

# Mathematical Optimization Theory and Operations Research (MOTOR 2019)

## Tentative program

**July 8, 2019**

### Session ***Mathematical Programming***

Topics: theory and methods of mathematical programming including linear, non-linear, convex, two-level programs, etc.

<b><i>Plenary talk</i></b>	<b><i>Prof. Angelo Sifaleras University of Macedonia Greece</i></b>	<b><i>Exterior Point Simplex-type Algorithms for Linear and Network Optimization Problems</i></b>
<i>oral presentation</i>	<i>Stephan Dempe</i>	<i>Computing local optimal solutions of the bilevel optimization problem using the KKT approach</i>
<i>oral presentation</i>	<i>Maxim Demenkov</i>	<i>From concave programming to polytope projection</i>
<i>oral presentation</i>	<i>Boris Dobronets and Olga Popova</i>	<i>Computational probabilistic analysis for random linear programming</i>
<i>oral presentation</i>	<i>Vladimir Erokhin</i>	<i>Regularization and matrix correction of improper linear programming problems</i>
<i>oral presentation</i>	<i>Igor Konnov and Olga Pinyagina</i>	<i>Splitting method with adaptive step-size</i>
<i>oral presentation</i>	<i>Valery Zorkaltsev</i>	<i>History and prospects of interior point method</i>

Session **Algorithms design and analysis**

Topics: design and analysis of polynomial time approximation algorithms with theoretic guarantees and approximation schemes for NP-hard combinatorial optimization problems

<b>Plenary talk</b>	<b>Prof. Vitaly Strusevich University of Greenwich United Kingdom</b>	<b>Design of Fully-Polynomial Approximation Schemes for Non-linear Boolean Programming Problems</b>
<i>oral presentation</i>	<i>René Van Bevern, Till Fluschnik and Oxana Tsidulko</i>	<i>On <math>(1+\epsilon)</math>-approximate data reduction for the Rural Postman Problem</i>
<i>oral presentation</i>	<i>Valentina Bykova and Aleksandr Soldatenko</i>	<i>Polynomial Time Approximation Algorithm for Resource Constrained Shortest Path problem</i>
<i>oral presentation</i>	<i>Michael Khachay and Yuri Ogorodnikov</i>	<i>Approximation schemes for Capacitated Vehicle Routing Problem with nonuniform demand</i>
<i>oral presentation</i>	<i>Vladimir Khandeev</i>	<i>Approximation Scheme for a Problem of Searching for the Largest Subset</i>
<i>oral presentation</i>	<i>Yurii Mezentsev and Pavel Pavlov</i>	<i>Approximate Efficient Algorithms for Solving One Class Mixed Integer Programming Problems Using Semi-definite Relaxation</i>
<i>oral presentation</i>	<i>Anatoly V. Panyukov and Yuliya F. Leonova</i>	<i>Algorithm with an estimation of accuracy for MAX TSP</i>

Session **Heuristics and Metaheuristics**

Topics: design and analysis of heuristic algorithms and meta-heuristics including GA, local search, VNS, simulated annealing, etc.

<b>Plenary talk (Tutorial)</b>	<b>Prof. Tatjana Davidović Mathematical Institute of the Serbian Academy of Sciences and Arts Serbia</b>	<b>Distributed memory based parallelization of metaheuristic methods</b>
<i>oral presentation</i>	<i>Alexander Chentsov, Alexey Grigoryev and Alexey Chentsov</i>	<i>Procedures of local optimization in routing problems with constraints</i>
<i>oral presentation</i>	<i>Vladislav Chulkov</i>	<i>Hybrid local search heuristic for a scheduling problem in flexible manufacturing systems</i>
<i>oral presentation</i>	<i>Yuri Kochetov and Natalia Shamray</i>	<i>Genetic Algorithm for Optimizing of Ambulance Fleet Allocation</i>
<i>oral presentation</i>	<i>Anna Kozlova and Andrei Nikolaev</i>	<i>Simulated annealing approach to test vertex adjacencies in the traveling salesperson polytope</i>
<i>oral presentation</i>	<i>Ivan Rozhnov, Victor Orlov and Lev Kazakovtsev</i>	<i>Variable neighborhood search algorithms for the k-means problem</i>
<i>oral presentation</i>	<i>Ivan Rozhnov and Lev Kazakovtsev</i>	<i>Consequitive greedy heuristics for k-medoid problems</i>

Session **Operations Research**

Topics: mathematical modeling in operations research including facility location problems, transportation problems, and stochastic optimization

<i>oral presentation</i>	<i>Natalia Aizenberg and Nikolai Voropai</i>	<i>The interaction of consumers and load serving entity to manage electricity consumption</i>
<i>oral presentation</i>	<i>Ivan Davydov and Daniil Tolstykh</i>	<i>An evolution based approach for the traffic lights optimization problem</i>
<i>oral presentation</i>	<i>Elina Dyaminova, Anna Filippova, Lidia Vasilyeva and Yulia Valiahmetova</i>	<i>The matrix technology of harnessing the data for solving the complex problem of geometrical placement</i>
<i>oral presentation</i>	<i>Sergey Lavlinskii, Artem Panin and Alexander Plyasunov</i>	<i>Stackelberg Model and Public–Private Partnerships in the Natural Resources Sector of Russia</i>
<i>oral presentation</i>	<i>Tatyana Makarovskikh and Egor Savitskiy</i>	<i>Optimization of Pierce Points Number for Cutting Plan with Combined Cuts</i>
<i>oral presentation</i>	<i>Artem Novikov</i>	<i>Bilevel stochastic model for resource region development program formation</i>
<i>oral presentation</i>	<i>Andrey Takmazian</i>	<i>Finite automata in the network flow application to the locomotive crews assignment problem</i>

Session **Economics**

Topics: economical modelling and related applied problems stemming from market analysis, production, manufacturing and management of multi-level economic systems

