

QUASILINEAR EQUATIONS, INVERSE PROBLEMS AND THEIR APPLICATIONS

Moscow Institute of Physics and Technology, Dolgoprudny
30 Nov. 2015 - 2 Dec. 2015

Conference program

Monday, November 30th.

09:00-12:30 Conference registration, Laboratory building hall

<p style="text-align: center;"><i>Chair: I. A. Taimanov</i></p> <p>9:30: Welcome 10:00: S. I. Kabanikhin (ICM&MG SB RAS, Russia) Two-dimensional analogy of I.M. Gelfand, B.M. Levitan and M.G. Krein equations in hyperbolic inverse problems 10:35: J. Boman (Stockholm University, Sweden) Tomographic region-of-interest reconstruction from incomplete data 11:10: R. G. Novikov (Ecole Polytechnique, France) Inverse scattering without phase information 11:45: J.-C. Saut (Université Paris-Sud, France) Dispersive perturbations of nonlinear hyperbolic equations 12:20: Coffee break & lunch</p>	Assembly Hall, Laboratory Building, MIPT
<p style="text-align: center;">Section «Inverse problems and integral geometry» <i>Chair: M. I. Belishev</i></p> <p>13:20: L. N. Pestov (Immanuel Kant Baltic Federal University, Russia) Integral geometry problems on convex Riemannian manifolds 13:55: W. Lionheart (University of Manchester, UK) Nonabelian tomography for polarized light and neutrons 14:30: A. Puro (Information Science Institute, Estonia) Optical tensor field tomography of residual stresses in fibers 15:05: V. A. Sharafutdinov (Sobolev Institute of Mathematics, Russia) The linearized problem of magneto-photoelasticity 15:40: Coffee break 16:00: A. S. Demidov (Moscow State University, Russia) Sur le problème inverse magnéto-encéphalographie 16:35: A. Jollivet (Université de Lille 1, France), V. A. Sharafutdinov (Sobolev Institute of Mathematics, Russia) An inequality for the zeta function of a planar domain 17:15: N. I. Klemashev (Moscow State University, Russia) The inverse problem in Pareto's theory of consumer demand 17:35: E. G. Molchanov (MIPT, Russia) Finding elasticity of substitution in the recourse distribution problem</p>	Assembly Hall, Laboratory Building, MIPT
<p style="text-align: center;">Section «Nonlinear PDEs and integrability» <i>Chair: A. K. Pogrebkov</i></p> <p>13:20: A. V. Faminskii (Peoples' Friendship University of Russia, Russia) On global well-posedness results for Zakharov-Kuznetsov equation 13:55: E. Lakshitanov (University of Aveiro, Portugal) On reconstruction of complex-valued once differentiable conductivities 14:30: O. S. Rozanova (Moscow State University, Russia) On a stochastic representation of solutions to systems of quasilinear equations 15:05: V. N. Razzhevaikin (Dorodnicyn Computing Centre of RAS, Russia) Asymptotic behavior of solutions of reaction density dependent diffusion equations and its applications 15:40: Coffee break 16:00: M. V. Pavlov (Lebedev Physical Institute of RAS, Russia) Integrability of the Benney System 16:35: A. Kazeykina (Université Paris-Sud, France) On the well-posedness of the Cauchy problem for the Novikov-Veselov equation 17:15: A. P. Antonova (Peoples' Friendship University of Russia, Russia) On regularity properties of solutions to Zakharov-Kuznetsov equation 17:35: M.A. Opritova (Peoples' Friendship University of Russia, Russia) Regularity and large-time decay of solutions to generalized Kawahara equation</p>	202, Laboratory Building, MIPT

