

**Institute of Computational Mathematics and Mathematical Geophysics
Novosibirsk State University
International Mathematical Center of NSU**

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THE ELEVENTH INTERNATIONAL SCIENTIFIC CONFERENCE AND YOUNG SCIENTIST SCHOOL

THEORY AND COMPUTATIONAL METHODS FOR INVERSE AND ILL-POSED PROBLEMS

Novosibirsk, Akademgorodok, 26.08.2019-04.09.2019



N* Novosibirsk
State
University
*THE REAL SCIENCE

PROGRAM



August 26, Monday**Novosibirsk State University, Pirogova street, 2, room 120a**

8:30-9:30	Registration	
9:30-10:00	Opening Ceremony	Group photo.
10:05-10:35	Sergey Godunov, Dmitry Klyuchinsky Sobolev Institute of Mathematics, Novosibirsk Novosibirsk State University	A new 1D linearized finite-difference model of fluid dynamics with entropy nondecreasing and its extension to 2D case
10:40-11:10	Jin Cheng Fudan University, China	The conditional stability estimates for inverse problems and Tikhonov regularization
11:15-11:40	Coffee break	
11:40-12:10	Mikhail Guzev Institute for Applied Mathematics, Vladivostok	Heat transfer in the harmonic chain
12:15-12:45	Iskander Taimanov Sobolev Institute of Mathematics, Novosibirsk	To be announced
12:50-13:20	Dinh Nho Hao Hanoi Institute of Mathematics, Vietnam	Stability results for backward time-fractional parabolic equations
13:25-15:00	Lunch	
15:00-15:30	Vladimir Vasin, Grigory Skorik N.N. Krasovskii Institute of Mathematics and Mechanics, Ekaterinburg	A new approach to solving the deconvolution problem in well test interpretation
15:35-16:05	Igor Marchuk Novosibirsk State University	Problems of capillary hydrodynamics and heat transfer
16:10-16:40	Ivan Oseledets Skolkovo Institute of Science and Technology, Moscow	Numerical modelling and machine learning
16:45-17:05	Coffee break	
17:05-17:35	Dinghua Xu Zhejiang Sci-Tech University, China	Mathematical modeling and numerical simulation in functional clothing design - forward and inverse problems approaches
17:40-18:10	Andrey Palyanov A.P. Ershov Institute of Informatics Systems, Novosibirsk	On the problems associated with computational modelling of neuro-informational processes within the C. elegans organism
18:15-18:45	Weinian Zhang Sichuan University, China	An algorithm for Melnikov functions and applications

August 27, Tuesday**Novosibirsk State University, Pirogova street, 1, room 2328**

9:00-9:30	Shuai Lu Fudan University, China	Multi-frequency inverse acoustic source problems
9:35-10:05	Vladimir Uchaikin Ulyanovsk State University	Variational-Interpolation (VINT) method with application to inverse problem solving
10:10-10:40	Huilin Xu Gannan Normal University, China	Construction and analysis of stable finite difference scheme for numerical differentiation
10:45-11:10	Coffee break	
11:10-11:55	Ivan Oseledets (Conference Lecture) Skolkovo Institute of Science and Technology, Moscow	Mathematics of neural networks
12:00-12:30	Mikhail Kokurin Mari State University, Yoshkar-Ola	Generalized solvability of classes of ill-posed nonlinear integral equations
12:35-13:05	Zewen Wang East China University of Technology, China	Determination of an unknown time-dependent heat source from a nonlocal measurement by finite difference method
13:10-14:30	Lunch	
14:30-15:00	Vladimir Penenko Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Variational methods for solving inverse continuation problems
15:05-15:35	Yury Laevsky, Tatiana Nosova Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Some mathematical problems of filtration combustion
15:40-16:10	Kazizat Iskakov L.N. Gumilyov Eurasian National University, Astana, Kazakhstan	Algorithms for solving inverse problems using data from georadar hardware
16:10-16:30	Coffee break	
16:30-18:00	Section I, room 2322	

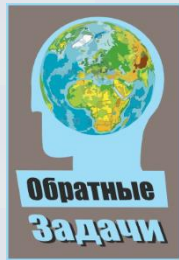
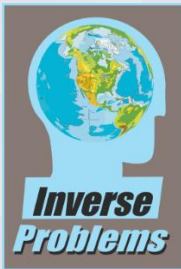
Section II, room 2328**August 28, Wednesday****Novosibirsk State University, Pirogova street, 1, room 2328**

