstracts p. 222
14:00-14:30	F. Javier Borondo (Universidad Politecnica de Madrid, Spain) Analyzing offline events through the mirror of Online Social Networks	Abstracts p. 223
14:30-15:00	Juan Carloss J Losada (Universidad Politecnica de Madrid, Spain) Analysis of human behaviors from telephone interactions. Serendipity measures	Abstracts p. 224
15:00-15:30	Mahsa Maghami (University of Central Florida, USA) Influence Maximization for Advertising in Multi-agent Markets	Abstracts p. 224

Special Session 55	Nonlinear Elliptic and Parabolic Problems Organizer(s): Julian Lopez-Gomez	Location GRC-C
13:30-14:00	Sze-Bi Hsu (National Tsing-Hua University, Taiwan) Single Phytoplankton Growth on Light and Nutrient in a Water Column	Abstracts p. 227
14:00-14:30	Zhifu Xie (Virginia State University, USA) Blow-up Rate and Uniqueness of Singular Radial Solutions for a Class of Quasi-Linear Elliptic Equations	Abstracts p. 230
14:30-15:00	Georg Hetzer (Auburn University, USA) Diffusion-driven Instability for Non-autonomous Problems	Abstracts p. 227
15:00-15:30	Lei Wei (Jiangsu Normal University, Peoples Rep of China) Positive solutions of elliptic equation with Hardy potential	Abstracts p. 230

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	Antoine Choffrut (Universitaet Leipzig, Germany) The local structure of the set of steady-states to the 2D incompressible Euler equations of hydrodynamics	Abstracts p. 241
14:00-14:30	Ho Lee (Max Planck Institute for Gravitational Physics, Germany) Global existence and nonrelativistic limit for the Vlasov-Maxwell-Chern-Simons system	Abstracts p. 243
14:30-15:00	Luan T Hoang (Texas Tech University, USA) A Poincaré–Dulac normal form for Navier-Stokes equations	Abstracts p. 242
15:00-15:30	Kyungkeun Kang (Yonsei University, Korea) Local estimates of weak solutions for steady-state non-Newtonian fluid flows	Abstracts p. 242

Special Session 68	Analysis and Simulations of Nonlinear Systems Organizer(s): Wei Feng, Zhaosheng Feng	Location MAG-A
13:30-14:00	Qishao Q Lu (Beihang Univ., Peoples Rep of China) Burst synchronization and rhythm dynamics in neuronal networks	Abstracts p. 261
14:00-14:30	Canan Celik Karaaslanli (Bahcesehir University, Turkey) Hopf Bifurcation Analysis of a Predator- Prey System with Discrete and Distributed Delays	Abstracts p. 260
14:30-15:00	Indranil SenGupta (University of Texas- El Paso, USA) Hyper-spherical harmonics and jumps in financial markets	Abstracts p. 262
15:00-15:30	Lijun Zhang (Zhejiang Sci-Tech University, Peoples Rep of China) The effects of singular lines in nonlinear wave equations	Abstracts p. 263

Special Session 77	The Navier-Stokes Equations and Related Problems Organizer(s): Sarka Necasova, Reimund Rautmann, Werner Varnhorn	Location REH-3
13:30-14:00	Josef Bemelmans (RWTH Aachen University, Germany) An obstacle problem for capillary surfaces	Abstracts p. 286
14:00-14:30	Adelia Sequeira (Technical University of Lisbon, Portugal) Fluid-Structure Interaction Problems in Hemodynamics	Abstracts p. 289
14:30-15:00	Ana Silvestre (Instituto Superior Técnico, Portugal) On the motion of a fluid-rigid ball system at the zero limit of the rigid ball radius	Abstracts p. 289
15:00-15:30	Ewelina Zatorska (University of Warsaw, Poland) Chemically reacting mixtures	Abstracts p. 290

