



# PROGRAM

of the 6th International Conference  
**NONLINEAR ANALYSIS  
AND  
EXTREMAL PROBLEMS**  
(NLA-2018)

JUNE 25–30, 2018  
IRKUTSK, RUSSIA

## SCHEDULE

June 25, Monday		June 26, Tuesday		June 27, Wednesday		June 29, Friday	
		9:00	<b>Lectures</b> Conference Hall	9:00	<b>Lectures</b> Conference Hall	9:00	<b>Lectures</b> Conference Hall
11:00	<b>Registration</b>	11:00	<b>Coffee Break</b>	11:00	<b>Coffee Break</b>	11:00	<b>Coffee Break</b>
		11:20	<b>Lecture</b> Conference Hall	11:20	<b>Plenary Talks</b> Conference Hall	11:20	<b>Plenary Talks</b> Conference Hall
		12:20	<b>Lunch</b>	12:40	<b>Lunch</b>	12:40	<b>Lunch</b>
14:00	<b>Opening</b> Conference Hall	14:00	<b>Section A</b> Room 407	14:00	<b>Section A</b> Room 407	14:00	<b>Section A</b> Room 407
			<b>Section B</b> Room 401		<b>Section B</b> Room 401		<b>Section B</b> Room 401
14:15	<b>Lecture</b> Conference Hall	16:00	<b>Coffee Break</b> 4 <sup>th</sup> floor	16:00	<b>Coffee Break</b> 4 <sup>th</sup> floor	16:00	<b>Coffee Break</b> 4 <sup>th</sup> floor
15:15	<b>Coffee Break</b>	16:20	<b>Section A</b> Room 407  <b>Section B</b> Room 401	16:20	<b>Section A</b> Room 407  <b>Section B</b> Room 401	16:20	<b>Section A</b> Room 407
15:35	<b>Lecture</b> Conference Hall						<b>Section B</b> Room 401
17:00	<b>Welcome Reception</b>					17:00	<b>Closing Ceremony</b> Room 407

## PROGRAM

June 25, Monday

ISDCT SB RAS, Conference hall (ground floor)

### LECTURES

Co-chairs – Alexander Tolsonogov, Pham Quang Cuong, Vladimir Bogachev

Secretary – Nikolay Pogodaev

11:00 – 14:00 **Registration**

14:00 – 14:15 **Opening**

14:15 – 15:15 *Vladimir Bogachev*. Geometry and topology of spaces of measures (Part 1)

15:15 – 15:35 **Coffee break**

15:35 – 16:35 *Pham Quang Cuong*. Optimal control and robot motion planning (Part 1)

17:00 – 19:00 **Welcome Reception**

**LECTURES**

Co-chairs – Vladimir Bogachev, Giovanni Colombo, Pham Quang Cuong

Secretary – Elena Chistyakova

- 9:00 – 10:00 *Giovanni Colombo*. On dynamics and optimal control of Moreau's sweeping process (Part 1)
- 10:00 – 11:00 *Vladimir Bogachev*. Geometry and topology of spaces of measures (Part 2)
- 11:00 – 11:20 **Coffee break**
- 11:20 – 12:20 *Pham Quang Cuong*. Optimal control and robot motion planning (Part 2)
- 12:20 – 14:00 **Lunch**

**SECTION A**

Co-chairs – Alexander Kazakov, Anna Lempert

Secretaries – Pavel Kuznetsov, Liubov Solovarova

- 14:00 – 14:20 *Anatolii Aristov*. On a Nonclassical Nonlinear Partial Equation
- 14:20 – 14:40 *Kim Gwang Hui*. Superstability of a Pexider-type trigonometric functional equation
- 14:40 – 15:00 *Svetlana Butler*. Non-linear functionals and deficient topological measures
- 15:00 – 15:20 *Alexander Chentsov, Dmitrii Serkov*. On non-anticipating selection
- 15:20 – 15:40 *Nikolay Pogodaev, Maxim Staritsyn*. A note on numeric analysis of impulsive control problems for continuity equations
- 15:40 – 16:00 *Olga Samsonyuk, Sergey Timoshin*. Approximation results for a BV-sweeping process driven by impulsive controls
- 16:00 – 16:20 **Coffee break**
- 16:20 – 16:40 *Anna Bondar*. On continuous dependence in the problem of dichotomy for difference equations with periodic coefficients
- 16:40 – 17:00 *Timur Yskak*. On stability of the zero solution to systems of differential equations with distributed delay
- 17:00 – 17:20 *Serge Miheev*. Representation of phase-periodical functions
- 17:20 – 17:40 *Lev Spevak, Alexander Kazakov, Pavel Kuznetsov*. Numerical and analytical construction of heat waves for the nonlinear heat equation with a source
- 17:40 – 18:00 *Sergey Kornev, Valeri Obukhovskii*. On asymptotics of solutions for functional differential inclusions with regular right-hand parts
- 18:00 – 18:20 *Choudhuri Debarjoyti*. Elliptic PDEs with measure and singularity
- 18:20 – 18:40 *Hamid Baghani*. Discontinuity and fixed points in incomplete metric spaces