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Tuesday, December 1st

<p style="text-align: center;"><i>Chair: S. I. Kabanikhin</i></p> <p>10:00: I. A. Taimanov (Sobolev Institute of Mathematics, Russia) On a numerical study of the discrete spectrum of two-dimensional Schroedinger operators with soliton potentials 10:35: M. I. Belishev (PDMI RAS, Russia) Intrinsic geometric world of a symmetric semibounded operator 11:10: S. Kuksin (Universite Paris-Diderot, France) Averaging for weakly-nonlinear PDE in finite volume 11:45: G. M. Henkin (Université Paris-VI, France), A. A. Shaninin (MIPT, Russia) On the Cauchy-Gelfand problem 12:20: Coffee break & lunch</p>	<p>Assembly Hall, Laboratory Building, MIPT</p>
<p style="text-align: center;">Section «Inverse problems of mathematical physics» <i>Chair: V. A. Sharafutdinov</i></p> <p>13:20: V. I. Agoshkov (Institute of Numerical Mathematics of RAS, Russia) Study and numerical solution of inverse problems of the theory of tides 13:55: A. Jollivet (Université de Lille 1, France) Inverse scattering in classical mechanics 14:30: Coffee break 14:50: A. S. Shurup, O. D. Rumyantseva (Moscow State University, Russia) Numerical simulation of the functional approach for recovering vector fields in acoustic tomography 15:25: A. V. Gasnikov (MIPT, Russia) Inverse problems in mathematical modeling of traffic flows 16:00: A. D. Agaltsov (Ecole Polytechnique, France) A global uniqueness result for acoustic tomography of moving fluid 16:20: A. V. Podoroga, I. V. Tikhonov (Moscow State University, Russia) Computer simulation for quasi-linear equations of traffic flow</p>	<p>BioPharm Building, MIPT</p>
<p style="text-align: center;">Section «Nonlinear PDEs and dynamical systems» <i>Chair: J.-C. Saut</i></p> <p>13:20: A. N. Sobolevski (IITP RAS, Russia) Evolution equations in cosmology: hydrodynamic and kinetic formulations 13:55: D. V. Tunitsky (Institute of Control Sciences of RAS, Russia) On global solvability of one-dimensional nonlinear wave equations 14:30: Coffee break 14:50: A. A. Belolipetskiy (Dorodnicyn Computing Centre of RAS, Russia), A. M. Ter-Krikorov (MIPT, Russia) Modified Kantorovich theorem and asymptotic solution of the singularly perturbed systems of ordinary differential equations 15:25: L. A. Beklaryan, A. L. Beklaryan (Central Economics and Mathematics Institute of RAS, Russia) On traveling wave type solutions in infinite dimensional dynamical systems 16:00: A. S. Bratus (Moscow State University of Railway Engineering, Russia) Distributed replicator system and its application to biology</p>	<p>BioPharm Building, MIPT</p>
<p style="text-align: center;">Section «Numerical methods» (school for young scientists) <i>Chair: A. A. Shaninin</i></p> <p>13:20: A. Lagunovskaya (Keldysh Institute of Applied Mathematics of RAS, Russia) On the relationship between simulation logit dynamics in the population game theory and mirror descent method in the online optimization using the example of the shortest path problem 13:40: D. Kamzolov, A. Suvorikova (MIPT, Russia) Fast computation Wasserstein Barycenters 14:00: D. Kamzolov (MIPT, Russia), A. Anikin (Institute for System Dynamics and Control Theory SB RAS, Irkutsk, Russia) Effective numerical methods for huge-scale linear systems with double-sparsity and applications to pagerank 14:20: D. Merkulov (MIPT, Russia) Convex online optimization with noisy first order oracle 14:40: V. Dryuma (Institute of Mathematics and Informatics AS, Moldova) New solutions of the Euler system of equations for incompressible fluid 15:00: A. Chernov (MIPT, Russia) Primal-dual method for entropy-linear programming 15:20: S. Omelchenko (MIPT, Russia) The evolutionary inference of the simplest model of splitting traffic flow on public and private ones 15:40: M. Mendel (MIPT, Russia) Inverse problem of demand IP-matrix calculation from link loads 16:00: D. Grigorievykh (MIPT, Russia) Mathematical modeling of cracks in the solid deformable bodies using hexahedral mesh 16:20: A. Aleksandrova (Peoples' Friendship University of Russia, Russia) Running wave speed analysis in one Polterovich-Henkin model modification</p>	<p>202, Laboratory Building, MIPT</p>
<p>17:00 Cultural program</p>	

