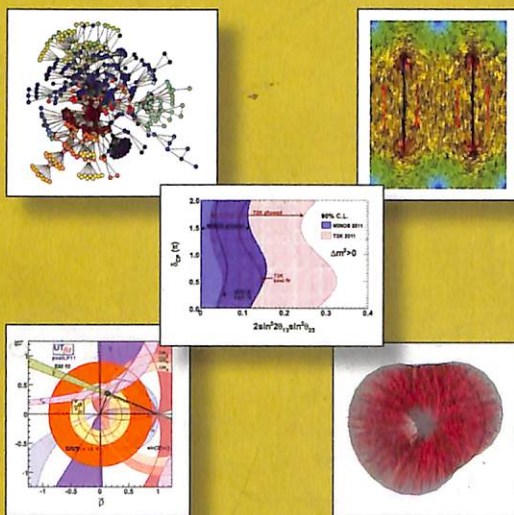
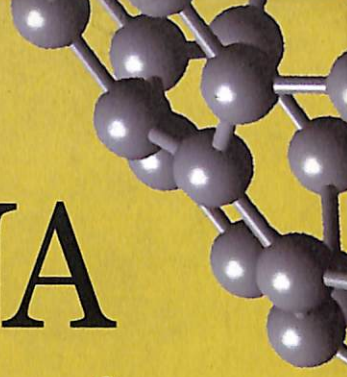


₹50/-

PRAMANA

— journal of
physics



Vol. 80, No. 1
January 2013

Indian Academy
of Sciences



 Springer

CONTENTS

General editorial on publication ethics	1
Invited Review	
Quantum effects at low-energy atom–molecule interface	
..... <i>B Deb, A Rakshit, J Hazra and D Chakraborty</i>	3
Research Articles	
SUSY formalism for the symmetric double well potential	
..... <i>Pinaki Patra, Abhijit Dutta and Jyoti Prasad Saha</i>	21
Exact solutions of Feinberg–Horodecki equation for time-dependent anharmonic oscillator	
..... <i>P K Bera and Tapas Sil</i>	31
Bifurcation analysis and the travelling wave solutions of the Klein–Gordon–Zakharov equations	
..... <i>Zaiyun Zhang, Fang-Li Xia and Xin-Ping Li</i>	41
Unpolarized coupled DGLAP evolution equation at small- x	
..... <i>Saurav Bhattacharjee, Ranjit Baishya and Jayanta Kumar Sarma</i>	61
Candidate of the member of three-phonon multiplet observed in the β^+ +EC decay of ^{76}Br	
..... <i>Shuifa Shen and Yongbo Chen</i>	69
Role of energy cost in the yield of cold ternary fission of ^{252}Cf	
..... <i>P V Kunhikrishnan and K P Santhosh</i>	81
Thermal-hydraulic analysis of LBE spallation target for accelerator-driven systems	
..... <i>Aniseh Ahmed Atef Abdalla, Jiyang Yu and Yongwei Yang</i>	89
Neutronic simulation of a research reactor core of $(^{232}\text{Th}, ^{235}\text{U})\text{O}_2$ fuel using MCNPX2.6 code ...	
..... <i>Seyed Amir Hossein Feghi, Marzieh Rezazadeh, Yacine Kadi, Claudio Tenreiro, Morteza Aref and Zohreh Gholamzadeh</i>	105
Antenna coupling study for ICWC plasma characterization in TEXTOR	
..... <i>Manash Kumar Paul, A Lysoivan, R Koch, G Van Wassenhove, M Vervier, G Bertschinger, R Laengner, B Unterberg, G Sergienko, V Philipps, T Wauters and the TEXTOR Team</i>	121
Influence of argon plasma treatment on polyethersulphone surface	
..... <i>N L Singh, S M Pelagade, R S Rane, S Mukherjee, U P Deshpande, V Ganeshan and T Shripathi</i>	133

(Continued on inside back cover)

(Continued from back cover)

