The Fourth International Conference
on
Differential and Functional Differential Equations

PROGRAM

Moscow, Russia, August 14–21, 2005

Steklov Mathematical Institute
Lomonosov Moscow State University
Moscow Mathematical Society

The Fourth International Conference
on
Differential and Functional Differential Equations

Program Committee:
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List of 45-minute Invited Lecturers:
A. Agrachev, M. S. Agranovich, A. B. Antonevich, C. Bardos, V. M. Buchstaber, V. I. Burenkov, S. Yu. Dobrokhotov, Yu. A. Dubinskii, B. Fiedler, K. Hadeler, A. M. Il'in, N. M. Ivochkina, W. Jäger, H. Karcher, V. A. Kondrat'ev, S. P. Novikov, V. A. Pliss, A. Sarychev, G. R. Sell, G. A. Seregin, A. G. Sergeev, Ya. G. Sinai, V. D. Stepanov, A. Tesei, F. Tomi, D. V. Treschev, L. Veron, M. I. Vishik, L. R. Volevich, H.-O. Walther, P. Yang, V. V. Zhikov.

Monday, August 15

Lecture Hall, 9th Floor

11:00–11:30   **Opening ceremony**

11:30–12:15   **M. I. Vishik**, "Ginzburg–Landau nonautonomous equation and its attractor"

Coffee break

12:45–13:30   **W. Jäger, M. Neuss-Radu**, "Multiscale modelling of ion transport through channels. Homogenization of Nernst–Planck equations"

Lunch

15:00–15:45   **P. Yang**, "Conformally invariant differential equations"

Section devoted to the 65th anniversary of Professor W. Jäger

16:00–16:30   **E. V. Radkevich**, "On the well-posedness of a mixed problem for hyperbolic operators with characteristics of variable multiplicity"

16:40–17:10   **D. A. Kosmodemiyanskiy, A. S. Shamaev**, "On some spectral acoustics problems in porous media saturated with liquid"

17:20–17:50   **T. A. Shaposhnikova, M. N. Zubova**, "On homogenization of variational inequalities for biharmonic operator with obstacles on ε-periodically situated subsets"

18:00–18:20   **A. Piatnitski**, "Gamma-convergence of nonconvex variational functionals defined on a random checker board structure"

18:40–19:00   **V. N. Denisov**, "On necessary and sufficient conditions for point-wise stabilization of solutions of the first mixed problem for the heat equation"

19:00   **Reception**

Lecture Hall, 7th Floor

16:00–16:30 **V. Nazaikinskii, B. Sternin**, "Surgery and the relative index in elliptic theory"

16:40–17:10 **V. P. Burskii, A. S. Zhedanov**, "Boundary-value problems for string equation, Poncelet problem, and Pell–Abel equation: a unique answer"

17:20–17:50 **Ya. M. Dymarskii**, "On the family of self-adjoint elliptic operators"

18:00–18:30 **A. A. Kovalevsky**, "Properties of solutions to nonlinear equations with degenerate coercivity and L^1-data"

18:40–19:00 **O. Zubelevich**, "On some abstract version of the Cauchy–Kowalewski problem"

19:00 **Reception**

Auditorium 530, 5th Floor

16:00–16:30 **M. Nakano**, "Asymptotic WKB solutions on a Riemann surface for the third-order ODEs"

16:40–17:10 **V. Yu. Novokshenov**, "Asymptotics in the complex plane of the third Painlevé transcendent"

17:20–17:50 **V. A. Golubeva**, "Algebraic structures related to models of mathematical physics"

18:00–18:30 **V. P. Leksin**, "Multidimensional Fuchsian systems with coefficients of the rank one and their monodromy and isomonodromic deformations"

19:00 **Reception**

Tuesday, August 16

Lecture Hall, 9th Floor

10:00–10:45   L. Veron, "Capacitary estimates of positive solutions of some semilinear elliptic equations with absorption"

11:00–11:45   **A. M. Il'in, B. I. Suleymanov**, "On asymptotic behavior of solutions for some ODEs related to originating contrast structures"