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**SECTION B**

Co-chairs – Alla Shcheglova, Ivan Finogenko

Secretaries – Nadezhda Maltugueva, Svyatoslav Orlov

- 14:00 – 14:20 *Pavel Petrenko*. Robust controllability of nonstationary differential-algebraic equations with unstructured uncertainties
- 14:20 – 14:40 *Viktor Chistyakov*. On the concept of index for linear partial differential algebraic equations
- 14:40 – 15:00 *Maria Skvortsova*. Stability of solutions in one model of population dynamics with delay
- 15:00 – 15:20 *Semen Podvalny, Eugeny Vasiljev*. Aggregate control of an unmanned aerial vehicle
- 15:20 – 15:40 *Ivan Finogenko*. TBA
- 15:40 – 16:00 *Ekaterina Balakina*. Definition of surface of breakdown coefficients of a non-stationary polychromatic transfer equation
- 16:00 – 16:20 **Coffee break**
- 16:20 – 16:40 *Alla Shcheglova*. Controllability in the class of impulse effects for differential-algebraic equations
- 16:40 – 17:00 *Oleg Khamisov*. Disturbance based decentralized frequency control for power systems
- 17:00 – 17:20 *Dmitry Trunin*. Nonlocal improvement of controls in quadratic on a state controlled systems with terminal constraints
- 17:20 – 17:40 *Oksana Kuznetsova*. Dynamic chameleon systems in automatic control
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**LECTURES**

Co-chairs – Alexander Tolstonogov, Vladimir Bogachev, Giovanni Colombo  
 Secretary – Maxim Staritsyn

- 9:00 – 10:00 *Vladimir Bogachev*. Geometry and topology of spaces of measures (Part 3)  
 10:00 – 11:00 *Giovanni Colombo*. On dynamics and optimal control of Moreau's sweeping process (Part 2)  
 11:00 – 11:20 **Coffee break**

**PLENARY TALKS**

- 11:20 – 12:00 *Constantin Corduneanu, Arkadii Kim, Maxim Novikov*. Application of i-smooth analysis to control problems of systems with delays  
 12:00 – 12:40 *Anh Pham The, Adam Czornik, Piotr Jurga, Michal Niezabitowski*. A proposition of the Lyapunov exponent of fractional systems  
 12:40 – 14:00 **Lunch**

**SECTION A**

Co-chairs – Mikhail Bulatov, Sergey Timoshin  
 Secretaries – Maxim Zharkov, Maxim Yanulevich

- 14:00 – 14:20 *Svetlana Svinina*. On the investigation of some quasilinear differential-algebraic partial differential equations  
 14:20 – 14:40 *Pavel Kalashnikov*. Dynamic model of the process of optimal control of the balance of the joint-distribution pension system  
 14:40 – 15:00 *Mikhail Bulatov, Liubov Solovarova*. On regularization properties of block difference schemes for differential-algebraic equations  
 15:00 – 15:20 *Sergey Chaikin*. The structure of the relative equilibria set of a stationary orbital nonsymmetrical gyrostator  
 15:20 – 15:40 *Alexander Balandin*. Solving the some scattering problem by the use of maximum entropy principle  
 15:40 – 16:00 *Andrey Banskikov*. On the influence of forces on the stability of a satellite with a gravitational stabilizer  
 16:00 – 16:20 **Coffee break**  
 16:20 – 16:40 *Andrei Lomov*. On the convergence of the computational solutions in the variational parametric identification problem for the difference equations  
 16:40 – 17:00 *Tumen Darmaev*. Numerical analysis of periodical modes of plane-parallel flows  
 17:00 – 17:20 *Ramezani Maryam*. Studying a Volterra integral equation in O-complete (not necessarily complete) metric spaces  
 17:20 – 17:40 *Jozil Takhirov*. On a cross diffusion system modeling predator-prey with prey-taxis  
 17:40 – 18:00 *Kamenskii M., Obukhovskii V., Petrosyan G.* On approximate solutions for a fractional order differential equations in Banach spaces  
 18:00 – 18:20 *Peregudin S.I., Peregudina Elina S., Kholodova S.E.* Nonlinear partial differential equations in problems of wave dynamics

