

International Conference-School  
**Dynamics, Bifurcations and Chaos 2016 (DBC III)**  
*18 – 22 July, 2016*  
*University Conference Center*  
*Nizhny Novgorod University*  
*Gagarina 23, Corp. 1,*  
*New library building (NLB), floor 4*

**PROGRAM**

Nizhny Novgorod -2016

**Monday, July 18**

9-00 – 10-00      Registration  
10-00 – 10-30      Opening (NLB, Conference Hall)  
**Chairman** S. Gonchenko (NLB, Conference Hall)

10-30 – 11-15 **V.S. Anishchenko** “Coherence-incoherence transition in an ensemble of coupled maps”

11-20 – 12-05 **A. Shilnikov** “Stunning complexity of global bifurcations in models with saddles and saddle-foci”

12-10 – 12-40    **Coffee-break**

12-40 – 13-25 **V. Grines, E. Zhuzhoma** “On dynamical systems on surfaces and Anosov-Weil theory”

13-30 – 14-30    **Lunch**

**Chairman** V.S. Anischenko (NLB, Conference Hall)

14-30 – 15-15    **S. Gonchenko**, Course “Elements of contemporary theory of dynamical chaos”, Lecture 1

15-15 – 16-00    **L. Lerman**, Course “Chaos in Hamiltonian systems”, Lecture 1

16-00 – 16-30    **Coffee-break**

	Section: Bifurcations and strange attractors Chairman: <b>D. Turaev</b> (NLB, Conference Hall)	Section: Dynamics and Topology Chairman: <b>S. Maksimenko</b> (NLB, Exhibition Room)	Section: Infinite-dimensional dynamical systems Chairman: <b>I. Kashchenko</b> (NLB, Room 3)
16-30 17-00	<b>K. Shinohara</b> "Volume hyperbolicity and wildness"	<b>O. Pochinka</b> "Energy function for A-diffeomorphisms in dimensions 2 and 3"	<b>A. Kostianko</b> "Inertial manifolds for reaction-diffusion-advection problems"
17-00 17-30	<b>I. Ovsyannikov</b> "Discrete Lorenz attractors in three-dimensional maps with homoclinic and heteroclinic tangencies"	<b>I. Vlasenko</b> "On the dynamics of non-invertible branched coverings of surfaces"	<b>G. Alfimov, A. Kirilin</b> "Soliton solutions of vector defocusing Gross-Pitaevskii equation: a method for full description?"
17-30 17-50	<b>A. Gonchenko</b> "Pseudohyperbolic attractors in three-dimensional Henon maps"	<b>V. Grines, V. Medvedev, E. Zhuzhoma</b> "On supporting manifolds for Morse-Smale systems"	<b>M. Lebedev</b> "Stable dipole solitons and soliton complexes in the nonlinear Schrodinger equation with periodically modulated nonlinearity"
17-50 18-10	<b>J. Creaser</b> "Finding first foliation tangencies in the Lorenz system"	<b>A. Barragan.</b> "Sectional Anosov Flows: Existence of Venice Masks with two singularities"	<b>I. Remizov</b> "Solution to the Cauchy problem for parabolic PDE using space shift based formulas"
18-10 18-30	<b>D. Todorov</b> "Random-fast-slow averaging"	<b>C. Olszowiec</b> "Complex behaviour in cyclic competition bimatrix games"	<b>L. Savkin</b> "Analysis of the methods of implementation of the precision chaos generators"

## Tuesday, July 19

**Chairman** A. Shilnikov (NLB, Conference Hall)

10-00 – 10-45 **D. Turaev** "Quantum acceleration"

10-50 – 11-35 **S. Kuznetsov** "Hyperbolic chaos in mechanical and electronic systems"

11-40 – 12-10 **Coffee-break**

12-10 – 12-50 **A. Neiman** "Emergence and coherence of oscillations in star and tree networks of stochastic excitable elements"