<i>oral presentation</i>	<i>Sergey Antsyz</i>	<i>On one approach to modeling developments economics</i>
<i>oral presentation</i>	<i>Nikolai Chernavin, Pavel Chernavin and Fedor Chernavin</i>	<i>Application of the committee machine method to the analysis of stock market technical indicators</i>
<i>oral presentation</i>	<i>Nina Plyaskina</i>	<i>Optimal Control of the Multilevel Economic System Based on Lagrange Multipliers</i>
<i>oral presentation</i>	<i>Yulia Polozhishnikova</i>	<i>Equity-linked notes. Pricing framework: mathematical models, software architecture and implementation tools</i>
<i>oral presentation</i>	<i>Eugene Vitvitsky, Saida Khairova, Okxana Kulikova, Elena Khoroshilova and Bari Khairov</i>	<i>Application of the tabu search algorithm to the task of optimal scheduling of small freight shipping in the city</i>

Session **Optimal Control and Games**

Topics optimal control and game theory: finding of optimal automatic controls and strategies for the players including design of the appropriate numerical methods.

<i>oral presentation</i>	<i>Alexander Dubanov</i>	<i>Building models of the movement of objects in the pursuit problem. Solution in the system of computational mathematics "MathCAD"</i>
<i>oral presentation</i>	<i>Vladimir Fedorov and Dmitriy Gordievskikh</i>	<i>An approximate controllability on infinite-dimensional degenerate fractional order systems in the sectorial case</i>
<i>oral presentation</i>	<i>Igor' Izmet'sev and Viktor Ukhobotov</i>	<i>On a single-type differential game with a non-convex terminal set</i>
<i>oral presentation</i>	<i>Dmitriy Yaparov and Liudmila Prokudina</i>	<i>Numerical modeling of the mass of the flowing liquid at transverse oscillations of the straight tube</i>
<i>oral presentation</i>	<i>Liudmila Prokudina and Dmitrii Bukharev</i>	<i>Simulation of flow regimes of non-isothermal liquid films</i>
<i>oral presentation</i>	<i>Mark Sigalovsky and Anvar Azimov</i>	<i>Numerical solution of geometrical inverse problem of gravimetry by genetic algorithm</i>
<i>oral presentation</i>	<i>Vladimir Ushakov, Aleksandr Ershov and Andrey Ushakov</i>	<i>Counter examples in the Theory of <math>\alpha</math>-Sets</i>
<i>oral presentation</i>	<i>Viktor Ukhobotov, Konstantin Kudryavtsev and Irina Stabulit</i>	<i>On the problem of comparing fuzzy numbers</i>
<i>oral presentation</i>	<i>Tatyana Zavyalova</i>	<i>Towards optimal controls for the systems of random structure</i>

Session **Optimization in Approximation**

Topics: fixed point iteration methods, projections to polyhedrons in the Euclidean spaces, approximation guarantees, etc.

<i>oral presentation</i>	<i>Roman Akopyan</i>	<i>Optimal recovery of a function analytic from its approximately given values on a part of the boundary</i>
<i>oral presentation</i>	<i>Destiny Anyaiwe and Chika Moore</i>	<i>Iterative Solutions for Variational Inclusion Problems in Banach Spaces</i>
<i>oral presentation</i>	<i>Vitalii Arestov</i>	<i>Optimal differentiation of functions with approximately given Fourier transform</i>
<i>oral presentation</i>	<i>Anastacia Drushlyak</i>	<i>Fixed and coincident points in terms of the category of uniform spaces</i>
<i>oral presentation</i>	<i>Alexandr Seliverstov</i>	<i>Elliptic Points on the Graph of a Third Degree Polynomial</i>
<i>oral presentation</i>	<i>Elena Tabarintseva</i>	<i>The accuracy of approximate solutions for a boundary value inverse problem with final overdetermination</i>

Session ***Global optimization***

Topics two-level optimization, vector optimization, equilibria, stability analysis and convergence bounds for numerical methods

<i>oral presentation</i>	<i>Simeon Vom Dahl and Andreas Löhne</i>	<i>On polyhedral d.c. optimization problems</i>
<i>oral presentation</i>	<i>Igor Kandoba and Alexander Uspenskiy</i>	<i>On one applied problem of vector optimization</i>
<i>oral presentation</i>	<i>Valeriy Marakulin</i>	<i>Spatial equilibrium in a multidimensional space: an immigration-consistent division into countries centered at barycenter</i>
<i>oral presentation</i>	<i>Evgeni Nurminski and Natalia Shamray</i>	<i>Discrete Time Lyapunov-Type Convergence Conditions for Recursive Sequences in Optimization</i>
<i>oral presentation</i>	<i>Andrei Orlov and Tatiana Gruzdeva</i>	<i>On a Local and a Global Search in Bilevel Problems with a Matrix Game at the Lower Level</i>
<i>oral presentation</i>	<i>Vladimir Ushakov and Pavel Lebedev</i>	<i>Iterative methods for optimal packing approximations constructing for non convex polygons</i>



**July 9, 2019**

Session ***Algorithms design and analysis***

Topics: design and theoretical analysis of approximation algorithms and schemes for intractable combinatorial optimization problems

<b><i>Plenary talk</i></b>	<b><i>Prof. Christoph Dürr Sorbonne Université France</i></b>	<b><i>Bijjective analysis of online algorithms</i></b>
<i>oral presentation</i>	<i>Edward Kh. Gimadi and Oxana Tsidulko</i>	<i>On the budget constrained Travelling salesman problem</i>
<i>oral presentation</i>	<i>Alexey Glebov</i>	<i>A 5/6-approximation algorithm for the maximization version of the pseudo-metric TSP</i>
<i>oral presentation</i>	<i>Natalia Grigoreva</i>	<i>Multiprocessor Scheduling with Inserted Idle Time for <math>P  r_j, q_j   C_{max}</math> Problem</i>
<i>oral presentation</i>	<i>Victor Il'ev, Svetlana Il'eva and Alexander Morshinin</i>	<i>A 2-approximation algorithm for the graph 2-clustering problem</i>
<i>oral presentation</i>	<i>Alexander Kelmanov and Vladimir Khandeev</i>	<i>The problem K-means and given J-centers: polynomial solvability in one dimension</i>
<i>oral presentation</i>	<i>Konstantin Kobylkin</i>	<i>Approximation algorithms for piercing special families of hippodromes: an extended abstract</i>
<i>oral presentation</i>	<i>Gennady Zabudsky and Natalia Veremchuk</i>	<i>On the One-Dimensional Space Allocation Problem with Partial Order and Forbidden Zones</i>

