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International Conference
“Nonlocal and Nonlinear Problems”

Moscow, Russia, October 14–19, 2024

PROGRAM

RUDN University

International Conference “Nonlocal and Nonlinear Problems”

Program Committee:

S. B. Kuksin (Chairman), A. B. Muravnik, A. L. Skubachevskii.

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List of 45-minute Lecturers:

B. P. Andreianov (France/Russia), A. Ashyralyev (Turkey), M. Ben-Artzi (Israel), A. V. Bobylev (Russia), G. A. Bocharov (Russia), D. I. Borisov (Russia), A. I. Bufetov (France/Russia), G. A. Chechkin (Russia), G. Crasta (Italy), A. A. Davydov (Russia), M. del Pino (UK), S. Yu. Dobrokhotov (Russia), V. K. Kalantarov (Turkey), V. N. Kolokoltsov (Russia), M. V. Korobkov (Russia), E. L. Korotyaev (Russia), G. G. Lazareva (Russia), V. E. Nazaikinskii (Russia), R. G. Novikov (France/ Russia), E. Yu. Panov (Russia), P. I. Plotnikov (Russia), I. Shafrir (Israel), A. Shirikyan (France), T. A. Suslina (Russia), I. A. Taimanov (Russia), Yu. L. Trakhinin (Russia), L. Véron (France), V. Volpert (France/ Russia), S. Zelik (UK), V. G. Zvyagin (Russia).

Monday, October 14

Hall No. 2 (Auditorium 708)

9:00–11:00 **Registration**

Coffee break

11:00–11:30 **Opening ceremony**

11:30–12:15 Taimanov I. A. “On some questions of finite-zone theory”

12:25–13:10 Crasta G. “Pairings between divergence-measure fields and functions of bounded variation”

13:20–14:05 Bobylev A. V., *Potapenko I. F.* “On solutions of the Vlasov–Poisson–Landau kinetic equations for plasmas”

Lunch

Conference Hall (Auditorium 558)

15:20–16:05 Bufetov A. I. “Convergence of random measures”

16:15–17:00 Ashyralyev A. “On stability of time dependent source identification problem for the Schrodinger-type involutory differential equations”

17:10–17:40 Skubachevskii A. L. “Global classical solutions of the Vlasov–Poisson system in the half-space”

17:50–18:20 Gebhard B. “On a degenerate elliptic problem arising in the Rayleigh–Taylor instability” (*online*)

18:30–19:00 Dymov A. V., *Elokhin A. A.* “On rigorous justification of the Peierls kinetic theory for quasisolutions”

19:00–21:30 **Reception**

Tuesday, October 15

Conference Hall (Auditorium 558)

10:00–10:45 Suslina T. A., *Piatnitski A. L., Sloushch V. A., Zhizhina E. A.* “Homogenization of the Lévy-type operators with periodic coefficients”

10:55–11:40 Lazareva G. G. “Mathematical modeling of aspects of heat flow influence on promising materials of divertor and first wall of thermonuclear reactor”

Coffee break

12:10–12:55 Kolokoltsov V. N. “Fractional equations of variable order and their CTRW approximations”

13:05–13:50 Kozhevnikova L. M. “On a local renormalized solution of an elliptic equation with $p(x)$ growth rate in the space \mathbb{R}^n ”

Lunch

15:15–16:00 Novikov R. G. “A holographic uniqueness theorem” (*online*)

16:10–16:40 Rozanova O. S. “On globally smooth oscillating solutions of non-strictly hyperbolic systems”

16:50–17:20 Apushkinskaya D. E. “Estimates of deviations of approximate solutions from exact ones in the problem with an obstacle for the p -Laplace operator”

Coffee break

17:50–18:10 Solonukha O. V. “On solvability of a nonlinear elliptic differential-difference equation with mixed boundary conditions”

18:20–18:40 Xin X. “The exact solutions and data-driven solutions of several nonlocal PDEs”

18:50–19:10 Ivanova E. P. “Elliptic boundary-value problems for differential-difference equations with incommensurable shifts of arguments”

19:20–19:40 Zhuikov K. N., *Savin A. Yu.* “Eta-invariant of elliptic boundary-value problems with parameter”

Auditorium 458

16:10–16:40 Razgulin A. V., *He L.* “On a model of a nonlinear optical system taking into account the kinetics of processes in the polymer layer”

16:50–17:20 Ibragimov A. I., *Varfolomeev E. M., Zakirov E. S.* “On the stitching of analytical and numerical solutions of the problem on a virtual boundary with the dominance of flow geometry in a bounded domain”

Coffee break

17:50–18:10 Belyaeva Yu. O. “On exact solutions of the system of Vlasov–Poisson equations with homogeneous and nonhomogeneous external magnetic fields”

18:20–18:40 Oksogoeva I. P., *Lazareva G. G.* “The effect of temperature on mathematical modeling of plasma transfer in a helical magnetic field”

18:50–19:10 Liu X. “Global numerical analysis of an improved IMEX numerical scheme for the SIS reaction diffusion model in advective heterogeneous medium”

19:20–19:40 Okishev V. A. “Computational model of the composite material heating process when its surface is exposed to a laser”

Wednesday, October 16

Conference Hall (Auditorium 558)

