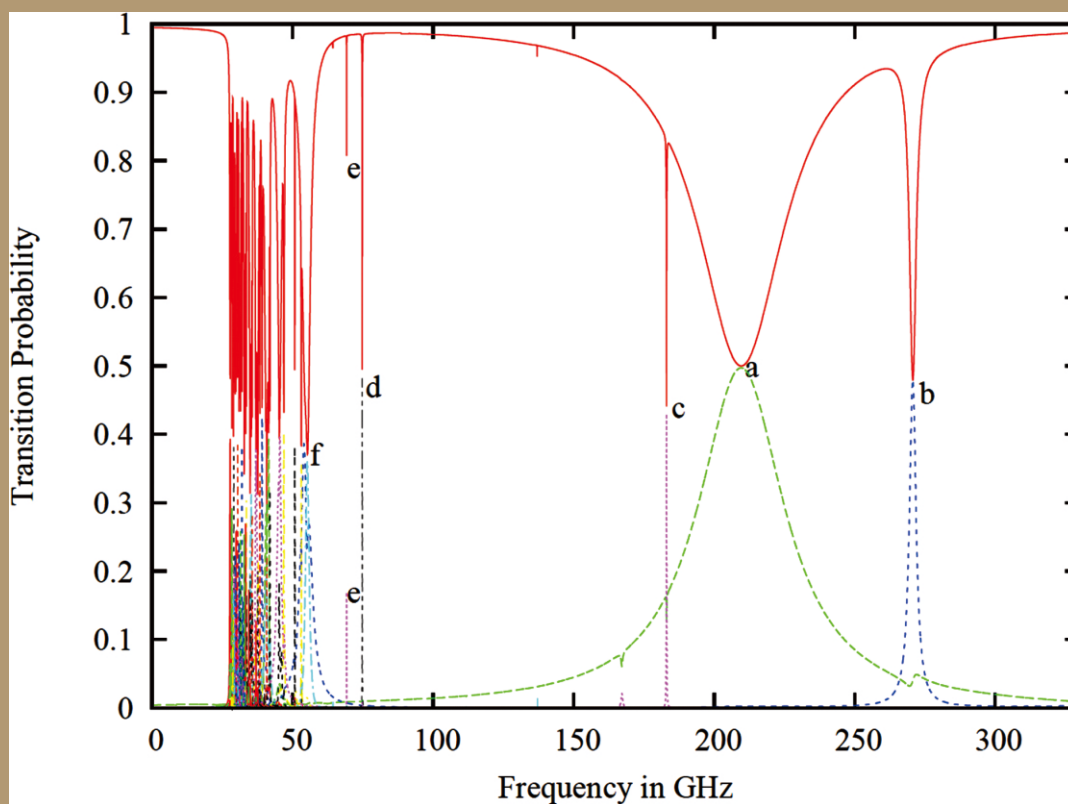




Journal of Modern Physics



ISSN: 2153-1196



9 772153 119007 01

Journal Editorial Board

ISSN: 2153-1196 (Print) ISSN: 2153-120X (Online)

<http://www.scirp.org/journal/jmp>

Editor-in-Chief

Prof. Victor Yashnikov Russian Academy of Sciences, Russia

Executive-Editor-in-Chief

Prof. Marko Markov Research International, Buffalo Office, USA

Editorial Board

Prof. Sadhan Kumar Adhikari Universidade Estadual Paulista, Brazil
Dr. Ksenofontov Alexandre Moscow Engineering Physics Institute, Russia
Prof. Sami M. AL-Jaber AN-Najah National University, Palestine
Prof. Kerim R. Allakhverdiev Institute of Physics Azerbaijan Academy of Sciences, Azerbaijan
Prof. Roberto Oscar Aquilano Universidad Nacional de Rosario, Argentina
Dr. Salvatore Capozziello University of Naples “Federico II”, Italy
Dr. Riccardo Cerulli Gran Sasso National Laboratory, INFN, Italy
Prof. Papadopoulos Demetrios Aristotle University of Thessaloniki, Greece
Dr. Hua-Shu Dou National University of Singapore, Singapore
Prof. Constantin Fetecau “Gh. Asachi” Technical University of Iasi, Romania
Prof. Karo Michaelian National Autonomous University of Mexico, Mexico
Prof. Christophe J. Muller University of Provence, France
Prof. Zdzislaw E. Musielak University of Texas at Arlington, USA
Prof. Luciano Nunziante University of Napoli Federico II, Italy
Prof. Valery Obukhov Tomsk State Pedagogical University, Russia
Prof. Avinash Chandra Pandey University of Allahabad, India
Prof. Richard Saurel University Aix Marseille I, France
Prof. Magnus Willander Linköping University, Sweden
Dr. S. Zerbini University of Trento, Italy

Managing Executive Editor

Prof. Chang Liu Wuhan University, China Email: cliu@acc-lab.whu.edu.cn

Editorial Assistant

Shirley Zhou Scientific Research Publishing, USA Email: jmp@scirp.org

TABLE OF CONTENTS

Volume 3 Number 1

January 2012

Spin, the Classical Theory

R. T. Hammond.....1

Totally Anisotropic Cosmological Models with Bulk Viscosity for Variable G and Λ

S. Ram, M. K. Singh, M. K. Verma.....9

Mechanisms of Proton-Proton Inelastic Cross-Section Growth in Multi-Peripheral Model within the Framework of Perturbation Theory. Part 2