Coffee break

12:15–13:00   **V. A. Pliss, G. R. Sell**, "Climate modeling and longtime dynamics"

Lunch

15:00–15:45   **Ju. A. Dubinskii**, "Complex BVP and orthogonal decomposition of the Lebesgue and Sobolev spaces (multidimensional case)"

16:00–16:30   **M. F. Bidaut-Veron**, "Self-similar solutions of the p-Laplace heat equation revisited"

16:40–17:10   **A. E. Shishkov**, "Very singular solutions of semilinear parabolic equations"

Coffee break

17:40–18:10   **I. V. Melnikova**, "Convoluted semigroups to abstract and differential Cauchy problems"

18:20–18:40   **O. V. Solonukha**, "On parabolic functional differential equation with the p-Laplacian"

18:50–19:10   **V. T. Dmitrienko**, "On the strong solutions of an initial-boundary value problem for regularized model of a viscoelastic medium"

Lecture Hall, 7th Floor

15:00–15:45 **K. P. Hadeler**, "Coupled dynamical systems and systems with quiescent states"

16:00–16:30 **V. B. Cherepennikov, P. G. Ermolaeva**, "Smooth solutions of some neutral type differential-difference equations"

16:40–17:10 **N. D. Vvedenskaya**, "Boundary-value problem for a functional equation"

Coffee break

17:40–18:10 **I. Kossenko**, "Topology degree and approximation of solutions to nonregular problems of mechanics: librations of a satellite in the elliptic orbit"

18:20–18:40 **T. Churkina**, "Periodical solutions of a system of differential equations in a problem of satellite close to dynamically symmetric motion in the vicinity of steady-state conditions"

18:50–19:10 **A. V. Razgulin, V. A. Chushkin**, "Parabolic functional-differential equations with controlled transforms of spatial argument and Fourier filtering"

Auditorium 530, 5th Floor

15:00–15:45 **V. D. Stepanov, E. N. Lomakina**, "Asymptotic estimates of approximative and entropy numbers of the single-weighted Riemann–Liouville operator"

16:00–16:30 **A. Ya. Yakubov, Ya. A. Yakubov**, "Pseudo-convexity and synchronism methods in the theory of nonlinear integral Volterra equations"

16:40–17:10 **A. V. Glushak, V. A. Popova**, "An inverse problem for the abstract Euler–Poisson–Darboux equation"

Coffee break

17:40–18:00 **D. Limansky**, "A priori estimates for systems of differential operators"

18:10–18:30 **A. V. Rozhdestvenskii**, "Necessary conditions for Fourier multipliers of type $(\psi(L), L^{1,\infty})$"

18:50–19:10 **A. Savin**, "On the homotopy classification of elliptic operators on manifolds with edges"

Wednesday, August 17

Lecture Hall, 9th Floor

10:00–10:45 **A. Tesei, M. A. Pozio**, "On the well-posedness of singular parabolic problems"

11:00–11:45 **A. Sergeev**, "Harmonic mappings into loop spaces of compact Lie groups"

Coffee break

12:15–13:00 **L. R. Volevich**, "A new class of parabolic operators connected with Newton's polygon"

Lunch

15:00–15:45 **N. M. Ivochkina**, "On homogeneity condition in the theory of geometric flows"

16:00–16:30 **M. O. Korpusov, A. G. Sveshnikov**, "Necessary and sufficient conditions of blow-up for solutions of one class of strongly nonlinear equations of pseudoparabolic type"

16:40–17:10 **C. Mascia**, "Transition between stable phases in forward-backward parabolic equations"

Coffee break

17:40–18:10 **D. B. Dhaigude, R. M. Dhaigude**, "Monotone scheme for finite difference system of nonlinear time degenerate parabolic problems"

18:20–18:40 **A. B. Muravnik**, "Complete blow-up for quasilinear parabolic inequalities"

18:50–19:10 **E. I. Galakhov**, "Some generalizations of the stationary Chipot–Weissler equation"

