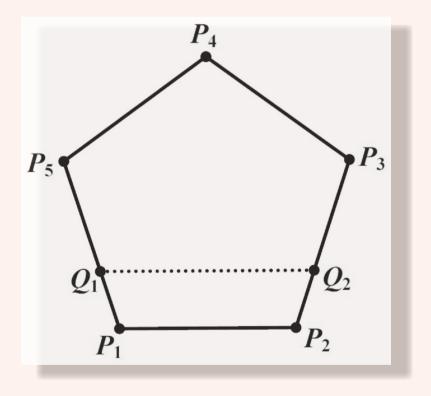




Applied Mathematics





Journal Editorial Board

http://www.scirp.org/journal/am

Editor-in-Chief

Prof. Chris Cannings University of Sheffield, UK

Editorial Board

Prof. Tamer Başar University of Illinois at Urbana-Champaign, USA

Prof. Leva A. Beklaryan Russian Academy of Sciences, Russia

Dr. Aziz Belmiloudi Institut National des Sciences Appliquees de Rennes, France

Dr. Anjan Biswas Delaware State University, USA

Prof. Mark Broom City University, UK

Prof. Amares Chattopadhyay

Dr. Badong Chen

Prof. Ljubomir Ciric

Prof. Jose Alberto Cuminato

Prof. Konstantin Dyakonov

Dr. David Greenhalgh

Indian School of Mines, India

Tsinghua University, China

University of Belgrade, Serbia

University of Sao Paulo, Spain

University of Barcelona, Spain

University of Strathclyde, UK

Prof. Zhiqing HanDalian University of Technology, China

Prof. Anwar H. Joarder King Fahd University of Petroleum and Minerals, Saudi Arabia

Prof. Palle Jorgensen University of Iowa, USA

Dr. Vladimir A. Kuznetsov Bioinformatics Institute, Singapore

Prof. Kil Hyun Kwon Korea Advanced Institute of Science and Technology, South Korea

Prof. Hong-Jian LaiWest Virginia University, USADr. Goran LesajaGeorgia Southern University, USAProf. Tao LuoGeorgetown University, USA

Prof. Addolorata MarascoUniversity of Naples Federico II, ItalyProf. Agassi MelikovNational Aviation Academy, Azerbaijan

Prof. María A. Navascués
University of Zaragoza, Spain
Prof. Alexander S. Rabinowitch
Prof. Yuriy V. Rogovchenko
University of Agder, Norway
University of Agder, Norway

Dr. Epaminondas Sidiropoulos Aristotle University of Thessaloniki, Greece

Prof. Sergei Silvestrov Mälardalen University, Sweden

Prof. Jacob Sturm

Rutgers University, USA

Dr. Zheng Su

Genentech, Inc., USA

Prof. Mikhail Sumin Nizhnii Novgorod State University, Russia

Dr. Chengbo Wang Zhejiang University, China



TABLE OF CONTENTS

Volume 4 Number 10 October	2013
The Change of Physical-Mechanical Properties of Viscoelastic Liquids in Consideration of Nanoparticles	
M. A. Ramazanov, M. S. Aslanov.	1367
Mathematical Neurolaw of Crime and Punishment: The q -Exponential Punishment Function	
T. Yokoyama, T. Takahashi	1371
Application of Functional Operators with Shift to the Study of Renewable Systems When the Reproductive Process Is Described by Integrals with Degenerate Kernels	
O. Karelin, A. Tarasenko, M. Gonzalez-Hernandez.	1376
The Dynamics of Vector-Host Feeding Contact Rate with Saturation: A Case of Malaria in Western Kenya	
J. Wairimu, O. Wandera	1381
In-Place Matrix Inversion by Modified Gauss-Jordan Algorithm	
D. DasGupta	1392
Confounding of Three Binary-Variable Counterfactual Model with DAG	
J. W. Liu, S. Hu.	1397
Variational Iteration Method Solutions for Certain Thirteenth Order Ordinary Differential Equation	IS
T. A. Adeosun, O. J. Fenuga, S. O. Adelana, A. M. John, O. Olalekan, K. B. Alao	1405
Variational Procedure of Deriving Diffusion Equation for Spreading in Porous Media	
K. Logvinova	1412
Matrix Measure with Application in Quantized Synchronization Analysis of Complex Networks with Delayed Time via the General Intermittent Control	
Q. L. Zhang.	1417
Explicit Approximation Solutions and Proof of Convergence of the Space-Time Fractional Advection Dispersion Equations	
E. A. Abdel-Rehim.	1427
On Continuous Programming with Support Functions	
I. Husain, S. K. Shrivastav, A. R. Shah	1441
Existence of Positive Solutions for Boundary Value Problem of Nonlinear Fractional q-Difference Equation	
L. Yang	1450

Copyright © 2013 SciRes.

Applied Mathematics, 2013, 4, 1367-1484

Published Online October 2013 in SciRes (http://www.scirp.org/journal/am/)



GDP Falls as MBA Rises?	
T. N. Cummins	

T. N. Cummins.	1455
Rational Equiangular Polygons	
M. Munteanu, L. Munteanu.	1460
Theoretical Study of Electromagnetic Wave Propagation: Gaussian Bean Method	
E. I. Ugwu, J. E. Ekpe, E. Nnaji, E. H. Uguru	1466
Extended Generalized Riccati Equation Mapping for Thermal Traveling-Wave Distribution in	
Biological Tissues through a Bio-Heat Transfer Model with Linear/Quadratic Temperature-Dep	pendent
Blood Perfusion	

The figure on the front cover is from the article published in Applied Mathematics, 2013, Vol. 4, No. 10, pp. 1460-1465 by Marius Munteanu, Laura Munteanu.

Copyright © 2013 SciRes.

Applied Mathematics (AM)

Journal Information

SUBSCRIPTIONS

The *Applied Mathematics* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$79 per copy.

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@2013 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

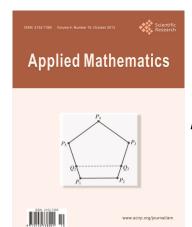
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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 assumes 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: am@scirp.org



Applied Mathematics (AM)

http://www.scirp.org/journal/am

Applied Mathematics (AM) is an international journal dedicated to the latest advancement of applied mathematics. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of applied mathematics.

Subject Coverage

All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

- Applied Probability
- Applied Statistics
- Approximation Theory
- Chaos Theory
- Combinatorics
- Complexity Theory
- Computability Theory
- Computational Methods in Mechanics and Physics
- Continuum Mechanics
- Control Theory
- Cryptography
- Discrete Geometry
- Dynamical Systems
- Elastodynamics

- Evolutionary Computation
- Financial Mathematics
- Fuzzy Logic
- Game Theory
- Graph Theory
- Information Theory
- Inverse Problems
- Linear Programming
- Mathematical Biology
- Mathematical Chemistry
- Mathematical Economics
- Mathematical Physics
- Mathematical Psychology
- Mathematical Sociology

- Matrix Computations
- Neural Networks
- Nonlinear Processes in Physics
- Numerical Analysis
- Operations Research
- Optimal Control
- Optimization
- Ordinary Differential Equations
- Partial Differential Equations
- Probability Theory
- Statistical Finance
- Stochastic Processes
- Theoretical Statistics

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 submissions, please access the website.

E-mail: am@scirp.org

Website and E-mail

http://www.scirp.org/journal/am

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, by delivering superior scientific publications and scientific information solution provider that enable advancement in scientific research.

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, world-wide, 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





Website: http://www.scirp.org Subscription: sub@scirp.org Advertisement: service@scirp.org