A model for the occurrence and analysis of ionic thermocurrent spectrum involving different orders of kinetics.....	<i>Jai Prakash</i>	143
A comparative study of the spectra recorded at RRCAT synchrotron BL-8 dispersive EXAFS beamline with other beamlines	<i>Abhijeet Gaur, B D Shrivastava, S N Jha, D Bhattacharyya and A Poswal</i>	159
Community detection using global and local structural information	<i>Hai-Long Yan, Ju Xiang, Xiao-Yu Zhang, Jun-Feng Fan, Fang Chen, Gen-Yi Fu, Er-Min Guo, Xin-Guang Hu, Ke Hu and Ru-Min Wang</i>	173



CONTENTS

Research Articles

- Fermionic particles with position-dependent mass in the presence of inversely quadratic Yukawa potential and tensor interaction *M K Bahar and F Yasuk* 187
- Covariant anomalies and Hawking radiation from Kaluza–Klein AdS black holes ..
 *Chuan-Yi Bai* 199
- Generalized entropy production fluctuation theorems for quantum systems
 *Shubhashis Rana, Sourabh Lahiri and A M Jayannavar* 207
- Complete switched modified function projective synchronization of a five-term chaotic system with uncertain parameters and disturbances *Fei Yu,*
 *Chunhua Wang, Qiuzhen Wan and Yan Hu* 223
- Quadrupole moments of low-lying baryons with spin- $\frac{1}{2}^+$, spin- $\frac{3}{2}^+$, and spin- $\frac{3}{2}^+ \rightarrow \frac{1}{2}^+$ transitions *Neetika Sharma and Harleen Dahiya* 237
- Equilibrium and pre-equilibrium calculations of cross-sections of (p, xn) reactions on ^{89}Y , ^{90}Zr and ^{94}Mo targets used for the production of ^{89}Zr , ^{90}Nb and ^{94}Tc positron-emitting radionuclides *R Baldik, H Aytakin and E Tel* 251
- Measurement, analysis and correction of the closed orbit distortion in Indus-2 synchrotron radiation source *Riyasat Husain, A D Ghodke, Surendra Yadav,*
 *A C Holikatti, R P Yadav, P Fatnani, T A Puntambekar and P R Hannurkar* 263
- Planar electron beams in a wiggler magnet array *Arti Hadap and K C Mittal* 277
- Drift wave in pair-ion plasma *Samiran Ghosh, Nikhil Chakrabarti,*
 *Manoranjan Khan and M R Gupta* 283
- Plasma excitations in a single-walled carbon nanotube with an external transverse magnetic field *K A Vijayalakshmi and T P Nafeesa Baby* 289
- Dust-acoustic solitons in quantum plasma with kappa-distributed ions
 *Mehran Shahmansouri* 295
- A tentative model for estimating the compressibility of rock-salt $\text{AgCl}_x\text{Br}_{1-x}$ alloys *Vassiliki Katsika-Tsigourakou and Efthimios S Skordas* 307

(Continued on inside back cover)

(Continued from back cover)

Effect of Al doping on microstructure and optical band gap of ZnO thin film synthesized by successive ion layer adsorption and reaction	315
..... <i>S Mondal, S R Bhattacharyya and P Mitra</i>	
Spin-dependent rectification in the C ₅₉ N molecule	327
..... <i>Mahvash Arabi Darehdor and Nasser Shahtahmasebi</i>	
Complex network perspective on structure and function of <i>Staphylococcus aureus</i> metabolic network	337
..... <i>L Ying and D W Ding</i>	
Studying the cosmological apparent horizon with quasistatic coordinates	349
..... <i>Rui-Yan Yu and Towe Wang</i>	
Brief Reports	
Particle–particle Tamm–Dancoff approximation and particle–particle random phase approximation calculations for ¹⁸ O and ¹⁸ F nuclei	355
..... <i>Ali H Taqi Al-Bayati</i>	
Soliton solutions of some nonlinear evolution equations with time-dependent coefficients	361
..... <i>Hitender Kumar, Anand Malik and Fakir Chand</i>	



CONTENTS

Review

- The Standard Model with one universal extra dimension
 *A Cordero-Cid, M Gómez-Bock, H Novales-Sánchez and J J Toscano* 369

