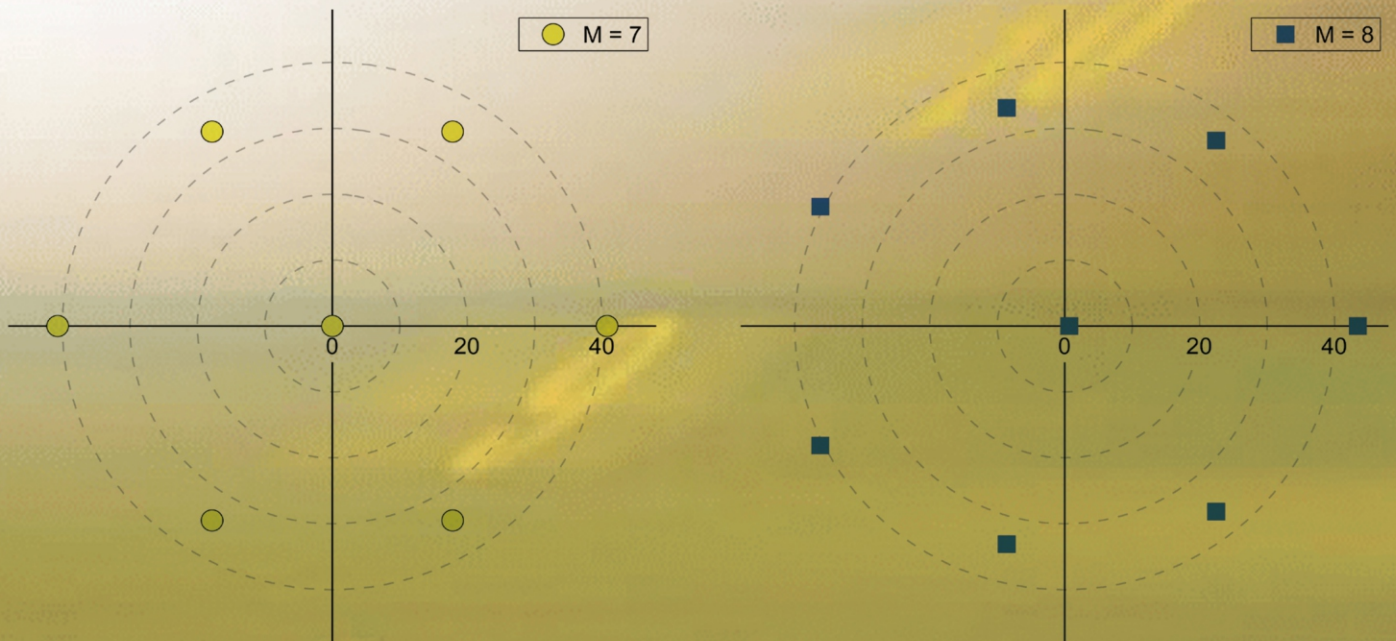
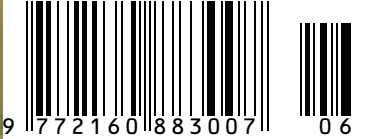


American Journal of Operations Research



ISSN: 2160-8830



www.scirp.org/journal/ajor

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. Shu-Cherng Fang

Prof. Panos Kouvelis

Prof. Lawrence M. Seiford

Prof. Suresh P. Sethi

University of Delaware, USA

York University, Canada

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

Dr. Carmen Galé

Prof. Xianghua Gan

Prof. Xiuli He

Prof. Mhand Hifi

Prof. Zhimin Huang

Prof. Zhibin Jiang

Dr. Ricardo Josa-Fombellida

Prof. Nguyen Khac Minh

Prof. Dennis Leech

Prof. Dengfeng Li

Prof. Liang Liang

Dr. Pedro Lorca

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

Prof. Delfim F. M. Torres

Prof. Evangelos Triantaphyllou

Dr. Manish Verma

Dr. Yu Amy Xia

Prof. Yi-Min Xie

Dr. Shenghan Xu

Dr. Jiping Yang

Dr. Shilei Yang

Prof. Peng-Yeng Yin

Dr. Xiaohang Yue

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 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

Thang Long University, Vietnam

University of Warwick, UK

Fuzhou University, China

University of Science and Technology of China, China

University of Oviedo, Spain

Washington State University, USA

University of Edinburgh, UK

University of Burgos, Spain

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

McMaster University, Canada

Northeastern University, USA

RMIT University, Australia

University of Idaho, USA

Beihang University, China

Southwestern University of Finance and Economics, China

National Chi Nan University, Chinese Taipei

University of Wisconsin-Milwaukee, USA

Table of Contents

Volume 6 Number 6

November 2016

The Design of a Novel Bearing Manufacturing Line Based on Simulation

A. R. Natarajan.....425

Proposed Heuristic Method for Solving Assignment Problems

S. K. Amponsah, D. Otoo, S. Salhi, E. Quayson.....436

Research on the Collision-Free Path Planning of Multi-AGVs System Based on Improved A* Algorithm

R. P. Yuan, T. T. Dong, J. T. Li.....442

Explicit Exact Solution of Damage Probability for Multiple Weapons against a Unitary Target

H. Y. Wang, C. Moten, M. Driels, D. Grundel, H. Zhou.....450

Dual Based Procedures for Un-Capacitated Minimum Cost Flow Problem

P. Sinha, R. R. K. Sharma.....468

Resolution of Resource Contentions in the CCPM-MPL Using Simulated Annealing and Genetic Algorithm

H. Yokoyama, H. Goto.....480

Standby Redundancy Allocation for a Coherent System under Its Signature Point Process Representation

V. da Costa Bueno.....489

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: \$79 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 and reuse rights for the front matter of the journal:

Copyright © 2016 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

Copyright for individual papers of the journal:

Copyright © 2016 by author(s) and Scientific Research Publishing Inc.

Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

Disclaimer of liability

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 assume 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



Call for Papers

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

Middle Tennessee State University, 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
Dr. Carmen Galé
Prof. Xianghua Gan
Prof. Xiuli He
Prof. Mhand Hifi
Prof. Zhimin Huang
Prof. Zhibin Jiang

Dr. Ricardo Josa-Fombellida
Prof. Nguyen Khac Minh
Prof. Dennis Leech
Prof. Dengfeng Li
Prof. Liang Liang
Dr. Pedro Lorca
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
Prof. Delfim F. M. Torres
Prof. Evangelos Triantaphyllou
Dr. Manish Verma
Dr. Yu Amy Xia
Prof. Yi-Min Xie
Dr. Shenghan Xu
Dr. Jiping Yang
Dr. Shilei Yang
Prof. Peng-Yeng Yin
Dr. Xiaohang Yue

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
Location
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
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>

E-mail: ajor@scirp.org