Contributed Session 09	PDEs and Applications Chair(s): Zhaosheng Feng	Location GRC-G
13:30-13:50	Hamidreza Rahimi (Central Tehran Branch. IAU, Iran) Note on “common fixed point results for noncommuting mappings without continuity in cone metric spaces”	Abstracts p. 330
13:50-14:10	Zhian Liang (Shanghai University of Finance and Economics, Peoples Rep of China) A Survey of the European Option Pricing Models	Abstracts p. 328
14:10-14:30	Andrei Bourchtein (Pelotas State University, Brazil) On solvability of balance equations for atmosphere dynamics	Abstracts p. 326
14:30-14:50	Nicholas Hoell (University of Toronto, Canada) Some Results in Tomography	Abstracts p. 327
14:50-15:10	Dmitry V Strunin (University of Southern Queensland, Australia) Dynamics in the nonlinearly excited 6th-order phase equation	Abstracts p. 330
15:10-15:30	Imran Naeem (Lahore University of Management Sciences (LUMS), Pakistan) Group classification of nonlinear equations on different surfaces	Abstracts p. 328

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16:00PM-18:30PM

Parallel Session 12

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	Mohammad A Rammaha (University of Nebraska-Lincoln, USA) Local and global well-posedness to a nonlinear model in viscoelasticity with m -Laplacian damping	Abstracts p. 21
16:30-17:00	Akif Ibragimov (Texas Tech University, USA) Non-Linear Plate Coupled with Darcy Flows for Slightly Compressible Fluid	Abstracts p. 20
17:00-17:30	Sorin Micu (University of Craiova, Romania) Time optimal boundary controls for the heat equation	Abstracts p. 21
17:30-18:00	Ciprian Gal (Florida International University, USA) Some Elliptic and Parabolic problems with boundary conditions of diffusive type	Abstracts p. 18
18:00-18:30	Amjad Tuffaha (The Petroleum Institute, United Arab Emirates) Solutions to the Euler equation on a domain with a moving boundary	Abstracts p. 22

Special Session 8	Propagation Phenomena Appearing in Reaction-Diffusion Systems Organizer(s): Hirokazu Ninomiya, Masaharu Taniguchi	Location REH-1
16:00-16:30	Kota Ikeda (Meiji University, Japan) Stability analysis for a planar traveling wave solution in an excitable systems	Abstracts p. 35
16:30-17:00	Chen Yan-Yu (Meiji University, Taiwan) Existence and uniqueness of spiral waves of a wave front interaction model in a plane	Abstracts p. 35
17:00-17:30	Ken-Ichi Nakamura (Kanazawa University, Japan) Existence of recurrent traveling waves in a two-dimensional undulating cylinder: the virtual pinning case	Abstracts p. 36
17:30-18:00	Matthias Winter (Brunel University, England) Symmetric and Asymmetric Spikes for the Two-Dimensional Schnakenberg Model	Abstracts p. 38
18:00-18:30	Hideo Ikeda (University of Toyama, Japan) Dynamics of traveling fronts in some heterogeneous diffusive media	Abstracts p. 35

Special Session 9	Mathematics for Information Processing and Management Organizer(s): Jianhong Wu, Zongben Xu	Location REH-5
16:00-16:30	Zongben Xu (Xi'an Jiaotong University, Peoples Rep of China) L1/2 regularization theory for sparse machine learning	Abstracts p. 41
16:30-17:00	Feng Xu (School of Management, Xi'an Jiaotong University, Peoples Rep of China) Risk assessment of China's commercial banks: Assessing data quality	Abstracts p. 42
17:00-17:30	Xuguo Zhang (Xi'an Jiaotong University, Peoples Rep of China) Delay Differential Equations and its Application in Developmental Biology	Abstracts p. 42
17:30-18:00	Zhou Zhang (School of Management, Xi'an Jiaotong University, Peoples Rep of China) An improved model of anonymous entity resolution in the public sector	Abstracts p. 42

