



Proceedings of the 3rd International Conference on Mathematical Sciences

Kuala Lumpur, Malaysia

17–19 December 2013

Editors

Wan Zawiah Wan Zin

Syahida Che Dzul-Kifli

Fatimah Abdul Razak

Anuar Ishak

Universiti Kebangsaan Malaysia, Selangor, Malaysia

All papers have been peer reviewed.



Melville, New York, 2014
AIP Proceedings

Volume 1602

Editors

Wan Zawiah Wan Zin
Syahida Che Dzul-Kifli
Fatimah Abdul Razak
Anuar Ishak

School of Mathematical Sciences
Faculty of Science and Technology
Universiti Kebangsaan Malaysia
43600 UKM Bangi, Selangor
Malaysia

E-mail: w_zawiah@ukm.edu.my
syahida@ukm.edu.my
fatima84@ukm.edu.my
anuar_mi@ukm.edu.my

Authorization to photocopy items for internal or personal use, beyond the free copying permitted under the 1978 U.S. Copyright Law (see statement below), is granted by the AIP Publishing LLC for users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$30.00 per copy is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923, USA: <http://www.copyright.com>. For those organizations that have been granted a photocopy license by CCC, a separate system of payment has been arranged. The fee code for users of the Transactional Reporting Services is: 978-0-7354-1236-1/14/\$30.00



© 2014 AIP Publishing LLC

No claim is made to original U.S. Government works.

Permission is granted to quote from the AIP Conference Proceedings with the customary acknowledgment of the source. Republication of an article or portions thereof (e.g., extensive excerpts, figures, tables, etc.) in original form or in translation, as well as other types of reuse (e.g., in course packs) require formal permission from AIP Publishing and may be subject to fees. As a courtesy, the author of the original proceedings article should be informed of any request for republication/reuse. Permission may be obtained online using RightsLink. Locate the article online at <http://proceedings.aip.org>, then simply click on the RightsLink icon/"Permissions/Reprints" link found in the article abstract. You may also address requests to: AIP Publishing Office of Rights and Permissions, Suite 300, 1305 Walt Whitman Road, Melville, NY 11747-4300, USA; Fax: 516-576-2450; Tel.: 516-576-2268; E-mail: rights@aip.org.

ISBN 978-0-7354-1236-1
ISSN 0094-243X
Printed in the United States of America

AIP Conference Proceedings, Volume 1602
Proceedings of the 3rd International Conference on Mathematical Sciences

Table of Contents

Preface: 3rd International Conference on Mathematical Sciences Wan Zawiah Wan Zin, Syahida Che Dzul-Kifli, Fatimah Abdul Razak, and Anuar Ishak	1
APPLIED MATHEMATICS	
A permutation parallel algorithm under exchange restriction with message passing interface Sharmila Karim, Zurni Omar, and Haslinda Ibrahim	3
Bifurcation of rupture path by linear and cubic damping force Dennis L. C. C., Chew X. Y., and Lee Y. C.	10
Block multistep methods based on rational approximants Teh Yuan Ying, Zurni Omar, and Kamarun Hizam Mansor	15
Boundary layer flow and heat transfer past a shrinking sheet in a copper-water nanofluid Nur Liyana Aleng, Norfifah Bachok, Norihan Md. Arifin, and Anuar Ishak	22
Challenging of path planning algorithms for autonomous robot in known environment R. N. Farah, N. Irwan, Raja Lailatul Zuraida, Umairah Shaharum, and Hafiz Mohd Hanafi@Omar	29
Characterization of essential proteins based on network topology in proteins interaction networks Sakhinah Abu Bakar, Javid Taheri, and Albert Y. Zomaya	36
Comparing linear and nonlinear differential equations of differential transformation method by other numerical methods Che Haziqah Che Hussin, Adem Kilicman, and Arif Mandangan	43
Compression-RSA technique: A more efficient encryption-decryption procedure Arif Mandangan, Loh Chai Mei, Chang Ee Hung, and Che Haziqah Che Hussin	50
Estimation of information theoretic measures on the Ising model Fatimah Abdul Razak and Henrik Jeldtoft Jensen	56