Research Articles

- Solutions and conservation laws of Benjamin–Bona–Mahony–Peregrine equation
 with power-law and dual power-law nonlinearities *Chaudry Masood Khalique* 413
- Is quantum theory compatible with special relativity?
 *M Bahrami, A Shafiee, M Saravani and M Golshani* 429
- Spherically symmetric scalar field collapse
 *Koyel Ganguly and Narayan Banerjee* 439
- Q-S synchronization of the fractional-order unified system *Yi Chai,*
 *Liping Chen, Ranchao Wu and Juan Dai* 449
- Peakons and compactons on the background of periodic wave
 *Chao-Qing Dai and Cui-Yun Liu* 463
- Double compactons in the Olver–Rosenau equation
 *Aiyong Chen and Shuangquan Wen* 471
- Mass shift of σ -meson in nuclear matter *J R Morones-Ibarra,*
 *Mónica Menchaca Maciel, Ayax Santos-Guevara and Felipe Robledo Padilla* 479
- Analysis of thermal distribution in two end pumping Nd:YAG laser rod using
 bacterial foraging optimization algorithm *Mohammed A Minshed* 487
- Generation of uniform atmospheric pressure argon glow plasma by dielectric barrier
 discharge *Raju Bhai Tyata, Deepak Prasad Subedi, Rajendra Shrestha*
 *and Chiow San Wong* 507
- Head-on collision of dust-ion-acoustic solitons in electron-dust-ion quantum
 plasmas *Prasanta Chatterjee, Malay Kumar Ghorui*
 *and Rajkumar Roychoudhury* 519

(Continued on inside back cover)

(Continued from back cover)

On the sharp front-type solution of the Nagumo equation with nonlinear diffusion and convection	<i>M B A Mansour</i>	533
Real gauge singlet scalar extension of the Standard Model: A possible candidate for cold dark matter	<i>Anirban Biswas and Debasish Majumdar</i>	539



CONTENTS

Symmetries and casimir of an extended classical long wave system	559
..... <i>K M Tamizhmani, R Ilangovane and B Dubrovin</i>	
Energy in the Kantowski–Sachs space-time using teleparallel geometry	571
..... <i>Anuradha Das Purkayastha</i>	
Adaptive control and synchronization of a fractional-order chaotic system	583
..... <i>Chunlai Li and Yaonan Tong</i>	
Synchronizability on complex networks via pinning control	593
..... <i>Yi Liang and Xingyuan Wang</i>	
Energy-dispersive X-ray diffraction beamline at Indus-2 synchrotron source	607
..... <i>K K Pandey, H K Poswal, A K Mishra, Abhilash Dwivedi,</i> <i>R Vasanthi, Nandini Garg and Surinder M Sharma</i>	
Fission dynamics of the compound nucleus ^{213}Fr formed in heavy-ion-induced reactions	621
..... <i>Hadi Eslamizadeh</i>	
Ring and jet study on the azimuthal substructure of pions at CERN SPS energy	631
..... <i>Prabir Kumar Haldar, Sanjib Kumar Manna, Prosenjit Saha</i> <i>and Dipak Ghosh</i>	
Collision and recombination driven instabilities in variable charged dusty plasmas	643
..... <i>S Bal and M Bose</i>	
Effect of superthermal electrons on dust-acoustic Gardner solitons in nonplanar geometry	665
..... <i>Deb Kumar Ghosh, Uday Narayan Ghosh, Prasanta Chatterjee</i> <i>and C S Wong</i>	
Absolute parametric instability in a nonuniform plane plasma waveguide	677
..... <i>Khaled Hamed El-Shorbagy, Atef Ahmed El-Bendary</i> <i>and Shatha Jameel Monaquel</i>	
Arc plasma devices: Evolving mechanical design from numerical simulation	685
..... <i>S Ghorui and A K Das</i>	
Induced moment due to perpendicular field cycling in trained exchange bias system	701
..... <i>Amitesh Paul and S Mattauch</i>	

(Continued on inside back cover)

