Program of the International Conference
«Nonlinear Dynamics of Deterministic and Stochastic Systems: Unraveling Complexity»
dedicated to 70th birthday of Prof. Dr. Vadim S. Anishchenko
19-23 May 2014, Saratov, «Volzhsky Dali»

Monday, May 19

8:30-9:30 – Breakfast

9:45-10:00 – Conference opening (A. Neiman)

Chair: L. Schimansky-Geier

10:00-10:30 – W. Ebeling, Stochastic effects in nonlinear lattices
10:30-11:00 – V. Belykh, Rigorous analysis of concrete systems having chaotic attractors

11:00-11:30 – Coffee-break

11:30-12:00 – U. Feudel, Harmful algal blooms: combining excitability, competition and hydrodynamic flows
12:00-12:30 – S. Kuznetsov, Hyperbolic chaos in physical systems
12:30-13:00 – A. Gonchenko, Lorenz-like attractors in a nonholonomic model of a Celtic stone

13:00-14:00 – Lunch

Chair: H. Braun

14:00-15:00 – S. Gonchenko, The simplest scenarios of onset of chaos in three-dimensional maps
15:00-15:30 – V. Anikin, General explicit solution of spectral problem for Frobenius-Perron operator of piece-wise 1D maps with full branches
15:30-16:00 – T. Vadasova, Experimental studies of stochastic Andronov-Hopf bifurcation
16:00-16:30 – J. Löber, Controlling the position of traveling waves in reaction-diffusion systems

18:00 – Welcome party and barbeque
Tuesday, May 20

8\textsuperscript{30} - 9\textsuperscript{30} – Breakfast

Chair: S. Kuznetsov

9\textsuperscript{30} - 10\textsuperscript{00} – H. Braun, Determinism and randomness in neural information processing and the question of the “free will”

10\textsuperscript{00} - 10\textsuperscript{30} – I. Sokolov, Accessibility and spread in temporal networks

10\textsuperscript{30} - 11\textsuperscript{00} – A. Pankratov, Minimizing noise-induced errors during high-speed switching of nonlinear systems

11\textsuperscript{00} - 11\textsuperscript{30} – Coffee-break

11\textsuperscript{30} - 12\textsuperscript{00} – D. Goldobin, On one of the mechanisms of weak-noise-induced reduction of disorder in chaotic dynamics

12\textsuperscript{00} - 12\textsuperscript{30} – L. Ryashko, Stochastic sensitivity analysis of noise-induced transitions

12\textsuperscript{30} - 13\textsuperscript{00} – I. Bashkirtseva, Stabilization of stochastic attractors and control of noise-induced chaos

13\textsuperscript{00} - 14\textsuperscript{00} – Lunch

Chair: W. Ebeling

14\textsuperscript{30} - 15\textsuperscript{00} – L. Lerman, Slow-fast dynamics for a slow varying Duffing type equation

15\textsuperscript{00} - 15\textsuperscript{30} – E. Pankratova, Emergence of wild attractors in a system of Van der Pol-Duffing oscillators coupled via linear common base

15\textsuperscript{30} - 16\textsuperscript{00} – T. Gurina, Investigation of conservative chaotic oscillatory systems by using the extended dissipative systems

16\textsuperscript{00} - 16\textsuperscript{30} – L. Turukina, Quasiperiodic dynamics in ensembles of chaotic oscillators

16\textsuperscript{30} - 18\textsuperscript{00} – Poster section

18\textsuperscript{00} - 19\textsuperscript{00} – Dinner

Wednesday, May 21

8\textsuperscript{30} - 9\textsuperscript{30} – Breakfast

Chair: V. Belykh

9\textsuperscript{30} - 10\textsuperscript{00} – E. Schöll, Spontaneous symmetry-breaking and partial synchronization in dynamical networks
10^{00}-10^{30} – G. Osipov, *Phase dynamics of neuron-like oscillators*
10^{30}-11^{00} – V. Nekorkin, *Modeling transient metastable dynamics in neural networks*

