

PREFACE

This volume contains proceedings of the 8th International Conference "Optimization and Applications" (OPTIMA-2017) that was held in Petrovac, Montenegro, during October 2-7, 2017. The Conference brought together researchers and practitioners working in the field of optimization theory, methods, software and related areas. Optimization is now a rapidly growing area in computer science. It is widely applied in various fields, e.g. data analysis and processing, image recognition, robotics, material sciences, design, logistics etc. Thus it was not surprising that OPTIMA-2017 attracted a significant number of participants. This year about 90 researchers participated in the conference.

Previous conferences took place at Petrovac, Montenegro in 2009, 2011, 2013, 2014, 2015, 2016 and at Costa da Caparica, Portugal, in 2012.

This event is a part of series of regular international conferences on optimization that covers a wide range of topics in mathematical programming, global optimization, nondifferential optimization, continuous optimization, combinatorial optimization, multicriteria optimization, equilibrium programming, game theory, optimal control, optimization software, data analysis, applications of optimization in natural sciences, engineering, data and information mining, economics, biology, medicine, etc. The main purpose of the conference was 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 146 submissions. Papers published in this volume (84 submissions) were carefully selected by the Program Committee on the basis of reports from two or more reviewers.

The conference featured 10 plenary talks, among them there were the following invited lectures:

- Prof. Sergiy Butenko, Texas A&M University, USA, talk: The Maximum Independent Union of Cliques Problem: Complexity and Exact Approaches;
- Academician of NAS of Kazakhstan, Prof. Maksat Kalimoldayev, ICT, Kazakhstan, talk: Mathematical and Computer Modeling of Stability of Complex Electric Power Systems;
- Prof. Yurii Nesterov, CORE/UCL, Belgium, talk: Accelerating the Universal Newton Methods.

Contributed papers are organized in the following sections:

Mathematical Programming section covers theoretic and algorithmic advances in the field of constrained optimization.

Optimal Control section collected talks devoted to dynamic optimization including optimal control and variational analysis.

Combinatorial and Discrete Optimization section devoted to various aspects of discrete optimization (integer and boolean programming, graph optimization, transportation problems etc.)

Optimization in Economy, Finance and Social Sciences section comprised papers related to optimization models and methods in economy and related fields.

Optimization Software section was devoted to various aspects of developing the software for solving optimization problems.

Mathematical and algorithmic foundations. This section comprised talks related to fundamental aspects of optimization.

Game theory section covers differential games, bimatrix games and other aspects of game theory and applications.

Applications section covering optimization applications in Natural Sciences, Engineering, Data and Information Mining, Economics, Biology, Medicine, etc.

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