Special Session 10	Computational and Nonautonomous Dynamics Organizer(s): Michael Dellnitz, Oliver Junge, Stefan Siegmund	Location GRC-A
16:00-16:30	Roberta Fabbri (Universita' di Firenze, Italy) Rotation number and exponential dichotomy for linear Hamiltonian systems: theoretical and numerical aspects	Abstracts p. 44
16:30-17:00	Cinzia Elia (University of Bari, Italy) Rotation number and QR based techniques for exponential dichotomy: numerical comparisons	Abstracts p. 43
17:00-17:30	Jacek Szybowski (AGH University of Science and Technology, Krakow, Poland) Towards automatic computation of the Conley index over a base	Abstracts p. 47

Special Session 16	Reaction Diffusion Equations and Applications Organizer(s): Jerome Goddard, Ratnasingham Shivaji	Location REH-8
16:00-16:30	Jerome Goddard II (Auburn University, USA) Population models with diffusion, strong Allee effect, and nonlinear boundary conditions	Abstracts p. 74
16:30-17:00	Robert Stephen Cantrell (University of Miami, USA) Evolution of dispersal and the ideal free distribution	Abstracts p. 73
17:00-17:30	Junping Shi (College of William and Mary, USA) Spatiotemporal Mutualistic Model of Mistletoes and Birds	Abstracts p. 76
17:30-18:00	Sarath Sasi (Mississippi State University, USA) Alternate Stable States in Ecological Systems	Abstracts p. 76
18:00-18:30	Shilpee Srivastava (Indian Institute of Technology Delhi, India) Dynamical behaviour of spatio-temporal plankton population model	Abstracts p. 77

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	Lei Zhang (University of Florida, USA) Monge-Ampere Equations on Exterior Domains	Abstracts p. 132
16:30-17:00	Alessandro Zilio (Politecnico di Milano, Italy) Regularity results for boundary partition problems	Abstracts p. 132
17:00-17:30	Susanna S Terracini (University of Milano-Bicocca, Italy) Extremality conditions for optimal partitions	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
16:00-16:30	Siegfried S Carl (University of Halle, Germany) Elliptic Variational Inequalities with Discontinuous Multifunctions	Abstracts p. 143
16:30-17:00	Giuseppina D'Agui (DiSIA, University of Messina, Italy) Multiplicity results for elliptic Neumann problems	Abstracts p. 143
17:00-17:30	Elisabetta Tornatore (University of Palermo, Italy) Three weak solutions for elliptic Dirichlet system	Abstracts p. 146
17:30-18:00	Raffaella Servadei (University of Calabria, Italy) Mountain Pass and Linking solutions for fractional Laplacian equations	Abstracts p. 146

Special Session 36	Stochastic Partial Differential Equations and their Optimal Control Organizer(s): Wilfried Grecksch	Location POI-A
16:00-16:30	Gabih Abdelali (University of Caddi Ayyad, Morocco) Portfolio Optimization Under Partial with Expert Opinions	Abstracts p. 160
16:30-17:00	Diana Keller (Martin-Luther-University Halle-Wittenberg, Germany) An Optimal Control Problem for a Nonlinear Controlled Stochastic Schrödinger Equation	Abstracts p. 161
17:00-17:30	Frank Wusterhausen (Martin Luther University Halle-Wittenberg, Germany) Schrödinger Equation with Noise on the Boundary	Abstracts p. 163
17:30-18:00	Michael Hinz (FSU Jena and Univ. of Connecticut, Germany) Vector calculus on fractals and applications	Abstracts p. 161
18:00-18:30	Wilfried Grecksch (Martin-Luther-University, Germany) A Filtering Problem for a Linear Stochastic Schrödinger Equation	Abstracts p. 160

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	Yuki Kaneko (Waseda University, Japan) Free boundary problems modeling the spreading of species in symmetric domains	Abstracts p. 167
16:30-17:00	Kazuhiro Oeda (Waseda University, Japan) Coexistence problem for a prey-predator model with a protection zone	Abstracts p. 168
17:00-17:30	Hiroshi Matsuzawa (Numazu National College of Technology, Japan) On a dynamics of solution with a transition layer to some bistable reaction diffusion equation	Abstracts p. 167