11^{00} - 11^{30} – Coffee-break

11^{30}-12^{00} – L. Schimansky-Geier, *Synchronization of stochastic complex networks*
12^{00}-12^{30} – V. Anishchenko, *Poincare recurrences in systems with positive and zero topological entropy*
12^{30}-13^{00} – A. Zakharova, *Chimera states in networks with symmetry-breaking coupling*

13^{00}-14^{00} – Lunch

Chair: E. Schöll
14^{30}-15^{00} – T. Kapitaniak, *Synchronization extends the life time of the desired behavior of globally coupled systems*
15^{00}-15^{30} – D. Postnov, *Vasoreactivity patterns: the dynamical point of view*
15^{30}-16^{00} – A. Shabunin, *Phase multistability in a small world network with dynamical structure of couplings*
16^{00}-16^{30} – A. Kazakov, “Figure-eight attractor” in the problem of the unbalanced ball moving on a rough plane

18^{00}-19^{00} – Dinner

**Thursday, May 22**

8^{30}-9^{30} – Breakfast
10^{00}-13^{00} – Boat tour
13^{00}-14^{00} – Lunch
14^{30}-16^{00} – Poster section
16^{00}-18^{00} – Visiting Aquapark
19^{00} – Conference Banquet

**Friday, May 23**

8^{30}-9^{30} – Breakfast

Chair: D. Postnov
9^{30}-10^{00} – J. Kurths, *How basin stability complements the linear-stability paradigm*
10^{00}-10^{30} – A. Neiman, *Emergence of spontaneous oscillations and sensory coding in peripheral receptors*
10\textsuperscript{30}-11\textsuperscript{00} – A. Chetverikov, *Dynamics of electrons distributions and percolation effects in nonlinear 2D lattices*

11\textsuperscript{00} - 11\textsuperscript{30} – *Coffee-break*

11\textsuperscript{30}-12\textsuperscript{00} – J. Freund, *Phase description of the Huber-Braun neuron model for mammalian cold receptors*

12\textsuperscript{00}-12\textsuperscript{30} – E. Sidak, *Detection of coupling between oscillators from time series based on phase increment correlation*

12\textsuperscript{30}-13\textsuperscript{00} – I. Sysoev, *Detecting coupling using time varying Granger causality approach from time series with fast transient processes*

13\textsuperscript{00}-14\textsuperscript{00} – *Lunch*

Chair: A. Neiman

14\textsuperscript{30}-15\textsuperscript{00} – V. Semenov, *Control of noise-induced oscillations in a generalized van der Pol oscillator*

15\textsuperscript{00}-15\textsuperscript{30} – A. Pavlov, *Intracranial hemorrhages in newborns: Diagnostics and analysis with optical imaging and wavelets*

15\textsuperscript{30}-16\textsuperscript{00} – O. Semyachkina-Glushkovskaya, *Why we need male sexual hormones: role of testosterone in cardiovascular physics and diseases*

16\textsuperscript{00}-16\textsuperscript{15} – *Closing ceremony*

18\textsuperscript{00}-19\textsuperscript{00} – *Dinner*
Poster Section I (May 20)

1) A. Kuznetsov, I. Sataev, L. Turukina, *Landau-Hopf scenario in low-dimensional network of Van der Pol oscillators*

2) V. Anikin, S. Arkadaksky, A. Remizov, *Generating functions for eigenfunctions of Perron-Frobenius operator and Goloubentsev’s polynomials*

3) S. Astakhov, A. Gulay, N. Fujiwara, J. Kurths, *External synchronization in a system of two coupled van der Pol oscillators with asymmetrical repulsive coupling*

4) S. Astakhov, M. Balakin, V. Astakhov, J. Kurths, *The effect of time delay in a coupling channel on synchronization and amplitude death in interacting oscillators with inertial nonlinearity*

5) S. Astakhov, O. Astakhov, V. Astakhov, J. Kurths, *Bifurcation mechanism of frequency pulling in a classical two-mode oscillator*

