

Indexes to Volume 79

SUBJECT INDEX

Mathematical Methods in Physics

- Analytic treatment of nonlinear evolution equations using first integral method
Ahmet Bekir and Ömer Ünsal 3–17
- Exact complex integrals in two dimensions for shifted harmonic oscillators
Jasvinder Singh Virdi and S C Mishra 19–40
- Complex dynamical invariants for two-dimensional complex potentials
J S Virdi, F Chand, C N Kumar and S C Mishra 173–183
- Solitons and cnoidal waves of the Klein–Gordon–Zakharov equation in plasmas
Ghodrat Ebadi, E V Krishnan and Anjan Biswas 185–198
- A procedure to construct exact solutions of nonlinear evolution equations
Adem Cengiz Çevikel, Ahmet Bekir, Mutlu Akar and Sait San 337–344
- Allowable irreducible representations of the point groups with five-fold rotational axes
K Rama Mohana Rao, B Simhachalam and P Hemagiri Rao 1365–1373

Quantum Mechanics, Field Theories, and Special Relativity

- Coupled Higgs field equation and Hamiltonian amplitude equation: Lie classical approach and (G'/G) -expansion method
Sachin Kumar, K Singh and R K Gupta 41–60
- Parallel decoherence in composite quantum systems
M Dugić and J Jeknić-Dugić 199–209
- Approximate solution of Schrödinger equation in D dimensions for inverted generalized hyperbolic potential
Oladunjoye A Awoga and Akpan N Ikot 345–356
- Dephasing of a qubit due to quantum and classical noise
Ebad Kamil and Sushanta Dattagupta 357–376

General Relativity and Gravitation

- Relativistic models of a class of compact objects
Rumi Deb, Bikash Chandra Paul and Ramesh Tikekar 211–222
- The final outcome of dissipative collapse in the presence of Λ
S Thirukkanesh, S Moopanar and M Govender 223–232

Statistical Physics

- Dynamics of fractional-ordered Chen system with delay
Varsha Daftardar-Gejji, Sachin Bhalekar and Prashant Gade 61–69
- Function projective synchronization of identical and non-identical modified finance and Shimizu–Morioka systems
S O Kareem, K S Ojo and A N Njah 71–79

| | | |
|--|---|-----------|
| Antisynchronization of a novel hyperchaotic system with parameter mismatch and external disturbances | <i>Fei Yu, Chun Hua Wang, Yan Hu and Jin Wen Yin</i> | 81–93 |
| Quantum Jarzynski equality with multiple measurement and feedback for isolated system | <i>Shubhashis Rana, Sourabh Lahiri and A M Jayannavar</i> | 233–241 |
| Exact solutions of some coupled nonlinear diffusion-reaction equations using auxiliary equation method | <i>Ranjit Kumar</i> | 393–402 |
| A universal projective synchronization of general autonomous chaotic system | <i>Fuzhong Nian, Xingyuan Wang, Ming Li and Ge Guo</i> | 1375–1383 |
| Particle Physics | | |
| Solutions of several coupled discrete models in terms of Lamé polynomials of arbitrary order | <i>Avinash Khare, Avadh Saxena and Apoorva Khare</i> | 377–392 |
| Higgs physics: Theory | <i>Abdelhak Djouadi</i> | 513–539 |
| Standard Model Higgs boson searches with the ATLAS detector at the Large Hadron Collider | <i>Aleandro Nisati</i> | 541–553 |
| Quantum chromodynamics effects in electroweak and Higgs physics | <i>Frank Petriello</i> | 555–562 |
| Quantum chromodynamics results from HERA and JLAB | <i>Katja Krüger</i> | 563–578 |
| Light hadron, charmonium(-like) and bottomonium(-like) states | <i>Hai-Bo Li</i> | 579–602 |
| Gauge boson production at colliders – Predictions for precision studies | <i>Giulia Zanderighi</i> | 603–616 |
| Production of electroweak bosons at colliders | <i>Matthias U Mozer</i> | 617–627 |
| Top quark theory | <i>Eric Laenen</i> | 629–641 |
| Top production at hadron colliders | <i>Albert De Roeck</i> | 643–658 |
| Top quark properties | <i>Yuji Takeuchi</i> | 659–673 |
| Electroweak symmetry breaking beyond the Standard Model | <i>Gautam Bhattacharyya</i> | 675–690 |
| Searches for phenomena beyond the Standard Model at the Large Hadron Collider with the ATLAS and CMS detectors | <i>Henri Bachacou</i> | 691–701 |
| Searches for physics beyond the Standard Model at the Tevatron | <i>Alberto Annovi</i> | 703–717 |
| Heavy ions: Results from the Large Hadron Collider | <i>Tapan K Nayak</i> | 719–735 |
| Heavy ions: Report from Relativistic Heavy Ion Collider | <i>Sonia Kabana</i> | 737–752 |
| Sign-posting the phase diagram of quantum chromodynamics | <i>Sourendu Gupta</i> | 753–756 |
| Low-energy neutrino measurements | <i>Davide D'Angelo</i> | 757–780 |
| Neutrinoless double beta decay | <i>Kai Zuber</i> | 781–791 |
| Theoretical aspects of neutrino mass and lepton flavour violation | <i>Graham G Ross</i> | 793–808 |
| A new observable to measure the top quark mass at hadron colliders | <i>Simone Alioli, Juan Fuster, Adrian Irles, Sven Moch, Peter Uwer and Marcel Vos</i> | 809–812 |