19:20–19:40 **E. A. Kalita**, "Subweak solutions for equations with monotone operators"

Lecture Hall, 7th Floor

15:00–15:45 **A. B. Antonevich**, "Variational principle for the spectral radius of functional operators"

16:00–16:30 **D. A. Medvedev, V. V. Vlasov**, "Spectral problems arising in the theory of functional differential equations"

16:40–17:10 **Yu. T. Silchenko**, "Evolution equation with nonlocal condition"

Coffee break

17:40–18:00 **E. P. Belan**, "Travelling wave dynamics in a nonlinear parabolic functional differential equation"

18:20–18:40 **A. M. Selitskii**, "The second mixed problem for parabolic differential-difference equation"

18:50–19:10 **E. M. Varfolomeyev**, "On the normality of some elliptic functional differential operators"

Auditorium 530, 5th Floor

15:00–15:45 **S. Yu. Dobrokhotov**, "Pseudodifferential operators and equations with operator-valued symbols in adiabatic problems of quantum and wave mechanics"

16:00–16:30 **R. I. Bogdanov**, "Nonlocal integrals and laws of conservation in the theory of nonlinear solitons"

16:40–17:10 **A. Plakhov**, "Newton's problem of minimal resistance and its generalizations"

Coffee break

17:40–18:10 **G. I. Bizhanova**, "On the solvability of free boundary problems in functional spaces"

18:20–18:40 **J. M. Perez Casas, O. Carballo Otero**, "Flow equations in natural gas deposits"

18:50–19:10 **A. Rozanova, C. Bardos**, "Khokhlov–Zabolotskaya–Kuznetzov equation"

Thursday, August 18

Lecture Hall, 9th Floor

10:00–10:45 **S. P. Novikov**, "Topology of Hamiltonian systems on Riemannian surfaces"

11:00–11:45 **Ya. G. Sinai**, "A new approach to the analysis of the 3D–Navier–Stokes system"

Coffee break

12:15–13:00 **V. Kondratiev**, "Asymptotic behavior of solutions of some nonlinear parabolic and elliptic equations"

Lunch

Lecture Hall, 7th Floor

Section devoted to the 70th anniversary of Professor V. A. Kondratiev

15:00–15:45 **V. V. Zhikov**, "On the uniqueness of a solution of the Dirichlet problem for second-order elliptic equations with lower-order terms"

16:00–16:30 **A. L. Skubachevskii**, "Elliptic problems with compact and noncompact nonlocal terms"

16:40–17:10 **A. V. Demyanov, A. I. Nazarov**, "On the existence of an extremal function in critical Sobolev embedding theorems"

17:20–17:50 **L. V. Borodulina, L. E. Rossovskii**, "Solvability of functional differential equations with contractions"

18:00–18:20 **P. L. Gurevich**, "Regularity of generalized solutions to nonlocal elliptic problems"

18:30–18:50 **M. A. Skryabin**, "Unique solvability of some nonlocal boundary-value problems in dihedral angles"

19:00 **Banquet**

Auditorium 530, 5$^{\text{th}}$ Floor

15:00–15:45	**V. M. Buchstaber, D. V. Leykin**, "Differential and differential-functional equations for sigma-functions"
16:00–16:30	**B. Paneah**, "Dynamical systems and functional equation related to boundary problems for hyperbolic differential operators"
16:40–17:10	**M. K. Grammatikopoulos, P. S. Kelevedjiev, N. I. Popivanov**, "On the solvability of a singular boundary-value problem for the equation $f(t, x, x', x'') = 0$"
17:20–17:40	**G. Röst**, "Bifurcation of periodic delay differential equations"
18:00–18:20	**M. Eichmann**, "Hopf bifurcation for differential equations with state-dependent delay"
18:30–18:50	**N. B. Zhuravlev**, "On the hiperbolicity of rapidly oscillating solutions of functional differential equations with several delays"