Session **Operations Research**

Topics: mathematical modeling in operations research including facility location problems, transportation problems, and stochastic optimization

<b>Plenary talk</b>	<b>Prof. Bertrand M.T. Lin</b> <b>National Chiao Tung University,</b> <b>Hsinchu Taiwan</b>	<b>An Overview of the Relocation Problem</b>
<i>oral presentation</i>	<i>Sergey V. Kruglikov</i>	<i>Operation Research Presentation of the State Support for the Regional Industry</i>
<i>oral presentation</i>	<i>Anna Lempert, Alexander Kazakov and Quang Mung Le</i>	<i>On the Thinnest Covering of Fixed Size Containers with Non-Euclidean Metric by Incongruent Circles</i>
<i>oral presentation</i>	<i>Yakov Lvovich, Igor Lvovich, Andrey Preobrazhenskiy, Oleg Choporov and Yuriy Klimenko</i>	<i>Management of distributed energy systems based on rating, optimization and expert approaches</i>
<i>oral presentation</i>	<i>Yurij Mezentsev and Yuliya Korotkova</i>	<i>Optimization Problems and algorithms for Airline's On-Time Performance management</i>
<i>oral presentation</i>	<i>Alexander Petunin, Alexander Chentsov, Alexander Seseikin and Pavel Chentsov</i>	<i>Tool path design for the CNC Sheet Metal Cutting Machines. Optimization models and “dynamic” constraints</i>
<i>oral presentation</i>	<i>Arseniy Spiridonov and Sergey Kumkov</i>	<i>Non-Conflict Merging Aircraft Flows under Given Arrival Schedule</i>
<i>oral presentation</i>	<i>Galina Timofeeva and Alexander Martynenko</i>	<i>Estimation of distribution parameters of the generalized trip cost via statistical data</i>

Session **Global optimization**

Topics two-level optimization, vector optimization, equilibria, stability analysis and convergence bounds for numerical methods

<b>Plenary talk (Tutorial)</b>	<b>Prof. Alexander Strelakovsky Matrosov Institute for System Dynamics and Control Theory SB RAS Russia</b>	<b>Modern methods of nonconvex optimization</b>
<i>oral presentation</i>	<i>Maria Barkova and Alexander Strelakovski</i>	<i>Computational testing of the local search method with penalty update procedure</i>
<i>oral presentation</i>	<i>Maria Barkova</i>	<i>On generating nonconvex optimization test problems</i>
<i>oral presentation</i>	<i>Victor Gergel, Alexander Sysoev and Maria Kocheganova</i>	<i>Some approaches for visual evaluation of global optimization method efficiency</i>
<i>oral presentation</i>	<i>Oleg Khamisov</i>	<i>Cutting plane methods for global minimization of a quasiconcave function over a box</i>
<i>oral presentation</i>	<i>Alexander Strelakovsky</i>	<i>Minimizing sequences and global search in d.c. optimization problem</i>

Session **Mathematical Programming**

Topics: theory and methods of mathematical programming including linear, non-linear, convex, two-level programs, etc.

<i>oral presentation</i>	<i>Yury Evtushenko, Alexander Golikov and Igor Kaporin</i>	<i>Penalty and regularization methods for solving systems of linear equations and inequalities</i>
<i>oral presentation</i>	<i>Vladimir Erokhin, Alexander Krasnikov and Vladimir Volkov</i>	<i>Using matrix correction of improper linear programming problems in the problem of pattern recognition with intersecting classes</i>
<i>oral presentation</i>	<i>Sergey Ivanov and Irina Zhenevskaya</i>	<i>Estimation of the necessary sample size for approximation of stochastic optimization problems with probabilistic criteria</i>
<i>oral presentation</i>	<i>Miloica Jacimovic and Nevena Mijajlovic</i>	<i>Dynamical systems and quasi-variational inequalities</i>
<i>oral presentation</i>	<i>Leonid Popov</i>	<i>Methods for matrix games with mixed strategies and quantile payoff function</i>
<i>oral presentation</i>	<i>Fedor Stonyakin</i>	<i>Some Adaptive Algorithms for Strongly Convex-Concave Saddle Point Problems</i>

Session **Heuristics and Metaheuristics**

Topics: design and analysis of heuristic algorithms and meta-heuristics including GA, local search, VNS, simulated annealing, etc.

<i>oral presentation</i>	<i>Dimitrije D. Čvokić, Yury Kochetov, Alexander Plyasunov and Aleksandar Savić</i>	<i>A (r p)hub-centroid problem under the price war</i>
<i>oral presentation</i>	<i>Damir Gainanov, Nenad Mladenovic and Varvara Rasskazova</i>	<i>Two Graph-based Approaches for Solving Railway Arrival and Departure Paths Assignment Problem</i>
<i>oral presentation</i>	<i>Egor Grishin, Alexander Lazarev, Semen Galakhov, Elena Musatova and German Tarasov</i>	<i>Algorithms of the organization of locomotive's maintenance</i>
<i>oral presentation</i>	<i>Alexander Petunin, Efim Polishchuk and Stanislav Ukolov</i>	<i>A novel algorithm for construction of the shortest path between a finite set of non-intersecting contours on the plane</i>
<i>oral presentation</i>	<i>Aida Valeeva, Yuliya Goncharova and Ruslan Valeev</i>	<i>On efficient deliverance of a uniform product to different customers</i>

Session **Optimal Control and Games**

Topics: optimal control and game theory: finding of optimal automatic controls and strategies for the players including design of the appropriate numerical methods.

