Section 09:
Ordinary Differential Equations and Dynamical Systems

Invited Lectures

Wednesday, 19 August — H 1012

14:00 – 14:45 **Zhihong Xia,** Northwestern University, Evanston, USA
Arnold diffusion and variational construction of connecting orbits *(I: p.120)*
Chair: Klaus Kirchgässner

15:00 – 15:45 **Welington de Melo,** IMPA, Rio de Janeiro, Brazil
Renormalization and Rigidity in one dimensional smooth dynamical systems *(I: p.112)*
Chair: Bernold Fiedler

Thursday, 20 August — H 1012

16:15 – 17:00 **Krystyna M. Kuperberg,** Auburn University, Auburn, USA
Counterexamples to the Seifert Conjecture *(I: p.117)*
Chair: Urs Kirchgraber

17:15 – 18:00 **Håkan Eliasson,** Royal Institute of Technology, Stockholm, Sweden
Reducibility and point spectrum for linear quasi-periodic skew-products *(I: p.112)*
Chair: Reiner Lauterbach

Friday, 21 August — H 1012

14:00 – 14:45 **Shuhei Hayashi,** Waseda University, Tokyo, Japan
Hyperbolicity, stability and the creation of homoclinic points *(I: p.113)*
Chair: Jack Carr

15:00 – 15:45 **Michael Herman,** CNRS, Université Denis Diderot / Paris 7, Paris, France
Some open problems in dynamical systems *(I: p.114)*
Chair: Thomas Bartsch

Saturday, 22 August — H 1012

14:00 – 14:45 **Yuri Kifer,** Hebrew University of Jerusalem, Jerusalem, Israel
Random Dynamics and its Applications *(I: p.114)*
Chair: Ludwig Arnold

15:00 – 15:45 **Curtis Tracy McMullen,** Harvard University, Cambridge, USA
Rigidity and inflexibility in conformal dynamics *(I: p.119)*
Chair: Joerg Schmeling

Monday, 24 August — H 1012

16:15 – 17:00 **Grzegorz Świątek,** Pennsylvania State University, University Park, USA
Induced Hyperbolicity for One-Dimensional Maps *(I: p.119)*
Chair: Klaus R. Schneider

17:15 – 18:00 **Sergei B. Kuksin,** Steklov Institute, Moscow, Russia and Heriot-Watt University, Edinburgh, UK
Towards a Qualitative Theory of Hamiltonian PDEs *(I: p.116)*
Chair: Jürgen Moser

Short Communications and Poster Sessions

Short Communications — Wednesday, 19 August

Symmetry and Bifurcation I — **H 111**
Chair: Karin Gatermann

16:15 – 16:30	**Oluwole Daniel Makinde,** University of Zimbabwe, Harare, Zimbabwe *Numerical Study of Bifurcation for Steady Flow in a Diverging Tube*	*(p.182)*
16:30 – 16:45	**Dmitry Turaev,** WIAS, Berlin, Germany *On infinitely degenerate dynamical systems*	*(p.194)*
16:45 – 17:00	**Karin Gatermann,** FU/ZIB, Berlin, Germany *Orbit space reduction*	*(p.175)*

Dynamical Systems on Surfaces — **H 110**
Chair: Raphael Albrecht

16:15 – 16:30	**Victoria Rayskin,** The University of Texas at Austin, Austin, USA *Degenerate homoclinic crossings*	*(p.187)*
16:30 – 16:45	**Shobh N. Singh,** University of Transkei, Umtata, Eastern Cape, South Africa *Solutions of boundary value problems by double Laplace transformations*	*(p.192)*
16:45 – 17:00	**Iuri M. Zaitsev,** Dept. Mathematica, Vitoria, Brazil *Lyapunov-type vector-function for nonlinear dynamic system*	*(p.196)*