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
16:00-16:30	Chara C Pantazi (Universitat Politecnica de Catalunya, Spain) A generalization of Darboux's method	Abstracts p. 172
16:30-17:00	Faina Berezovsky (Howard University, USA) Asymptotics of Orbits of a Kolmogorov Type Planar Vector Field with a Fixed Newton Polygon	Abstracts p. 170
17:00-17:30	Philip C Parker (James Madison University, USA) Solving ODEs using PSM and Trees	Abstracts p. 171
17:30-18:00	John Bridstrup (James Madison University, USA) Systems of polynomial ODE's as a tool for improving the efficiency of numerical methods	Abstracts p. 170

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	Michael Winkler (University of Paderborn, Germany) Finite-time blow-up in the higher-dimensional Keller-Segel system	Abstracts p. 181
16:30-17:00	Elliott Ginder (Kanazawa University, Japan) An approximation scheme for area-constrained curvature-driven multiphase motions	Abstracts p. 178
17:00-17:30	Shaohua Chen (Cape Breton University, Canada) Global and Blowup Solutions for General Quasilinear Parabolic Systems	Abstracts p. 177

Special Session 43	Stochastic Networks with Applications to Neuroscience Organizer(s): Lee DeVille, Georgi Medvedev	Location REH-7
16:00-16:30	Carina Curto (University of Nebraska-Lincoln, USA) Spatially structured networks from sequences	Abstracts p. 184
16:30-17:00	Katherine A Newhall (Courant Institute, NYU, USA) Synchrony in Stochastic Pulse-coupled Neuronal Network Models	Abstracts p. 184
17:00-17:30	Vladimir Itskov (University of Nebraska-Lincoln, USA) Memory encoding via perturbations of spatially structured 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
16:00-16:30	Mickael Chekroun (UCLA, USA) Nonlinear stochastic inverse models with memory, and prediction of climatic phenomena	Abstracts p. 187
16:30-17:00	Boualem Khouider (University of Victoria, Canada) Stochastic models for organized tropical convection	Abstracts p. 188
17:00-17:30	Celestine A Woodruff (Florida State University, USA) The Effects of Time Iteration Schemes on the Climate of the Lorenz 96 Model	Abstracts p. 190

Special Session 47	Dynamics and Games Organizer(s): Alberto Pinto, Michel Benaim	Location POI-C
16:00-16:30	Abdelrahim Mousa (University of Porto, Portugal) A game theoretical approach to resort prices	Abstracts p. 199
16:30-17:00	Bruno Oliveira (LIAAD UP, Portugal) Strategic optimization in R&D Investment with uncertainty in the investment	Abstracts p. 200
17:00-17:30	Tania Oliveira (LIAAD UP, Portugal) The replicator dynamics and human decisions	Abstracts p. 199
17:30-18:00	Bruno Oliveira (LIAAD UP, Portugal) Random Matching Edgeworthian economies trading in the core via a prisoners dilemma	Abstracts p. 200

Special Session 50	Mathematical Novelties in Inverse Problems in Imaging Sciences Organizer(s): Alexandru Tamasan	Location PAL-D
16:00-16:30	Toufic El Arwadi (Beirut Arab University, Lebanon) Geometrical effects of the conductivity on the D-bar method procedure for the electrical impedance tomography	Abstracts p. 210
16:30-17:00	Peter Gibson (York University, Canada) Identification of minimum phase preserving operators	Abstracts p. 210
17:00-17:30	Nicholas Hoell (University of Toronto, Canada) Some Results on the Attenuated Ray Transform	Abstracts p. 210
17:30-18:00	Sungwhan Kim (Hanbat National University, USA) Reinterpretation of the imaginary part of the complex potential In EIT	Abstracts p. 210