<i>oral presentation</i>	<i>Mikhail Gusev</i>	<i>Estimates of the minimal eigenvalue of the controllability Gramian for a system containing a small parameter</i>
<i>oral presentation</i>	<i>Vasily Dikusar and Andrzej Yatsko</i>	<i>Optimal movement of train with accounting profile of path</i>
<i>oral presentation</i>	<i>Yurii Dolgii, Alexander Sesekin, Oleg Tashlykov and Kien Trujng Tran</i>	<i>Sequential optimal control of the nuclear fuel reload mechanism</i>
<i>oral presentation</i>	<i>Konstantin Kudryavtsev and Vladislav Zhukovskiy</i>	<i>Hybrid Equilibrium in N-persons Games</i>
<i>oral presentation</i>	<i>Onesimo Hernandez Lerma</i>	<i>Differential games with Pareto-optimal Nash equilibria</i>
<i>oral presentation</i>	<i>Alexey Lamotkin</i>	<i>Investigation of a problem of antagonistic wheel braking in the case of limited capabilities of the braking player</i>
<i>oral presentation</i>	<i>Lev Petrov</i>	<i>Using Nonlinear Interactions To Control Oscillations Of Dynamic Systems</i>
<i>oral presentation</i>	<i>Anna N. Rettieva</i>	<i>Coalition Stability in Dynamic Multicriteria Games</i>
<i>oral presentation</i>	<i>Artem Ripatti</i>	<i>Faster calculating of nim-values of Grundy's game</i>

Session **Optimization in Approximation**

Topics: approximation, interpolation, attainability, Euclidean projections, etc.

<i>oral presentation</i>	<i>Evgeny Derevtsov</i>	<i>Some properties of generalized exponential ray transforms</i>
<i>oral presentation</i>	<i>Ekaterina Kolpakova</i>	<i>Open-loop Strategies in Nonzero-sum Differential Game with Multilevel Hierarchy</i>
<i>oral presentation</i>	<i>Oxana Matviychuk and Alexander Matviychuk</i>	<i>On ellipsoidal estimates for reachable sets of the control system</i>
<i>oral presentation</i>	<i>Vladimir Noghin</i>	<i>On optimizing of numerical function over the fuzzy set</i>
<i>oral presentation</i>	<i>Ganesh Perumal and Srinivasa Prasanna</i>	<i>Projections on polytopes in Euclidean space</i>
<i>oral presentation</i>	<i>Dmitry Yamkovi</i>	<i>Harmonic interpolating wavelets in Neumann boundary value problem in a circle</i>

**July 10, 2019**

Session ***Integer Programming***

Topics: design and analysis issues for numerical algorithms in discrete and combinatorial optimization: branch-and-price, cutting, polyhedra, dynamic programming, etc.

<b><i>Plenary talk</i></b>	<b><i>Prof. Oleg Burdakov Linköping University Sweden</i></b>	<b><i>Node partitioning and subtour creation problem</i></b>
<i>oral presentation</i>	<i>Maximilian John and Andreas Karrenbauer</i>	<i>Dynamic Sparsification for Quadratic Assignment Problems</i>
<i>oral presentation</i>	<i>Aigul Fabarisova and Vadim Kartak</i>	<i>An integer programming approach to the irregular polyomino tiling problem</i>
<i>oral presentation</i>	<i>Tatiana Levanova and Alexander Gnusarev</i>	<i>Development of branch and bound algorithm for the location and design problem with elastic demand</i>
<i>oral presentation</i>	<i>Andrei Nikolaev</i>	<i>On vertex adjacencies in the polytope of pyramidal tours with step-backs</i>
<i>oral presentation</i>	<i>Igor Vasilyev, Pasquale Avella, Maurizio Boccia and Sandro Viglione</i>	<i>A computational case study for the university course timetabling: a heuristic based on integer linear programming</i>
<i>oral presentation</i>	<i>Igor Vasilyev, Anton Ushakov and Tatiana Gruzdeva</i>	<i>A bi-level <math>r</math>-interdiction <math>p</math>-median problem</i>



Session **Operations Research**

Topics: mathematical modeling in operations research including facility location problems, transportation problems, and stochastic optimization

<b>Plenary talk</b>	<b>Prof. Olga Battaia ISAE-Supaero, Toulouse France</b>	<b>Decision under ignorance: a comparison of existing criteria in a context of linear programming</b>
<i>oral presentation</i>	<i>Nadezhda Dresvyanskaya and Oleg Khamisov</i>	<i>Bilevel model of long-term power system development under network capacity constraints</i>
<i>oral presentation</i>	<i>Oleg Khamisov and Natalia Mikhakhanova</i>	<i>Numerical methods for finding equilibrium on heat energy markets</i>
<i>oral presentation</i>	<i>Anton Kolosnitsyn</i>	<i>Stochastic Analogue of Long-term Development Model of Power Energy Systems</i>
<i>oral presentation</i>	<i>Alexandr Krivonogov and Galina Zakharova</i>	<i>Using of language R for solving optimization problems in the educational program of the university</i>
<i>oral presentation</i>	<i>Ilya Kurochkin, Yakov Grinberg and Alexandra Prun</i>	<i>Heuristic composite algorithm for sequential routing on a telecommunication network graph</i>
<i>oral presentation</i>	<i>Olga Sokolova</i>	<i>Modeling message transmission in networks with mobile nodes</i>
<i>oral presentation</i>	<i>Alexandr Tesselkin and Valeriy Khabarov</i>	<i>Optimal Design of Observations on Traffic Flows for the Origin-Destination Matrix Estimation</i>

Session **Algorithms design and analysis**

Topics polynomial time approximation algorithms with theoretic bounds and approximation schemes for NP-hard combinatorial problems