| | | |
|--|---|---------|
| Measurement of the production cross-section of pairs of isolated photons in pp collisions at $\sqrt{s} = 7$ TeV | <i>Sudha Ahuja</i> | 813–816 |
| Data-driven performance evaluation method for CMS RPC trigger system using 2011 data at LHC | <i>A Sharma and S B Beri</i> | 817–819 |
| Search for Standard Model Higgs boson in the decay channel $H \rightarrow ZZ \rightarrow l^+l^-q\bar{q}$ at CMS | <i>Arun Kumar</i> | 821–824 |
| Measurements of the electron and muon inclusive cross-sections in proton–proton collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector | <i>Moritz Backes</i> | 825–828 |
| A search for charged massive long-lived particles at D0 | <i>Sudeshna Banerjee</i> | 829–832 |
| Non-singlet spin structure function $g_1^{\text{NS}}(x, t)$ in the DGLAP approach | <i>Neelakshi N K Borah, D K Choudhury and P K Sahariah</i> | 833–837 |
| Dijet physics with CMS detector at the Large Hadron Collider | <i>Suvadeep Bose</i> | 839–843 |
| Search for the Standard Model Higgs boson produced in the decay channel $H \rightarrow ZZ \rightarrow 2l2\tau$ with CMS detector at $\sqrt{s} = 7$ TeV | <i>Chhibra Simranjit Singh</i> | 845–848 |
| Flavoured co-annihilation | <i>D Chowdhury, R Garani and S K Vempati</i> | 849–852 |
| Top physics with $0.70\text{--}1.08 \text{ fb}^{-1}$ of pp collisions with the ATLAS detector at the LHC | <i>Markus Cristinziani</i> | 853–858 |
| Pion showers in highly granular calorimeters | <i>Jaroslav Cvach</i> | 859–862 |
| Quarkonia production at forward rapidity in Pb+Pb collisions at $\sqrt{s_{\text{NN}}} = 2.76$ TeV with the ALICE detector | <i>Debasish Das</i> | 863–866 |
| A natural connection between neutrino mass generation and the lightness of a next-to-minimal supersymmetric Standard Model pseudoscalar | <i>Debottam Das, Asmaa Abada, Gautam Bhattacharyya and Cédric Weiland</i> | 867–870 |
| Search for heavy resonances decaying to tau pairs with the CMS detector at the Large Hadron Collider | <i>N Dhingra</i> | 871–874 |
| Search for new physics in dijet mass and angular distributions in pp collisions at $\sqrt{s}=7$ TeV measured with the ATLAS detector | <i>Thorsten Dietzsch</i> | 875–878 |
| Ultraheavy Yukawa-bound states of fourth-generation at Large Hadron Collider | <i>Ts Enkhbat</i> | 879–882 |
| Unification of 3-3-1 models | <i>R Martinez and F Ochoa</i> | 883–886 |
| SuSeFLAV: A program for calculating supersymmetric spectra and lepton flavour violation | <i>Debtosh Chowdhury, Raghuv eer Garani and Sudhir K Vempati</i> | 887–889 |
| Constraints on the K_{l_3} form factors from analyticity and unitarity | <i>Gauhar Abbas, B Ananthanarayan, Irinel Caprini and I Sentitemsu Imsong</i> | 891–894 |
| Physics beyond the Standard Model through $b \rightarrow s\mu^+\mu^-$ transition | <i>Diptimoy Ghosh</i> | 895–898 |
| Limits on anomalous trilinear gauge couplings at the CMS with 7 TeV Large Hadron Collider data | <i>Bhawna Gomer</i> | 899–902 |
| Dipole moments of the tau neutrino via the process $e^+e^- \rightarrow \nu\bar{\nu}\gamma$ in a 331 model | <i>A Gutiérrez-Rodríguez</i> | 903–906 |

