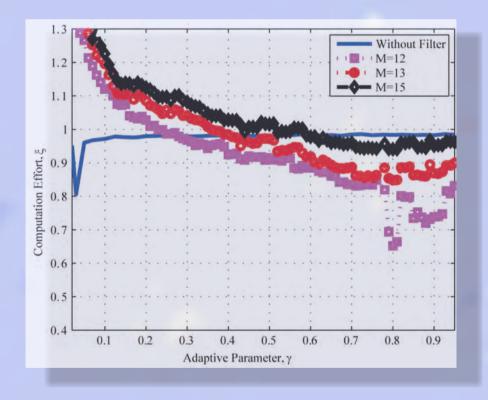




# American Journal of Operations Research





# **Journal Editorial Board**

ISSN 2160-8830 (Print) ISSN 2160-8849 (Online) http://www.scirp.org/journal/ajor

#### **Editor in Chief**

Prof. Jinfeng Yue

Middle Tennessee State University, USA

#### **Editorial Advisory Board**

Prof. Bintong Chen Prof. Wade D. Cook Prof. William W. Cooper Prof. Shu-Cherng Fang Prof. Panos Kouvelis Prof. Lawrence M. Seiford Prof. Suresh P. Sethi University of Delaware, USA York University, Canada University of Texas at Austin, USA North Carolina State University, USA Washington University in St. Louis, USA University of Michigan, USA University of Texas at Dallas, USA

#### **Editorial Board**

Dr. Javier De Andrés Prof. Janine E. Aronson Dr. Annamaria Barbagallo Dr. Nabil Belacel Prof. Ignacio Castillo Prof. Xu Chen Prof. Muhammad El-Taha

Prof. Muhammad El-13
Dr. Vladimir Filipović
Dr. Carmen Galé
Dr. Xianghua Gan
Dr. Xiuli He
Prof. Mhand Hifi
Prof. Zhimin Huang
Prof. Zhibin Jiang

Dr. Ricardo Josa-Fombellida

Prof. Dennis Leech Prof. Deng-Feng Li Prof. Liang Liang Dr. Pedro Lorca Dr. Zhaosong Lu

Prof. Monga Kalonda Luhandjula Prof. Charles L. Munson Dr. Jamal Quenniche

Prof. Joaquín Antonio Pacheco Bonrostro

Prof. Gregory P. Prastacos Prof. Javier Ramirez Rodriguez Prof. Bhaba R. Sarker

Prof. Renduchintala Raghavendra Kumar Sharma

Dr. Chunming (Victor) Shi Prof. Andranik Tangian Prof. Etsuji Tomita Dr. Delfim F. M. Torres Prof. Evangelos Triantaphyllou

Dr. Manish Verma Dr. Yu Amy Xia Prof. Yi-Min Xie Dr. Shenghan Xu Prof. Farouk Yalaoui Dr. Jiping Yang

Dr. Shilei Yang Prof. Peng-Yeng Yin

Dr. Xiaohang Yue Dr. Bin Zhang

Pedro Lorca

University of Oviedo, Spain University of Georgia, USA

University of Naples "Federico II", Italy

NRC Institute for Information Technology, Canada

Wilfrid Laurier University, Canada

University of Electronic Science and Technology of China, China

University of Southern Maine, USA University of Belgrade, Serbia University of Zaragoza, Spain

The Hong Kong Polytechnic University, China The University of North Carolina at Charlotte, USA

University of Picardie Jules Verne, France Adelphi University, USA

Shanghai Jiao Tong University, China University of Valladolid, Spain University of Warwick, UK Fuzhou University, China

University of Science and Technology of China, China

University of Oviedo, Spain Simon Fraser University, Canada University of South Africa, South Africa Washington State University, USA University of Edinburgh, UK University of Burgos, Spain

Athens University of Economics and Business, Greece The Metropolitan Autonomous University, Mexico

Louisiana State University, USA

IIT Kanpur, India

Wilfrid Laurier University, Canada Karlsruhe Institute of Technology, Germany The University of Electro-Communications, Japan

University of Aveiro, Portugal Louisiana State University, USA

Memorial University of Newfoundland, Canada

Northeastern University, USA RMIT University, Australia University of Idaho, USA

 $University\ of\ Technology\ of\ Troyes,\ France$ 

Beihang University, China

Southwestern University of Finance and Economics, China

National Chi Nan University, Chinese Taipei University of Wisconsin-Milwaukee, USA

Sun Yat-sen University, China

.......

#### **Guest Reviewers**

Jose Humberto Ablanedo-Rosas Lingyan Cao Yuan-Shyi Peter Chiu Petr Ya. Ekel Wang-Ting Hu Vassilis Kostoglou Ulrike Leopold-Wildburger Chih-Chin Liang Yu Lu Fabrizio Marinelli V.N. Maurya Frank Meisel Jerzy Michnik Ahmed Nait-Sidi-Moh Hussein Naseraldin Alain Pietrus Han Qiao Andre Rossi Zhenjun Shi Xiang Song Nodari Vakhania Tao Wu Gongxian Xu Zixiang Xu Takeo Yamada Xiaoning Zhang



