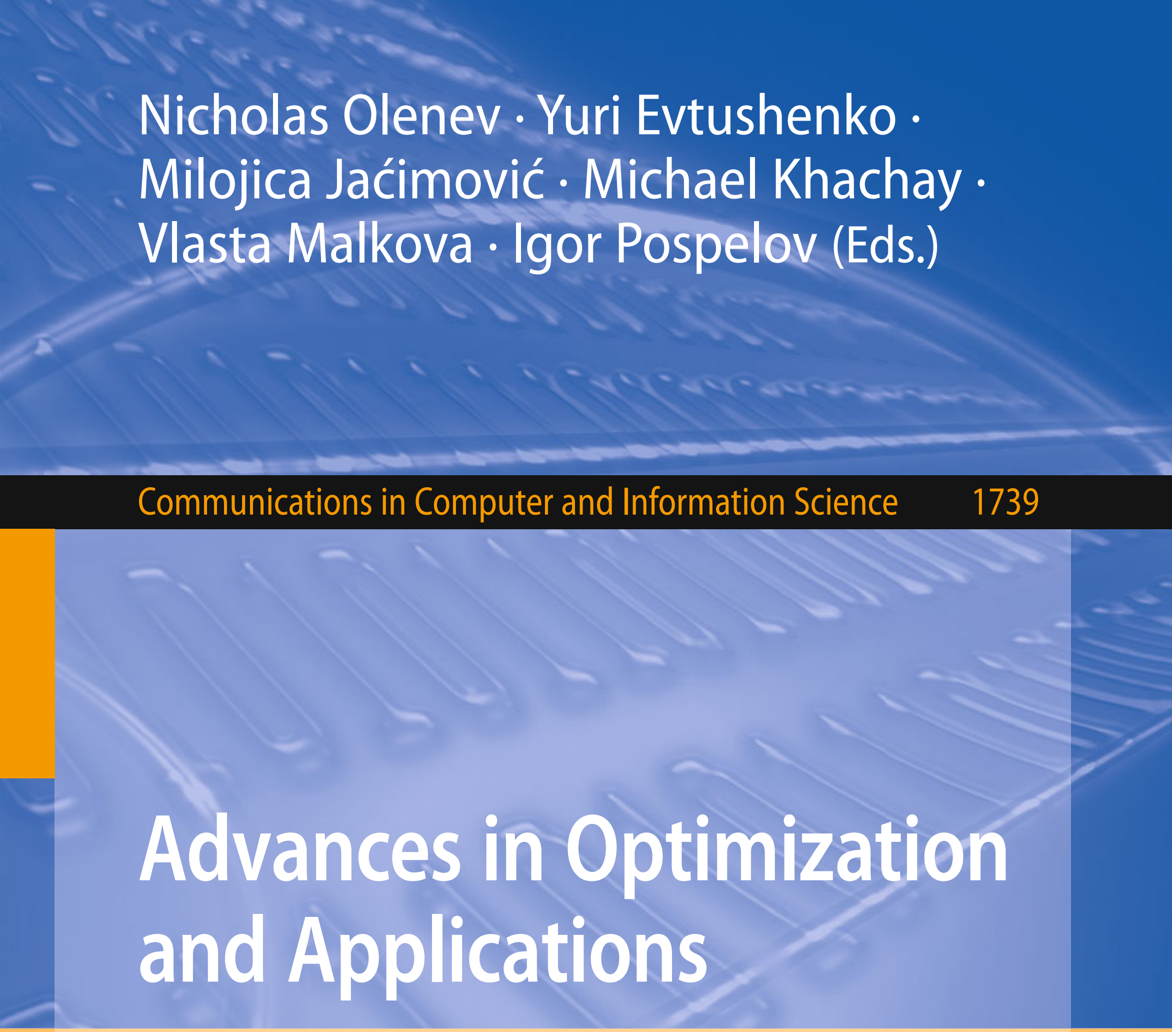

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Milojica Jaćimović · Michael Khachay ·
Vlasta Malkova · Igor Pospelov (Eds.)

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Advances in Optimization and Applications

13th International Conference, OPTIMA 2022
Petrovac, Montenegro, September 26–30, 2022
Revised Selected Papers

Springer

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Preface

This volume contains the second part of the refereed proceedings of the XIII International Conference on Optimization and Applications (OPTIMA 2022)[1].

Organized annually since 2009, the conference has attracted a significant number of researchers, academics, and specialists in many fields of optimization, operations research, optimal control, game theory, and their numerous applications in practical problems of data analysis and software development.

The broad scope of OPTIMA has made it an event where researchers involved in different domains of optimization theory and numerical methods, investigating continuous and discrete extremal problems, designing heuristics and algorithms with theoretical bounds, developing optimization software, and applying optimization techniques to highly relevant practical problems can meet together and discuss their approaches and results. We strongly believe that this facilitates collaboration between researchers working in optimization theory, methods, and applications, and those employing them to resolve valuable practical problems.

The conference was held during September 26–30, 2022, in Petrovac, Montenegro, in the picturesque Budvanian riviera on the azure Adriatic coast. For those who were not able to come to Montenegro this year, an online session was organized. The main organizers of the conference were the Montenegrin Academy of Sciences and Arts, Montenegro, the Dorodnicyn Computing Centre, FRC CSC RAS, Russia, and the University of Évora, Portugal. This year, the key topics of OPTIMA were grouped into seven tracks:

1. Mathematical programming
2. Global optimization
3. Discrete and combinatorial optimization
4. Optimal control
5. Optimization and data analysis
6. Game theory and mathematical economics
7. Applications

The Program Committee (PC) and invited reviewers included more than one hundred well-known experts in continuous and discrete optimization, optimal control and game theory, data analysis, mathematical economy, and related areas from leading institutions of 25 countries: Argentina, Australia, Austria, Belgium, China, Finland, France, Germany, Greece, India, Israel, Italy, Lithuania, Kazakhstan, Mexico, Montenegro, the Netherlands, Poland, Portugal, Russia, Serbia, Sweden, Taiwan, the UK, and the USA. This year we received 70 submissions, mostly from Russia but also from Azerbaijan, Kazakhstan, Latvia, Montenegro, Poland, Portugal, and the USA. Each submission was reviewed in a single-blind blind manner by at least three PC members or invited reviewers, experts in their fields, to supply detailed and helpful comments. Out of 43 qualified submissions, the Program Committee decided to accept 17 papers to the first volume of the proceedings for publication in LNCS volume 13781. Thus the acceptance rate for the volume was about 40%.

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[1] http://agora.guru.ru/display.php?conf=OPTIMA-2022.

In addition, after a short presentation of the candidate submissions, discussion at the conference, and subsequent revision, the Program Committee proposed 13 out of the remaining 26 papers to be included in this, second, volume of proceedings.

The conference featured two invited lecturers, plus several plenary and keynote talks. The invited lectures were as follows:

- Panos M. Pardalos, University of Florida, USA, "Computational Approaches for Solving Systems of Nonlinear Equations"
- Alexey Tret'yakov, Siedlce University of Natural Sciences and Humanities, Poland, "Degenerate Equality Constrained Optimization Problems and P-Regularity Theory"

We would like to thank all the authors for submitting their papers and the members of the PC for their efforts in providing exhaustive reviews. We would also like to express special gratitude to all the invited lecturers and plenary speakers.

October 2022

Nicholas Olenev
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