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Special Issue for 10th International Conference of Iranian Operations Research Society

This is a special issue of the Iranian Journal of Operations Research composed of some of the invited talks presented at the 10th International Iranian Operations Research Society (IORS) Conference held in University of Mazandaran, Babolsar, May 3-5, 2017. The IORS conference is an annual event and is the main forum for presenting new theoretical and applied developments of OR within Iran. In recent years, international participation has been promoted to enhance cooperation among internal and external researchers. There were over 400 participants with 186 accepted talks and 138 poster presentations. The selected papers were reviewed going through the usual reviewing process and 7 papers were finally accepted for publication in the current issue.

In the first paper, Adil Bagirov and Sona Taheri develop an algorithm based on optimization for clustering data using an L_1-norm. In doing this, they find the Clarke stationary points of the clustering problem and use the points for an effective clustering of data. Comparative test results are presented.

In the second paper, Günter Karl Franz Bärwolff, Minjie Chen and Hartmut Schwandt, concerned with an efficient planning of public transportation systems, propose a simulation of pedestrian flow behaviors by presenting both macroscopic and microscopic models of the pedestrian dynamics. The authors provide comparative test results of the proposed simulation with a real video clip.

The third paper, by Oleg Burdakov and Oleg Sysoev, presents the development of an active-set algorithm based on duality for solving a special regularized slope-constrained monotonic regression problem. The authors show competitive complexity results both theoretically and in practice, while illustrating desirable features of the obtained solutions.

The fourth paper by Fateme Kouchakinejad and Alexandra Šipošová is concerned with the notion of ordered weighted averaging operators and gives a review of their applications in decision making. The authors also give some generalizations of the operators along with illustrative examples.

The last three articles are concerned with certain applied problems in Sweden, Netherlands and Oman.

As the fifth paper, Peter Lohmander presents some results for a stochastic optimal control approach to the management of the wildlife. The author first derives general optimal control and value functions, and then makes use of relevant functions for the moose management in Sweden.

Cornelis Roos discusses a mathematical model developed for protecting the Netherlands from possible incurring flood damages. The author has been seriously involved with the development of the model in the past decade and has been shown to be successful in using the model in the Netherlands to set up legal safety standards in the country.

Finally, Chefi Triki, Abdulwahab Al-Maimani and Jamila Akil propose a ridesharing model for use in Muscat, Oman, to control the growing traffic congestion in the city. They provide a detection support system for the model. The set of feasible routes of the ridesharing is found by solving a constrained mathematical programming problem. Then, a bin packing problem is modelled and solved to find the optimal routes. Illustrative examples are worked through.

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