Symmetry and Bifurcation II — **H 111**
Chair: Reiner Lauterbach

17:15 – 17:30	**Patrick Bonckaert,** Limburgs Universitair Centrum, Diepenbeek, Belgium *Convergence problems of normalizing transformations with symmetry*	*(p.172)*
17:30 – 17:45	**Claudia Wulff,** Freie Universität, Berlin, Germany *Spiral Waves and Euclidean Symmetry*	*(p.194)*
17:45 – 18:00	**Reiner Lauterbach,** WIAS, Berlin, Germany *Intermittent dynamics and symmetry*	*(p.180)*

Invariant Measures and Random Dynamics I — **H 110**
Chair: Gerhard Keller

17:15 – 17:30	**Alexander Loskutov,** Moscow State University, Moscow, Russia *Dynamics of one-dimensional nonhomogeneous coupled map lattices*	*(p.181)*
17:30 – 17:45	**Roberto Markarian,** IMERL, Fac. de Ingeniería, Montevideo, Uruguay *Invariant measures for Anosov maps with small holes*	*(p.182)*
17:45 – 18:00	**Nikolas Efstathiou Sofronidis,** Caltech, Thessaloniki, Greece *The Topological Entropy is continuous on a second category set in* $\mathrm{Diff}^r(M)$, *whenever* M *is a compact manifold and* r *is a non-negative integer*	*(p.193)*

Short Communications — Thursday, 20 August

Chaotic Dynamical Systems — **H 111**
Chair: Mohamed Houssni

14:00 – 14:15	**Abdelhak Fahsi,** University of Hassan II — F.S.T. Mohammadia, Mohammedia, Morocco *Saddle loop and chaotic bifurcations in nonlinear oscillators*	*(p.175)*
14:15 – 14:30	**Jaroslav Smital,** Silesian University, Opava, Czech Republic *Distributional chaos in dynamical systems generated by iterates of continuous maps*	*(p.192)*
14:30 – 14:45	**Mohamed Houssni,** Université Hassan II, Casablanca, Morocco *Suppression of chaos in a quasi-periodically excited system*	*(p.177)*

Periodic Solutions of Differential Equations **H 110**
Chair: Mohammad Jahanshahi

14:00 – 14:15 **Mihail Emilian Popescu,** Romanian Academy of Science, Bucharest, Romania
Existence and Oribital Stability of Periodic Solutions for Small-Parameter Non-Linear Differential Systems *(p.186)*

14:15 – 14:30 **Sergiy V. Yanchuk,** National Academy of Sciences of Ukraine, Kiev, Ukraine
Conditions for the existence of cycles in some two-dimensional system of differential equations *(p.195)*

14:30 – 14:45 **Mohammad Jahanshahi,** Tarbiat Modarres University, Tehran, Iran
Periodic Solution of a Non-Linear Dynamical System of Second Order with Dimension n *(p.178)*

Boundary Value Problems Related to FDE **H 111**
Chair: Zhanyuan Hou

15:00 – 15:15 **Manuel J. Alves,** Perm State University, Perm, Russia
К вопросу о разрешимости двухточечной краевой задачи для сингулярного функционально-дифференциального уравнения *(p.169)*

15:15 – 15:30 **Sergei A. Brykalov,** Inst. Mathematics & Mechanics, Ekaterinburg, Russia
Solution sets of problems with nonlinear functional boundary conditions *(p.173)*

15:30 – 15:45 **Zhanyuan Hou,** London Guildhall University, London, Great Britain
L^p-Perturbation of Linear Functional Differential Equations *(p.176)*

Periodic Solutions of FDE **H 110**
Chair: Mustapha Yebdri

15:00 – 15:15 **Nataliya Bantsur,** Institue of Mathematics of the National Academy of Sciences, Kyiv, Ukraine
Existence and stability of the periodic and almost periodic solutions of differential equations with maxima *(p.171)*

15:15 – 15:30 **Joao S.P. Munembe,** Perm State University, Perm, Russian Federation
Computationally verifiable conditions of the existence of stabilizable solutions for linear differential systems with periodic parameters *(p.184)*

15:30 – 15:45 **Mustapha Yebdri,** Université de Tlemecen, Tlemcen, Algeria
The linear stability of slowly oscillating periodic solutions of a delay differential equation *(p.195)*

