

5th International Conference on Integrable Systems and Nonlinear
Dynamics
7–11.10.2024

Conference Programme

All conference talks are scheduled in Moscow Time (GMT+3)

Duration of plenary talks: 30', duration of section talks: 20'.

Monday, 07.10.2024

	Morning session: Plenary talks
09:00–09:45	Conference Registration
09:45–10:00	IT company “Tensor”, Rector of the YarSU.
10:00–10:30	Victor Buchstaber “Hyperelliptic sigma functions and the sequence of the Novikov’s g -equations”
10:30–11:00	Sergei Kashchenko “Dynamics of full-coupled chains of a great number of oscillators”
11:00–11:30	Coffee break
11:30–12:00	Sergey Bolotin “A nonstandard billiard problem”
12:00–12:30	Vladimir Sokolov “Decomposition of Lie algebra into sum of two subalgebras and Integrability”
12:30–13:00	Dmitry Treschev, “TBA”
13:00–14:30	Lunch break

	Afternoon session: Plenary talks
14:30–15:00	Dmitry Millionshchikov “On infinite towers of symplectic and contact nilmanifolds”
15:00–15:30	Sergei Sokolov “TBA”
15:30–16:00	Andrei Pogrebkov “Is classical integrable system a bit quantum?”
16:00–16:30	Coffee break

	Section talks “Integrable systems and nonlinear dynamics”
16:30–16:50	Elena Bunkova “Polynomial dynamical systems corresponding to differentiations of hyperelliptic functions and Korteweg–de Vries hierarchy”
16:50–17:10	Vladimir Klinshov “Dynamics of neural networks with adaptive delays”
17:10–17:30	Anton Kazakov “Electrical networks and the totally positive symplectic matrices”
17:30–17:50	Boris Bardin “On transcendental cases in the problem of orbital stability of periodic motions of a heavy rigid body”

Tuesday, 08.10.2024

	Morning session: Plenary talks
09:00–09:30	Valery Kozlov “Generalised Dirac Hamiltonian Dynamics”
09:30–10:00	Sergei Dobrokhotov “Degenerate Billiards with Semi-rigid Walls and Nonlinear Shore Waves”
10:00–10:30	Oleg Sheinman “On reversion of the Abel–Prym map and its applications to integrable systems”
10:30–11:00	Olga Pochinka “TBA”
11:00–11:30	Coffee break
11:30–12:00	Valerii Dryuma “Multidimensional Riemannian metrics for integrating the Navier–Stokes equations” (online)
12:00–12:30	Sergey Glyzin “Periodic regimes of multicluster synchronization in coupled networks of nonlinear oscillators with integral”
12:30–13:00	Igor Korepanov “Self-similarity and combinatorial correlations in three-dimensional statistical physics models” (online)
13:00–14:30	Lunch break

	Poster session
14:30–15:30	<p>Vladislav Alexeev “Two-cluster Synchronisation in a Fully Coupled Network of Mackey–Glass Generators”</p> <p>Raul Argun, “Mathematical Modeling of a Moving Fire Front in Spreading Forest Fires”</p> <p>Vladimir Goryunov “On Lyapunov dimension of diffusion chaos in one ecological model”</p> <p>Leonid Ivanovsky “Dynamics of one Cauchy problem with impulses”</p> <p>Dmitry Kosterin “Families of step solutions of quasilinear forms for a system of integro-differential equations”</p> <p>Ilya Luzin “Stable solutions of a nonlinear system of two equations with delay”</p> <p>Igor Maslenikov “Investigation of local dynamics in the vicinity of the equilibrium state of a logistic equation with non-classical boundary conditions”</p> <p>Ivan Maslenikov “The behavior of solutions to a second-order differential equation with a delayed impulse feedback”</p> <p>Evgenia Morozova, “Dynamics of delay differential equation with simple behavior at infinity”</p> <p>Anastasia Nikitina “Noncommutative Yang–Baxter maps of KdV and NLS type”</p> <p>Maksim Pogrebnyak “Parameters estimation in the traffic flow model”</p> <p>Margarita Preobrazhenskaia “An unstable cycle with a ‘short’ period in one relay differential equation with delay”</p> <p>Liudmila Romakina “On the Cardan motion in an extended hyperbolic plane”</p> <p>Ivan Teplyashin, “Periodic solutions of a single differential equation with three delays from neurodynamics”</p> <p>Vladimir Volkov “Periodic internal transition layers in the reaction-diffusion problem in the case of a weak reaction discontinuity”</p> <p>Vera Vorontsova, “Resurgent neuron mode”</p> <p>Julia Yakubiv “Synchronization of slowly oscillating solutions in a system of coupled equations with neutral delay”</p>

	Afternoon session: Section talks
15:40–16:00	Mikhail Kolesnikov “Negative flows”
16:00–16:30	Coffee break
16:30–16:50	Vladislav Kibkalo “Topological modeling of singularities with saddle and focal components via billiards”
16:50–17:10	Sergei Agapov “Polynomial integrals of geodesic flows and the generalized hodograph method” (online)
17:10–17:30	Andrei Bondarev “Solvability Theorems for the Linear Non-Local Problem for Abstract Parabolic Equations”
17:30–17:50	Svetlana Mukhina “Hyperbolic systems: special transformations and exact solutions”
17:50–18:10	Maria Onufrienko “Corank-1 singularities of typical integrable systems with 3 degrees of freedom” (online)
18:10–18:30	Dmitry Serow “Geometric Anatomy of the Nonwandering Continuum Possessing Wada Property” (online)
18:30–18:50	Sergey Titarenko “Billiard dynamics as a source of Stone’s logic generalization”