(Continued from back cover)

Synthesis and characterization of aqueous MPA-capped CdS–ZnS core–shell quantum dots	<i>Atefeh Emamdoust, Saber Farjami Shayesteh</i> <i>and Maziyar Marandi</i>	713
String cosmology in Bianchi type-VI ₀ dusty Universe with electromagnetic field	<i>Hassan Amirhashchi</i>	723



CONTENTS

Research Articles

- The symmetries and conservation laws of some Gordon-type equations in Milne space-time..... *S Jamal, A H Kara, A H Bokhari and F D Zaman* 739
- Exact travelling wave solutions for some important nonlinear physical models.....
..... *Jonu Lee and Rathinasamy Sakthivel* 757
- Classification of single travelling wave solutions to the generalized Zakharov–Kuznetsov equation *Jin-Yan Hu* 771
- Collapse revival behaviour of the entanglement between V-type three-level atoms and two-mode photons in nonlinear Jaynes–Cummings model
..... *M Mahjoei, M M Golshan and H Safari* 785
- Confinement, average forces, and the Ehrenfest theorem for a one-dimensional particle *Salvatore De Vincenzo* 797
- Space-time algebra for the generalization of gravitational field equations.....
..... *Süleyman Demir* 811
- Comparison of backstepping and modified active control in projective synchronization of chaos in an extended Bonhöffer–van der Pol oscillator
..... *K S Ojo, A N Njah and S T Ogunjo* 825
- Investigation of the zenith angle dependence of cosmic-ray muons at sea level.....
..... *Mehmet Bektasoglu and Halil Arslan* 837
- Effect of the isovector coupling channel on the macroscopic part of the nuclear binding energy *S Haddad* 847
- Beam lifetime measurement and analysis in Indus-2 electron storage ring
..... *Pradeep Kumar, A D Ghodke and Gurnam Singh* 855
- The measurements of thermal neutron flux distribution in a paraffin phantom.....
..... *Parisa Akhlaghi, Laleh Rafat-Motavalli and Seyed Hashem Miri-Hakimabad* 873
- Nonlinear properties of a graded-index photonic heterostructure.....
..... *B Tavakkoly Moghaddam, S Roshan Entezar and H Pashaei Adl* 887

(Continued on inside back cover)

(Continued from back cover)

Construction of an exact solution of time-dependent Ginzburg–Landau equations and determination of the superconducting–normal interface propagation speed in superconductors	<i>Neelufar Panna and Jamal Nazrul Islam</i>	895
Nanoscale experimental study of the morphology of a microcrack in silicon by transmission electron microscopy	<i>D S Liu, C W Zhao and X H Hou</i>	903
Brief Report		
A cellular automata model for ant trails	<i>Sibel Gokce and Ozhan Kayacan</i>	909



CONTENTS

New travelling wave solutions for nonlinear stochastic evolution equations	917
..... <i>Hyunsoo Kim and Rathinasamy Sakhivel</i>	
Single-peak solitary wave solutions for the variant Boussinesq equations	933
..... <i>Hong Li, Lilin Ma and Dahe Feng</i>	
The Kepler problem in the Snyder space	945
..... <i>Carlos Leiva, Joel Saavedra</i>	
..... <i>and J R Villanueva</i>	
Microscopic study of positive-parity yrast bands of $^{224-234}\text{Th}$ isotopes	953
..... <i>Daya Ram, Rani Devi and S K Khosa</i>	
Three-dimensional simulation studies of 10 MeV, 352.2 MHz drift tube Linac	971
..... <i>Nita S Kulkarni</i>	
Searching for universal behaviour in superheated droplet detector with effective recoil nuclei	983
..... <i>Mala Das and Susnata Seth</i>	
High harmonic generation in H_2^+ and HD^+ by intense femtosecond laser pulses: A wave packet approach with nonadiabatic interaction in HD^+	995
..... <i>Farzana Sharmin, Samir Saha and S S Bhattacharyya</i>	
Temperature profile evolution in quenching high- T_c superconducting composite tape	1011
..... <i>Ziauddin Khan, Subrata Pradhan and Irfan Ahmad</i>	
Solitary heat waves in nonlinear lattices with squared on-site potential	1017
..... <i>Rovinita Perseus and M M Latha</i>	
Nonlinear propagation of dust-acoustic solitary waves in a dusty plasma with arbitrarily charged dust and trapped electrons	1031
..... <i>O Rahman and A A Mamun</i>	
Vibrational properties of vacancy in bcc transition metals using embedded atom method potentials.	1041
..... <i>Vandana Gairola, P D Semalty and P N Ram</i>	
Finding confined water in the hexagonal phase of $\text{Bi}_{0.05}\text{Eu}_{0.05}\text{Y}_{0.90}\text{PO}_4 \cdot x\text{H}_2\text{O}$ and its impact for identifying the location of luminescence quencher	1055
..... <i>R S Ningthoujam</i>	