Short Communications — Friday, 21 August

Stability Theory of FDE **H 111**
Chair: Géza Makay

16:15 – 16:30 **Meirong Zhang,** Tsinghua University, Beijing, People's Republic of China
The Fučik Spectrum and its Generalization for Asymptotically Positively Homogeneous Systems of Differential Equations *(p.197)*

16:30 – 16:45 **Mark R. Liberzon,** Moscow St. Avia. Tech. Univ., Moscow, Russia
Inners and Absolute Stability of Time-Lag Systems *(p.181)*

Dynamical Properties of Mechanical Systems **H 110**
Chair: Dmitriy A. Chebanov

16:15 – 16:30 **Daniel Massart,** École Normale Superieure de Lyon, Lyon, Frankreich
On the convexity of the action of a Lagrangian *(p.182)*

16:30 – 16:45 **Natalia Valeryevna Tkachenko,** Inst. of Appl. Math. and Mech., NASU, Donetsk, Ukraine
About some new solutions in a problem about motion of a body in a magnetic field *(p.193)*

16:45 – 17:00 **Dmitriy A. Chebanov,** Inst. of Appl. Math. and Mech., NASU, Donetsk, Ukraine
New exact solutions of the problem about motion of Lagrange's gyroscopes system *(p.173)*

Invariant Measures and Random Dynamics II **H 111**
Chair: Gerhard Keller

17:15 – 17:30	**Raphael Albrecht,** Universität Bonn, Bonn, Germany *Periodic data, intersection types, and conjugacy of profinite surface automorphisms*	*(p.169)*
17:30 – 17:45	**Roman Hric,** Faculty of Natural Sciences, Banska Bystrica, Slovakia *Chaos and Topological Entropy in Onedimensional Dynamics*	*(p.177)*
17:45 – 18:00	**Gerhard Keller,** Universität Erlangen, Erlangen, Germany *Spectral stability of transfer operators under non-small perturbations*	*(p.178)*

Multifrequence Systems and Invariant Tori **H 110**
Chair: Anatolij M. Samoilenko

17:15 – 17:30	**Chong-Qing Cheng,** Nanjing University, Nanjing, China, Peoples Republic of *Aboundance of Lower Dimensional Invariant Tori in Hamiltonian Systems*	*(p.174)*
17:30 – 17:45	**Miklós Rontó,** University of Miskolc, Miskolc, Hungary *A numerical-analytic method for parametrized BVPs*	*(p.188)*
17:45 – 18:00	**Anatolij M. Samoilenko,** National Academy of Sciences, Kiev, Ukraine *Investigation of m-frequency oscillatory systems*	*(p.189)*

Short Communications — Saturday, 22 August

Random Dynamical Systems **H 111**
Chair: Govindan Rangarajan

16:15 – 16:30	**Lev Ryashko,** Ural State University, Ekaterinburg, Russia *Quasipotential in stochastic stability analysis of limit cycles*	*(p.188)*
16:30 – 16:45	**Henri U. Schurz,** La Universidad de Los Andes, Santafe de Bogotá, Colombia *Contractivity and Stability Exponents of Nonlinear Stochastic Dynamical Systems*	*(p.191)*
16:45 – 17:00	**Govindan Rangarajan,** Indian Institute of Science, Bangalore, India *A New Method for Computing Lyapunov Exponents*	*(p.186)*

Complex Differential Equations **H 111**
Chair: Bruno Scardua

17:15 – 17:30	**Ljudmila A. Bordag,** Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany *Projective differential geometrical structure of the Painlevé equations*	*(p.172)*
17:30 – 17:45	**Alexei A. Glutsuk,** Institute for Advanced Studies, Princeton, New Jersey, USA *Stokes phenomena via generic perturbation*	*(p.176)*
17:45 – 18:00	**Bruno Scardua,** Instituto de Matemática Pura e Aplicada, Rio de Janeiro, Brazil *Integration of Complex Differential Equations*	*(p.190)*