10:00–10:45 Nazaikinskii V. E. “Asymptotic solution of the Cauchy problem for nonlinear shallow water equations in a basin with gently sloping shores”

10:55–11:40 Trakhinin Yu. L. “On well-posedness of the MHD-Maxwell free interface problem”

Coffee break

12:10–12:55 Del Pino M. “Delaunay-type compact equilibria in the liquid drop model” (*online*)

13:05–13:50 Zelik S. V. “Multi-vortices and lower bounds for the attractor dimension in hydrodynamics” (*online*)

Lunch

15:15–16:00 Volpert V. A. “On a new model of biological pattern formation” (*online*)

16:10–16:40 Zvyagin A. V. “Weak solvability of the Voigt thermo-model with nonlinear viscosity”

16:50–17:10 Grishina G. V. “Some regularity results for weak solutions of nondiagonal parabolic systems”

Coffee break

17:50–18:10 Mozokhina A. S. “Investigation of the immunity influence on the infection progression with mathematical modeling”

18:20–18:40 Ryumina K. A. “Mathematical modeling of respiratory viral infection”

18:50–19:10 Adkhamova A. Sh. “On a damping problem for a multidimensional control system of degenerate type”

19:20–19:40 Vorotnikov R. Yu. “On some properties of generalized eigenfunctions of differential-difference operators”

Auditorium 458

- 16:10–16:40 Savin A. Yu., *Abbas H. H.* “On the index problem on manifolds with group actions. Contributions of fixed points”
- 16:50–17:20 Rautian N. A. “Correct solvability of Volterra parameter dependent integro-differential equations in Hilbert space”

Coffee break

- 17:50–18:10 Sloushch V. A., *Zhizhina E. A., Piatnitski A. L., Suslina T. A.* “Homogenization of a nonlocal operator of convolutional type taking into account the corrector”
- 18:20–18:40 Tasevich A. L. “Solvability of elliptic functional differential equations with orthotropic contractions in Sobolev spaces and weighted spaces”
- 18:50–19:10 Boltachev A. V. “On ellipticity of operators with shear mappings”
- 19:20–19:40 Bairash R. A. “A priori estimates of solutions for even-order ordinary differential equations with integral boundary conditions”

Thursday, October 17

Conference Hall (Auditorium 558)

10:00–10:45 Dobrokhotov S. Yu. “Sources in the piston model of long waves on water generated by localized displacements in an elastic base”

10:55–11:40 Davydov A. A., *Platov A. S.*, *Tunitsky D. V.* “Nonlocal KPP model, its stationary solutions and their optimization”

Coffee break

12:10–12:55 Shafrir I., *Roy P.* “A mixed eigenvalue problem on domains tending to infinity in several directions” (*online*)

14:30 *Bus departure from 3 Ordzhonikidze st.
to VDNKh*

Friday, October 18

Conference Hall (Auditorium 558)

- 10:00–10:45 Andreianov B. P. “On Hughes’ model of pedestrian evacuation”
10:55–11:40 Ben-Artzi M. “Splines, biharmonic operator, and approximate eigenvalues” (*online*)

Coffee break

- 12:10–12:55 Véron L. “Isolated singularities of fractional Emden’s equations via the extension method” (*online*)
13:05–13:50 Shirikyan A., *Nguyen T. H.* “Viscosity estimation for two-dimensional pipe flows” (*online*)

Lunch

- 15:15–16:00 Borisov D. I., *Polyakov D. M.* “Asymptotics of the eigenvalues of the Schrödinger operator with a small shift and the Dirichlet condition”
16:10–16:55 Plotnikov P. I. “Hessians in the shape optimization theory” (*online*)
17:05–17:35 Bidaut-Véron M.-F. “A quasilinear elliptic equation with absorption term and Hardy potential” (*online*)

Coffee break

- 18:05–18:35 Muravnik A. B. “Two-dimensional hyperbolic equations with general-kind translated potentials”
18:45–19:15 Tikhonov I. V. “On the theory of linear nonlocal problems for evolution equations”
19:25–19:45 Gavrilov O. A., *Tikhonov I. V.* “Nonlocal in time problem with piecewise constant weight function”

Saturday, October 19

Conference Hall (Auditorium 558)

10:00–10:45 Korobkov M. V. “On Leray problems for steady-state Navier–Stokes system in unbounded domains”

10:55–11:40 Bocharov G. A., Grebennikov D. S., Savinkov R. S. “Nonlinear and nonlocal processes in problems of mathematical immunology”

Coffee break

12:10–12:55 Zvyagin V. G. “On the problem of flow of a viscoelastic fluid of the Oldroyd type through the boundary of a multiply connected domain” (*online*)

13:05–13:50 Chechkin G. A. “On homogenization of the Lavrentiev–Bitsadze equation” (*online*)

Lunch

15:15–16:00 Panov E. Yu. “On self-similar solutions to a multi-phase Stefan problem”

16:10–16:40 Faminskii A. V. “Initial-boundary value problems for the 3D Zakharov–Kuznetsov equation”

16:50–17:20 Galakhov E. I., Salieva O. A. “Nonexistence for some elliptic inequalities with transformed argument in cones”

17:30–18:00 Budochkina S. A. “About Birkhoff’s equations”

18:15–18:45 **Closing Ceremony**

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