(Continued on inside back cover)

(Continued from back cover)

Durability of rewritable phase-change $\text{Ge}_x\text{Sb}_y\text{Te}_{1-x-y}$ memory devices	1065
..... <i>N Parvathala Reddy, Ch Bapanayya, Rajeev Gupta and S C Agarwal</i>	
Erratum to: Quadrupole moments of low-lying baryons with $\text{spin}-\frac{1}{2}^+$, $\text{spin}-\frac{3}{2}^+$, and $\text{spin}-\frac{3}{2}^+ \rightarrow \frac{1}{2}^+$ transitions	1083
..... <i>Neetika Sharma and Harleen Dahiya</i>	
Subject Index of Volume 80	1085
Author Index of Volume 80	1091
Contents of Volume 80	iii
Information for Contributors	



CONTENTS

General editorial on publication ethics	1
Invited Review	
Novel experimentally observed phenomena in soft matter	
. <i>Ranjini Bandyopadhyay</i>	3
Review	
Plasma response to transient high voltage pulses	
. <i>S Kar and S Mukherjee</i>	35
Research Articles	
Anisotropic cosmological models in $f(R, T)$ theory of gravitation	
. <i>Shri Ram, Priyanka and Manish Kumar Singh</i>	67
New perspective in the use of soft rotor formula for $K = 2 \gamma$ -band	
. <i>J B Gupta, Satendra Sharma and Vikas Katoch</i>	75
A benchmark study on uncertainty of ALICE ASH 1.0, TALYS 1.0 and MCNPX 2.6 codes to estimate production yield of accelerator-based radioisotopes	
. <i>Seyed Amirhossein Fegghi, Zohreh Gholamzadeh, Zahra Alipoor, Akram Zali, Mahdi Joharifard, Morteza Aref and Claudio Tenreiro</i>	87
Systematic study of multiparticle production in nucleus–nucleus interactions at 14.6 A GeV	
. <i>Ashwini Kumar, G Singh and B K Singh</i>	103
Investigation of invisible oscillation on the photodetachment cross-section of H_2^- near a hard surface	
. <i>Muhammad Haneef, Suneela Arif, Jehan Akbar, Muhammad Zahir, Nasrullah Shah and Kamran Abid</i>	117
Vibrational resonance in the Morse oscillator	
. <i>K Abirami, S Rajasekar and M A F Sanjuan</i>	127
A simplistic pedagogical formulation of a thermal speed distribution using a relativistic framework	
. <i>Ashmeet Singh</i>	143

(Continued on inside back cover)

(Continued from back cover)

Microwave power coupling with electron cyclotron resonance plasma using Langmuir probe.....	<i>S K Jain, V K Senecha, P A Naik, P R Hannurkar and S C Joshi</i>	157
Nonlinear propagation of ion-acoustic waves in a degenerate dense plasma.....	<i>M M Masud and A A Mamun</i>	169
Characterization of pure and copper-doped iron tartrate crystals grown in silica gel.....	<i>V Mathivanan and M Haris</i>	177