Flood control project selection using an interval type-2 entropy weight with interval type-2 fuzzy TOPSIS Nurnadiyah Zamri and Lazim Abdullah	62
Fourth-order solutions of nonlinear two-point boundary value problems by Newton-HSSOR iteration Jumat Sulaiman, Mohd. Khatim Hasan, Mohamed Othman, and Samsul Ariffin Abdul Karim	69
Free convection boundary layer flow near the lower stagnation point of a solid sphere with convective boundary conditions in a micropolar fluid Hamzeh Taha Alkawasbeh, Mohd Zuki Salleh, Razman Mat Tahar, Roslinda Nazar, and Ioan Pop	76
Functional data analysis on ground reaction force of military load carriage increment Wan Rozita Wan Din and Azmin Sham Rambely	83
Hopf bifurcation in Hutchinson's equation with distributed delay I. Darti	89
Improved nonlinear prediction method Nur Hamiza Adenan and Mohd Salmi Md Noorani	94
Kinematic analysis of rope skipper's stability Nor Atikah Ab Ghani and Azmin Sham Rambely	100
Linear fixed point function for solving system of polynomial equations Hafizudin Mohamad Nor, Ahmad Izani Md. Ismail, and Ahmad Abdul Majid	105
Mathematical modelling for the drying method and smoothing drying rate using cubic spline for seaweed <i>Kappaphycus Striatum</i> variety <i>Durian</i> in a solar dryer M. K. M Ali, M. H. Ruslan, M. S. Muthuvalu, J. Wong, J. Sulaiman, and S. Md. Yasir	113
Maximum number of limit cycles of a general Lienard equation Hero WaisiSalih and Zainal Abdul Aziz	121
MHD stagnation-point flow and heat transfer over a permeable stretching/shrinking sheet Fadzilah Md Ali, Roslinda Nazar, Norihan Arifin, and Ioan Pop	125

Mixed convection boundary-layer flow near the stagnation-point on a vertical surface in a nanofluid	132
Anisah Dasman, Noor Adila Othman, Salimah Ahmad, Nor Azizah Yacob, and Anuar Ishak	
Mixed convection flow about a solid sphere with constant heat flux embedded in a porous medium filled by a nanofluid: Buongiorno-Darcy model	139
Leony Tham, Roslinda Nazar, and Ioan Pop	
Modified multistep method based on interpolation for solving ordinary differential problem	146
Azman Ismail, Rokiah@Rozita Ahmad, Ummul Khair Salma Din, and Mohd Rosli A. Hamid	
Natural convection and viscous dissipation in a square porous enclosure using a thermal nonequilibrium model	151
Abeer Alhashash, Habibis Saleh, and Ishak Hashim	
New results on the W-weighted Drazin inverse	157
M. Nikuie and M. Z. Ahmad	
Numerical investigation of mixed convection on a stagnation point flow past a stretching vertical surface with convective boundary conditions	163
M. K. A. Mohamed and M. Z. Salleh	
Numerical solution of differential algebraic equations (DAEs) by mix-multistep method	170
Yong Faezah Rahim, Mohamed Suleiman, and Zarina Bibi Ibrahim	
Numerical solution of the free convection boundary layer flow over a horizontal circular cylinder with convective boundary conditions	179
Norhafizah Md Sarif, Mohd Zuki Salleh, Razman Mat Tahar, and Roslinda Nazar	
Numerical solutions for linear Fredholm integral equations of the second kind using 2-point half-sweep explicit group method	186
Mohana Sundaram Muthuvalu, Sarat Chandra Dass, Beh Hoe Guan, Dennis Ling Chuan Ching, and Jumat Sulaiman	
Numerical solutions of three-dimensional boundary layer flow and heat transfer past a permeable shrinking surface in a Cu-water nanofluid	192
Mohd Amin Mohd Noor, Roslinda Nazar, Khamisah Jafar, and Ioan Pop	

