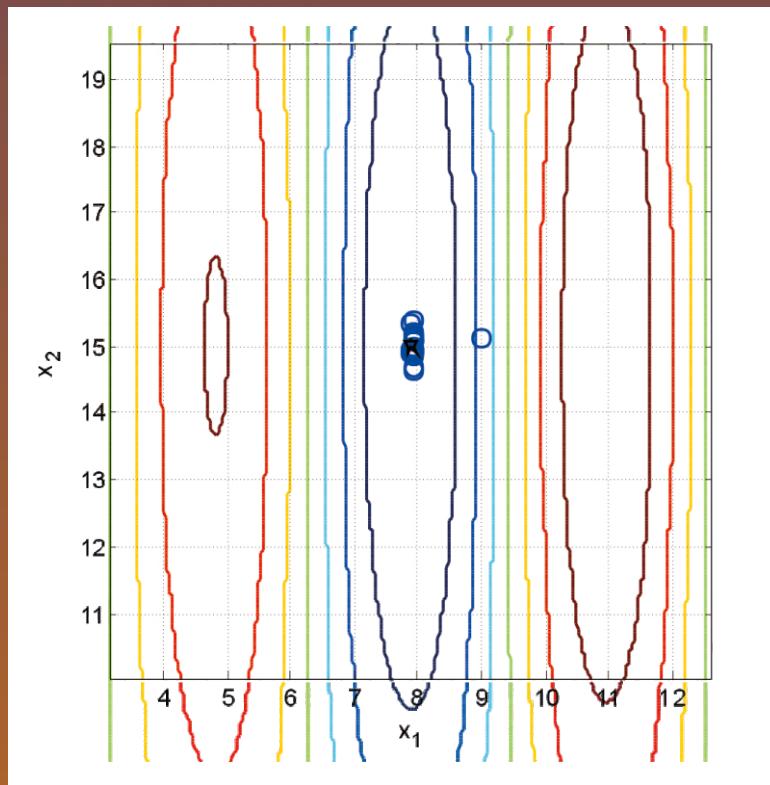


Applied Mathematics

Special Issue on “Optimization”



ISSN: 2152-7385



9 772152 738001

30

www.scirp.org/journal/am

Journal Editorial Board

ISSN Print: 2152-7385 **ISSN Online: 2152-7393**

<http://www.scirp.org/journal/am>

Editor in Chief

- Prof. Chris Cannings** University of Sheffield, UK

Editorial Board

- | | |
|---------------------------------------|---|
| Prof. Tamer Başar | University of Illinois at Urbana-Champaign, USA |
| Prof. Leva A. Beklaryan | Russian Academy of Sciences, Russia |
| Dr. Aziz Belmiloudi | Institut National des Sciences Appliquees de Rennes, France |
| Dr. Anjan Biswas | Delaware State University, USA |
| Prof. Mark Broom | City University, UK |
| Prof. Amares Chattopadhyay | Indian School of Mines, India |
| Dr. Badong Chen | Tsinghua University, China |
| Prof. Ljubomir Cirim | University of Belgrade, Serbia |
| Prof. Jose Alberto Cuminato | University of Sao Paulo, Spain |
| Prof. Konstantin Dyakonov | University of Barcelona , Spain |
| Dr. David Greenhalgh | University of Strathclyde, UK |
| Prof. Zhiqing Han | Dalian University of Technology, China |
| Prof. Anwar H. Joarder | King Fahd University of Petroleum and Minerals, Saudi Arabia |
| Prof. Palle Jorgensen | University of Iowa, USA |
| Dr. Vladimir A. Kuznetsov | Bioinformatics Institute, Singapore |
| Prof. Kil Hyun Kwon | Korea Advanced Institute of Science and Technology, South Korea |
| Prof. Hong-Jian Lai | West Virginia University, USA |
| Dr. Goran Lesaja | Georgia Southern University, USA |
| Prof. Tao Luo | Georgetown University, USA |
| Prof. Agassi Melikov | National Aviation Academy, Azerbaijan |
| Prof. María A. Navascués | University of Zaragoza, Spain |
| Dr. Donatus C. D. Oguamanam | Ryerson University, Canada |
| Prof. Alexander S. Rabinowitch | Moscow State University, Russia |
| Dr. Epaminondas Sidiropoulos | Aristotle University of Thessaloniki, Greece |
| Prof. Sergei Silvestrov | Mälardalen University, Sweden |
| Prof. Jacob Sturm | Rutgers University, USA |
| Dr. Zheng Su | Genentech, Inc., USA |
| Prof. Mikhail Sumin | Nizhnii Novgorod State University, Russia |
| Dr. Chengbo Wang | Zhejiang University, China |