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**SECTION B**

Co-chairs – Alexander Strekalovskii, Alexander Gornov

Secretaries – Pavel Sorokovikov, Eugeniya Finkelshtein

- 14:00 – 14:20 *Anatoly Apartsyn, Evgeniia Markova, Inna Sidler, Victor Trufanov.* The influence of economic indices on the solution to the optimization problem of the age structure of power plants equipment
- 14:20 – 14:40 *Alexander Strekalovsky.* Global optimality conditions for general d.c. optimization problems
- 14:40 – 15:00 *Pavel Sorokovikov.* Nonlocal algorithms for one-dimensional search based on the Holder condition
- 15:00 – 15:20 *Bayarma Zanaeva, Pavel Sorokovikov, Fedor Khandarov.* Towards a hybrid algorithm of swarm intelligence
- 15:20 – 15:40 *Nikita Martynov, Olga Khandarova, Fedor Khandarov.* Graph clustering algorithm based on modularity change estimation
- 15:40 – 16:00 *Anton Anikin.* Optimization algorithms parallelization techniques for hybrid computing systems
- 16:00 – 16:20 **Coffee break**
- 16:20 – 16:40 *Alexander Gornov.* Newtonian type algorithm with linear memory for minimization of quasi-separable functions
- 16:40 – 17:00 *Yuri Kan, Sofia Vasil'eva.* On the linearization of the criterial function in probabilistic problems of analysis and optimization
- 17:00 – 17:20 *Igor Zabotin, Kseniya Kazaeva.* Variant of the method of external penalties with approximation of auxiliary functions epigraphs
- 17:20 – 17:40 *Kumar Rakesh, Subir Das.* Weak, modified and function projective synchronization of Cohen-Grossberg neural networks with mixed time-varying delays and parameter mismatch via matrix measure approach
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**BAIKAL SESSION**

Co-chairs – Alexander Tolstonogov, Vladimir Dykhta

**LECTURES**

Co-chairs – Alexander Tolstonogov, Pham Quang Cuong, Giovanni Colombo

Secretary – Pavel Petrenko

- 9:00 – 10:00 *Giovanni Colombo*. On dynamics and optimal control of Moreau's sweeping process (Part 3)
- 10:00 – 11:00 *Pham Quang Cuong*. Optimal control and robot motion planning (Part 3)
- 11:00 – 11:20 **Coffee break**

**PLENARY TALKS**

- 11:20 – 12:00 *Evgeny Panov*. On decay of space almost periodic viscosity solutions of Hamilton-Jacobi equations
- 12:00 – 12:40 *Dmitry Khlopin*. Tauberian theorem for Nash equilibria
- 12:40 – 14:00 **Lunch**

**SECTION A**

Co-chairs – Vladimir Dykhta, Nikolay Pogodaev

Secretaries – Maria Barkova, Vsevolod Voronov

- 14:00 – 14:20 *Ivan Burlakov, Alexander Buldaev*. Numerical solution of the optimal control problems with phase constraints and optimal speed by the fixed point method
- 14:20 – 14:40 *Ekaterina Dryganova*. Fixed point methods in the discrete controlled systems
- 14:40 – 15:00 *Andrei Svinin*. On some generalizations of power-sums arising in the theory integrable hierarchies
- 15:00 – 15:20 *Tursun Yuldashev*. Singularities of solution of the boundary value problems for an integro-differential equations with degenerate kernel
- 15:20 – 15:40 *Svyatoslav Orlov*. Special exact solutions of a nonlinear diffusion equation
- 15:40 – 16:00 *Svetlana Gakh*. Nonlinear modeling of expansion and operation of power systems
- 16:00 – 16:20 **Coffee break**
- 16:20 – 16:40 *Singh Anup, S. Das*. Numerical solution of spatial-time fractional nonlinear reaction-advection-diffusion equation
- 16:40 – 17:00 *Natalya Antipina*. Impulsive control by advertising investments flow
- 17:00 – 17:20

## SECTION B

Chair – Eugenii Cherkashin

Secretaries – Kseniya Bedenko, Anton Anikin

- 14:00 – 14:20 *Stadnikov D., Kopaygorodsky N.* Monitoring of open and Big data
- 14:20 – 14:40 *Cherkashin E., Shigarov A., Malkov F., Galachyants Yu., Morozov A., Mikhailov I., Gorsky S.* Modelling processes of amplicon analysis
- 14:40 – 15:00 *Kasyanenko A., Sosinskaya S.* Development of a mobile client for information support of complex parts group technology
- 15:00 – 15:20 *Pakkert D., Cherkashin E.* Computer simulation environment for modeling routing in wireless networks
- 15:20 – 15:40 *Kimlyuk E.A., Cherkashin A.K., Cherkashin E.A.* A Java library for time series and image analysis
- 15:40 – 16:00 *Arlyapov S., Cherkashin E.* Logical computer simulation of a group of elevators
- 16:00 – 16:20 **Coffee break**

**CLOSING CEREMONY – 17:00, Room 407**