On oscillation of nonlinear second order differential equations Ambarka Abdalla Salhin, Ummul Khair Salma Din, Rokiah Rozita Ahmad, and Mohd Salmi Md Noorani	199
Perona Malik anisotropic diffusion model using Peaceman Rachford scheme on digital radiographic image Suhaila Abd Halim, Rohayu Abd Razak, Arsmah Ibrahim, and Yupiter HP Manurung	208
Prediction of single stage limit language and adult language via Yusof-Goode approach Wen Li Lim, Yuhani Yusof, and Norhayati Rosli	215
Prediction on carbon dioxide emissions based on fuzzy rules Herrini Pauzi and Lazim Abdullah	222
Radiation and porosity effects on the magnetohydrodynamic flow near a vertical plate that applies shear stress to the fluid with mass diffusion Arshad Khan, Ilyas Khan, and Sharidan Shafie	227
Roles of the influential parameters in the incineration process using centrality concept of graph theory W. A. Awatif, B. Sabariah, M. Rashid, and M. Normah	233
Runge-Kutta method for wall shear stress of blood flow in stenosed artery Izyan Syazana Awaludin and Rokiah@Rozita Ahmad	240
Separability criteria and method of measurement for entanglement Siti Munirah Mohd, Bahari Idrus, and Muriati Mukhtar	246
Some relations between two stages DNA splicing languages Mohammad Hassan Mudaber, Yuhani Yusof, and Mohd Sham Mohamad	254
Steady fluid flow and heat transfer over an exponentially shrinking sheet with partial slip Rajesh Sharma, Anuar Ishak, and Ioan Pop	260
Stagnation-point flow over a nonlinearly stretching/shrinking sheet in a micropolar fluid Nor Azizah Yacob and Anuar Ishak	266

A new steepest descent method Zubai'ah Zainal Abidin, Mustafa Mamat, Mohd Rivaie, and Ismail Mohd	273
The double scale convergence for problem of dissipative evolution in periodically perforated environment Dumitrache Mihaela and Gheldiu Camelia	279
The global convergence properties of a conjugate gradient method Osman Omer, Mustafa Mamat, Abdelrhman Abashar, and Mohd Rivaie	286
The proof of sufficient descent condition for a new type of conjugate gradient methods Abdelrhman Abashar, Mustafa Mamat, Mohd Rivaie, Ismail Mohd, and Osman Omer	296
Unscented Kalman filtering for wave energy converters system identification Mohd Aftar Abu Bakar, David A. Green, Andrew V. Metcalfe, and Noratiqah Mohd Ariff	304
Unsteady boundary layer flow and heat transfer over a stretching sheet with a convective boundary condition in a nanofluid Syahira Mansur and Anuar Ishak	311
Unsteady separated stagnation-point flow with suction towards a stretching sheet Lok Yian Yian, Syakila Ahmad, and Ioan Pop	317
Utilizing QR decomposition for solving singular fuzzy linear systems M. Nikuie and M. Z. Ahmad	323
A protocol of rope skipping exercise for primary school children: A pilot test A. N. M. Radzi, A. S. Rambely, and K. Chellapan	330
Automated mango fruit assessment using fuzzy logic approach Suzanawati Abu Hasan, Teoh Yeong Kin, Suraiya Sauddin@Sa'duddin, Azlan Abdul Aziz, Mahmod Othman, Ab Razak Mansor, and Vincent Parnabas	335
Computing distance using internal axis-aligned bounding-box for nearly intersected objects Hamzah Asyrani Sulaiman, Abdullah Bade, and Mohd Harun Abdullah	343
Dynamics of two nonlinear oligopoly models Adyda Ibrahim	350

