



Special Issue: 18th International conference on mathematical optimization theory and operations research (MOTOR 2019)

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This special issue of the Journal of Global Optimization consists of selected papers presented at XVIII International Conference on Mathematical Optimization Theory and Operations Research (MOTOR 2019)¹, which took place on July 8–12, 2019, near Ekaterinburg, Russia.

MOTOR 2019 was the first joint scientific event unifying a number of well-known international and All-Russian conferences held in Ural, Siberia, and the Far East for a long time:

- the Baikal International Triennial School Seminar on Methods of Optimization and Their Applications (BITSS MOPT) established in 1969 by academician N.N. Moiseev, whose 17th event² was held in 2017 in Buryatia;
- the All-Russian Conference on Mathematical Programming and Applications (MPA) established in 1972 by academician I. I. Eremin, with the 15th conference³ in this series held in 2015 near Ekaterinburg;
- the International Conference on Discrete Optimization and Operations Research (DOOR) was organized nine times since 1996 and the last event⁴ was held in 2016 in Vladivostok;
- the International Conference on Optimization Problems and Their Applications (OPTA) was organized regularly in Omsk since 1997 and the 7th event⁵ was held in 2018.

By tradition, the conference included, but was not limited to topics such as, mathematical programming, bi-level and global optimization, integer programming and combinatorial optimization, approximation algorithms with theoretical guarantees and approximation schemes,

¹ <http://motor2019.uran.ru/>

² <http://isem.irk.ru/conferences/mopt2017/en/index.html>

³ <http://mpa.imm.uran.ru/96/en>

⁴ <http://www.math.nsc.ru/conference/door/2016/>

⁵ <http://opta18.oscsbras.ru/en/>

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heuristics and meta-heuristics, game theory, optimal control, optimization in machine learning and data analysis, and their valuable applications in operations research and economics.

Main topics of the papers included to this issue are as follows:

- Novel theoretical results in the field of dynamic stability and existence of cooperative equilibria in multicriteria games of asymmetric players [1].
- Novel regularization approach to design reliable algorithms for finding closed-form solution variational problems [2].
- A valuable extension of the duality theory for mathematical programming. By introducing a novel concept of normalized immobile indices, the authors proved that, for linear copositive programs, strong duality relation holds without additional constraint qualification [3].
- Novel results showing high numerical performance of the well-known Variable Neighborhood Search (VNS) metaheuristic, the powerful solving tool for intractable combinatorial problems, even in the field of two-level optimization [4].
- Novel graph-theoretical results related to extensions of the well-known concept of independent set relevant to combinatorial optimization defined on large weighted networks [5].
- Valuable contribution in mathematical theory and algorithmic design for the Flow Shop Scheduling [6].

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