Short Communications — Monday, 24 August

Singularly Perturbed Systems **H 111**
Chair: Vladimir Sobolev

14:00 – 14:15	**Minoru Nakano,** Keio University, Yokohama, Japan *On the WKB method and Airy functions*	*(p.184)*
14:15 – 14:30	**Carmen Rocsoreanu,** University of Craiova, Craiova, Romania *Canards in the Fitz-Hugh-Nagumo model*	*(p.188)*
14:30 – 14:45	**Vladimir Sobolev,** Samara State University, Samara, Russia *Canards and black swans*	*(p.192)*

Spectral Problems and Smooth Linearization **H 110**
Chair: Vjacheslav A. Yurko

14:00 – 14:15	**Shunian Zhang,** Shanghai Jiaotong University, Shanghai, China, Peoples Republic of *Stability of neutral delay difference systems*	*(p.197)*
14:15 – 14:30	**Samovol Vladimir,** Russian State University for Humanities, Moscow, Russia *The problem of local smooth linearization of systems of ordinary differential equations*	*(p.189)*
14:30 – 14:45	**Vjacheslav A. Yurko,** Saratov University, Saratov, Russia *Inverse spectral problems for ordinary differential equations*	*(p.196)*

Singularly Perturbed and Control Problems **H 111**
Chair: Nikolay N. Nefedov

15:00 – 15:15	**Klaus R. Schneider,** WIAS, Berlin, Germany *Exchange of stabilities in singularly perturbed systems*	*(p.190)*
15:15 – 15:30	**Alexander G. Chentsov,** Institute of Mathematics and Mechanics, Ekaterinburg, Russia *Nonanticipating set-valued mappings and constructions of the programmed iterations method*	*(p.174)*
15:30 – 15:45	**Nikolay N. Nefedov,** Lomonosov Moscow State University, Moscow, Russia *Asymptotic method of differential inequalities for nonlinear singularly perturbed PDE's with internal layers*	*(p.185)*

Stability of Dynamical Systems **H 110**
Chair: Shaobo Gan

15:00 – 15:15	**Abdelkader Boucherif,** University of Tlemcen, Tlemcen, Algeria *A free boundary problem for a reaction-diffusion equation*	*(p.172)*
15:15 – 15:30	**Juan H. Arredondo,** Universidad Autónoma Metropolitana, México, D.F., México *A geometric approach to the asymptotic of systems of evolution equations*	*(p.171)*
15:30 – 15:45	**Shaobo Gan,** ICTP, Trieste, Italy *Star Systems X^* and a Proof of the C^1 Ω Stability*	*(p.175)*

Short Communications — Tuesday, 25 August

Large-Time Behavior **H 111**
Chair: Martin Brokate

14:00 – 14:15	**Ivan Kiguradze,** A. Razmadze Mathematical Institute, Tbilisi, Georgia *On explosive kneser solutions of nonlinear ordinary differential equations*	*(p.179)*
14:15 – 14:30	**Matthias Wolfrum,** WIAS, Berlin, Germany *A geometrical description for the attractors of semilinear parabolic PDE*	*(p.194)*
14:30 – 14:45	**Martin Brokate,** University of Kiel, Kiel, Germany *On a rate independent variational inequality*	*(p.173)*

Topological Dynamics **H 110**
Chair: Fritz Boese

14:00 – 14:15	**Sergey Bezuglyi,** Institute for Low Temperature Physics, Kharkov, Ukraine *Full groups of minimal homeomorphisms of Cantor sets*	*(p.171)*
14:15 – 14:30	**Fritz Boese,** Max-Planck-Institut für extraterristrische Physik, Garching, Germany *Unilluminable Rooms*	*(p.171)*

Holomorphic and Symbolic Dynamics **H 111**
Chair: Mitsuhiro Shishikura

15:00 – 15:15	**Dierk Schleicher,** Technische Universität München, München, Germany *On iterated exponential maps*	*(p.190)*
15:15 – 15:30	**George Osipenko,** St. Petersburg State Technical University, St. Petersburg, Russia *Applied Symbolic Dynamics*	*(p.185)*
15:30 – 15:45	**Mitsuhiro Shishikura,** Johns Hopkins University, Baltimore, USA *Rigidity of complex quadratic polynomials and the universal Teichmüller space*	*(p.191)*