The application of peridynamic method on prediction of viscoelastic materials behaviour N. Nikabdullah, M. A. Azizi, R. Alebrahim, S. S. K. Singh, and Elwaleed A. K.	357
Free convection on heated horizontal circular cylinder in presence of heat generation Najahulfazliah Zainuddin, Ishak Hashim, Muhaimin Ismoen, and Rozaini Roslan	364
Line clipping based on parallelism approach and midpoint intersection Adel Salem Abdullah Hattab and Yuhanis Yusof	371
Stability analysis of the Euler discretization for SIR epidemic model Agus Suryanto	375
Stagnation point flow over a stretching/shrinking cylinder with prescribed surface heat flux Najwa Najib, Norfifah Bachok, and Norihan Md. Arifin	380
Oscillation theory for neutral delay differential equations with variable coefficients Fatima N. Ahmed, Rokiah Rozita Ahmad, Ummul Khair Salma Din, and Mohd Salmi Md Noorani	387
Optimal series solution for mixed convection flow of third grade viscoelastic fluid in a channel with walls transpiration Mohammed Abdulhameed, Ishak Hashim, Habibi Saleh, and Rozaini Roslan	393
Optimization of Spinal Muscular Atrophy subject's muscle activity during gait Gazlia Umat and Azmin Sham Rambely	408
Parametric approach for an absolute value linear fractional programming with interval coefficients in the objective function M. Borza, A. S. Rambely, and M. Saraj	415
Three-dimensional viscous flow over an unsteady permeable stretching/shrinking sheet Mohd Ezad Hafidz Hafidzuddin, Roslinda Nazar, Norihan Md Arifin, and Ioan Pop	422
Surface interpolation using partial differentiation equation with positivity preserving cubic said-ball curves boundary condition Ahmed Kherd, Azizan Saaban, and Noraziah Haji Man	429
Boundary layer flow and heat transfer past a moving plate with suction and injection Anuar Ishak, Roslinda Nazar, and Ioan Pop	435

Mixed convection boundary layer flow over a stretching vertical sheet in a thermally stratified fluid	443
Anuar Ishak, Roslinda Nazar, and Ioan Pop	

ACTUARIAL SCIENCE

A simulation model for the determination of tabarru' rate in a family takaful	449
Hamizun bin Ismail	

Empirical application of normal mixture GARCH and value-at-risk estimation	453
Zetty Ain Kamaruzzaman and Zaidi Isa	

Empirical study on impact of demographic and economic changes on pension cost	460
Shaira Yusof and Rose Irnawaty Ibrahim	

Prediction of interest rate using CKLS model with stochastic parameters	467
Khor Chia Ying and Pooi Ah Hin	

The Lexis plot for run-off non-life insurance companies in United Kingdom	473
Humaida Banu Samsudin	

Static vs stochastic optimization: A case study of FTSE Bursa Malaysia sectorial indices	480
Nur Jumaadzan Zaleha Mamat, Saiful Hafizah Jaaman, and Rokiah@Rozita Ahmad	

Smoothing two-dimensional Malaysian mortality data using P-splines indexed by age and year	487
Halim Shukri Kamaruddin and Noriszura Ismail	

MATHEMATICS EDUCATION

Teaching calculus using module based on cooperative learning strategy	497
Norazman Arbin, Sazelli Abdul Ghani, and Firdaus Mohamad Hamzah	

The relationship between English language learning strategies and gender among pre-university students: An overview of UMS	502
Johannah Jamalul Kiram, Jumat Sulaiman, Suyansah Swanto, and Wardatul Akmam Din	

Blooms' separation of the final exam of Engineering Mathematics II: Item reliability using Rasch measurement model	508
Norain Farhana Ahmad Fuaad, Zulkifli Mohd Nopiah, Norgainy Mohd Tawil, Haliza Othman, Izamarlina Asshaari, Mohd Hanif Osman, and Nur Arzilah Ismail	