TABLE OF CONTENTS

Volume 3 Number 10A

October 2012

Control Approach to Nuclear Safety

- J. O. Omolehin, A. Lukman, K. Rauf.....1215

A Genetic Algorithm with Weighted Average Normally-Distributed Arithmetic Crossover and Twinkling

- G. S. Ladkany, M. B. Trabia.....1220

Modelling to Generate Alternatives Using Simulation-Driven Optimization: An Application to Waste Management Facility Expansion Planning

- J. S. Yeomans, R. Imanirad.....1236

An Interactive Fuzzy Satisficing Method for Multiobjective Stochastic Integer Programming with Simple Recourse

- M. Sakawa, T. Matsui.....1245

An Inexact Restoration Package for Bilevel Programming Problems

- E. A. Pilotta, G. A. Torres.....1252

Mauro: A Novel Strategy for Optimizing Mixture Properties

- S. Clementi, M. Fernandi, M. Baroni, D. Decastri, G. M. Randazzo, F. Scialpi.....1260

Performance Comparison of Electromagnetism-Like Algorithms for Global Optimization

- J.-L. Lin, C.-H. Wu, H.-Y. Chung.....1265

Enhanced Particle Swarm Optimization Based Local Search for Reactive Power Compensation Problem

- A. A. Mousa, M. A. El-Shorbagy.....1276

Water Supply and Demand Sensitivities of Linear Programming Solutions to a Water Allocation Problem

- K. P. Georgakakos.....1285

Optimization of Osmotic Drying Parameters for Button Mushroom (*Agaricus bisporus*)

- B. K. Mehta, S. K. Jain, G. P. Sharma, V. D. Mudgal, R. C. Verma, A. Doshi, H. K. Jain.....1298

Modified Piyavskii's Global One-Dimensional Optimization of a Differentiable Function

- R. Ellaia, M. Z. Es-Sadek, H. Kasbioui.....1306

Infinite Horizon LQ Zero-Sum Stochastic Differential Games with Markovian Jumps

- H.-N. Zhu, C.-K. Zhang, N. Bin.....1321

A Fixed Point Method for Convex Systems

- M. Kimiae, F. Rahpeymaii.....1327

On the Stable Sequential Kuhn-Tucker Theorem and Its Applications

- M. I. Sumin.....1334

Analysis of Ringing and Noise in FE and FDTD Calculated Acoustic Pulse Profiles

- A. Every, L. Aebi, J. Dual.....1351

Hybrid Extragradient-Type Methods for Finding a Common Solution of an Equilibrium Problem and a Family of Strict Pseudo-Contraction Mappings

- P. N. An, T. D. Quo, D. X. Son.....1357

Robust Optimum Design of Thrust Hydrodynamic Bearings for Hard Disk Drives

H. Hashimoto, Y. Sunami.....1368

A Parallel Algorithm for Global Optimization Problems in a Distributed Computing Environment

M. Gaviano, D. Lera, E. Mereu.....1380

Optimal Policies for Managing Invasive Species under Uncertainty

C. S. Kim, M. Aillery, J. Lewandrowski, S. G. Kim.....1388

Solution Concepts and New Optimality Conditions in Bilevel Multiobjective Programming

F. Fouodji Dedzo, L. P. Foto, C. O. Pieume.....1395

Using of Particle Swarm for Performance Optimization of Helicopter Rotor Blades

G. Guglieri.....1403

A New Lagrangian Multiplier Method on Constrained Optimization

Y. L. Shang, S. L. Guo, X. Y. Jiang.....1409

An Application of the Maximum Theorem in Multi-Criteria Optimization, Properties of

Pareto-Retract Mappings, and the Structure of Pareto Sets

Z. D. Slavov, C. S. Evans.....1415

A Modified Centered Climbing Algorithm for Linear Programming

M.-F. Ding, Y. Q. Liu, J. A. Gear.....1423

Optimization of Quantizer's Segment Threshold Using Spline Approximations for Optimal Compressor Function

L. Velimirović, Z. Perić, M. Stanković, J. Nikolić.....1430

Artificial Searching Swarm Algorithm and Its Performance Analysis

T. G. Chen, W. Guo, Z. J. Gao.....1435

A Collaborative Approach for LA-DHBMO

V. Azadehgan, P. Khanteimouri, S. Akbari, N. Ghandehari.....1442

Comparison of Alternative Strategies for Multilevel Optimization of Hierarchical Systems

