ISSN: 1017-060X (Print)

ISSN: 1735-8515 (Online)

Special Issue of the

Bulletin of the
Iranian Mathematical Society

Special Issue Dedicated to ORO2013 Conference

Vol. 42 (2016), No. 7, pp. 1–3

Title:

Operations Research and Optimization Conference

Author(s):

D. T. Luc, N. Mahdavi-Amiri, J.-E. Martínez-Legaz and M. Soleimani-damaneh

Published by Iranian Mathematical Society
http://bims.ims.ir

Bull. Iranian Math. Soc.
Vol. 42 (2016), No. 7, pp. 1–3
Online ISSN: 1735-8515

OPERATIONS RESEARCH AND OPTIMIZATION CONFERENCE

D. THE LUC, N. MAHDAVI-AMIRI, J.-E. MARTÍNEZ-LEGAZ AND M. SOLEIMANI-DAMANEH

Special issue dedicated to ORO2013 conference

This issue of the Bulletin of the Iranian Mathematical Society is dedicated to the Second International Conference on Operations Research and Optimization (ORO2013) within the ORO conference series [1, 2], which was held at the School of Mathematics, Statistics and Computer Science, University of Tehran on January 19-22, 2013. The conference was jointly organized by the School of Mathematics, Statistics and Computer Science-University of Tehran (UT), the School of Mathematics in Institute for Research in Fundamental Sciences (IPM), Graduate University of Advanced Technology (GUAT)-Kerman, and the Iranian Mathematical Society (IMS).

UT [3] is the oldest and largest university in Iran. It is the symbol of higher education in Iran. The School of Mathematics, Statistics and Computer Science of UT is also the oldest Iranian higher education center in mathematics. Operations Research and Optimization are currently two of the most promising and active research areas of this school.

The IPM [4] is an Iranian institute, founded in 1989 under the name "Institute for Studies in Theoretical Physics and Mathematics (IPM)". Its goal has been the advancement of research and innovation in theoretical physics and mathematics. The main activity of the IPM is to foster the culture of research all across the country. In recent years, mathematical optimization has become an active field at the IPM.

GUAT [5], founded in 2007, is an advanced research center and a graduate-level degree-granting institution in Kerman, Iran. Optimization is one of the most active fields at the Faculty of Science and Modern Technologies at GUAT.

IMS [6] was officially registered in 1971 as a non-governmental and non-profit scientific organization, with the purpose of promoting national cooperation in mathematics. At present the IMS has about 700 full members, 2000 associate members and 45 institutional members. In addition, several outstanding overseas Iranian mathematicians are its honorary members. During the past 45

Article electronically published on December 15, 2016.

©2016 Iranian Mathematical Society

years, the IMS organized a number of academic and social events. The activities of IMS include promoting mathematics across the country, encouraging and supporting national mathematical activities (conferences, seminars, etc.), publishing Bulletin of IMS in English (since 1973), a persian journal called the Culture and Thoughts of Mathematics (since 1982) and Newsletter of IMS, managing 10 Math prizes and many other enterprises. The IMS is the representative of Iran as a member of the International Mathematical Union (IMU) in Group IV.

The main aim of ORO conferences is to bring together researchers and scientists from all over the world to discuss theoretical and applied aspects of Operations Research and Optimization (ORO). The conference also aims to construct an atmosphere of cooperation between national institutions as well as international ones being active in ORO and related disciplines. In ORO2013, there were 7 plenary talks and 53 contributed talks, selected among 120 submissions. Moreover, a short course on "Vector Optimization" was delivered by Dinh The Luc (Université d'Avignon, France), during January 12-17, 2013 at the conference venue. Some selected high-quality papers as well as some invited papers have been considered for publication in this issue, after completing the standard review process. In the following, we briefly review the accepted papers.

In the first paper, Behnam Soleimani and Christiane Tammer characterize the approximate solutions of nonconvex vector optimization problems with variable ordering structures in Banach spaces. Applying nonlinear separating functionals and Ekeland's variational principle, they derive necessary conditions for approximate minimizers and approximately minimal solutions using a generic approach to subdifferentials.

The second paper, by Juan Enrique Martínez-Legaz and Antoine Soubeyran, is to analyze a sequential decision making process, in which at each step the decision is made in two stages. In the first stage a partially optimal action is chosen, allowing the decision maker to learn how to improve it under the new environment. The authors show how inertia (cost of changing) may lead the process to converge to a routine where no further changes are made. They illustrate their scheme with some economic models.

The author of the third paper is Ali Reza Doagooei, who examines and identifies the maximal elements of support sets of subtopical functions. He obtains necessary and sufficient conditions for global minimum of the difference of two sub-topical functions.

In the fourth paper, Milan Hladík and Michal Černý study a linear programming problem in which all the coefficients may vary in some prescribed intervals in the presence of linear dependencies among the parameters. A class of problems that are easily solved by reduction to the classical case is addressed. Furthermore, a class of problems with very simple dependencies, making the

problem hard to deal with, is addressed. The paper is closed with some open questions.

The authors of the fifth paper are Behrouz Kheirfam and Nezam Mahdavi-Amiri. They present an enhanced full Nesterov-Todd step infeasible interior-point method for linear complementarity problem over symmetric cone. In the presented method, each iteration consists of only one feasibility step, and so the new algorithm demands less work in each iteration and admits a simple analysis of complexity bound.

In the sixth paper, Alireza H. Dehmiri and Mohammad A. Yaghoobi develop a new algorithm for solving a multiobjective linear programming problem. The provided technique is able to obtain a solution which approximately meets the decision maker's preferences. The convergency of the proposed algorithm has been investigated and some numerical examples along with a simulation study are worked through.

The last paper is by Kazhal Khaledian, in which the author deals with the Pascoletti-Serafini scalarization in multiobjective optimization. Some drawbacks are discussed and some improvements by restricting the parameter set are provided. Furthermore, the author presents a technique to convert a problem with a finitely generated ordering cone to a problem with conical ordering cone.

References

[1] H. Mohebi, B. Mordukhovich, M. Soleimani-damaneh, Operations Research and Optimization (ORO); Editorial preface, *Optimization*, **62** (2013) 673-674.
[2] N. Mahdavi-Amiri, B. Mordukhovich, M. Soleimani-damaneh, Special Issue: International Conference on Operations Research and Optimization (ORO2011), *International Journal of Information Technology & Decision Making*, **14** (2015) 725-726.
[3] http://www.ut.ac.ir.
[4] http://www.ipm.ac.ir.
[5] http://kgut.ac.ir.
[6] http://en.ims.ir.

(Dinh The Luc) Department of Mathematics, Université d'Avignon, Avignon, France.
E-mail address: dtluc@univ-avignon.fr

(Nezam Mahdavi-Amiri) Department of Mathematical Sciences, Sharif University of Technology, Tehran, Iran.
E-mail address: nezamm@sharif.edu

(Juan-Enrique Martínez-Legaz) Departament d'Economia i d'Història Econòmica, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain.
E-mail address: JuanEnrique.Martinez.Legaz@uab.cat

(Majid Soleimani-damaneh) School of Mathematics, Statistics and Computer Science, College of Science, University of Tehran, Enghelab Avenue, Tehran, Iran.
E-mail address: soleimani@khayam.ut.ac.ir