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Wednesday, December 2nd

<p style="text-align: right;"><i>Chair: R. Novikov</i></p> <p>10:00: K. Khanin (University of Toronto, Canada) On global solutions to the random Hamilton-Jacobi equation 10:35: I. B. Petrov (MIPT, Russia) Numerical investigation in solid mechanics of direct and inverse problems 11:10: A. K. Pogrebkov (Steklov Mathematical Institute of RAS, Russia) Integrable discretizations of integrable PDE's 11:45: Coffee break 12:00: R. G. Novikov (Ecole Polytechnique, France) Introductory lecture for students «Inverse scattering and applications» 14:00: Coffee break & lunch</p>	<p>BioPharm Building, MIPT</p>
<p style="text-align: center;">Section «Modeling in Continuum Mechanics and Inverse Problems using HPC» <i>Chair: I. B. Petrov</i></p> <p>15:00: O. Ya. Voinov (MIPT), V. I. Golubev (MIPT), M. S. Zhdanov (Univ. of Utah) Migration imaging in acoustic media using Kirchhoff and Born methods 15:20: A.V. Favorskaya, D. I Petrov, N. I. Khokhlov, I. B. Petrov (MIPT) Numerical modeling of seismic prospecting in the Arctic by grid-characteristic method 15:40: A. V. Favorskaya (MIPT), M. S. Zhdanov (University of Utah) Elastic Kirchhoff Integrals and Migration 16:00: K. Beklemysheva, A. Ermakov, A. Vasyukov (MIPT) Modeling non-destructive testing of composite materials for delamination identification 16:20: V. A. Miryaha (MIPT), D. A. Kuchevsky (MIPT), A. V. Sannikov (IHEP) Numerical simulation of impact of ice formation on Arctic offshore objects. 16:40: N. B. Yavich (MIPT), M. S. Malovichko (SPbSU), M. S. Zhdanov (Utah) Efficient algorithm for modeling low-frequency electromagnetic field and its applicability to inversion of geophysical data 17:00: M. S. Malovichko (MIPT), N. I. Khokhlov (MIPT), M. S. Zhdanov (Univ. of Utah), I. B. Petrov (MIPT) Integral approximations in seismic modeling 17:40: Coffee break</p>	<p>910, Applied Mathematics Building, MIPT</p>
<p style="text-align: center;">Section «Nonlinear PDEs and dynamical systems» <i>Chair: S. Kuksin</i></p> <p>15:00: N. S. Petrosyan (MSTU "STANKIN") Asymptotic time-behavior of the solution of the mixed problem for quasilinear scalar conservation law 15:35: Shuhua Zhang (Tianjin University of Finance and Economics, China) Modeling and computation of mean field equilibria in producers' game with emission permits trading 16:10: V. E. Karpov, A. I. Lobanov (MIPT, Russia) Mathematical model of the fibrin polymerization and phase change in blood 16:45: N. K. Volosova, S. P. Vakulenko, K. A. Volosov (Moscow State University of Railway Engineering, Russia) On the theory of method of quality control of the railroad track from a moving train 17:40: Coffee break</p>	<p>BioPharm Building, MIPT</p>
<p style="text-align: center;">Section «Inverse problems of mathematical physics» <i>Chair: L. N. Pestov</i></p> <p>15:00: A. A. Gavrikov, D. U. Knyazkov, A. V. Romanova, V. V. Chernik, A. S. Shamaev Direct and inverse problems of sea surface electromagnetic tomography 15:35: A. G. Yagola (Moscow State University, Russia) Error estimation for ill-posed problems 16:10: V. A. Sedaykina (Immanuel Kant Baltic Federal University, Russia) Simulation of acoustical imaging in semigeodesic coordinates by BC-method 16:30: P. A. Mikheev (SRISA/NIISI RAS, Russia) The application of gradient method to electromagnetic wavefront optimization 17:40: Coffee break</p>	<p>202, Laboratory Building, MIPT</p>

18:00: Closing, BioPharm Building, MIPT