<b>Plenary talk (Tutorial)</b>	<b>Prof. Alexander Kononov Sobolev Institute of Mathematics Russia</b>	<b>Primal-dual Method and Online Problems</b>
oral presentation	Edward Kh. Gimadi and Ekaterina Shin	On random MST problem with given diameter
oral presentation	Edward Kh. Gimadi, Oxana Yu. Tsidulko and Alexander Shtepa	On some Implementations of solving the Restricted Capacitated Facility Location Problem
oral presentation	Edward Kh. Gimadi, Oxana Tsidulko and Alexander Shevyakov	A polynomial-time algorithm for a three-level facility location problem on tree-like networks
oral presentation	Alexander Kelmanov, Anna Panasenko and Vladimir Shenmaier	A Polynomial-Time Approximation Scheme for One Cardinality-Weighted 2-Clustering Problem
oral presentation	Michael Khachay and Katherine Neznakhina	Generalizations of the asymmetric TSP and CVRP: does the triangle inequality implies constant-ratio polynomial time approximation?
oral presentation	Dmitry Mokeev	Effective algorithms for the k-path packing and k-path vertex cover problems on graphs of some classes

Session **Mathematical Programming**

Topics: theory and methods of mathematical programming including linear, non-linear, convex, two-level programs, etc.

<i>oral presentation</i>	<i>Anton Ereemeev and Nikolay Tyunin</i>	<i>Comparison of Gradient Optimization and Simulated Annealing on Non-Convex Quadratic Programming Problems with Special Structure</i>
<i>oral presentation</i>	<i>Mikhail Khvostov and Vladimir Erokhin</i>	<i>About matrix correction of a dual pair of improper linear programming problems with a minimum weighted Euclidean norm</i>
<i>oral presentation</i>	<i>Vladimir Skarin</i>	<i>On the application of the quasi-solution method for the correction of inconsistent problems of convex programming</i>
<i>oral presentation</i>	<i>Tatiana Tchemisova and Olga Kostyukova</i>	<i>Phenomenon of Immobility in study of convex Optimization problems</i>
<i>oral presentation</i>	<i>Dragan Urosevic, Yiad Ibrahim Yousef Alghoul, Zhazira Amirgaliyeva and Nenad Mladenovic</i>	<i>Variable neighborhood Tabu search for Quadratic Bipartite Programming Problem</i>
<i>oral presentation</i>	<i>Vitaly Zhadan</i>	<i>Variant of Simplex Method for Second-order Cone Programming</i>

Session **Heuristics and Metaheuristics**

Topics: Genetic and memetic algorithms, local search, VNS and other efficient heuristics

<i>oral presentation</i>	<i>Yulia Kovalenko and Aleksey Zakharov</i>	<i>Pareto Memetic Algorithms for Bicriteria Asymmetric Travelling Salesman Problem</i>
<i>oral presentation</i>	<i>Hanan Shabana and Mikhail Volkov</i>	<i>Using Sat solvers for synchronization issues in partial deterministic automata</i>
<i>oral presentation</i>	<i>Konstantin Speshilov and Valeriy Khabarov</i>	<i>Heuristic algorithms in the behavior model of tutoring agents in simulator complexes</i>
<i>oral presentation</i>	<i>Anastasia Tavaeva, Dmitry Kurenkov, Vladimir Krotov and Alexander Petunin</i>	<i>A Cost Minimizing at Laser Cutting of Sheet Parts on CNC machines</i>
<i>oral presentation</i>	<i>Oleg Zaikin and Stepan Kochemazov</i>	<i>Black-box optimization in an extended search space for SAT solving</i>

Session **Optimal Control and Games**

Topics: numerical methods of automatic control and mathematical physics

<i>oral presentation</i>	<i>Alla Albu and Vladimir Zubov</i>	<i>Application the Fast Automatic Differentiation for Solving Inverse Coefficient Problems by Second-Order Methods</i>
<i>oral presentation</i>	<i>Anatoly Antipin and Elena Khoroshilova</i>	<i>A method of cross-sections of state constraints by convex programming problems</i>
<i>oral presentation</i>	<i>Aleksandr Buldaev and Ivan Burlakov</i>	<i>Iterative Method with Exact Fulfillment of Constraints in Optimal Control Problems</i>
<i>oral presentation</i>	<i>Elena Khoroshilova</i>	<i>On application of Lagrange approach in a terminal control problem with intermediate state constraints</i>
<i>oral presentation</i>	<i>Yuryi Kropotov and Valeryi Ermolaev</i>	<i>Functional differential and differential-difference models of systems with acoustic feedback</i>
<i>oral presentation</i>	<i>Sergey V. Kruglikov</i>	<i>Distributed Algorithm of Information Image Forming while Interaction</i>
<i>oral presentation</i>	<i>Evgeniy A. Krupennikov</i>	<i>A new approach to inverse problems of optimal control</i>
<i>oral presentation</i>	<i>Mikhail Marchenko, Dmitry Smirnov and Merrey Kenzhebayeva</i>	<i>Two optimization methods for solving the inverse gravimetrical problem</i>
<i>oral presentation</i>	<i>Nina Subbotina and Natalia Novoselova</i>	<i>On viability set to problems of chemotherapy of malignant tumors</i>

Session **Machine Learning**

Topics numerical methods in machine learning and artificial intelligence

<i>oral presentation</i>	<i>Anastasiya Andrianova</i>	<i>Some modifications of the SVM-method optimization problem to reduce errors in the classification problem</i>
<i>oral presentation</i>	<i>Marat Bogdanov, Aleksander Dumchikov, Aigul Akhmerova, Dajan Nasyrov and Ivan Dokuchaev</i>	<i>Secured Telemedicine Service based on Deep Learning</i>
<i>oral presentation</i>	<i>Valentina Bykova and Choduraa Mongush</i>	<i>On "safety" decomposition of a binary context in data analysis and combinatorial optimization</i>
<i>oral presentation</i>	<i>Vladimir Krutikov, Mikhail Zhalnin, Lev Kazakovtsev and Vladimir Kazakovtsev</i>	<i>New Methods of Teaching Two-Layer Sigmoidal Neural Networks with Regularization</i>
<i>oral presentation</i>	<i>Artyom Makovetskii, Sergei Voronin, Vitaly Kober and Aleksei Voronin</i>	<i>A generalized point-to-point approach for orthogonal transformations</i>
<i>oral presentation</i>	<i>Al'fiya Surina and Alexander Tyrsin</i>	<i>Risk management in caussian stochastic systems as an optimization problem</i>

