9th International Conference on Applied Physics and Mathematics (ICAPM 2019)

Journal of Physics: Conference Series Volume 1298

Bangkok, Thailand 21 - 23 January 2019

ISBN: 978-1-5108-9575-1

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.

This work is licensed under a Creative Commons Attribution 3.0 International Licence. Licence details: http://creativecommons.org/licenses/by/3.0/.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2021)

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

MATHEMATICAL THEORY AND CALCULATION

A CLASS OF WEIGHTED POINT SCHEMES FOR THE GRÜNWALD IMPLICIT FINITE DIFFERENCE SOLUTION OF TIME-FRACTIONAL PARABOLIC EQUATIONS USING	
KSOR METHOD	1
NEWTON METHOD WITH AOR ITERATION FOR FINDING LARGE SCALE UNCONSTRAINED MINIMIZER WITH TRIDIAGONAL HESSIAN MATRICES	7
THE FRONTIER OF ESTIMATOR IN AGRICULTURE ECONOMICS: APPLICATION FOR RICE PRODUCTS IN 7 TOP COUNTRIES IN ASIA	14
DIFFERENTIAL EQUATIONS LEARNING FROM SPATIAL-TIME SERIES DATA BY THE FAST ITERATIVE SHRINKAGE-THRESHOLDING ALGORITHM	21
MEASUREMENT OF THE CELL DENSITY OF MICROALGAE BY AN OPTICAL METHOD	28
MATHEMATICAL MODELING AND METHODS	
DELAY-INDUCED STABILITY SWITCHES IN AN SIRS EPIDEMIC MODEL WITH SATURATED INCIDENCE RATE AND TEMPORARY IMMUNITY	33
COMPARING THE SANDPILE MODEL WITH TARGETED TRIGGERING AND THE OLAMI-FEDER-CHRISTENSEN MODEL AS MODELS OF SEISMICITY USING RECURRENCE NETWORK ANALYSIS	41
COMPUTATION OF CUSP BIFURCATION POINT IN A TWO-PREY ONE PREDATOR MODEL USING LAGRANGE MULTIPLIER METHOD	48
NONLINEAR RANDOM DYNAMICAL MODEL FOR THE STOCK MARKET	55
ALGORITHM DESIGN AND OPTIMIZATION	
REVISED FLOYD-WARSHALL ALGORITHM TO FIND OPTIMAL PATH IN SIMILARITY-WEIGHT NETWORK AND ITS APPLICATION IN THE ANALYSIS OF GLOBAL VALUE CHAIN	60

DIFFERENCES BETWEEN ENGLISH AND CHINESE IN THE IMPLEMENTATION OF THE RSA ALGORITHM	66
Duoji Jiang, Kwame Yankson	
IMAGE PROCESSING AND DATA CALCULATION	
A NEW METHOD OF HUMAN BRAIN SEGMENTATION UTILIZING A CLASS OF POWER SERIES SOLUTIONS OF FRACTIONAL DIFFERENTIAL	73
IMAGE PROCESSING OF CASE STUDY OF SOLAR RADIO BURST TYPE III AND TYPE IV BURST USING SUNPY Z. S. Hamidi, N. Ramli, N. N. M. Shariff	78
IMAGE FEATURE EXTRACTION METHOD TO ANALYZE SOFT-MODE TURBULENCE FLUCTUATION IN NEMATIC LIQUID CRYSTAL	85
OPTIMIZATION OF PATHOLOGY DIAGNOSIS BY APPLYING CHAOS THEORY AND FRACTAL ANALYSIS TO EEG-SIGNAL PROCESSING	91
IMPACT OF VEHICULAR LATERAL PLACEMENT ON SPEED UNDER NON-LANE DISCIPLINE TRAFFIC STREAM	97
<u>ASTROPHYSICS</u>	
AN ANALYSIS OF ACTIVE REGION AS A TRIGGER OF SOLAR FLARES	104
AN ANALYSIS ON THE FORMATION OF SOLAR RADIO BURST TYPE II, III AND IV BY USING E-CALLISTO, IUGONET AND SPACE WEATHER DATA	109
THE IMPACT ON CLIMATE CHANGE DUE TO THE EFFECT OF GLOBAL ELECTROMAGNETIC WAVES OF SOLAR FLARE AND CORONAL MASS EJECTIONS (CMES) PHENOMENA	115
N Mohamad Ansor, Z S Hamidi, N N M Shariff A PREDICTION MODEL FOR SUPERCONDUCTOR CRITICAL TEMPERATURE USING STEPWISE DISCRIMINANT ANALYSIS BASED ON FEATURE EXTRACTION	121
P C Guo, Wei Li, Z Y Su MATERIAL ANALYSIS AND FLUID MECHANICS	
STRESS INTENSITY FACTOR FOR CRACKS IN BONDED DISSIMILAR MATERIALS	130
ELECTRON TRANSPORT MECHANISMS IN CDSXTE1-X SOLID SOLUTION THIN FILMS PREPARED BY THERMAL EVAPORATION METHOD	136

ELECTROSPINNING TECHNIQUE	143
EFFECT OF SORET AND DUFOUR NUMBERS ON DOUBLE DIFFUSIVE MIXED CONVECTION BOUNDARY LAYER FLOW INDUCED BY A SHRINKING SHEET	148
Siti Suzilliana Putri Mohamed Isa, Norihan Md. Arifin, Umer Farooq MOLECULAR ENGINEERING OF QUINODIMETHANE-BASED DYES WITH DIFFERENT ANCHOR GROUPS FOR DYE SENSITIZED SOLAR CELLS (DSSCS)	162
Jianhao Tang, Yun Gong	103
ON THE OSCILLATORY CONVECTIVE INSTABILITY IN NANOFLUID LAYER WITH TEMPERATURE DEPENDENT VISCOSITY	170
POWER AND CONTROL ENGINEERING	
DESIGN OF THE CONTROL LAW OF LONGITUDINAL ATTITUDE FOR TAIL-SITTER UAV	177
DYNAMIC BEHAVIOUR OF A MONO-PILE WITH SKIRTED TEMPLATE STRUCTURE FOR OFFSHORE WIND-POWER SYSTEM	184
Author Index	