8th International Conference on Applied Physics and Mathematics (ICAPM 2018)

Journal of Physics: Conference Series
Volume 1039

Phuket, Thailand
27 – 29 January 2018

ISBN: 978-1-5108-6589-1
ISSN: 1742-6588

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2018) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 1039

2018 8th International Conference on Applied Physics and Mathematics (ICAPM 2018)

27–29 January 2018, Phuket, Thailand

Accepted papers received: 23 May 2018
Published online: 27 June 2018

Preface

2018 8th International Conference on Applied Physics and Mathematics (ICAPM 2018)

Conference Committee

Peer review statement

Papers

Mathematical theory and calculation

On varying coefficients of spatial inhomogeneous nonlinear Schrödinger equation

N. Karjanto and J. Tan.....1

Numerical solution of Benjamin-Bona-Mahony-Burger (BBMB) and regularized long-wave (RLW) equations using time-space pseudo-spectral method

A K Mittal, L K Balyan and D Tiger.....6

Multiple positive solutions to a class of second-order boundary value problems involving integral conditions

Bo Sun and Guiyang Jiang.....12

Positive solutions to a third-order boundary value problem with Riemann Stieltjes integral boundary conditions

Bo Sun and Jianfeng Li.....17

Laplace Variational Method for System of Partial Differential Equations

Muhammad Aslam Noor, Ayesha Sohail and Sarmad Arshad.....22

A turn based traffic allocation game

Youyuan Dong.....29

A NOTE ON THE DIOPHANTINE EQUATION qx + py = z2

Lei Lu.....34

An implicit numerical method for the space-time variable-order fractional Bloch-Torrey equation*

Tao Xu, Shujuan Lü and Haonan Li.....38

An explicit solution to a random walk game

Guolong Li and Tony Tian.....44

Cop and Robber with road building ability

Guolong Li and Yanchen Pu.....52

Abdollahi's Conjectures and a Class of Prime Power Group

K Moradipour and S Ilangovan.....57

Solution of the general multi-objective De-Novo programming problem using compensatory operator under fuzzy environment

D Bhattacharya and S Chakraborty.....61

Physical Mathematics and Applied Physics

The Variance Formation of M9.3 Solar Flare Associated with Solar Radio Burst Type V Occurred at Eight (8) Different Sites of the CALLISTO System on 4th August 2011

N. N. M. Shariff, Z. S. Hamidi and S.N.U. Sabri.....69

Logarithmic quantum wave equation with variable nonlinear coupling

Konstantin G. Zloshchastiev.....74

The impact of slip conditions on magnetohydrodynamics radiating fluid beyond an exponentially extended sheet

Siti Suzilliana Putri Mohamed Isa, Norihan Md. Arifin and Umer Farooq.....79

The influence of plume angle and energy on the mass separation of plasma beam

Hailong Zhao, Zhongying Lin, Chunsheng Wang and Hongchen Liu.....94

The effect of numerical noises on statistics of a chaotic dynamical system

Xiaoming Li, Xiaochen Li and Shijun Liao.....100

The Non-thermal of a Large Solar Flares Associated with High Energy of Solar Burst Type III on 4th September 2017

Z.S. Hamidi and N.N.M. Shariff.....105

System Design and Mathematical Modeling

Wave Induced Oscillation in an Irregular Domain by using Hybrid Finite Element Model

Prashant Kumar, Rajni and Rupali.....110

Probabilistic sensitivity analysis for multivariate model outputs with applications to Li-ion batteries

V. Triantafyllidiis, W.W. Xing, P.K. Leung, A. Rodchanarowan and A.A. Shah.....115

Robust portfolio selection based on Gaussian rank correlation estimator

Mei Yan and Xin Zhao.....127

Agent-based models in financial market studies

L Wang, K Ahn, C Kim and C Ha.....136

ARIMA model to forecast international tourist visit in Bumthang, Bhutan

Choden and Suntaree Unhapipat.....148

Sensitivity of WRF microphysics schemes: case study of simulating a severe rainfall over Egypt

Muhammed Eltahan and Mohammed Magooda.....158

Applied Mathematics and Engineering

Econometric Analysis of Influence of Monetary Policy on Macroeconomic Aggregates in Indian Economy

I V Tregub.....164

Galois ring codes and their images under various bases

Virgilio Sison and Gio Carlo Delos Santos.....169

The Frontier of Estimator Comparison between MLE and MEboot Estimation: Application for Optimization Management of Macroeconomics

S Wannapan and C Chaiboonsri.....177

Designing Efficient Configurable QCA Nano Circuit for Morphological Operations in Image Processing

Shiv Bhusan Tripathi, Aron Narzary, Rahul Toppo, Mrinal Goswami and Bibhash Sen.....182

Density functional theory study of uni- and bi-metallic small Pt and Ni clusters for fuel conversion applications

Alexandra B. Santos-Putungan and Darwin Barayang Putungan.....187

Mathematical Modeling and Analysis in Medical Field

Application of log-linear models to pneumonia patients: a case study of Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) in Bhutan

Sonam Zam and Montip Tiensuwan.....193

Application of logistic regression models to cancer patients: a case study of data from Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) in Bhutan

Choney Zangmo and Montip Tiensuwan.....202

Risk factors for cardiovascular diseases (CVDs) patients in Bhutan

Yeshi Dorji and Montip Tiensuwan.....212

Time series analysis of diabetes patients: A case study of Jigme Dorji Wangchuk National Referral Hospital in Bhutan

Thukten Singye and Suntaree Unhapipat.....220

Stepwise Regression Modeling of the Retardance in Dextran-Citrate Coated Ferrofluids

J F Lin, J J Sheu and Y Y Yang.....231

Optimal control for the transmission dynamics of malaria disease model

Bundit Unyong.....236

The Role of Family on the Transmission Model of Methamphetamine

Surapol Naowarat and Nuengruedee Kumat.....247

Applied mechanics

Asymptotic Solutions of the Planar Squeeze Flow of a Herschel-Bulkley Fluid

Pavan Kumar Singeetham and Vishwanath Kadaba Puttanna.....253

Structure-preserving algorithm for thermal conduction of local thermal nonequilibrium saturated porous medium

Xuemei Liu.....262

Study on Numerical Simulation of Wind Turbine

S Yan, Y T Guo, J Y Zhao, S P Shi and X Liu.....269

On the free surface motion with a vertical vortex sheet under water

Jing Li and Shi-jun Liao.....277

Instrument Design and Measurement

Research on electromagnetic propulsion system based on reusable space vehicle

Fu Hui, Wang Pei, Zhang Ke, Lv Mei Bo and Ge Zhi Lei.....282

Three-dimensional Trajectory Tracking Guidance Law Based on Linear Quadratic Regulator

Zhilei Ge, Yanni Wang and Meibo Lv.....287

Measuring on Sugar Content of Sugarcane Based on Phase Locked Loop with Capacitive Sensor

Siriporn Nonta, Anucha keawphusuk and Paramote Wardkein.....293

A Study Thermal Efficiency of Solar Air Heater with Wire Mesh Stainless Installation: Using Solar Simulator

Ratinun Luampon and Bundit Krittakom.....298

Testing change points and its application in urban transportation

H Y Wang, S Z Shi, Z X Jiang and H F Jia.....304

Disturbance Rejection Attitude Controller Design for Launch Vehicle based on Orthogonal Function Neural Network

Pei Wang, Mei Bo Lv, Zhi Lei Ge and Zi Qi Zhang.....309