

ISSN: 2167-9479 Volume 6, Number 2, June 2017



International Journal of Modern Nonlinear Theory and Application

ISSN: 2167-9479



www.scirp.org/journal/ijmnta

Journal Editorial Board

ISSN: 2167-9479 (Print) ISSN: 2167-9487 (Online)

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

Editor-in-Chief

Prof. Ahmad M. Harb

German Jordanian University, Jordan

Editorial Board

Prof. Nabil Mohamed Jabr Abdel-Jabbar

American University of Sharjah, UAE

Dr. Eihab M. Abdel-Rahman

University of Waterloo, Canada

Prof. Ravi P. Agarwal

Texas A&M University-Kingsville, USA

Prof. Ahmad Al-Qaisia

University of Jordan, Jordan

Prof. Jan Awrejcewicz

The Technical University of Lodz, Poland

Prof. Nabil Ayoub

German Jordanian University, Jordan

Prof. Fethi Bin Muhammad Belagcem

Public Authority for Applied Education and Training, Kuwait

Prof. Cristian S. Calude

The University of Auckland, New Zealand

Prof. Seonho Cho

Seoul National University, South Korea

Dr. Prabir Daripa

Texas A&M University, USA

Prof. Bruce Henry

The University of New South Wales, Australia

Dr. Boon Leong Lan

Monash University, Malaysia

Prof. Hongyi Li

Bohai University, China

Dr. C. W. Lim

City University of Hong Kong, China

Prof. Gamal M. Mahmoud

Taibah University, Saudi Arabia

Dr. Wenchao Meng

Carleton University, Canada

Prof. Lamine Mili

Virginia Polytechnic Institute and State University, USA

Prof. Zuhair Nashed

University of Central Florida, USA

Prof. Antonio Palacios

San Diego State University, USA

Dr. Samir M. Shariff

Taibah University, Saudi Arabia

Prof. Guowei Wei

Michigan State University, USA

Prof. Pei Yu

University of Western Ontario, Canada

Table of Contents

Volume 6 Number 2

June 2017

Robust Model-Free Software Sensors for the HIV/AIDS Infection Process

H. Alazki, A. Poznyak.....39

Random Attractor of the Stochastic Strongly Damped for the Higher-Order Nonlinear Kirchhoff-Type Equation

G. G. Lin, L. Chen, W. Wang.....59

The Computational Theory of Intelligence: Feedback

D. Kovach.....70

Human-Simulating Intelligent PID Control

Z. N. Liu.....74

International Journal of Modern Nonlinear Theory and Application (IJMNTA)

Journal Information

SUBSCRIPTIONS

The *International Journal of Modern Nonlinear Theory and Application* (Online at Scientific Research Publishing, www.SciRP.org) is published quarterly 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 and reuse rights for the front matter of the journal:

Copyright © 2017 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 © 2017 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: ijmnta@scirp.org



International Journal of Modern Nonlinear Theory and Application

ISSN: 2167-9479 (Print) ISSN: 2167-9487 (Online)
<http://www.scirp.org/journal/ijmnta>

International Journal of Modern Nonlinear Theory and Application (IJMNTA) is an international peer-reviewed journal dedicated to publishing original papers on all topics related to nonlinear dynamics and its applications such as, electrical, mechanical, civil, and chemical systems and so on. The contributions concerned will be discussion of a practical problem, the formulating nonlinear model, and determination of closed form exact or numerical solutions.

Editor-in-Chief

Prof. Ahmad M. Harb

German Jordanian University, Jordan

Editorial Board

Prof. Nabil Mohamed Jabr Abdel-Jabbar
Dr. Eihab M. Abdel-Rahman
Prof. Ravi P. Agarwal
Prof. Ahmad Al-Qaisia
Prof. Jan Awrejcewicz
Prof. Nabil Ayoub
Prof. Fethi Bin Muhammad Belagcem
Prof. Cristian S. Calude
Prof. Seonho Cho
Dr. Prabir Daripa
Prof. Bruce Henry

Dr. Boon Leong Lan
Prof. Hongyi Li
Dr. C. W. Lim
Prof. Gamal M. Mahmoud
Dr. Wenchao Meng
Prof. Lamine Mili
Prof. Zuhair Nashed
Prof. Antonio Palacios
Dr. Samir M. Shariff
Prof. Guowei Wei
Prof. Pei Yu

Subject Coverage

This journal invites original papers and review papers that address the following issues in modern nonlinear theory and its applications. The interested topics that may be covered, but not limited to:

- Application of Modern Nonlinear Theory in:
 - Biology
 - Business
 - Chemical Systems
 - Electrical and Power Systems
 - Fluid Mechanics
 - Mechanical Systems
 - Medicine
 - Physics
- Applied Mechanics
- Bifurcation and Chaos
- Chaos Control
- Classic Control Systems
- Electrical Drives and Power Electronics
- Fractal Order Systems
- High Dimensional Chaos and Applications
- Intelligent Control Systems (Fuzzy, Neural, Genetic...)
- Nonlinear Control
- Nonlinear Differential Equations and Applications
- Nonlinear Dynamic Stability
- Nonlinear Dynamics
- Nonlinear Mathematical Physics
- Nonlinear Optical Physics & Materials
- Nonlinear Oscillations
- Nonlinear Phenomena
- Nonlinear Science and Numerical Simulation
- Power Systems and Energy
- Security in Communication Systems

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 submission, please access the website.

Website and E-Mail

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

E-mail: ijmnta@scirp.org

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific
Research
Publishing**

Website: <http://www.scirp.org>

Subscription: sub@scirp.org

Advertisement: service@scirp.org