12-50 – 13-30 **T. Pereira** "Robust Chimeras in Networks"

13-30 – 14-30 **Lunch**

**Chairman** M. Malkin (NLB, Conference Hall)

14-30 – 15-15 **S. Gonchenko**, Course "Elements of contemporary theory of dynamical chaos", Lecture 2

15-15 – 15-45 **A. Kazakov, I. Sataev** "Scenarios of the birth and evolution of strange attractors in the nonholonomic model of the Chaplygin top"

15-45 – 16-15 **Coffee-break**

Section: Bifurcations and strange attractors-1 Chairman: <b>V. Belykh</b> (NLB, Conference Hall)	Section: Hamiltonian and mixed dynamics Chairman: <b>M.Gonchenko</b> (NLB, Exhibition Room)	Section: Bifurcations and strange attractors -2 Chairman: <b>L. Glebsky</b> (NLB, Room 3)
<b>16-15 - 16-45 A. Rodrigues</b> “Quasi-stochastic Bykov attractors”	<b>16-15 - 16-45 T. Seara</b> “Oscillatory motions in the restricted planar elliptic three body problem”	<b>16-15 - 16-45 I. Kashchenko</b> “Local dynamics of second-order equation with large delay”
<b>16-45 - 17-15 J.C.Tatjer</b> “Non-smooth bifurcations in quasi-periodically forced 1-D maps”	<b>16-45 - 17-15 V. Sidorenko</b> “The eccentric Kozai-Lidov effect as a resonance phenomenon”	<b>16-45 – 17-00 S.Belyakin</b> “Stabilization of hyperbolic Plykin attractor by the Piragas method”
<b>17-15 - 17-35 N. Solodovnikov</b> “Bifurcations of one-parameter families of vector fields on the two-dimensional sphere”	<b>17-15 – 17-45 A. Viero</b> “Splitting of separatrices at a periodically forced Hamiltonian-Hopf bifurcation”	<b>17.00 – 17.20 M. Kulakov</b> “Transformations of cluster basins and phase space in a ring of nonlocally coupled logistic maps”
<b>17-35 - 17-55 N. Solodovnikov, I. Schurov</b> “Duck factory on the two-torus: multiple canard cycles without geometric constraints”	<b>17-45 – 18.15 A. Batkhin</b> “Bifurcations of periodic solutions of a generalized Hill problem”	<b>17-20 - 17-50 N. Stankevich</b> “Ouasiperiodic bifurcations in five coupled van der Pol oscillators”
<b>I. Belykh, V. Belykh, R. Jeter</b> “Bifurcations and crowd dynamics on a wobbly bridge”		<b>17-50 – 18.20 A. Kuznetsov, M. Pozdnyakov, A. Savin, D. Savin,</b> “On the dynamics of quasiperiodically driven maps with weak dissipation”
<b>18.15 – 18.35 D.Li</b> “Heterodimensional cycles born at bifurcations of Shilnikov loops”	<b>18.15 – 18.35 V. Fain</b> “Stability of some periodic orbits in a circle billiard with a small interior scatterer”	<b>18-20 - 18-40 M. Preobrazhenskaia</b> “Existence and stability of bursting cycles in a neuron model with two delays”

**Wednesday, July 20**

**Chairman:** A. Morozov (NLB, Conference Hall)

10-00 – 10-45 **W. Tucker** “In search for the Henon attractor”

10-50 – 11-35 **Yu. Ilyashenko** “Towards the global bifurcation theory on the plane”

11-40 – 12-20 **Coffee-break (+ beginning of Poster sessions)**

12-20– 13-00 **S. Zelik** “Recent progress in the theory of inertial manifolds”

13-00 – 14-30 **Lunch**

**Chairman:** V. Grines (NLB, Conference Hall)

14-30 – 15-15 **L. Lerman**, Course “Chaos in Hamiltonian systems” Lecture 2

15.15 – 15-45 **S. Slijepcevic** "Variational construction of positive entropy invariant measures of Lagrangian systems and Arnold diffusion"