Wednesday, 09.10.2024

	Morning session: Plenary talks
09:00–09:30	Wen-Xiu Ma “Nonlocality, Integrability, and Solitons” (online)
09:30–10:00	Tassos Bountis “Damping effect of Caputo fractional time derivatives in nonlinear wave equations” (online)
10:00–10:30	Ch. Skokos, “Energy transport and chaos in a one-dimensional disordered nonlinear stub lattice” (online)
10:30–11:00	V. Caudrelier “Lagrangian multiforms: a variational framework for integrable hierarchies” (online)
11:00–11:30	Coffee break
11:30–12:00	Frank Nijhoff “The elliptic lattice KdV system revisited, and associated elliptic discrete integrable systems” (online)
12:00–12:30	Dmitry Talalaev “RE-algebras, quasi-determinants and the full Toda system”
12:30–13:00	Andy Hone “New cluster algebras from old: deformations of finite type” (online)
13:00–14:30	Lunch break

	Afternoon session: Section talks
14:40–15:00	Maria Matushko “Supersymmetric solutions of the associative Yang–Baxter equation”
15:00–15:20	Sergey Gonchenko “Homoclinic resonance and elliptic points”
15:20–15:40	Nataliya Levashova “Using parabolic equations with modular type nonlinearity in applications”
15:40–16:00	Egor Nikulin, “Weak inner layer in the reaction-diffusion-advection problem in the case of reaction discontinuity”
16:00–16:30	Coffee break
16:30–16:50	Andrei Orlov “Existence and stability of stationary solutions with boundary layer in a two-dimensional system of fast and slow reaction-diffusion-advection equations with KPZ nonlinearities”

	Student section
16:50–17:10	Danila Bain “Linearization of delay differential equations with delayed discontinuities”
17:10–17:30	Denis Golitsyn “Hyperbolic stable polynomials and total positivity”
17:30–17:50	Alina Kutuzova “Periodic solutions of the Toda relay chain”
17:50–18:10	Evgeny Chistov “Constructions of new nonlinear integrable differential-difference equations and Miura-type transformations”
18:10–18:30	Anastasia Shubert “Inertia tensor of a rigid body in pseudo-Euclidean space”

19:00	Buffet reception
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Thursday, 10.10.2024

	Morning session: Plenary talks
09:30–10:00	Petr Grinevich “Multisoliton KP-2 solutions and degenerate M-curves”
10:00–10:30	Maxim Pavlov “Bi-Hamiltonian Structures of Dubrovin–Novikov type”
10:30–11:00	Aigul Khakimova “Reduction of the Laplace sequence and sine-Gordon type equations”
11:00–11:30	Coffee break

	Morning session: Section talks
11:30–11:50	Pavlos Kassotakis “Quadrirational pentagon maps” (online)
11:50–12:10	Sergei Igonin “Discrete Miura-type transformations, gauge simplifications, and group actions associated with Lax representations for differential-difference equations”
12:10–12:30	Alexandra Kashchenko “Traveling waves in the ring of coupled oscillators with delayed feedback”
13:00–14:30	Lunch break

	Afternoon session: Section talks
14:30–14:50	Nadezhda Timofeeva “On locally-free-compactified moduli of vector bundles on a higher-dimensional variety”
14:50–15:10	Evgeny Kubyshkin “Investigation of self-oscillating solutions of a mathematical model of dynamics of a rigid disk on a flexible shaft”
15:10–15:30	Anatoly Kullikov “Existence, stability and number of invariant manifolds of a periodic boundary value problem for nonlinear functional partial differential equation”
15:30–15:50	Ilya Sysoev “Network model of limbic seizure propagation”
16:00–16:30	Coffee break
16:30–16:50	Vyacheslav Sedykh “On singularities of caustics in spaces of dimension $n \leq 5$ ” (online)
16:50–17:10	Aleksandr Smirnov “New types of solutions to the vector derivative NLS equation”
17:10–17:30	Victoria Vedyushkina “Liouville foliation of integrable billiard books at the focal level” (online)

Friday, 11.10.2024

	Morning session: Section talks
09:00–09:20	Anatoly Kamchatnov “Asymptotic integrability” (online)
09:20–09:40	Marcelo Flamarion “Nonlinear interactions of solitons and external forces” (online)
09:40–10:00	Henok Moges “Quantification and Comparison of Magnetic and Kinetic Chaos in Toroidal Plasmas”
10:00–10:20	Irina Andreeva “Notes on the Approach, Methods and Results of a Qualitative Research for Some Families of Polynomial Dynamic Systems”
10:20–10:50	Alexandr Orlov “Matrix models and universal characters”
11:00–11:30	Coffee break
11:30–11:50	Norbert Hounkonnou “Noncommutative n –torus in a magnetic field: volume invariance, scalar curvature and quantum stochastic equation” (online)
11:50–12:10	Michail Chirkov “Noncommutative solutions of local tetrahedron equation”
12:10–12:30	Georgy Sharygin “On the symmetries of the full symmetric Toda system”
13:00–14:00	Lunch break
14:00	Excursion