OPERATIONAL RESEARCH

A new conjugate gradient method for unconstrained optimization with sufficient descent Nurul Hajar Mohd Yusoff, Mustafa Mamat, Mohd Rivaie, and Ismail Mohd	514
A new modification of Hestenes-Stiefel method with descent properties Norrlaili Shapiee, Mohd Rivaie, Mustafa Mamat, and Ismail Mohd	520
Fletcher Reeves like CG formula approach on Broyden family update A. Z. M. Sofi, M. Mamat, I. Mohd, and M. A. H. Ibrahim	527
Linear versus quadratic portfolio optimization model with transaction cost Norhidayah Bt Ab Razak, Karmila Hanim Kamil, and Siti Masitah Elias	533
Minimizing travel claims cost with minimal-spanning tree model Mohd Helmi Jamalluddin, Mohd Azrul Jaafar, Mohd Iskandar Amran, Mohd Sharizal Ainul, Aqmar Hamid, Zafirah Mohd Mansor, and Zulkifli Mohd Nopiah	541
Multiobjective fuzzy stochastic linear programming problems with inexact probability distribution Abdulqader Othman Hamadameen and Zaitul Marlizawati Zainuddin	546
Operator performance evaluation using multi criteria decision making methods Ruzanita Mat Rani, Wan Rosmanira Ismail, and Siti Fatimah Razali	559
Review of feed forward neural network classification preprocessing techniques Roya Asadi and Sameem Abdul Kareem	567
Solving unconstrained optimization with a new type of conjugate gradient method Syazni Shoid, Mohd Rivaie, Mustafa Mamat, and Ismail Mohd	574
The relationship between budget allocated and budget utilized of faculties in an academic institution Wan Noor Hayatie Wan Abdul Aziz, Rossidah Wan Abdul Aziz, Adibah Shuib, and Nor Faezah Mohamad Razi	580

A model for routing problem in quay management problem Mourad Zirour, Ahmed Oughalime, Choong-Yeun Liong, Wan Rosmanira Ismail, and Khairuddin Omar	587
Heuristic for vehicle routing problem with release and due dates Farhana Johar, Chris Potts, and Julia Bennell	594
PURE MATHEMATICS	
Global optimization using homotopy with 2-step predictor-corrector method Kerk Lee Chang and Rohanin Bt. Ahmad	601
A new concept of similarity measure for IT2FS TOPSIS and its use in decision making Adawiyah Otheman and Lazim Abdullah	608
A new numerical approach for uniquely solvable exterior Riemann-Hilbert problem on region with corners Zamzana Zamzamid, Ali H. M. Murid, and Munira Ismail	615
A quotient space approach to model nanotori and determine their symmetry groups Mark Loyola, Ma. Louise Antonette De Las Peñas, Eko Budi Santoso, and Grace Estrada	620
An extension of first order limit language Muhammad Azrin Ahmad, Nor Haniza Sarmin, Fong Wan Heng, and Yuhani Yusof	627
Automata for subgroups Fong Wan Heng, Gan Yee Siang, Nor Haniza Sarmin, and Sherzod Turaev	632
Automorphism group of nonabelian groups of order p^3 Nor Haniza Sarmin and Yasamin Barakat	640
Bounded harmonic mappings related to starlike functions Durdane Varol, Melike Aydoğan, and Yaşar Polatoğlu	644
Cesáro partial sums of concave univalent functions Ibtisam Aldawish and Maslina Darus	650

Circulant solutions of the matrix equations $AX=C$ and $AXB=C$ Aldous Cesar F. Bueno	657
Crystallographic flat origami with three flat foldability types of the generating unit Eduard C. Taganap, Ma. Louise Antonette N. De Las Peñas, and Teofina A. Rapanut	662
Decomposition theorem in ideal topological spaces W. AL-omeri, Mohd. Salmi Noorani, and A. AL-Omari	668
Fixed point results of T-Kannan contraction on generalized distance in cone metric spaces Zaid Mohammed Fada'il and Abd Ghafur Bin Ahmad	680
Generalized the Pommerenke integral operators Rabha W. Ibrahim and Maslina Darus	684
Homological functor of a torsion free crystallographic group of dimension five with a nonabelian point group Tan Yee Ting, Nor'ashiqin Mohd. Idrus, Rohaidah Masri, Nor Haniza Sarmin, and Hazzirah Izzati Mat Hassim	691
Infective disease processes based on fractional differential equation Rabha W. Ibrahim and Maslina Darus	696
Integral representations of metacyclic groups over a local field Noor Asma'Adny Mohd Adnan, Nor Haniza Sarmin, Nor Muhainiah Mohd Ali, Zainab Yahya, and Hamisan Rahmat	704
Isomorphism classes of 10-dimensional filiform Leibniz algebras Suzila Mohd Kasim, Isamiddin S. Rakhimov, and Sharifah Kartini Said Husain	708
Mappings on multiaspect fuzzy soft classes Nor Hashimah Sulaiman and Daud Mohamad	716
Non-commutative generalized Latin squares of order 5 with certain number of distinct elements H. V. Chen, A. Y. M. Chin, and S. Sharmini	723

