

INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION

EDITOR-IN-CHIEF

Prof. Björn Birnir,
Santa Barbara, CA

ASSOCIATE EDITORS

Ana Carpio, Madrid
Rudi Weikard, Birmingham, AL
Dieter Armbruster, Tempe, AZ
Jan Awrejcewicz, Lodz
Hakima Bessaih, Laramie, WY
Xi Chen, Lubbock, TX
Elżbieta Jarzębowska, Warsaw
J. A. Tenreiro Machado, Porto
Antonio Marzocchella, Naples
Tobias Schäfer, New York, NY
Yuri Sobral, Brasília
Knut Solna, Irvine, CA

DE GRUYTER

ABSTRACTED/INDEXED IN Chemical Abstracts, Scopus, Current Contents, SciSearch.

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions or liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 1565-1339 · e-ISSN 2191-0294

All information regarding notes for contributors, subscriptions, open access, back volumes and orders is available online at www.degruyter.com/ijnsns.

RESPONSIBLE EDITOR

Prof. Björn Birnir, Department of Mathematics, University of California, Santa Barbara, CA 93106, USA,
Email: birnir@math.ucsb.edu

JOURNAL MANAGER Esther Markus, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany,
Tel.: +49 (0)30 260 05 – 127, Fax: +49 (0)30 260 05 – 250, Email: esther.markus@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Claudia Neumann, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany,
Tel.: +49 (0)30 260 05 – 226, Fax: +49 (0)30 260 05 – 264, Email: anzeigen@degruyter.com

© 2018 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING Integra Software Services Pvt. Ltd., Pondicherry, India

PRINTING Franz X. Stückle Druck und Verlag e. K., Ettenheim



Contents

O. D. Makinde, N. Sandeep, T. M. Ajayi
and I. L. Animasaun

Numerical Exploration of Heat Transfer and Lorentz Force Effects on the Flow of MHD Casson Fluid over an Upper Horizontal Surface of a Thermally Stratified Melting Surface of a Paraboloid of Revolution — 93

Ahmet Can Altunışik, Ali Fuat Genç, Murat Günaydin,
Süleyman Adanur and Fatih Yesevi Okur

Ambient Vibration-Based System Identification of a Medieval Masonry Bastion for Health Assessment using Nonlinear Analyses — 107

Yuji Liu

Solvability of Anti-periodic BVPs for Impulsive Fractional Differential Systems Involving Caputo and Riemann–Liouville Fractional Derivatives — 125

R. Thepi Siewe, U. Simo Domguia and P. Woafu

Microcontroller Control/Synchronization of the Dynamics of Van der Pol Oscillators Submitted to Disturbances — 153

M. H. Heydari, H. Laeli Dastjerdi and M. Nili Ahmadabadi

An Efficient Method for the Numerical Solution of a Class of Nonlinear Fractional Fredholm Integro-Differential Equations — 165

Osama A. Marzouk

Radiant Heat Transfer in Nitrogen-Free Combustion Environments — 175

Shapour Heidarkhani, Ghasem A. Afrouzi
and Shahin Moradi

Variational Approaches to $P(X)$ -Laplacian-Like Problems with Neumann Condition Originated from a Capillary Phenomena — 189

Ramziya Rifhat, Ahmadjan Muhammadhaji
and Zhidong Teng

Global Mittag–Leffler Synchronization for Impulsive Fractional-Order Neural Networks with Delays — 205

Li Wang and Jixiu Wang

Multiplicity Results for Degenerate Fractional p -Laplacian Problems with Critical Growth — 215

Mahmoud A.E. Abdelrahman

Numerical Investigation of the Wave-Front Tracking Algorithm for the Full Ultra-Relativistic Euler Equations — 223