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Preface to the Special Issue "ICVNS 2018"

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The Variable Neighborhood Search (VNS) metaheuristic is based on systematic changes in the neighborhood structure within a search. It has been successfully applied for the solution of various global and combinatorial optimization problems [7]. The aim of this special issue of *Journal of Global Optimization* (JOGO) is to present some recent methodological developments in the field of Variable Neighborhood Search and also to publish emerging applications in this area. The VNS papers in this issue are linked to the 6th International Conference on Variable Neighborhood Search (ICVNS 2018) [8], which was held in Sithonia, Halkidiki, Greece, during October 4–7, 2018. Each submission was peer reviewed by at least two referees, according to the editorial policy of JOGO. Sixteen articles were submitted to this issue and after the refereeing process, the following six of them were finally accepted for publication:

The issue begins with the paper "Improved metaheuristics for the quartet method of hierarchical clustering" authored by S. Consoli, J. Korst, S. Pauws, and G. Geleijnse [1]. The authors present improved metaheuristics for the quartet method of clustering, a novel hierarchical clustering approach based on the $\mathcal{NP}$-hard minimum quartet tree cost problem.

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The second paper considers continuous location problems and it is titled "The continuous single-source capacitated multi-facility Weber problem with setup costs: formulation and solution methods". C.A. Irawan, S. Salhi, and K. Soemadi [4] introduce a new nonlinear mathematical model and efficient metaheuristic solution approaches based on Variable Neighbourhood Search.

S. Gil-Borrás, E.G. Pardo, A. Alonso-Ayuso, and A. Duarte [3], in the paper "GRASP with Variable Neighborhood Descent for the online order batching problem", deal with the online order batching problem. The authors have developed a hybrid method based on the combination of a Greedy Randomized Adaptive Search Procedure and a Variable Neighborhood Descent, in order to tackle the online order batching problem with a single picker and in a single-block warehouse.

The fourth paper studies the influence of cooperative parallelization strategies on the quality of the solutions of combinatorial optimization problems. P. Kalatzantonakis, A. Sifaleras, and N. Samaras [5] in their paper titled "Cooperative versus non-cooperative parallel variable neighborhood search strategies: a case study on the capacitated vehicle routing problem" show the benefits of a new self-adaptive parameterized cooperative approach, especially in computationally hard instances of capacitated vehicle routing problems.

In the paper by I. Krimi, R. Todosijević, R. Benmansour, M. Ratli, A.A. El Cadi, and A. Aloullal [6] titled "Modelling and solving the multi-quays berth allocation and crane assignment problem with availability constraints", the aim is to solve a real-world problem faced by an industrial company in Morocco. The authors present a mixed-integer programming model and also a general variable neighborhood search method that were able to solve instances with a time horizon covering a period of 15 days, a number of vessels ranging from 6 to 14 where each vessel may request one or two products, and three different congestion scenarios for the number of vessels arriving within the same time window.

This special issue closes with the contribution from V. Radonjić Djogatović, M. Djogatović, M. Stanojević, and N. Mladenović [2] "Revenue maximization of Internet of things provider using variable neighbourhood search". The authors propose a VNS algorithm in order to derive the optimal threshold price that maximizes Internet of things provider's revenue, and users' satisfaction by applying pay per use pricing within the combinatorial sealed-bid auction.

Finally, we would like to thank all the authors who contributed to this special issue, the Editor-in-Chief Prof. Sergiy Butenko for his kind support and assistance, and also gratefully acknowledge the hard work by the referees who provided timely and constructive reports.

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