**July 11, 2019**

Session ***Integer Programming***

Topics discrete optimization problems on graphs and polytopes and exact optimization methods

<b><i>Plenary talk</i></b>	<b><i>Prof. Vadim Levit Ariel University Israel</i></b>	<b><i>Critical and Maximum Independent Sets Revisited</i></b>
<i>oral presentation</i>	<i>Maksim Barketau</i>	<i>Representation and properties of the optimal solutions of several discrete optimization problems with incomplete input</i>
<i>oral presentation</i>	<i>George Bolotashvili</i>	<i>Expansion <math>(m, k)</math> facets, in the case of <math>k \geq 4</math>, <math>k</math>-even, <math>m = 3k-1</math>, for a linear ordering polytope</i>
<i>oral presentation</i>	<i>Artem Ripatti and Vadim Kartak</i>	<i>Bounds for minimal non-IRUP instances of cutting stock problem</i>
<i>oral presentation</i>	<i>Yaroslav Salii</i>	<i>One Branch-and-Bound Scheme for Dynamic Programming in Precedence-Constrained Traveling Salesman Problem</i>
<i>oral presentation</i>	<i>Vladimir Servakh and Kseniya Chernykh</i>	<i>Research of an optimum solution to a machine problem combinatorial structure</i>
<i>oral presentation</i>	<i>Inna Urazova and Ruslan Simanchev</i>	<i>Experimental studies of the objective function properties of the graph approximation problem</i>

Session **Scheduling**

Topics scheduling theory and algorithms including settings with uncertainty with applications

<b>Plenary talk</b>	<b>Prof. Mikhail Kovalyov United Institute of Informatics Problems NASB Belarus</b>	<b>No-idle scheduling of unit-time jobs with release dates and deadlines on parallel machines</b>
<i>oral presentation</i>	<i>Ilya Chernykh and Antonina Khramova</i>	<i>Another algorithm for the two-machine open shop and its application to one routing problem</i>
<i>oral presentation</i>	<i>Eugeny Goncharov, Dmitriy Mishin and Nina Plyaskina</i>	<i>On the Project Scheduling Problem with maximum profit for given target dates and limited resources</i>
<i>oral presentation</i>	<i>Alexander Kononov, Julia Memar and Yakov Zinder</i>	<i>Scheduling with limited storage - a polynomial-time algorithm and efficient heuristics</i>
<i>oral presentation</i>	<i>Yulia Kovalenko and Alexander Kononov</i>	<i>Approximation Algorithms for Speed Scaling Scheduling of Parallel Jobs</i>
<i>oral presentation</i>	<i>Ketevan Kutkhashvili</i>	<i>On a randomized model in the scheduling theory</i>
<i>oral presentation</i>	<i>Sergey Sevastyanov</i>	<i>Some positive news on the proportionate open shop problem</i>



Session **Mathematical Programming**

Topics: linear, convex, and stochastic programming: theory, methods and applications

<b>Plenary talk (Tutorial)</b>	<b>Prof. Evgeni A. Nurminski Far Eastern Federal University Russia</b>	<b>Projection Problems and Problems with Projection</b>
<i>oral presentation</i>	<i>Mohammad Alkousa, Fedor Stonyakin and Alexander Titov</i>	<i>On some methods for strongly-convex optimization problems with one functional constraint</i>
<i>oral presentation</i>	<i>Yuri Kan and Sofia Vasil'eva</i>	<i>Deterministic approximation of stochastic programming problems with probabilistic constraints</i>
<i>oral presentation</i>	<i>Olga Murav'eva</i>	<i>Matrix correction of infeasible linear programming problems using the matrix l1 norm</i>
<i>oral presentation</i>	<i>Mikhail Posypkin and Andrey Gorchakov</i>	<i>A high performance method for constructing an outer approximation of a set defined by a system of equations</i>
<i>oral presentation</i>	<i>Vladimir Semenov, Yana Vedel and Viacheslav Dudar</i>	<i>Convergence of the optimistic mirror-prox method for saddle point problems and variational inequalities</i>
<i>oral presentation</i>	<i>Fedor Stonyakin, Pavel Dvurechensky, Alexander Gasnikov, Olesya Kuznetsova, Artem Agafonov, Dmitry Pasechnyuk, Darina Dvinskikh, Victoria Piskunova Alexey Kroshnin</i>	<i>Non-Accelerated Gradient Method for Problems with Inexact Model of the Objective and Relative Smoothness</i>
<i>oral presentation</i>	<i>Rashid Yarullin</i>	<i>Proximal Bundle Method with Periodically Discarding Cutting Planes</i>
<i>oral presentation</i>	<i>Anna Zykina, Olga Kaneva and Victoria Munko</i>	<i>Multicriteria model curriculum</i>

Session **Economics**

Topics: economical modelling and related applied problems stemming from market analysis, production, manufacturing and management of multi-level economic systems