On derivations of low dimensional associative dialgebras Mohamed Abubakar, I. S. Rakhimov, and I. M. Rikhsiboev	730
On isomorphism classes of a subclass of filiform leibniz algebras in dimension 10 N. S. Mohamed, S. K. Said Husain, and I. S. Rakhimov	736
On quasi-symmetry of conjugacies between critical circle maps with break points Sokhobiddin Akhatkulov, Mohd Salmi Md Noorani, Akhtam Dzhililov, and Habibulla Akhadkulov	744
On smoothness of conjugations between break equivalent circle maps Habibulla Akhadkulov, Mohd Salmi Md Noorani, and Sokhobiddin Akhatkulov	749
On some homological functors of Bieberbach group of dimension four with dihedral point group of order eight Siti Afiqah Mohammad, Nor Muhainiah Mohd Ali, Nor Haniza Sarmin, Nor'ashiqin Mohd Idrus, and Rohaidah Masri	754
Probabilistic simple splicing systems Mathuri Selvarajoo, Fong Wan Heng, Nor Haniza Sarmin, and Sherzod Turaev	760
q-analogue of Ruscheweyh operator and its applications to certain subclass of uniformly starlike functions Huda Aldweby and Maslina Darus	767
Q-fuzzy soft matrix and its application Fatma Adam and Nasruddin Hassan	772
Quasiconformal harmonic mappings related to Janowski alpha-spirallike functions Melike Aydoğan and Yaşar Polatoğlu	779
A subclasses of harmonic functions defined by multiplier transformation Khalifa Zayid Al-Shaqsi	785
Solvability criteria for cubic equations over Z_2^* Mansoor Saburov and Mohd Ali Khameini Ahmad	792

Solving fuzzy polynomial equation and the dual fuzzy polynomial equation using the ranking method Nurhakimah Ab. Rahman and Lazim Abdullah	798
Some new properties of modified Jacobsthal and Jacobsthal-Lucas numbers Julius Fergy T. Rabago	805
Some properties of (fw) and (fwr)-supplemented module Majid Mohammed Abed, Mohamed Abubakar, and Abd Ghafur Ahmad	819
Study on new class of convex functions Khadeejah Rasheed Alhindi and Maslina Darus	826
The analysis of crystallographic symmetry types in finite groups Atikah Mohd Sani, Nor Haniza Sarmin, Nooraishikin Adam, and Siti Norziahidayu Amzee Zamri	834
An enumeration on the structure of nonrepeated triples in a three-fold triple system Haslinda Ibrahim, Sharmila Karim, and Mohd Saiful Adli Mohamad	844
The generalization of the exterior square of a Bieberbach group Rohaidah Masri, Hazzirah Izzati Mat Hassim, Nor Haniza Sarmin, Nor Muhainiah Mohd Ali, and Nor'ashiqin Mohd Idrus	849
The generative power of weighted one-sided and regular sticker systems Gan Yee Siang, Fong Wan Heng, Nor Haniza Sarmin, and Sherzod Turaev	855
The orbit graph for some finite solvable groups S. M. S. Omer, N. H. Sarmin, and A. Erfanian	863
Tripled fixed point results in cone metric spaces with c-distance Sahar Mohammad Abusalim and Mohd Salmi Md Noorani	870
Watson-Crick Petri net languages with finite sets of final markings Nurhidaya Mohamad Jan, Fong Wan Heng, Nor Haniza Sarmin, and Sherzod Turaev	876