Special Session 51	Ordinal Symbolic Dynamics and Applications Organizer(s): Jose Maria Amigo, Karsten Keller	Location POI-B
16:00-16:30	Maria F Correia (University of Evora, Portugal) Iteration of differentiable functions under m-modal maps with aperiodic kneading sequences	Abstracts p. 214
16:30-17:00	Karsten Keller (University of Luebeck, Germany) KS Entropy and Permutation Entropy	Abstracts p. 214
17:00-17:30	Anton M Unakafov (University of Luebeck, Germany) Conditional entropy of ordinal patterns	Abstracts p. 216
17:30-18:00	Jose M Amigo (Universidad Miguel Hernandez (Spain), Spain) Permutation entropy: One concept, two approaches	Abstracts p. 213
18:00-18:30	Juergen Kurths (Humboldt University Berlin, Germany) Cardiovascular Regulation During Sleep Quantified By Symbolic Coupling Traces	Abstracts p. 215

Special Session 54	Dynamics in Complex Networks Organizer(s): Juan A. Almendral, Miguel Romance	Location MAG-C
16:00-16:30	Stefano Boccaletti (Center for Biomedical Technology - UPM, Spain) Emerging Meso-and Macroscales from Synchronization of Adaptive Networks	Abstracts p. 223
16:30-17:00	Juan A Almendral (Rey Juan Carlos University, Spain) The integration/segregation phenomena from the complex networks viewpoint	Abstracts p. 222
17:00-17:30	Massimiliano Zanin (Centre for Biomedical Technology, UPM, Spain) Network reconstruction from vectors of features	Abstracts p. 225
17:30-18:00	Jean R Bragard (University of Navarra, Spain) Defibrillation mechanisms on a one-dimensional ring of cardiac tissue	Abstracts p. 223

Special Session 55	Nonlinear Elliptic and Parabolic Problems Organizer(s): Julian Lopez-Gomez	Location GRC-C
16:00-16:30	Giovanni Porru (University of Cagliari, Italy) Optimization of the first eigenvalue of equations with indefinite weights	Abstracts p. 228
16:30-17:00	David G Costa (University of Nevada Las Vegas, USA) On homoclinic solutions for singular Hamiltonian systems	Abstracts p. 227
17:00-17:30	Stella Piro Vernier (University of Cagliari, Italy) Pointwise estimates for solutions of singular parabolic problems in $\mathbb{R}^N \times [0, +\infty)$	Abstracts p. 228
17:30-18:00	Kimun Ryu (Cheongju University, Korea) Qualitative behavior of a diffusive predator-prey model	Abstracts p. 229
18:00-18:30	Kenichiro Umezū (Ibaraki University, Japan) On the effect of spatial heterogeneity in logistic type elliptic equations with nonlinear boundary conditions	Abstracts p. 230

Special Session 61	PDE Models for Biological Pattern Formation Organizer(s): Thomas Hillen, Michael Winkler	Location PAL-CC
16:00-16:30	Marcello Delitala (Politecnico di Torino, Italy) Mutations, competition and progression in cancer dynamics	Abstracts p. 238
16:30-17:00	Sachiko Ishida (Tokyo University of Science, Japan) Remarks on the global existence in super-critical cases for quasilinear degenerate Keller-Segel systems	Abstracts p. 238
17:00-17:30	Youshan Tao (Dong Hua University, Peoples Rep of China) Global dynamics in a multi-dimensional chemotaxis-haptotaxis model	Abstracts p. 239
17:30-18:00	Cristian Morales-Rodrigo (Univ. Sevilla, Spain) Long time behaviour in some chemotaxis models arising in angiogenesis	Abstracts p. 238
18:00-18:30	Christian Stinner (University of Paderborn, Germany) Finite-time blowup and global-in-time unbounded solutions to a parabolic-parabolic quasilinear Keller-Segel system	Abstracts p. 239
18:30-19:00	Etsushi Nakaguchi (Tokyo Medical and Dental University, Japan) Global existence of solutions to a parabolic-parabolic system for chemotaxis with logistic source in the higher-dimensional domain	Abstracts p. 239