<i>oral presentation</i>	<i>Christof Defryn, Julian Golak, Alexander Grigoriev and Veerle Timmermans</i>	<i>Inland waterway efficiency through skipper collaboration and joint speed optimization</i>
<i>oral presentation</i>	<i>Chiang Kao</i>	<i>Measuring the most favorable Russell efficiency under the framework of data envelopment analysis</i>
<i>oral presentation</i>	<i>Vladimir Mazurov and Ekaterina Polyakova</i>	<i>Ural Problems and Committee Method</i>
<i>oral presentation</i>	<i>Nicholas Olenev</i>	<i>An endogenous production function and its identification for some countries</i>
<i>oral presentation</i>	<i>Vladimir Servakh and Svetlana Malakh</i>	<i>The net present value maximization in inventory management system</i>
<i>oral presentation</i>	<i>Alexander Smirnov and Vladimir Mazurov</i>	<i>Conditions under which any optimal control is preserved, in one formalization of optimal exploitation renewable resources problem</i>

Session **Optimal Control and Games**

Topics: optimal controls and strategies, equilibria, theory, methods, and applications

<i>oral presentation</i>	<i>Leon Petrosyan and Yaroslava B. Pankratova</i>	<i>Equilibrium and Cooperation in the Repeated Hierarchical Game</i>
<i>oral presentation</i>	<i>Boris Ananyev</i>	<i>Control Problem of Parabolic System with Incomplete Information</i>
<i>oral presentation</i>	<i>Ivan Kamenev</i>	<i>Application of the model human as the information carrier for the analysis of educational policy priorities</i>
<i>oral presentation</i>	<i>Alexander Karasev and Dmitriy Kuvshinov</i>	<i>The connectedness of the set of admissible motions in the two-persons non-zero sum hierarchical differential positional game with linear dynamics</i>
<i>oral presentation</i>	<i>Ildus Kuchkarov and Ovanes Petrosian</i>	<i>On a Class of Linear Quadratic Non-cooperative Differential Games with Continuous Updating</i>
<i>oral presentation</i>	<i>Oleg Kuzenkov, Elena Ryabova and Vladislav Ryabov</i>	<i>Optimization of self-replicating systems</i>
<i>oral presentation</i>	<i>Nadezhda Maltugueva, Nikolay Pogodaev and Olga Samsonyuk</i>	<i>Optimality conditions and numerical algorithms for a hybrid system</i>
<i>oral presentation</i>	<i>Vladimir Mazalov and Elena Parilina</i>	<i>Game of competition for opinion with two centers of influence</i>
<i>oral presentation</i>	<i>Marina Plekhanova</i>	<i>Problems of hard control for a class of degenerate fractional order evolution equations</i>

Session **Machine Learning**

Topics: statistical learning theory, artificial intelligence, and their relevant applications in practice

<i>oral presentation</i>	<i>Valeriy Kalyagin</i>	<i>Clustering in Random Variables Network</i>
<i>oral presentation</i>	<i>Vladimir Berikov</i>	<i>A Study of Optimality Functional for Supervised Classification Using Multiple Clustering and Low-Rank Matrix Operations</i>
<i>oral presentation</i>	<i>Igor Masich</i>	<i>Increasing the informativeness of logical patterns through using pseudo-Boolean optimization algorithms</i>
<i>oral presentation</i>	<i>Timur Merembayev, Yedilkhan Amirgaliyev and Shahriar Shamiluulu</i>	<i>Using machine learning algorithm for diagnosis of stomach disorders</i>
<i>oral presentation</i>	<i>Anastasiya Polyakova, Leonid Lipinskiy and Eugene Semenkin</i>	<i>Sample reducing</i>  <i>Исследование методов сокращения опорной выборки при коллективном выводе с помощью нечетких логических систем</i>
<i>oral presentation</i>	<i>Guzel Sharipzhanovna Shkaberina, Viktor Ivanovich Orlov, Elena Mikhailovna Tovbis and Lev Aleksandrovich Kazakovtsev</i>	<i>Identification of the Optimal Set of Informative Features for the Problem of Separating a Mixed Production Batch of Semiconductor Devices for the Space Industry</i>
<i>oral presentation</i>	<i>Anton Ushakov and Igor Vasilyev</i>	<i>A computational comparison of parallel and distributed k-median clustering algorithms on large-scale image data</i>

**July 12, 2019**

Session ***Integer Programming***

Topics: theory and methods of integer and mixed integer programming

<b><i>Plenary talk</i></b>	<b><i>Prof. Alexander Grigoriev Maastricht University Netherlands</i></b>	<b><i>A survey on possible and impossible attempts to solve the treewidth problem via ILPs</i></b>
<i>oral presentation</i>	<i>Vladimir Beresnev and Andrey Melnikov</i>	<i>Algorithm to compute an upper bound for the competitive facility location problem with prescribed choice of suppliers</i>
<i>oral presentation</i>	<i>Anton Ereemeev, Alexander Kelmanov, Mikhail Y. Kovalyov and Artem Pyatkin</i>	<i>Maximum Diversity Problem with Squared Euclidean Distance</i>
<i>oral presentation</i>	<i>Dmitry Griбанov and Dmitry Malishev</i>	<i>Comparison oracle based Integer conic minimization</i>
<i>oral presentation</i>	<i>Nadezhda Muravyova and Oksana Pichugina</i>	<i>The Polyhedral-Surfaced Cutting-Plane Method for Linear Combinatorial Optimization</i>
<i>oral presentation</i>	<i>Alexander Semenov</i>	<i>Merging variables: one technique of search in pseudo-Boolean optimization</i>
<i>oral presentation</i>	<i>Sergey Semenov and Nikolai Zolotykh</i>	<i>A dynamic algorithm for constructing dual representation for a polyhedron</i>
<i>oral presentation</i>	<i>Lidia Zaozerskaya</i>	<i>Analysis of Integer Programming Model of Academic Load Distribution</i>

Session **Economics**

Topics games, equilibria, ensembles of decision rules and their applications in economics

