

## Preface

This supplementary volume contains the proceedings of the 9th conference on Discrete Optimization and Operations Research and scientific school on Modern Optimization and Equilibrium, held in Vladivostok, Russia, during September 19 - 23, 2016. It was organized by the Far Eastern Federal University, Sobolev Institute of Mathematics, Krasovskiy Institute of Mathematics and Mechanics, Novosibirsk State University, and the Higher School of Economics in Nizhny Novgorod.

Previous conferences took place at the Sobolev Institute of Mathematics, Novosibirsk, in 1996, 1998, 2000, 2002, and 2004. The 6th conference was held in the Russian Far East in a picturesque on the shore of the Japanese Sea near Vladivostok in 2007. The 7th one, in 2010, was held in the Mountain Altay. The 8th event took place in Novosibirsk again.

This event is a part of series of regular international conferences on optimization and operations research that covers a wide range of topics in mathematical programming and its applications, integer programming and polyhedral combinatorics, bi-level programming and multi-criteria optimization, optimization problems in machine learning and data mining, discrete optimization in scheduling, routing, bin packing, locations, and optimization problems on graphs, computational complexity, and polynomial time approximation. The main purpose of the conference and scientific school is to provide a forum where scientists and young researchers can exchange ideas, identify promising directions for research and application domains, and foster new collaborations.

In response to the call for papers, we received 181 submissions. Papers included in this volume were carefully selected by the Program Committee on the basis of reports from two or more reviewers from 17 countries such as Belarus, Belgium, France, Germany, India, Israel, Italy, Kazakhstan, Netherlands, Russian Federation, Spain, Sweden, Taiwan, Turkey, Ukraine, United Kingdom, United States. Only 82 submissions were selected for inclusion in this volume. The conference also featured ten invited talks by the following eminent speakers:

- Vladimir Mazalov from the Institute of Applied Mathematical Research of the Karelian Research Centre RAS, Russia; Title of the talk: *Behavioral equilibrium in transportation networks*;
- Evripidis Bampis from the Université Pierre et Marie Curie, France; Title of the talk: *Algorithmic issues in energy-efficient computation*.
- Vitaly Strusevich from the University of Greenwich, Old Royal Naval College, United Kingdom; Title of the talk: *Handling scheduling problems with controllable parameters by methods of submodular optimization*.
- Fedor Fomin from the University of Bergen, Norway; Title of the talk: *Modern trends in parameterized algorithms*
- Panos Pardalos from the University of Florida, USA; Title of the talk: *A new information theory perspective on network robustness*
- Jun Pei from School of Management, Hefei University of Technology, China; Title of the talk: *Coordinated scheduling of deteriorating jobs in a two-stage supply chain*.
- Yair Censor from the University of Haifa, Israel; Title of the talk: *Linear and non-linear superiorization: A methodology between feasibility-seeking and optimization*.

- Athanasios Migdalas from the Lulea University of Technology, Sweden; Title of the talk: *Location modeling in the presence of firm and customer competition.*
- Vadim Shmyrev from the Sobolev Institute of Mathematics, Russia; Title of the talk: *Iterative approach for piecewise linear exchange model;*
- Alexandr Kononov from the Sobolev Institute of Mathematics, Russia; Title of the talk: *Short survey on minimization graph correlation clustering;*

and eight tutorials:

- Adil Erzin from the Sobolev Institute of Mathematics, Russia; Title of the talk: *Computational geometry and combinatorial optimization problems in the context of wireless sensor networks optimization;*
- Alexandr Kononov from the Sobolev Institute of Mathematics, Russia; Title of the talk: *How to design approximation schemes for intractable optimization problems;*
- Yury Kochetov from the Sobolev Institute of Mathematics, Russia; Title of the talk: *Discrete Location Problems;*
- Nenad Mladenovic from the University of Valenciennes, France; Title of the talk: *Developing variable neighborhood and formulation space search procedures;*
- Michael Khachay from the Krasovskiy Institute of Mathematics and Mechanics, Russia; Title of the talk: *Effective algorithms for some actual generalizations of geometrical traveling salesman problems;*
- Oleg Khamisov from the Melentiev Institute of Energy Systems, Russia; Title of the talk: *Modeling of the energy markets with network restrictions;*
- Michael Batsyn from the National Research University Higher School of Economics, Russia; Title of the talk: *Optimization problems in the transportation logistics;*
- Alexandr Strekalovsky from the Matrosov Institute for System Dynamics and Control Theory, Russia; Title of the talk: *Theory and methods of nonlinear optimization.*

We thank all Program Committee members and external reviewers for their cooperation. We also thank the Organizing Committee members and our sponsors: the Russian Foundation for Basic Research, the Far Eastern Federal University, Novosibirsk State University, the Laboratory of Algorithms and Technologies for Networks Analysis, the Higher School of Economics in Nizhny Novgorod for supporting our project.

September 2016

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