CONTENTS

Research Articles

Generalized Freud's equation and level densities with polynomial potential	189
..... <i>Akshat Boobna and Saugata Ghosh</i>	
Bright and dark soliton solutions of the (3 + 1)-dimensional generalized Kadomtsev– Petviashvili equation and generalized Benjamin equation	203
..... <i>Ahmet Bekir and Özkan Güner</i>	
Stability analysis of a class of fractional delay differential equations	215
..... <i>Sachin B Bhalekar</i>	
Exact solutions of some nonlinear partial differential equations using functional variable method	225
..... <i>A Nazarzadeh, M Eslami and M Mirzazadeh</i>	
A quantum Hamilton–Jacobi proof of the nodal structure of the wave functions of supersymmetric partner potentials	237
..... <i>S Sree Ranjani, A K Kapoor, Avinash Khare, and P K Panigrahi</i>	
Coxeter groups A_4 , B_4 and D_4 for two-qubit systems	247
..... <i>Ramazan Koç, M Yakup Hacubrahimoğlu and Mehmet Koca</i>	
Matter-wave bright solitons in effective bichromatic lattice potentials	261
..... <i>Golam Ali Sekh</i>	
A class of exact strange quark star model	275
..... <i>S Thirukkanesh and F C Ragel</i>	
Multiplicity distributions of shower particles and target fragments in ${}^7\text{Li}$ –Em collisions at 3 A GeV/c	287
..... <i>N N Abd Allah, Fu-Hu Liu, E A Sultan and M Hassan</i>	
Temporal dynamics of high repetition rate pulsed single longitudinal mode dye laser	295
..... <i>G Sridhar, V S Rawat, S Singh and L M Gantayet</i>	
Quantum capacitance of the armchair-edge graphene nanoribbon	309
..... <i>Ling-Feng Mao</i>	
Effect of doping and annealing on the physical properties of ZnO:Mg nanoparticles	319
..... <i>Saber Farjami Shayesteh and Armin Ahmadi Dizgah</i>	
Preparation and investigation of optical, structural, and morphological properties of nanostructured ZnO:Mn thin films	331
..... <i>E Amoupour, F E Ghodsi, H Andarva and A Abdolazadeh Ziabari</i>	

(Continued on inside back cover)

(Continued from back cover)

Solar diurnal anisotropy measured using muons in GRAPES-3 experiment in 2006
..... *P K Mohanty, D Atri, S R Dugad, S K Gupta, B Hariharan, Y Hayashi,*
..... *A Jain, S Kawakami, S D Morris, P K Nayak, A Oshima and B S Rao* 343

Brief Report

Three-body interactions and the Landau levels using Nikiforov–Uvarov method
..... *P K Bera* 359

Erratum

Erratum to: A simplistic pedagogical formulation of a thermal speed distribution
using a relativistic framework *Ashmeet Singh* 365



CONTENTS

Localized structures for (2+1)-dimensional Boiti–Leon–Pempinelli equation	367
..... <i>Gui Mu, Zhengde Dai and Zhanhui Zhao</i>	
The functional variable method for finding exact solutions of some nonlinear time-fractional differential equations	377
..... <i>Wenjun Liu and Kewang Chen</i>	
Spin–momenta entanglement in moving frames: Properties of von Neumann entropy	385
..... <i>S Rastgoo and M M Golshan</i>	
Projective synchronization of chaotic systems with bidirectional nonlinear coupling	395
..... <i>Mohammad Ali Khan and Swarup Poria</i>	
Time-varying interaction leads to amplitude death in coupled nonlinear oscillators	407
..... <i>Awadhesh Prasad</i>	
Adaptive projective synchronization between different chaotic systems with parametric uncertainties and external disturbances	417
..... <i>Mayank Srivastava, Saurabh K Agrawal and Subir Das</i>	
On acceleration dependence of Doppler effect in light	439
..... <i>Sanjay M Wagh</i>	
Charge radii of octet and decuplet baryons in chiral constituent quark model	449
..... <i>Neetika Sharma and Harleen Dahiya</i>	
Higgs interchange and bound states of superheavy fermions	467
..... <i>M De Sanctis</i>	
The steady state of a particle in a vibrating box and possible application in short pulse generation of charged particles	485
..... <i>Nandan Jha and Sudhir R Jain</i>	
Nonplanar ion-acoustic shocks in electron–positron–ion plasmas: Effect of superthermal electrons	491
..... <i>Deb Kumar Ghosh, Prasanta Chatterjee, Pankaj Kumar Mandal and Biswajit Sahu</i>	
On the determination of the mutual exclusion statistics parameter	503
..... <i>Saptarshi Mandal</i>	