<b>Plenary talk</b>	<b>Prof. Natalia Shakhlevich University of Leeds United Kingdom</b>	<b>On a New Approach for Optimization under Uncertainty</b>
<i>oral presentation</i>	<i>Ivan Belyaev and Igor Bykadorov</i>	<i>Equilibrium in Dixit-Stiglitz- Krugman Model: the Case of Nonlinear Production Costs</i>
<i>oral presentation</i>	<i>Igor Bykadorov</i>	<i>Social Optimality in International Trade under Monopolistic Competition</i>
<i>oral presentation</i>	<i>Eugeniia Markova and Inna Sidler</i>	<i>Integral model of developing system without prehistory</i>
<i>oral presentation</i>	<i>Serge Plotnikov</i>	<i>Aggregating the solutions of game-theoretic settings by committee methods</i>
<i>oral presentation</i>	<i>Olga Tilzo and Igor Bykadorov</i>	<i>Retailing under Monopolistic Competition: a Comparative Analysis</i>
<i>oral presentation</i>	<i>Dmitry Zavalishchin and Artem Khazimullin</i>	<i>Dynamic approach to loyalty program management</i>

Session **Global optimization**

Topics theory and methods of global and multi-extremal optimization

<b>Plenary talk (Tutorial)</b>	<b>Prof. Oleg Khamisov Melentiev Energy Systems Institute SB RAS Russia</b>	<b>The fundamental role of concave programming in continuous global optimization</b>
<i>oral presentation</i>	<i>Olga Druzhinina, Olga Masina and Alexey Petrov</i>	<i>Algorithms for global optimization in the problems of technical systems motion modeling and control</i>
<i>oral presentation</i>	<i>Ilya Minarchenko</i>	<i>On minimization of a quadratic function with one negative eigenvalue</i>
<i>oral presentation</i>	<i>Lyubov Shagalova</i>	<i>Piecewise linear minimax solution of Hamilton-Jacobi equation with nonhomogeneous Hamiltonian</i>
<i>oral presentation</i>	<i>Vladislav Sovrasov</i>	<i>Comparison of several stochastic and deterministic derivative-free global optimization algorithms</i>
<i>oral presentation</i>	<i>Vladimir Stanovov, Shakhnaz Akhmedova and Eugene Semenkin</i>	<i>Genetic algorithm with success history based parameter adaptation</i>
<i>oral presentation</i>	<i>Sergey Trofimov and Alexey Ivanov</i>	<i>An Infinitesimal Approach to the Construction of Optimality Criterion for Unconstrained Optimization Problems in Polar Coordinates</i>

## Session **Scheduling**

Topics scheduling theory and algorithms including settings with uncertainty with applications

<i>oral presentation</i>	<i>Ilya Chernykh and Ekaterina Lgotina</i>	<i>How the difference in travel time affects the optima localization for the routing open shop</i>
<i>oral presentation</i>	<i>Adil Erzin and Roman Plotnikov</i>	<i>The Convergecast Scheduling Problem on a Regular Triangular Grid</i>
<i>oral presentation</i>	<i>Yurii Mezentsev, Igor Estraykh and Nikita Chubko</i>	<i>Practical aspects of implementation of an efficient parametric algorithm for optimal scheduling on unrelated parallel machines with release dates</i>
<i>oral presentation</i>	<i>Artem Pyatkin and Mikhail Golovachev</i>	<i>Routing Open Shop with two nodes, unit processing times and equal number of jobs and machines</i>
<i>oral presentation</i>	<i>Anna Romanova</i>	<i>Minimizing Resource Cost in Project Scheduling Problem with Accumulative Resources of Time-dependent Cost</i>



Session **Heuristics and Metaheuristics**

Topics: Genetic and memetic algorithms, local search, VNS and other efficient heuristics\_

<i>oral presentation</i>	<i>Ivan Davydov and Petr Gusev</i>	<i>VNS based heuristic for the (r p)-centroid problem under l1 metric</i>
<i>oral presentation</i>	<i>Evgenii Goncharov</i>	<i>Variable Neighborhood Search for the Resource Constrained Project Scheduling Problem</i>
<i>oral presentation</i>	<i>Sergey Khapugin and Andrey Melnikov</i>	<i>Local Search Approach for the Medianoid Problem with Multi-purpose Shopping Trips</i>
<i>oral presentation</i>	<i>Polina Kononova and Igor Kulachenko</i>	<i>The VNS Approach for a Consistent Capacitated Vehicle Routing Problem under the Shift Length Constraints</i>
<i>oral presentation</i>	<i>Roman Plotnikov and Adil Erzin</i>	<i>Constructive Heuristics for Min-Power Bounded-Hops Symmetric Connectivity Problem</i>
<i>oral presentation</i>	<i>Alexander Zyryanov, Yury Kochetov and Sergey Lavlinskii</i>	<i>A randomized matheuristic for the bilevel public-private partnership problem</i>

Session ***Optimal Control and Games***

Topics: optimal controls and strategies, equilibria, theory, methods, and applications

<i>oral presentation</i>	<i>Maxim Demenkov</i>	<i>On connection between multiobjective optimization, polyhedral projection and automatic control</i>
<i>oral presentation</i>	<i>Vladimir Dykhta and Stepan Sorokin</i>	<i>Feedback minimum principle for optimal control problems in discrete-time systems and its applications</i>
<i>oral presentation</i>	<i>Dmitry Khlopin</i>	<i>General limit value for Nash equilibrium</i>
<i>oral presentation</i>	<i>Dmitry Khlopin</i>	<i>On subgradients of lower epi-limits of sequences of continuous functions</i>
<i>oral presentation</i>	<i>Ovanes Petrosian and Anna Tur</i>	<i>Hamilton-Jacobi-Bellman Equations for Non-cooperative Differential Games with Continuous Updating</i>
<i>oral presentation</i>	<i>Aleksei Rodin</i>	<i>Finding bifurcation points of a piecewise smooth minimax solution of the Hamilton-Jacobi-Bellman equation</i>
<i>oral presentation</i>	<i>Olga Samsonuyk, Stepan Sorokin and Maxim Staritsyn</i>	<i>Feedback Optimality Conditions with Weakly Invariant Functions for Nonlinear Problems of Impulsive Control</i>

Program committee co-chair

Michael Khachay