15-45 – 16-30 **Coffee-break**

Section: Bifurcations and Chaos Chairman <b>I. Vlasenko</b> (NLB, Conference Hall)	Section: Hamiltonian and mixed dynamics Chairman: <b>X. Leoncini</b> (NLB, Exhibition Room)	Section: Applications of dynamical systems Chairman: <b>A. Neiman</b> (NLB, Room 3)
<b>16-30- 17-00 S. Maksymenko</b> "Contractibility of manifolds by means of stochastic flows"	<b>16.30 – 17.00 A. Kazakov</b> "On the phenomenon of mixed dynamics in Pikovsky-Topaj system of coupled rotators"	<b>16-30- 17-00 T. Gurina</b> "Homoclinic cascade of bifurcations in models of the fall plate in a viscous fluid"
<b>17-00 – 17.30 M. Yumagulov</b> "The main asymptotics in the problem of Andronov-Hopf bifurcation"	<b>17-00 - 17-30 T. Lazaro</b> "Mixed dynamics in planar reversible maps with a symmetric couple of quadratic tangencies"	<b>17-00 - 17-30 K. Aleshin</b> "Dynamics of the spintransfer nano-oscillator under spin wave impact induced by external signal"
<b>17-30 – 17-50 S.A. Dovbysh</b> "Anti-integrable limit and non-existence of first integral in multi-dimensional systems"	<b>17-30 - 18-00 M. Gonchenko</b> "Bifurcations of cubic homoclinic tangencies in two-dimensional symplectic maps"	<b>17-30 – 17-45 F.Aydogmus, E.Tosyali</b> "Chaos in BEC for Gaussian optical lattice potential"
		<b>17-45 – 18-00 F.Aydogmus, E.Tosyali</b> "The effects of white noise in fermionic systems"
<b>17-50 – 18-10 M. Malkin</b> "High - dimensional perturbations of zero entropy Lorenz maps"	<b>18-00 - 18-30 R. Medrano</b> "The scenery in planar parameter space from a cubic homoclinic tangency"	<b>18-00 - 18-20 E. Slepukhina</b> "Complex dynamic regimes in the stochastic Hindmarsh-Rose model"
<b>18-10 - 18-30 A.D.Morozov, K.E.Morozov</b> "On transitory shift in pendulum type equations"		<b>18-20 - 18-40 A. Chekmareva, A. Kuznetsov, A. Savin</b> "Formation of attractors in the system of phase equations with symmetry violation"

**Poster sessions (Wednesday and Friday, the whole day):**

- 1) **F.Aydogmus, E.Tosyali** "From regularity to chaos in the GPE with bichromatic trap"
- 2) **J. Bakarji** "Stochastic Modeling of Slow Granular Flows"
- 3) **V. Bogaevskaya** "Time-delayed control of stability for periodic solution"
- 4) **S. Bogomolov, G. Strelkova** "Analysis of spatial correlations at the coherence-incoherence transition in a ring of nonlocally coupled logistic maps"
- 5) **M. Bolotov, G.Osipov** "Collective dynamics of rotators coupled via common impulse field"
- 6) **E. Giricheva** "Effect of intratrophic predation and spatial activity of zooplankton on the Turing instability in NPZ-model"
- 7) **A. Gonchenko, A. Kozlov** "Strange attractors in three-dimensional nonorientable Henon maps"
- 8) **P. Kizin** "On initial data for Cauchy problem for equation  $u_{xx}+Q(x)u-P(u)=0$  corresponding to singular solutions"
- 9) **E. Kolbina** "Effect of optimal harvesting on the genetic diversity and dynamics of a Mendelian limited population"
- 10) **A. Korobeynikov** "Sliding modes for NLS-type lattice with saturable nonlinearity: discrete vs continuous description"
- 11) **E. Krotova** "Identification of chaotic signals by the form the law of distribution of density of probability of selective values"
- 12) **M. Kulakov, E. Frisman** "Clustering in the linear chain and ring of Ricker population models at the colonization of the linear area"
- 13) **Yu. Levchenko** "On dynamics of diffeomorphisms of three-dimensional manifolds with one-dimensional surface basic sets"
- 14) **M. Mammeri** "An identical period-doubling route to chaos in a family of 3-D sinusoid discrete maps"
- 15) **E. Nozdrinova** "One-dimensional dynamics"
- 16) **A. Shilovskaya** "On three-dimensional diffeomorphisms with one-dimensional basic sets spaciouly situated on 2-tori."