(Continued on inside back cover)

(Continued from back cover)

Performance assessment of nanoscale Schottky MOSFET as resonant tunnelling device: Non-equilibrium Green's function formalism	
..... <i>Zahra Ahangari and Morteza Fathipour</i>	511
Thermoluminescence glow curve involving any extent of retrapping or any order of kinetics	
..... <i>Jai Prakash</i>	521
Low-limit detection of NO ₂ by longitudinal mode selection in a photoacoustic resonant system.....	
..... <i>F Yehya and A K Chaudhary</i>	535



CONTENTS

Research Articles

- Numerical solution of the one-dimensional Burgers' equation: Implicit and fully implicit exponential finite difference methods *Bilge Inan and Ahmet Refik Bahadır* 547
- Incompressible Einstein–Maxwell fluids with specified electric fields *S Hansraj, S D Maharaj and T Mthethwa* 557
- Causality in 1+1-dimensional Yukawa model-II *Asrarul Haque and Satish D Joglekar* 569
- Low-lying ($K^\pi = 0^+$) states of gadolinium isotopes *Harun Reşit Yazar* 579
- Elastic scattering and fusion cross-sections in ${}^7\text{Li} + {}^{27}\text{Al}$ reaction *D Patel, S Santra, S Mukherjee, B K Nayak, P K Rath, V V Parkar and R K Choudhury* 587
- Analytical model of transient thermal effect on convectional cooled end-pumped laser rod *Khalid S Shibib, Mohammad A Munshid and Kadim A Hubiter* 603
- Benchmarking and scaling studies of pseudospectral code Tarang for turbulence simulations *Mahendra K Verma, Anando Chatterjee, K Sandeep Reddy, Rakesh K Yadav, Supriyo Paul, Mani Chandra and Ravi Samtaney* 617
- Effect of nonthermal distributed electrons and temperature on phase shifts during the collision of inward and outward ion-acoustic solitary waves in nonplanar geometry *Uday Narayan Ghosh, Prasanta Chatterjee and Deb Kumar Ghosh* 631
- Convectively driven flow past an infinite moving vertical cylinder with thermal and mass stratification *Rudra Kanta Deka and Ashish Paul* 641
- Experimental study of yttrium barium copper oxide superconducting tape's critical current under twisting moment *Ziauddin Khan, Ananya Kundu and Subrata Pradhan* 667
- Oscillation death in a coupled van der Pol–Mathieu system *Madhurjya P Bora and Dipak Sarmah* 677

(Continued on inside back cover)

(Continued from back cover)

Observational constraints on modified Chaplygin gas in Horava–Lifshitz gravity
with dark radiation *B C Paul, P Thakur and M M Verma* 691

Brief Report

Cryogen-free dilution refrigerator for bolometric search of neutrinoless double
beta decay ($0\nu\beta\beta$) in ^{124}Sn *V Singh, S Mathimalar, N Dokania, V Nanal,*
..... *R G Pillay and S Ramakrishnan* 719