9:00-9:30	Alexander Kononov RFNC - Zababakhin VNIITF, Snezhinsk	Identification methods with compression in inverse tomography problems
9:35-10:05	Gennady Mikhailov, Evgeniya Kablukova, Vasiliy Ogorodnikov, Sergey Prigarin Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Constructing a numerically statistical model of a homogeneous random field with the given distribution of the integral over one of the phase coordinates
10:10-10:40	Boris Kargin Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Weighted Statistical Modeling in the Problems of Atmospheric and Oceanic Optics
10:45-11:10	Coffee break	
11:10-11:40	Valery Ilyin Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk State University	Parallel technologies of the integrated computational environment for optimization methods to solve inverse problems
11:45-12:15	Andrey Karchevsky Sobolev Institute of Mathematics, Novosibirsk	Solutions of the Cauchy problem for the elliptic equation and the heat equation with data on a time-like boundary
12:20-12:50	Victor Debelov Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Light meshes: soft shadows simulation and acceleration of Whitted-like ray tracing
12:55-14:30	Lunch	
14:30-14:50	Alexander Demidov Lomonosov Moscow State University	Moutard transformation and Cauchy problem for an elliptical equation
14:50-15:10	Alexander Ryzhenkov Institute of Economics and Industrial Engineering, Novosibirsk	Regulation of effort, catch and biomass in global marine fisheries models
15:10-15:30	A. Asanov, Zuurakan Kadenova Institute of Mathematics, Bishkek, Kyrgyz Republic	About solutions of Fredholm-Stieltjes linear integral equations of the first kind with two variables
15:30-15:50	Sergey Kazantsev Sobolev Institute of Mathematics, Novosibirsk	Cosserat eigenfunctions for the first boundary-value problem of the theory of elasticity in a ball
15:50-16:10	Vasily Vasiliev, A. Kardashevsky Northeastern Federal University, Yakutsk	Numerical solution of the retrospective inverse problem for a parabolic equation using the Poisson integral
16:10-16:30	Coffee break	
16:30-18:00	Section III, room 2322	

Section IV, room 2328**August 29, Thursday****Novosibirsk State University, Pirogova street, 1, room 2328**

9:00-9:30	Karl Sabelfeld Institute of Computational Mathematics and Mathematical Geophysics	Randomization of supercomputer simulations involving big data manipulations
9:35-10:05	Vladimir Krupchatnikov, Dina Yakshina, Gennady Platov, Yulia Martynova, Irina Borovko Institute of Computational Mathematics and Mathematical Geophysics, Siberian Regional Scientific Research Hydrometeorological Institute, Institute for Monitoring of Climatic and Ecological Systems, Novosibirsk State University	On the interaction of atmospheric dynamics Arctic and mid-latitudes under climate change

