

# Communications in Theoretical Physics

Vol. 60, No. 3, 2013

## Contents

### General

- A Bäcklund Transformation of the Restricted mKdV Flow with a Rosochatius Deformation  
*ZHOU Ru-Guang* ..... 263–265
- A New Solution to the Hirota–Satsuma Coupled KdV Equations by the Dressing Method  
*ZHU Jun-Yi, ZHOU De-Wen, and YANG Juan-Juan* ..... 266–268
- Analytical Approach for Nonlinear Partial Differential Equations of Fractional Order  
*Pradip Roul* ..... 269–277
- Higgs Algebraic Symmetry of Screened System in a Spherical Geometry  
*LI Yan, ZHANG Fu-Lin, GU Rui-Juan, and CHEN Jing-Ling* ..... 278–282
- Quantum Correlations in a Family of Two-Qubit Separable States  
*YE Biao-Liang, LIU Yi-Min, XU Chun-Jie, LIU Xian-Song, and ZHANG Zhan-Jun* ..... 283–288
- Measurement-Based Interference in Quantum Computation  
*XU You-Yang* ..... 289–295
- Dirac Equation and Some Quasi-Exact Solvable Potentials in the Turbiner’s Classification  
*S. Aghaei and A. Chenaghlu* ..... 296–302
- Quantum Trajectory Approach to Molecular Dynamics Simulation with Surface Hopping  
*FENG Wei, XU Lu-Ting, LI Xin-Qi, and FANG Wei-Hai* ..... 303–307
- Non-Markovianity and Indivisible Quantum dynamics of a Spin-S System  
*HAO Xiang, XU Xue-Fen, and ZHU Shi-Qun* ..... 308–312
- Probabilistic Remote Preparation of a Four-Particle Entangled W State for the General Case and for All Kinds of the Special Cases  
*DAI Hong-Yi, ZHANG Ming, ZHANG Zu-Rong, and XI Zai-Rong* ..... 313–322
- Energy Distribution for a Power Model of the Plane Symmetric Spacetime in  $f(R)$  Gravity  
*Morteza Yavari* ..... 323–327

### Physics of Elementary Particles and Fields

- CPT-Frames for Non-Hermitian Hamiltonians  
*CAO Huai-Xin, GUO Zhi-Hua, and CHEN Zheng-Li* ..... 328–334

### Nuclear Physics

- Nuclear Structure and Electromagnetic Transitions Investigation in Er Isotopes within Framework of Interacting Boson Model  
*S.N. Abood and M.A. Al-Jubbori* ..... 335–340

(Continued)

---

ISSN 0253-6102  
CN 11-2592/O3  
Price: 108.00 Yuan

ISSN 0253-6102



9 770253 610110



0 9>

## **Atomic and Molecular Physics**

Electronics and Structural Properties of Single-Walled Carbon Nanotubes Interacting with a Glucose Molecule:  
*ab initio* Calculations

*M. Darvish Ganji and A. Bakhshandeh* ..... 341–347

## **Physics of Gases, Plasmas, and Electric Discharges**

Diffusion in Two-dimensional Magnetized Dusty Plasmas

*KONG Wei and YANG Fang* ..... 348–352

## **Condensed Matter: Structural, Mechanical, and Thermal Properties**

Controlling Thermal Conductivity of Few-Layer Graphene Nanoribbons by Using the Transversal Pressure

*ZHONG Wei-Rong, YANG Ming-Ming, ZHANG Mao-Ping, and AI Bao-Quan* ..... 353–356

## **Condensed Matter: Electronic Structure, Electrical, Magnetic, and Optical Properties**

Spin-wave Analysis of the Spin-1 Two-Dimensional Frustrated Heisenberg Antiferromagnet with  
the Single-Ion Anisotropy

*WU You and CHEN Yuan* ..... 357–362

## **Interdisciplinary Physics and Related Areas of Science and Technology**

Solution Space Coupling in the Random  $K$ -Satisfiability Problem

*ZENG Ying and ZHOU Hai-Jun* ..... 363–374

Topological Properties of Fibonacci Networks

*ZHANG Jing-Yuan, SUN Wei-Gang, TONG Li-Yan, and LI Chang-Pin* ..... 375–379

Effect of Topology Structures on Synchronization Transition in Coupled Neuron Cells System

*LIANG Li-Si, ZHANG Ji-Qian, XU Gui-Xia, LIU Le-Zhu, and HUANG Shou-Fang* ..... 380–386