S. DorMohammadi, M. Rais-Rohani.....1448

Efficient Numerical Optimization Algorithm Based on New Real-Coded Genetic Algorithm, AREX + JGG, and Application to the Inverse Problem in Systems Biology

A. Komori, Y. Maki, M. Nakatsui, I. Ono, M. Okamoto.....1463

Non-Frobenius Spectrum-Transformation Method

A. Iskhakov, V. Pospelov, S. Skovpen.....1471

Parameters Optimization Using Genetic Algorithms in Support Vector Regression for Sales Volume Forecasting

F.-C. Yuan.....1480

Dynamic Optimization of Bioprocesses

G. Koumpouras, C. Kontoravdi.....1487

An Implementation Method for the Geodesics with Constraints on Heisenberg Manifolds

Y. Khellaf, N. Bensalem.....1496

Portfolio Selection under Condition of Variable Weights

R. Keykhaei, M. T. Jahandideh.....1505

Optimization of Extrusion Process for Producing High Antioxidant Instant Amaranth (*Amaranthus hypochondriacus* L.) Flour Using Response Surface Methodology

J. Milán-Carrillo, A. Montoya-Rodríguez, R. Gutiérrez-Dorado, X. Perales-Sánchez, C. Reyes-Moreno.....1516

Optimization of Geometry at Hartree-Fock level Using the Generalized Simulated Annealing

L. A. C. Malbouisson, A. M. de C. Sobrinho, M. A. C. Nascimento, M. D. de Andrade.....1526

Harmony Search and Cellular Automata in Spatial Optimization

E. Sidiropoulos.....1532

Advancing the Backtrack Optimization Technique to Obtain Forecasts of Potential Crisis Periods

E. G. Lisgara, G. I. Karolidis, G. S. Androulakis.....1538

Empirical Review of Standard Benchmark Functions Using Evolutionary Global Optimization

J. M. Dieterich, B. Hartke.....1552

Multigrid One-Shot Method for PDE-Constrained Optimization Problems

S. B. Hazra.....1565

Reactive Search Optimization; Application to Multiobjective Optimization Problems

A. Mosavi, A. Vaezipour.....1572

The figure on the front cover is from the article published in *Applied Mathematics*, 2012, Vol. 3, No. 10 Special Issue, pp. 1220-1235 by George S. Ladkany, Mohamed B. Trabia.

Applied Mathematics (AM)

Journal Information

SUBSCRIPTIONS

The *Applied Mathematics* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly 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©2012 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.

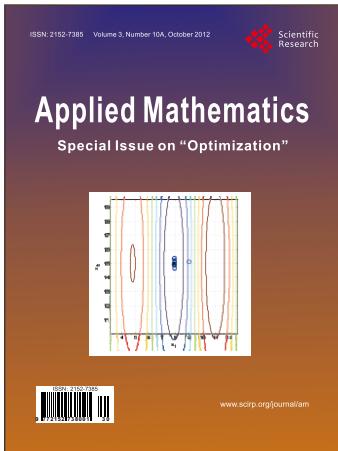
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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: am@scirp.org



Applied Mathematics (AM)

ISSN Print: 2152-7385 ISSN Online: 2152-7393

<http://www.scirp.org/journal/am>

Applied Mathematics (AM) is an international journal dedicated to the latest advancement of applied mathematics. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of applied mathematics.

Subject Coverage

All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

- | | | |
|---|--|--|
| <ul style="list-style-type: none">● Applied Probability● Applied Statistics● Approximation Theory● Chaos Theory● Combinatorics● Complexity Theory● Computability Theory● Computational Methods in Mechanics and Physics● Continuum Mechanics● Control Theory● Cryptography● Discrete Geometry● Dynamical Systems● Elastodynamics | <ul style="list-style-type: none">● Evolutionary Computation● Financial Mathematics● Fuzzy Logic● Game Theory● Graph Theory● Information Theory● Inverse Problems● Mathematical Biology● Mathematical Chemistry● Mathematical Economics● Mathematical Physics● Mathematical Psychology● Mathematical Sociology● Matrix Computations | <ul style="list-style-type: none">● Neural Networks● Nonlinear Processes in Physics● Numerical Analysis● Operations Research● Optimal Control● Optimization● Ordinary Differential Equations● Partial Differential Equations● Probability Theory● Statistical Finance● Stochastic Processes● Theoretical Statistics |
|---|--|--|

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

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/am> E-mail: am@scirp.org