Why even almost perfect number should not be divisible by 3? A non - almost perfect criterion for even positive integers $n \neq 2^k$ John Rafael M. Antalan	881
A class of meromorphically analytic functions related to Cho-Kwon-Srivastava operator with applications to generalized hypergeometric functions F. Ghanim and M. Darus	886
New subclasses of bi-univalent functions involving polylogarithm functions Saibah Siregar and Maslina Darus	893
A study on arithmetical functions and the prime number theorem Yeoh Saw Imm	899
Generalized $\Psi\rho$-closed sets and generalized $\Psi\rho$-open sets in double fuzzy topological spaces Fatimah. M. Mohammed, M. S. M. Noorani, and A. Ghareeb	909
Reliability analysis and prediction of mixed mode load using Markov Chain Model N. Nikabdullah, S. S. K. Singh, R. Alebrahim, M. A. Azizi, Elwaleed A. K, and M. S. M. Noorani	918
QUALITY AND PRODUCTIVITY	
Application of quality measurement tools in determining the quality of drinking water Nora Muda, Norashikin Ramli, and Zainol Mustafa	925
Assessing efficiency and effectiveness of Malaysian Islamic banks: A two stage DEA analysis Norbaizura Kamarudin, Wan Rosmanira Ismail, and Muhammad Azri Mohd	934
Level of understanding of innovation among the Malaysian executives Norkisme Zainal Abidin, Nur Riza Mohd Suradi, Faridatulazna Shahabuddin, Zainol Mustafa, and Wan Rosmanira Ismail	939
Modeling quality attributes and metrics for web service selection Meysam Ahmadi Oskooei, Salwani binti Mohd Daud, and Fang-Fang Chua	945

STATISTICS

A nonlinear model of gold production in Malaysia Norashikin Ramli, Nora Muda, and Mohd Rozi Umor	953
Adaptive and automatic trimming in testing the equality of two group case Suhaida Abdullah, Sharipah Soaad Syed Yahaya, and Abdul Rahman Othman	959
Bivariate Poisson-weighted exponential distribution with applications Hossein Zamani, Pouya Faroughi, and Noriszura Ismail	964
Dependence values of Asia-Pacific stock markets Ruzanna Ab Razak and Noriszura Ismail	969
Development of car theft crime index in peninsular Malaysia Malina Zulkifli, Noriszura Ismail, Ahmad Mahir Razali, and Maznah Mat Kasim	975
Fisher information of the regression parameters using median ranked set sampling Mohammad Al-Rawwash, Mohd Alodat, and Inad Nawajah	983
Gold price effect on stock market: A Markov switching vector error correction approach Phoong Seuk Wai, Mohd Tahir Ismail, and Sek Siok Kun	990
Impact of global financial crisis on stylized facts between energy markets and stock markets Tan Kim Leng, Chin Wen Cheong, and Tan Siow Hooi	994
Lee-Carter state space modeling: Application to the Malaysia mortality data W. H. Wan Zakiyatussariroh, Z. Mohammad Said, and M. R. Norazan	1002
Markov Chain Monte Carlo estimation for Bayesian approach based on right censored data Alomari Mohammed Ahmed	1009
Maximum likelihood estimation of finite mixture model for economic data Seuk-Yen Phoong and Mohd Tahir Ismail	1016

Modified H-statistic with adaptive Winsorized mean in two groups test Kian Wooi Teh, Suhaida Abdullah, Sharipah Soaad Syed Yahaya, and Zahayu Md Yusof	1021
Odd and even sums of generalized Fibonacci numbers by matrix methods C. K. Ho and Chin-Yoon Chong	1026
On the sum of generalized Fibonacci sequence Chin-Yoon Chong and C. K. Ho	1033
Ordinary kriging base on OLS-WLS fitting semivariogram: Case of gold vein precipitation Nur Ali Amri, Abdul Aziz Jemain, and Wan Fuad Wan Hassan	1039
Pedestrian dynamics via Bayesian networks Ibrahim Venkat, Ahamad Tajudin Khader, and K. G. Subramanian	1046
Performance analysis of rotating disc contactor (RDC) column Wan Nurul Aiffah, Siti Aisyah, Nor Fashihah, and Khairil Anuar	1050
Performance of Brownian-motion-generated universal portfolios Choon Peng Tan and Sook Theng Pang	1059
Prediction of daily rainfall Pooi Ah Hin	1066
Premium analysis for copula model: A case study for Malaysian motor insurance claims Yulia Resti, Noriszura Ismail, and Saiful Hafizah Jaaman	1072
Price returns efficiency of the Shanghai A-Shares Wang Jiang Long, Saiful Hafizah Jaaman, and Humaida Banu Samsudin	1078
Robust estimation procedure in panel data model Nurul Sima Mohamad Shariff and Nor Aishah Hamzah	1085
Robust principal component analysis in water quality index development Zalina Mohd Ali, Noor Akma Ibrahim, Kerrie Mengersen, Mahendran Shitan, and Hafizan Juahir	1091
Survival analysis of cancer patients with multiple endpoints using global score test methodology Zakiyah Zain and John Whitehead	1098