Special Session 62	PDEs and Dynamical Systems, and Their Applications Organizer(s): Soo Kyung Joo, Jinhae Park, Tuoc Van Phan	Location GRC-I
16:00-16:30	Patricia Bauman (Purdue University, USA) Analysis of Liquid Crystals with Defects of Degree One-Half	Abstracts p. 241
16:30-17:00	Jihoon Lee (Sungkyunkwan University, Korea) On some coupled system with the Navier-Stokes equations	Abstracts p. 242
17:00-17:30	Chong Luo (University of Oxford, England) Planar bistable liquid crystal device and dynamics of switching	Abstracts p. 243
17:30-18:00	Dan Phillips (Purdue University, USA) An analysis of textures in smectic-C films with multiple defects	Abstracts p. 244
18:00-18:30	Ruhai Zhou (Old Dominion University, USA) Kinetic theory and simulations of active nematic suspensions	Abstracts p. 245

Special Session 68	Analysis and Simulations of Nonlinear Systems Organizer(s): Wei Feng, Zhaosheng Feng	Location MAG-A
16:00-16:30	Jifeng Chu (Hohai University, Peoples Rep of China) Lyapunov stability of elliptic periodic solutions of nonlinear damped equations	Abstracts p. 260
16:30-17:00	Shenzhou Zheng (School of Science, Beijing Jiaotong University, Peoples Rep of China) Energy identity for a class of approximate biharmonic maps into sphere in dimension four	Abstracts p. 263
17:00-17:30	Zengji Du (Xuzhou Normal University, Peoples Rep of China) Existence and Global Attractivity of Positive Periodic Solution to a Lotka-Volterra Model	Abstracts p. 260
17:30-18:00	Lei Wei (Jiangsu Normal University, Peoples Rep of China) Qualitative properties of positive solutions of a class of boundary blow-up problems	Abstracts p. 263

Special Session 69	Dissipative Systems and Applications Organizer(s): Georg Hetzer, Wenxian Shen, Lourdes Tello	Location POI-D
16:00-16:30	Lourdes Tello (Universidad Politecnica de Madrid, Spain) On a climate energy balance model with continents distribution.	Abstracts p. 266
16:30-17:00	Arturo A Hidalgo (Universidad Politecnica de Madrid, Spain) A finite volume scheme for the numerical approximation of a 2D climatological model.	Abstracts p. 265
17:00-17:30	Everaldo Bonotto (University from Sao Paulo - USP, Brazil) Attractors of impulsive dissipative semidynamical systems	Abstracts p. 264
17:30-18:00	Sergey S Shmarev (University of Oviedo, Spain) On a free boundary problem for a cross-diffusion system	Abstracts p. 265

Special Session 77	The Navier-Stokes Equations and Related Problems Organizer(s): Sarka Necasova, Reimund Rautmann, Werner Varnhorn	Location REH-3
16:00-16:30	Sarka Necasova (Mathematical Institute, Czech Rep) Weak solutions for the motion of a self-propelled deformable structure in a viscous incompressible fluid	Abstracts p. 288
16:30-17:00	Reimund R Rautmann (University of Paderborn, Germany) Hopf-Galerkin Approach to Vorticity Transport & Diffusion.	Abstracts p. 288
17:00-17:30	Werner Varnhorn (Institute of Mathematics, Kassel University, Germany) Extensions of Serrin's condition for weak solutions of the Navier-Stokes equations	Abstracts p. 290