Short Communications — Wednesday, 26 August

Nonlinear Evolution Equations — **H 1029**
Chair: Michael V. Pomazanov

15:00 – 15:15	**Valery A. Gaiko,** Belarus State University of Informatics and Radioelectronics, Minsk, Belarus *Global bifurcation theory and multiple limit cycles*	
15:15 – 15:30	**Samuel S. Okoya,** Obafemi Awolowo University, Ile-Ife, Nigeria *A criterion for solutions of a model quasilinear parabolic equation*	
15:30 – 15:45	**Michael V. Pomazanov,** Moscow State University, Moscow, Russia *About the structure of some typical singularities in implicit ordinary differential equations*	

Complex Dynamical Systems — **H 111**
Chair: John C. Mayer

16:15 – 16:30	**Toshiyuki Sugawa,** Dept. of Math., Kyoto University, Kyoto, Japan *An explicit bound for uniform perfectness of Julia sets*	*(p.193)*
16:30 – 16:45	**Hiroki Sumi,** Graduate School of Human and Environmental Studies, Kyoto, Japan *Dynamics of rational semigroups and Hausdorff dimension of the Julia sets*	*(p.193)*
16:45 – 17:00	**John C. Mayer,** University of Alabama at Birmingham, Birmingham, AL, USA *Invariant subcontinua in Siegel and Cremer Julia sets of polynomials*	*(p.183)*

Impulsive Systems — **H 110**
Chair: Anatoli Myshkis

16:15 – 16:30	**Dariusz Idczak,** University of Łódź, Łódź, Poland *Stability in semilinear problems*	*(p.177)*
16:30 – 16:45	**Cristian Dascalu,** Inst. of Appl. Math. of the Romanian Academy, Bucharest, Romania *Antiplane Shear Instability in Elastodynamics with Slip Dependent Friction*	*(p.174)*
16:45 – 17:00	**Anatoli Myshkis,** Moscow State University of Communications, Moscow, Russia *Autonomous impulsive-differential equations*	*(p.184)*

Invariant Manifolds and Normal Forms — **H 111**
Chair: Pei Yu

17:15 – 17:30	**Alexander Ya. Kopanskii,** Institute of Mathematics & Mechanics of NASU, Kishinev, Moldova *Normal forms of vector fields satisfying certain geometric conditions*	*(p.180)*
17:30 – 17:45	**Alexander M. Kovalev,** Institute of Applied Mathematics, Donetsk, Ukraine *The equations of invariant and oriented manifolds of dynamical systems*	*(p.180)*
17:45 – 18:00	**Pei Yu,** University of Western Ontario, London, Canada *Simplest Normal Forms of Differential Equations*	*(p.196)*

Boundary Value Problems — **H 110**
Chair: Guiseppe Anichini

17:15 – 17:30	**Nusrat Rajabov,** Tajik State National University, Dushanbe, Tadschikistan *Linear conjugate boundary value problems for the second order linear ordinary differential equation with super–singular coefficients*	*(p.186)*
17:30 – 17:45	**Masashi Kisaka,** Osaka Prefecture University, Sakai, Japan *On the Connnected Components of Julia Sets of Transcendental Entire Functions*	*(p.180)*
17:45 – 18:00	**Guiseppe Anichini,** Università di Modena, Modena, Italy *Boundary value problems for implicit ODE's in a singular case*	*(p.170)*

Poster Session — Tuesday, 25 August

16:15 – 18:00 — **MA 144**

Alina Gleska, Poznań University of Technology, Poznań, Poland
Comparison theorems for the asymptotic behavior of solutions of difference equations *(p.176)*

Renato Iturriaga, CIMAT, Guanajuato Gto., Mexico
Lagrangian Graphs, Minimizing Measures, and Mañe's Critical Values *(p.178)*

Géza Makay, Bolyai Institute, Jozsef Attila University of Szeged, Szeged, Hungary
Marachkov type stability results for functional differential equations *(p.181)*