The effect of high leverage points on the logistic ridge regression estimator having multicollinearity Syaiba Balqish Ariffin and Habshah Midi	1105
The selection criteria in determining the robustness of <i>t</i>-test Nor Aishah Ahad and Sharipah Soaad Syed Yahaya	1112
The value-at-risk evaluation of Brent's crude oil market Chin Wen Cheong, Zaidi Isa, Khor Chia Ying, and Ng Sew Lai	1118
Universal portfolios generated by Toeplitz matrices Choon Peng Tan, Sin Yen Chu, and Wei Yeing Pan	1126
Comparative assessment of rule-based and Bayes' theorem as inference engines in diagnosing symptoms for Islamic medication expert system H. Daud, R. Razali, T. J. Low, M. Sabdin, and S. Z. Mohd Zafrul	1132
Comparison between empirical mode decomposition and local linear regression in presence of boundaries Abobaker M. Jaber and Mohd Tahir Ismail	1139
Estimation of count data using mixed Poisson, generalized Poisson and finite Poisson mixture regression models Hossein Zamani, Pouya Faroughi, and Noriszura Ismail	1144
The efficiency of reweighted minimum vector variance Hazlina Ali, Sharipah Soaad Syed Yahaya, and Zurni Omar	1151
Testing the equality of students' performance using Alexander-Govern test with adaptive trimmed means Suhaida Abdullah, Sharipah Soaad Syed Yahaya, and Zahayu Md Yusof	1157
The construction of control chart for PM10 functional data Norshahida Shaadan, Abdul Aziz Jemain, and Sayang Mohd Deni	1161

Stochastic growth logistic model with aftereffect for batch fermentation process Norhayati Rosli, Tawfiqullah Ayoubi, Arifah Bahar, Haliza Abdul Rahman, and Madihah Md Salleh	1168
Association between air pollution and hospital admission: Case study at three monitoring stations in Malaysia Marina Zahari, Wan Zawiah Wan Zin@Ibrahim, Noriszura Ismail, and Tan Hui Ni	1178
An efficient automatic firearm identification system Zun Liang Chuan, Choong-Yeun Liong, Abdul Aziz Jemain, and Nor Azura Md. Ghani	1185
Statistical analysis on 1-dimensional and 2-dimensional thermal dissipation for nickel metal hydride battery system Mohammad Firdaus Abu Hashim, Sivakumar Ramakrishnan, and Ahmad Azmin Mohamad	1190
Design of experiment (DOE) study of biodegradable magnesium alloy synthesized by mechanical alloying using fractional factorial design Emee Marina Salleh, Sivakumar Ramakrishnan, and Zuhailawati Hussain	1196
A new approach in measuring graduate employability skills Mohd Hafiz Zakaria, Bidin Yatim, and Suzilah Ismail	1202
Time-series identification of fatigue strain data using decomposition method Z. M. Nopiah, A. Lennie, M. Z. Nuawi, S. Abdullah, A. Z. Nuryazmin, and M. N. Baharin	1209
A preliminary study on drought events in Peninsular Malaysia Wan Zawiah Wan Zin, Siti Aishah Nahrawi, Abdul Aziz Jemain, and Marina Zahari	1217
Diagonally implicit Runge-Kutta method of order four with minimum phase-lag for solving first order linear ODEs Fudziah Ismail and Mohammed M. Salih	1226