Contributed Session 09	PDEs and Applications Chair(s): Zhaosheng Feng	Location GRC-G
16:00-16:20	Matthew A Fury (Penn State Abington, USA) Regularization of ill-posed evolution problems in Hilbert space	Abstracts p. 327
16:20-16:40	Kimun Ryu (Cheongju University, Korea) On ratio-dependent predator-prey systems with disease in the prey	Abstracts p. 330
16:40-17:00	Mauro Garavello (University of Milano Bicocca, Italy) Nonlinear hyperbolic balance laws coupled with ordinary differential equations	Abstracts p. 327
17:00-17:20	Mousomi Bhakta (Tata Institute of Fundamental Research, India) Poincare Sobolev equations in the Hyperbolic Space	Abstracts p. 326
17:20-17:40	Kyouhei Wakasa (Future University Hakodate, Japan) Sharp blow-up for semilinear wave equations with non-compactly supported data	Abstracts p. 331
17:40-18:00	Marilena Poulou (National Technical University of Athens, Greece) Energy Decay of Klein - Gordon - Schrödinger Type with linear memory term	Abstracts p. 329
18:00-18:20	Wei Dong (Hebei University of Engineering, Peoples Rep of China) Multiple solutions for an indefinite superlinear elliptic problem on RNI	Abstracts p.

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 semilinear 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 conditions 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

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

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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

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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
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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
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15:00-15:30	Jorge P Zubelli (IMPA, Brazil) Project Evaluation and Hedging in Incomplete Markets using Historical Prices	Abstracts p. 201

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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
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Special Session 55	Nonlinear Elliptic and Parabolic Problems Organizer(s): Julian Lopez-Gomez	Location GRC-C
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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
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14:30-15:00	Huiqiang Jiang (University of Pittsburgh, USA) On the singular limit of thin 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
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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	Trenea 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
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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 Thalhaammer	Location GRC-A
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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
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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 Pujon-Menjouet (University of Lyon, France) How interactions between mathematicians and biologists lead to new hypothesis on prion formation	Abstracts p. 319

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17:00-17:30	Shitao Liu (University of Helsinki, Finland) Recovering sound speed and initial data for the wave equation by a single measurement	Abstracts p. 20

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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
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16:30-17:00	Anna Maria Candela (Universita' di Bari, Italy) Some existence results for a perturbed asymptotically linear problem	Abstracts p. 142
17:00-17:30	Beatrice B Di Bella (University of Messina, Italy) Variational methods for differential equation with small impulsive effects	Abstracts p. 143
17:30-18:00	Giuseppina Barletta (Università di Reggio Calabria, Italy) Multiplicity results to elliptic problems in \mathcal{R}	Abstracts p. 142

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16:30-17:00	Jerry L Bona (University of Illinois at Chicago, USA) Dispersive blow-up phenomena	Abstracts p. 232
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17:30-18:00	Zhaosheng Feng (University of Texas-Pan American, USA) First Integral of Duffing-van der Pol Oscillator System	Abstracts p. 260

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16:30-17:00	Morten Brons (Technical University of Denmark, Denmark) Canard explosions in the templator model	Abstracts p. 291
17:00-17:30	Enrique Ponce (University of Sevilla, Spain) Canards in slow-fast piecewise-linear planar systems	Abstracts p. 292

Special Session 80	Advances in the Numerical Solution of Nonlinear Evolution Equations Organizer(s): Mechthild Thalhammer	Location GRC-A
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17:00-17:20	Calistus N Ngonghala (National Institute for Mathematical and Biological Sciences, USA) The importance of stochasticity and safety nets in breaking disease-induced poverty traps	Abstracts p. 319
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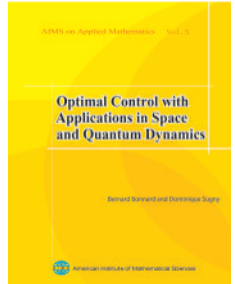
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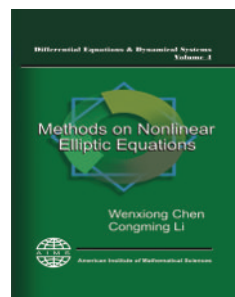
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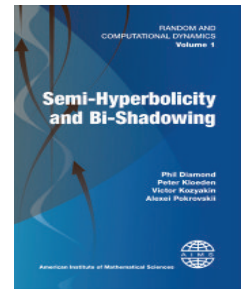
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