6) V. Khorev, M. Prokhorov, V. Ponomarenko, *Recovery of delay information from time series based on the nearest neighbor analysis*

7) E. Sidak, D. Smirnov, B. Bezruchko, *Interval estimation of coupling delay for oscillators with various nonlinear and statistical properties of phase dynamics*

8) O. Maslennikov, *Dual role of delayed coupling in complex neuronal networks*

9) A. Kuznetsov, S. Kuznetsov, N. Stankevich, *Example of a system with two-dimensional torus occurring as a result of blue sky catastrophe*

10) A. Kuznetsov, S. Kuznetsov, E. Mosekilde, N. Stankevich, *Coexistence of hidden attractors in a radio-physical oscillator system*

11) V. Anishchenko, N. Biryukova, *Peculiarities of Poincaré recurrences in logistic and cubic maps*

12) Y. Boev, V. Anischenko, *Afraimovich-Pesin dimension for the transition to chaos in one-dimensional maps*

13) A. Slepnev, T. Vadivasova, *Two types of oscillatory regimes in an active medium with periodic boundary conditions*

14) O. Isaeva, D. Savin, E. Selezen, *On synchronization of robust chaos generators*

15) O. Isaeva, *Secure and wide-band communication, implemented by pair of synchronized robust generators, associated with hyperbolic (hyper)chaotic maps of the circle and torus*

16) I. Dementyeva, A. Kuznetsov, A. Savin, Yu. Sedova, *Dynamics of three coupled logistic maps*

17) D. Arzhanukhina, S. Kuznetsov, *Dynamics associated with Arnold cat map and Smale-Williams attractor in autonomous delay system with two feedback loops*
1) A. Adilova, A. Kuznetsov, A. Savin, *Dynamics of three coupled discrete Rössler oscillators*
2) N. Biryukova, T. Abrosimova, V. Anishchenko, *Poincaré recurrences in a stroboscopic section of a nonautonomous van der Pol oscillator*
3) E. Borovkova, A. Karavaev, D. Kulminsky, *Device for monitoring the state of cardiovascular system in real-time*
4) A. Chekmareva, A. Kuznetsov, A. Savin, *The destruction of conservative dynamics in the phase equations for the system of coupled oscillators by violations the symmetry*
5) A. Kuznetsov, L. Turukina, N. Chernyscho, *Features of the dynamics of oscillators with reactive coupling*
7) E. Felk, A. Savin, *Transition to chaos in the degenerate Hamiltonian system with weak nonlinear dissipative perturbation*
8) E. Felk, A. Kuznetsov, A. Savin, *The effect of weak dissipation on the system with Arnold’s diffusion*
9) M. Kornilov, I. Sysoev, *Choosing empirical model parameters for detecting connectivity with nonlinear Granger causality approach from time series with a main time scale*
10) V. Kruglov, *Attractor of Smale-Williams type in modified Brusselator model*
11) S. Krylov, D. Smirnov, B. Bezruchko, *Conditions for strong effect of sparse sampling in estimation of directional couplings from time series*
12) M. Obychev, O. Isaeva, *An example of stage ring system with wave nonlinear elements, manifesting the special phenomena of the theory of chaos: complex analytical dynamics, hyperbolic chaos*
13) T. Vadivasova, K. Sergeev, *Noise induced transitions in a small ensemble of active Brownian particles*
14) I. Shepelev, T. Vadivasova, *Traveling waves, bifurcations and multistability in bistable active medium with periodic boundary conditions*
15) M. Sysoeva, E. Sitnikova, I. Sysoev, *Application of adaptive nonlinear Granger causality: disclosing network changes before and after absence seizure onset in a genetic rat model*
16) O. Bibikova, S. Sindeev, E. Zinchenko, M. Kassim, M. Ulanova, A. Gekaluyk, F.A. Al-Fatle, L. Al Hassani, *Wavelet analysis of blood pressure signals and cardiovascular catastophes*
17) A. Pavlov, O. Pavlova, A. Yaseen, M. Mohammad, *Wavelets and their applications to images denoising*