### TABLE OF CONTENTS

Volume 3 Number 6	November 2013
Relationship between Maximum Principle and Dynamic Programming in Stochastic Differential Games and Applications	445
J. T. Shi	445
Green Investment Cost Optimization Model in the Supply Chain S. Sim, H. Jung	454
A Genetic Algorithm for Multiple Inspections with Multiple Objectives P. R. McMullen	463
The Effects of Output Growth on Preventive Investment Policy Y. Giat	474
Forecasting the Convergence State of per Capital Income in Vietnam N. K. Minh, P. Van Khanh	
A Computational Comparison of Basis Updating Schemes for the Simplex Algorithm on a CPU-GPU System  N. Ploskas, N. Samaras.	
Breast Cancer Screening: A Stochastic DEA Study M. E. Bruni	
Adaptive Strategies for Accelerating the Convergence of Average Cost Markov Decision Processes Using a Moving Average Digital Filter  E. F. Arruda, F. Ourique	514
Models for Ordering Multiple Products Subject to Multiple Constraints, Quantity and Freight Discounts  J. Moussourakis, C. Haksever	521
A Different Approach to Cone-Convex Optimization	
S. K. Suneja, S. Sharma, M. B. Grover, M. Kapoor	536
Application of AHP/EVAMIX Method for Decision Making in the Industrial Environment V. P. Darji, R. V. Rao	
A Two Stage Batch Arrival Queue with Reneging during Vacation and Breakdown Pe M. Baruah, K. C. Madan, T. Eldabi	
Linear Plus Linear Fractional Capacitated Transportation Problem with Restricted F K. Gupta, S. R. Arora	
Energetic Extended Edge Finding Filtering Algorithm for Cumulative Resource Const. R. Kameugne, S. B. Fetgo, L. P. Fotso	

The figure on the front cover is from the article published in American Journal of Operations Research, 2013, Vol. 3, No. 6, pp. 514-520 by Edilson F. Arruda and Fabrício Ourique.

Open Access AJOR

#### **American Journal of Operations Research (AJOR)**

#### **Journal Information**

#### SUBSCRIPTIONS

The American Journal of Operations Research (Online at Scientific Research Publishing, www.SciRP.org) is published bimonthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$59 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

#### **SERVICES**

#### Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

#### Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

#### **COPYRIGHT**

Copyright@2013 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assumes no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

#### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: ajor@scirp.org



# American Journal of Operations Research

ISSN 2160-8830 (Print) ISSN 2160-8849 (Online) http://www.scirp.org/journal/ajor

AJOR is an international scientific journal dedicated to the publication and public discussion of high quality, original papers that contribute to the methodology of operational research and to the practice of decision making.

## **Editor in Chief**

Prof. Jinfeng Yue

Dr. Javier De Andrés

Middle Tennessee State University, USA

#### **Editorial Board**

Prof. Janine E. Aronson
Dr. Annamaria Barbagallo
Dr. Nabil Belacel
Prof. Ignacio Castillo
Prof. Xu Chen
Prof. Muhammad El-Taha
Dr. Vladimir Filipović
Dr. Carmen Galé
Dr. Xianghua Gan
Dr. Xiuli He
Prof. Mhand Hifi
Prof. Zhimin Huang
Prof. Zhibin Jiang
Dr. Ricardo Josa-Fombellida

Prof. Dennis Leech
Prof. Deng-Feng Li
Prof. Liang Liang
Dr. Pedro Lorca
Dr. Zhaosong Lu
Prof. Monga Kalonda Luhandjula
Prof. Charles L. Munson
Dr. Jamal Ouenniche
Prof. Joaquín Antonio Pacheco Bonrostro
Prof. Javier Ramirez Rodriguez
Prof. Bhaba R. Sarker
Prof. Renduchintala Raghavendra Kumar Sharma
Dr. Chunming (Victor) Shi

Prof. Andranik Tangian

Prof. Etsuji Tomita
Dr. Delfim F. M. Torres
Prof. Evangelos Triantaphyllou
Dr. Manish Verma
Dr. Yu Amy Xia
Prof. Yi-Min Xie
Dr. Shenghan Xu
Prof. Farouk Yalaoui
Dr. Jiping Yang
Dr. Shilei Yang
Prof. Peng-Yeng Yin
Dr. Xiaohang Yue
Dr. Bin Zhang

#### **Subject Coverage**

This journal invites original research and review papers that address the following issues in operations research. Topics of interest include, but are not limited to:

# 1. Operations Research and Optimization Theory and Research Technical Approaches

Computational Intelligence and Information Management

Continuous Optimization

Decision Support Systems, Multi-Criteria Decision Methods

Discrete Optimization

Expert Systems

Heuristics Mathematical Programming

Networks

Queues

Simulation

Stochastic Models and Statistics

Time Series Analysis

#### 2. Manufacturing and Service Operations Research

Forecasting Inventory

Logistics, Transportation Warehousing and Maintenance

Planning and Scheduling
Product and Service Design

Project Management Quality Management Revenue Management Supply Chain Management

#### 3. Interfaces with Other Disciplines

Community Operations Research

Complex Systems

Education Operations Research Environmental and Energy Issues

Financial Engineering

Government Operations Research Health Services Operations Research

Marketing Science

Military and Homeland Security

Operations Research in Nonprofit Organization Policy Modeling and Public Sector OR

Productivity and Efficiency in the Public Sector

Sports Operations Research

E-mail: ajor@scirp.org

Telecommunications and Networking

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the AJOR.

#### **Notes for Intending Authors**

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-mail

http://www.scirp.org/journal/ajor