10:10-10:40	Zhousheng Ruan East China University of Technology, China	Identification of initial condition in one-dimensional integer/fractional order diffusion equation by one point observation data
10:45-11:10	Coffee break	
11:10-11:40	Xingjun Luo Gannan Normal University, China	A multiscale projection method for solving nonlinear integral equations
11:45-12:15	Yu Jiang Shanghai University of Finance and Economics, China	Inversion analysis for magnetic resonance elastography
12:20-13:05	Vladimir Belonosov (Conference Lecture) Sobolev Institute of Mathematics, Novosibirsk	Inverse spectral problems
13:10-14:30	Lunch	
14:30-15:00	Jijun Liu Southeast University, China	Recovering the weight function in distributed order fractional equation from interior measurement
15:05-15:35	Alexander Shaninin Moscow Institute of Physics and Technology	Inverse problems in models of distribution of resources
15:40-16:10	Shuhua Zhang Tianjin University Finance and Economics, China	A new idea for forecasting - based on data-driven PDE and ODE
16:15-16:40	Coffee break	
16:40-18:00	Section V, room 2322	Section VI, room 2328
August 30, Friday		Novosibirsk State University, Pirogova street, 1, room 2328
9:00-9:45	Eugene Tyrtshnikov (Conference Lecture) Marchuk Institute of Computational Mathematics, Moscow	Tensor train decomposition and its application
9:50-10:35	Vladimir Romanov (Conference Lecture) Sobolev Institute of Mathematics, Novosibirsk	Phaseless inverse problems
10:40-11:10	Coffee break	
11:10-11:55	Vladimir Vasin (Conference Lecture) N.N. Krasovskii Institute of Mathematics and Mechanics, Ekaterinburg	Some actual problems of the theory of ill-posed problems
12:00-12:45	Michele Pagano (Conference Lecture) University of Pisa, Italy	Anomaly-based NIDSs based on deep learning
12:50-14:30	Lunch	
14:30-15:15	Sergey Kabanikhin (Conference Lecture) Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Regularization of the Cauchy problem with partial data
15:20-16:05	Maxim Shishlenin (Conference Lecture) Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Coefficient inverse problems for PDE
16:10-16:40	Coffee break	
16:40-17:10	Tangwei Liu East China University of Technology	Some parameters estimation problems in marine geophysics
17:15-17:45	Olga Krivorotko Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Numerical regularization of multi-parametric minimization problems arising in epidemiology
17:50-18:20	Ting Wei Lanzhou University, China	Identification of time-dependent convection coefficient in a time-fractional diffusion equation
August 31, Saturday		Novosibirsk State University, Pirogova street, 1, room 2328
9:00-9:30	Eugene Tyrtshnikov Marchuk Institute of Computational Mathematics, Moscow	Tensor in numerical mathematics
9:35-10:05	Aleksey Penenko Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Adjoint functions ensembles in data assimilation and inverse problems solution algorithms
10:10-10:40	Sergey Golushko Novosibirsk State University	Direct, inverse and optimization problems in the mechanics of composites
10:45-11:15	Alexander Kozhanov Sobolev Institute of Mathematics, Novosibirsk	Differential equations of mathematical physics with unknown parameters
11:20-11:40	Coffee break	
11:40-12:10	Alexander Gasnikov Moscow Institute of Physics and Technology	Modern numerical methods for solving non-convex smooth optimization problems
12:15-12:45	Andrey Terekhov Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Imaging Earth's interior via the Laguerre finite-difference one-way wave equation solver
12:50-13:20	Sébastien Tordeux, Sergey Kabanikhin, Maxim Shishlenin EPC Magique 3D, UPPA, INRIA, France, Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Reconstruction of impedance condition in an acoustic bench
September 2, Monday		Institute of Computational Mathematics and Mathematical Geophysics, Lavrentiva street 6, Conference Hall
9:00-9:30	Anatoly Yagola Lomonosov Moscow State University	Is it possible to estimate the error of solving an Ill-Posed problem?
9:35-10:05	Mikhail Marchenko Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Supercomputer stochastic simulation of kinetic processes and Big Data processing
10:10-10:40	Viktor Mikhailov St. Petersburg Department of Steklov Mathematical Institute	Dynamic inverse problem for special system associated with Jacobi matrices and classical moment problems
10:45-11:15	Gennady Platov, Elena Golubeva Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Using the EOF decomposition methodology to analyze atmospheric forcing in the formation of climate trends in the Arctic
11:20-11:40	Coffee break	
11:40-12:10	Gulnara Kuramshina Lomonosov Moscow State University	Inverse problems of determining the parameters of potential functions of polyatomic molecules from experimental data
12:15-12:45	Alexander Mikhailov St. Petersburg Department of Steklov Mathematical Institute	Forward and inverse dynamic problems for a Krein string. Approximation by point-mass densities
12:50-13:20	Ivan Kazantsev Institute of Computational Mathematics and Mathematical Geophysics, Novosibirsk	Decomposition of regular textures in images using the Radon transform
September 3, Tuesday		Institute of Computational Mathematics and Mathematical Geophysics, Lavrentiva street 6, Conference Hall
10:00-13:00	Alexander Gasnikov Moscow Institute of Physics and Technology	Distributed and parallel optimization
September 3, Tuesday		Institute of Computational Mathematics and Mathematical Geophysics, Lavrentiva street 6, Conference Hall
09:00-11:00	Viktor Mikhailov St. Petersburg Department of Steklov Mathematical Institute	Boundary control method and spectral problems
11:30-13:30	Alexander Mikhailov St. Petersburg Department of Steklov Mathematical Institute	Inverse problem. Krein equation and applications



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