CONTENTS

Research Articles

- Lag synchronization of chaotic systems with time-delayed linear terms via impulsive control..... *Ranchao Wu and Dongxu Cao* 727
- The integrability of an extended fifth-order KdV equation with Riccati-type pseudopotential *Yun-Hu Wang and Yong Chen* 737
- Analytical travelling wave solutions and parameter analysis for the (2+1)-dimensional Davey–Stewartson-type equations *Jianping Shi, Jibin Li and Shumin Li* 747
- A generalized exp-function method for multiwave solutions of sine-Gordon equation *Sheng Zhang, Jian Wang, Au-Xue Peng and Bin Cai* 763
- Coupling constant in dispersive model..... *R Saleh-Moghaddam and M E Zomorrodian* 775
- Next-to-next-to-leading order calculation of the strong coupling constant α_s by using moments of event-shape variables *Samira Shoeibi Mohsenabadi and Mohammad Ebrahim Zomorrodian* 791
- The asymptotic D-state to S-state ratio of triton..... *Hossein Sadeghi, Reza Pourimani and Hassan Khalili* 799
- Fission characteristics of ^{216}Ra formed in heavy-ion induced reactions..... *Hadi Eslamizadeh* 807
- Fundamental modes of new dispersive SH-waves in piezoelectromagnetic plate *A A Zakharenko* 819
- Development of online quasimonochromatic X-ray backlighter for high energy density physics studies *S Chaurasia, P Leshma and D S Munda* 829
- Boson bound states in the β -Fermi–Pasta–Ulam model *Xin-Guang Hu, Ju Xiang, Zheng Jiao, Yang Liu, Guo-Qiu Xie and Ke Hu* 839

(Continued on inside back cover)

(Continued from back cover)

Effective thermal conductivity of condensed polymeric nanofluids (nanosolids) controlled by diffusion and interfacial scattering	849
..... <i>M R Nisha, M S Jayalakshmy and J Philip</i>	
Magnetic field effect on state energies and transition frequency of a strong-coupling polaron in an anisotropic quantum dot	865
..... <i>Wei Xiao and Jing-Lin Xiao</i>	
Phase transition properties of a cylindrical ferroelectric nanowire	873
..... <i>Wang Ying and Yang Xiong</i>	
Brief Report	
Elastic and piezoelectric properties, sound velocity and Debye temperature of (B3) boron–bismuth compound under pressure	885
..... <i>S Daoud, N Bioud and N Lebga</i>	

CONTENTS

Direct approach for solving nonlinear evolution and two-point boundary value problems	<i>Jonu Lee and Rathinasamy Sakthivel</i>	893
Exact solutions for nonlinear variants of Kadomtsev–Petviashvili (n, n) equation using functional variable method	<i>M Mirzazadeh and M Eslami</i>	911
The classification of the single travelling wave solutions to the generalized Pochhammer–Chree equation	<i>Hui-Ling Fan and Xin Li</i>	925
Pitchfork bifurcation and vibrational resonance in a fractional-order Duffing oscillator	<i>J H Yang, M A F Sanjuán, W Xiang and H Zhu</i>	943
On the nucleon–nucleon scattering phase shifts through supersymmetry and factorization	<i>U Laha and J Bhoi</i>	959
A clean signal for a top-like isosinglet fermion at the Large Hadron Collider	<i>Aarti Girdhar</i>	975
Monitoring foam coarsening using a computer optical mouse as a dynamic laser speckle measurement sensor	<i>Jáder Guerrero, Enrique Mejia-Ospino and Rafael Cabanzo</i>	987
High harmonic generation in H_2^+ and HD^+ by two-colour femtosecond laser pulses	<i>Farzana Sharmin, Samir Saha and S S Bhattacharyya</i>	995
Statistical model of stress corrosion cracking based on extended form of Dirichlet energy	<i>Harry Yosh</i>	1009
Phonon dispersions in graphene sheet and single-walled carbon nanotubes	<i>Dinesh Kumar, Veena Verma, H S Bhatti and Keya Dharamvir</i>	1021
Dynamo in protostars	<i>Mahendra K Verma, Bidya Binay Karak and Rohit Kumar</i>	1037
Brief Report		
Shape transition of state density for bosonic systems	<i>Harshal N Deota, N D Chavda and V Potbhare</i>	1045

(Continued on inside back cover)

(Continued from back cover)

Erratum

Erratum to “Antisynchronization of a novel hyperchaotic system with parameter mismatch and external disturbances”	<i>Fei Yu, Chunhua Wang,</i> <i>Yan Hu and Jinwen Yin</i>	1051
Subject Index of Volume 81		1055
Author Index of Volume 81		1061
Contents of Volume 81		iii
Information for Contributors		