I. Sharf, A. Tykhonov, G. Sokhrannyi, M. Deliyergiyev, N. Podolyan, V. Rusov.....16

I -Mixing Collision in Presence of Microwave Field

U. Arya, B. Dahiya, V. Prasad.....28

The Computation of Scalar Curvature in the Four-State Mixed Spin Model and the Investigation of Its Behavior: A Computational Study

A. Heidari, M. Ghorbani.....37

Symmetry Violation of Time Reversal in Third Order Vertex Angle Renormalization Process of Electromagnetic Interaction

X. C. Mei.....43

Investigations of Ion Confinement by Direct Current Coaxial Glow Discharge

A. Abu-Hashem, M. A. Hassouba, M. M. Masoud.....48

Ultra Low Energy Results and Their Impact to Dark Matter and Low Energy Neutrino Physics

E. Bougamont, P. Colas, J. Derre, I. Giomataris, G. Gerbier, M. Gros, P. Magnier, X. F. Navick, P. Salin, I. Savvidis,
G. Tsiledakis, J. D. Vergados.....57

Cyclic Correlation of Diffuse Reflected Signal with Glucose Concentration and Scatterer Size

J. Solanki, P. Sen, J. T. Andrews, K. K. Thareja.....64

Synthesis and Electrical Characterization of ZrO_2 Thin Films on Si(100)

V. R. Chinchamalature, S. M. Chore, S. S. Patil, G. N. Chaudhari.....69

Phase Shift between Supersymmetric Partner Potentials

S. Mahapatra.....74

Simple Landau Model of the Liquid- R_{II} - R_I Rotator Phases of Alkanes

P. K. Mukherjee, S. Dey.....80

Study of Decoherence of Elementary Gates Implemented in a Chain of Few Nuclear Spins Quantum Computer Model

G. V. López, P. López.....85

Optical Near-Field Study of Ag Nanowires by the Differential Method

M. Z. Chekroun, G. Bassou, L. Salomon, A. Zenati, A. Taalbi, H. Bendaoud, M. Ameri.....102

String Gauge Symmetries in the Conformally Gauge-Fixed Polyakov *D1* Brane Action in the Presence of Background Gauge Fields

U. Kulshreshtha, D. S. Kulshreshtha.....110

On Production of Hadrons in Proton-Proton Collisions at RHIC and LHC Energies and an Approach

P. Guptaroy, G. Sau, S. Bhattacharyya.....116

An Analytical and Numerical Approach to the Self-Consistent Method for Computing the Proportion of F_2^n / F_2^p Using the ^3He and ^3H Nucleuses' Structure Function and EMC Ratio

A. Heidari, M. Ghorbani.....124

The figure on the front cover is from the article published in *Journal of Modern Physics*, 2012, Vol. 3, No. 1, pp. 28-36 by Urvashi Arya, Brijender Dahiya and Vinod Prasad.

Journal of Modern Physics (JMP)

Journal Information

SUBSCRIPTIONS

The *Journal of Modern Physics* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$59 per issue.

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©2012 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.

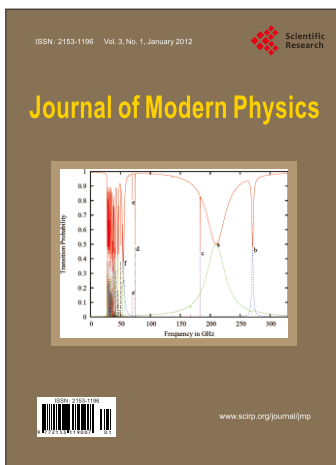
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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 assume 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: jmp@scirp.org



Journal of Modern Physics

ISSN Print: 2153-1196 ISSN Online: 2153-120X

<http://www.scirp.org/journal/jmp>

Journal of Modern Physics (JMP) is an international journal dedicated to the latest advancement of modern physics. 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 modern physics.

Editor-in-Chief

Prof. Victor Yashnikov

Russian Academy of Sciences, Russia

Executive-Editor-in-Chief

Prof. Marko Markov

Research International, Buffalo Office, USA

Editorial Board

Prof. Sadhan Kumar Adhikari
Dr. Ksenofontov Alexandre
Prof. Sami M. AL-Jaber
Prof. Kerim R. Allakhverdiev
Prof. Roberto Oscar Aquilano
Dr. Salvatore Capozziello
Dr. Riccardo Cerulli

Prof. Papadopoulos Demetrios
Dr. Hua-Shu Dou
Prof. Constantin Fetecau
Prof. Karo Michaelian
Prof. Christophe J. Muller
Prof. Zdzislaw E. Musielak
Prof. Luciano Nunziante

Prof. Valery Obukhov
Prof. Avinash Chandra Pandey
Prof. Richard Saurel
Prof. Magnus Willander
Dr. S. Zerbini

Subject Coverage

Journal of Modern Physics publishes original papers including but not limited to the following fields:

Biophysics and Medical Physics
Complex Systems Physics
Computational Physics
Condensed Matter Physics
Cosmology and Early Universe
Earth and Planetary Sciences
General Relativity
High Energy Astrophysics
Instrumentation and Measurement
Interdisciplinary Physics
Materials Sciences and Technology

Mathematical Physics
Mechanical Response of Solids and Structures
New Materials: Micro and Nano-Mechanics and Homogenization
Non-Equilibrium Thermodynamics and Statistical Mechanics
Nuclear Science and Engineering
Physics of Nanostructures
Plasma Physics
Quantum Theory
Relativistic Astrophysics
Theoretical High Energy Physics

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.

Website and E-Mail

<http://www.scirp.org/journal/jmp>

E-mail: jmp@scirp.org