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## EDITORIAL

## Preface of special issue BALCOR

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Received: 20 April 2017 / Accepted: 4 May 2017 / Published online: 12 May 2017 © Springer-Verlag Berlin Heidelberg 2017

This special issue contains selected papers presented at IX Balkan Conference on Operational Research, which took place in Belgrade and on Zlatibor, a beautiful mountain in western Serbia, from September 7–11, 2013.

BALCOR is an international conference which traditionally gathers operational researchers with the objective to present the results of theoretical and applied work. One of the benefits is a successful exchange of ideas and information of interest to operational research and the promotion of international co-operation, particularly among the Balkan countries.

The conference program contained 144 contributions by 309 authors from 25 counties. Invited speakers at BALCOR 2013 and at its joint conference SYM-OP-IS 2013 were the following well-known scientists: Sally Brailsford, University of Southampton, UK; Emilio Carrizosa, Universidad de Sevilla, Spain; Zohar Laslo, SCE—Shamoon College of Engineering, Israel; İlhan Or, Bogaziçi University, Turkey; Veljko Milutinović, University of Belgrade, Serbia; Jose Moreno Perez, University of La Laguna, Spain; Abraham Duarte, Universidad Rey Juan Carlos, Spain; Bertrand Mareschal, Université Libre de Bruxelles, Belgium; Athanasios Migdalas, Aristotle University of Thessaloniki, Greece; Moshe Sniedovich, The University of Melbourne, Australia. More details regarding conference may be found at http://www.balcor2013.fon.bg.ac.rs/. Conference proceedings that contains 815 pages may be found at http://www.balcor2013.fon.bg.ac.rs/wp-content/uploads/



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FINAL\_Balcor2013\_Proceedings.pdf. The book of Abstracts that had been published before the conference, is at the following address: http://www.balcor2013.fon.bg.ac.rs/wp-content/uploads/Book-of-abstract.pdf. It also contains abstracts of plenary speakers.

This special issue contains 10 papers. Stancu and Stancu-Minasian have considered some types of generalized convexity and discuss new global semiparametric sufficient efficiency conditions for a multi-objective fractional programming problem involving *n*-set functions.

Todosijevic et al. successfully have implemented General variable neighborhood search metaheuristic rules in solving recently proposed Traveling salesman problem with draft limits, the problem that arises in the context of maritime transportation. They have obtained significantly better results than those reported by previous heuristic.

Nicolic et al. prove some symmetry properties of resolving sets in hypercube graph, and illustrate how they could be used to reduce the complexity of a greedy procedure for finding its metric dimension. The consequence of proved symmetry properties is 18 new upper bounds of the metric dimension problem for hypercube graphs.

In "General variable neighborhood search for computing graph separators" paper, Duarte et al. proposed very efficient heuristic able to get all optimal solutions in all instances where optimal solutions were known. Neighborhood structures developed are used in usual sequential manner. Some interesting properties regarding neighborhoods used are derived as well.

New Mixed integer programming model for multiprocessor task scheduling problem with communication delays has been proposed in El Cadi et al. This important problem has many applications. The proposed mathematical programming model significantly reduces the number of variables and constraints when compared with the previous best model. This fact allows authors to solve exactly much larger problems than before.

A hub location problems are important class of discrete location. In Todosijevic et al., a new variant of the problem is considered, i.e., the un-capacitated r-allocation p-hub median problem, and efficiently solved by using general variable neighborhood search approach. Results of very good quality are reported and successfully compared with previous methods.

Brimberg et al. reformulate the clique partitioning problem as a maximally diverse grouping problem, and solve it by adapting an existing Variable neighborhood search based heuristic, already developed for solving the second problem. The computational results obtained are significantly better than those reported by all previous heuristics.

In Antic et al., the static time-continuous multiproduct EOQ-based inventory problem with the limited storage space is first modeled and then two heuristic approaches are proposed and compared for solving it. Preliminary numerical results show that both heuristics could be efficiently applied for solving this problem.

The recently introduced dominating tree problem is solved by Variable neighborhood search based heuristic in Drazic et al. For small dimensions, the proposed heuristic reaches optimal values obtained by CPLEX in all cases, while for large instances, it gives better results than the two existing heuristics based on ant colony and bee colony approaches.



Miskovic et al. propose a robust optimization model of the multi-source variant of the two-stage capacitated facility location problem that involves the uncertainty of transportation costs. For solving it, authors develop a hybrid heuristic that combines the following metaheuristics: memetic algorithm, evolutionary algorithm, simulated annealing, and tabu search.

Guest Editors March 21, 2017.