19:00 **Banquet**

Auditorium 430, 4$^{\text{th}}$ Floor

15:00–15:45	**F. Tomi**, "The barrier principle for minimal submanifolds of arbitrary codimension and applications"
16:00–16:30	**V. M. Zakalyukin**, "Function singularities via virtual equivalences"
16:40–17:10	**A. Davydov**, "Transition between optimal strategies in Arnold's model"
17:20–17:50	**S. I. Bezrodnykh, V. I. Vlasov**, "An effective method for solving singularly perturbed system of nonlinear differential equations"
18:00–18:30	**R. Koplatadze**, "Generalized nonlinear ordinary differential equations of Emden–Fowler type with property A"
18:40–19:00	**S. G. Kryzhevich**, "Chaotic and periodic regimes in single degree of freedom systems"

19:00 **Banquet**

Friday, August 19

Lecture Hall, 9th Floor

10:00–10:45   **B. Fiedler**, "Sturm attractors: geometry and global dynamics"

11:00–11:45   **C. Bardos**, "Analytic stability and singularities for Kelvin–Helmholtz and Rayleigh–Taylor problems. Comparison with the stability of water waves problems"

Coffee break

12:15–13:00   **G. A. Seregin**, "Local regularity theory for the Navier–Stokes equations"

Lunch

15:00–15:45   **M. S. Agranovich**, "Mixed spectral problems for strongly elliptic second order systems in smooth and Lipschitz domains"

16:00–16:30   **N. D. Kopachevsky**, "Abstract Green's formula. Abstract spectral and evolution problems"

16:40–17:10   **A. S. Pechentsov**, "Regularized traces of singular differential operators with discrete spectrum"

Coffee break

17:40–18:00   **I. V. Sadovnichaya**, "A new estimate of the spectral function for the self-adjoint extension in $L^2(\mathbb{R})$ of the Sturm–Liouville operator with uniformly locally summable potential"

18:20–18:40   **A. M. Savchuk**, "An inverse Sturm–Liouville problem for operators with potentials-distributions (reconstruction by two spectra)"

18:50–19:10   **N. Filonov, A. Pushnitski**, "Two-dimensional magnetic Hamiltonian and orthogonal polynomials"

Lecture Hall, 7th Floor

15:00–15:45   V. I. Burenkov, "Spectral stability of general non-negative self-adjoint differential operators"

16:00–16:30   L. A. Beklaryan, "A boundary-value problem for a functional differential equation and solutions of traveling wave type for infinite-dimensional dynamic systems"

16:40–17:10   M. Basova, V. Obukhovskii, "On some boundary-value problems for semilinear functional differential inclusions"

Coffee break

17:40–18:10   J. Appleby, A. Rodkina, "Stability and decay rate of stochastic differential and difference equations"

18:20–18:50   J. Baris, P. Baris, B. Ruchlewicz, "Quadratic systems of differential equations"

Auditorium 530, 5th Floor

15:00–15:45   A. Agrachev, A. Sarychev, "Incompressible fluid under degenerate forcing: controllability of the 2D Euler and Navier–Stokes equation by geometric methods"

16:00–16:30   A. V. Fursikov, "Stabilization of solutions to the Navier–Stokes equations"

16:40–17:10   V. G. Zvyagin, "On the solvability of some initial-boundary-value and boundary-value problems of non-Newtonian hydrodynamics"

Coffee break

17:40–18:10   Yu. N. Skiba, "Nonlinear and linear instability of the Rossby–Haurwitz wave"

18:20–18:40   R. V. Shamin, "On existence of smooth solutions for equations describing a flow of ideal liquid with free surface"

18:50–19:10   T. Shilkin, "On the coupled systems in the mathematical fluid dynamics"

Saturday, August 20

Lecture Hall, 9th Floor

10:00–10:45   **H. Karcher**, "How the constructions of complete embedded minimal surfaces in $\mathbb{R}^3$ evolved"

11:00–11:45   **D. Treschev**, "Quantum observables: algebraic aspect"

<div align="center">

Coffee break

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12:15–13:00   **H.-O. Walther**, "The degenerate bifurcation and asymptotic shape of periodic solutions to the exchange rate equation"

13:15   **Closing ceremony**