## Thursday, July 21

**Chairman:** S. Kuznetsov (NLB, Conference Hall)

10-00 – 10-45 **H. Broer** “Classification of constrained differential equations embedded in the theory of slow fast systems”

10-50 – 11-20 **Coffee-break**

11-20 – 12-00 **T. Vadivasova** “Noise-induced transitions in a bistable oscillator with state dependent nonlinear dissipation”

12-10 – 13-10 **Lunch**

**14-00 – 18-00 Excursion**

19-00 – 22-00 **Conference dinner**

## Friday, July 22

**Chairman:** S. Zelik (NLB, Conference Hall)

10-00 – 10-45 **V. Belykh** “Shilnikov bifurcation in certain systems”

10-50 – 11-20 **X. Leoncini** “When rare events dominate transport: stickiness in Hamiltonian systems”

11-20 – 11-50 **L. Glebsky** “Dynamics of modular exponent and the Higman group”

11-50 – 12-20 **Coffee-break**

12-20 – 13-00 **A. Morozov**, Course “Chaos in Hamiltonian systems”, Lecture 3 (Systems with non-monotonic rotation)

13-00 – 14-30 **Lunch**

	Section: Bifurcations and strange attractors Chairman: <b>Yu.Ilyashenko</b> (NLB, Conference Hall)	Section: Applications of dynamical systems Chairman: <b>A.Rassadin</b> (NLB, Exhibition Room)	Section: Population dynamics Chairman: <b>A. Kazakov</b> (NLB, Room3)
14-30 15-00	<b>L. Efremova</b> “Birkhoff Problem on the depth of the center for skew products of maps of an interval”	<b>A. Potapov, A. Rassadin</b> “Feynman integrals and radiation of waves in two- and three-dimensional spaces”	<b>E. Grines</b> “On constructing simple examples of three-dimensional flows with two heteroclinic cycles”
15-00 15-20	<b>A. Okunev</b> “Generic iterated function systems on the circle”	<b>O. Galkin</b> “On global extrema of Weierstrass’ functions”	<b>G.Neverova</b> “Complex dynamics regimes of age-structured population with density dependent regulation”

15-20 15-40	<b>S. Minkov</b> "Non-trivial attractors for Anosov diffeomorphisms"	<b>A. Gavrilin</b> "The radar aspect of electron wave function"	<b>O. Zhdanova</b> "Multistability and multimodality in Ricker's model with genetically defined parameters"
15-40 16-00	<b>N. Isaenkova</b> "On semiconjugacy of Williams endomorphism and nonsingular circle endomorphism"	<b>A. Kitaev</b> "The application of modified Lagrange's and Hamilton's equations for systems with energy dissipation"	<b>O. Revutskaya</b> "Dynamic modes and multistability in the model of population with a simple age structure"
16-00 16-20	<b>H. Sanabria</b> "Sectional-Anosov flows of Venice mask type in compact 3-manifolds"	<b>A. Gavrilin</b> "Magnetic dipole vs bimonopole"	<b>N. Belotelov</b> "A simulation model of population dynamics taking into account nonlocal interactions"

16-20 – 16-50 **Coffee-break**

16-50 -17-10 **L. Stefanenko** "On the dependence of solutions of convolution equations on convex sets on the right-hand side"

**Closing**