| | | |
|--|---|-----------|
| W +jets in pp collisions at 7 TeV with ATLAS | <i>Giovanni Zevi Della Porta</i> | 907–910 |
| Inclusive $b + Z$, $Z \rightarrow \mu^+ \mu^-, e^+ e^-$ production at CMS | <i>Natalie Heracleous</i> | 911–915 |
| One-loop corrections to the baryon axial vector current | <i>M A Hernández-Ruíz</i> | 917–920 |
| Leptonic minimal flavour violation in warped extra dimensions | <i>Abhishek M Iyer and Sudhir K Vempati</i> | 921–924 |
| Measurement of the cross-section of $Z\gamma$ and limits on ADD models at the CMS with 7 TeV Large Hadron Collider data | <i>Sandhya Jain</i> | 925–928 |
| Search for excited leptons in pp collisions at $\sqrt{s}=7$ TeV | <i>Shilpi Jain</i> | 929–932 |
| Search for the Higgs boson in the $H \rightarrow WW \rightarrow \ell v j j$ decay channel in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector | <i>Dilip Kumar Jana</i> | 933–936 |
| Measurement of the Drell–Yan differential cross-section $d\sigma/dM$ at $\sqrt{s} = 7$ TeV | <i>M Jindal</i> | 937–940 |
| Recent neutrino oscillation results from T2K | <i>H A Tanaka</i> | 941–952 |
| Long-baseline experiments, now and soon! | <i>Jenny Thomas</i> | 953–962 |
| Towards a θ_{13} measurement | <i>Kam-Biu Luk</i> | 963–977 |
| Neutrino mass and mixing – status | <i>Thomas Schwetz</i> | 979–992 |
| Whither colliders after the Large Hadron Collider? | <i>Rolf-Dieter Heuer</i> | 993–1002 |
| India-based Neutrino Observatory | <i>Naba K Mondal</i> | 1003–1020 |
| Indirect searches for dark matter | <i>Marco Cirelli</i> | 1021–1043 |
| Review of dark matter direct detection experiments | <i>Rupak Mahapatra</i> | 1045–1057 |
| The information paradox: Conflicts and resolutions | <i>Samir D Mathur</i> | 1059–1073 |
| Applications of the AdS/CFT correspondence | <i>Shiraz Minwalla</i> | 1075–1090 |
| Overview of the Cabibbo–Kobayashi–Maskawa matrix | <i>Tim Gershon</i> | 1091–1108 |
| B -physics results from the Large Hadron Collider | <i>Gerhard Raven</i> | 1109–1124 |
| Some theoretical issues in heavy flavour physics | <i>Amol Dighe</i> | 1125–1139 |
| Charged-lepton flavour physics | <i>Andreas Hoecker</i> | 1141–1167 |
| Summary of Lepton–Photon 2011 | <i>Michael E Peskin</i> | 1169–1214 |
| Search with the ATLAS detector for new physics with significant missing transverse energy and two isolated leptons | <i>João Firmino da Costa</i> | 1215–1218 |
| Search for anomalous Wtb couplings in single top quark production at D0 | <i>Jyoti Joshi and Suman Beri</i> | 1219–1222 |
| Measurement of single top production in pp collisions at 7 TeV with the CMS detector | <i>Jyothsna Rani Komaragiri</i> | 1223–1226 |
| $W^\pm Z$ production in pp collisions at 7 TeV with ATLAS | <i>Michael Kagan</i> | 1227–1230 |
| Neutral current cross-section measurement at low Q^2 and high y with the ZEUS detector at HERA | <i>Prabhdeep Kaur</i> | 1231–1234 |
| Tau reconstruction and identification algorithm | <i>Raman Khurana</i> | 1235–1238 |
| ATLAS fast physics monitoring | <i>Karsten Köneke</i> | 1239–1241 |

| | | |
|--|--|-----------|
| Main injector particle production experiment at Fermilab | <i>Sonom Mahajan, Ashok Kumar and Rajendran Raja</i> | 1243–1246 |
| Single W production in $e^- \gamma$ collisions through the decay lepton spectrum to probe γWW couplings | <i>Satendra Kumar and P Poullose</i> | 1247–1250 |
| B decays to baryons | <i>Torsten Leddig</i> | 1251–1254 |
| Model unspecific search for new physics in pp collision at $\sqrt{s} = 7$ TeV | <i>Shivali Malhotra, Md Naimuddin, Thomas Hebbeker, Arnd Meyer, Holger Pieta, Paul Papacz, Stefan Antonius Schmitz and Mark Olschewski</i> | 1255–1258 |
| Model-independent search for new physics at D0 experiment | <i>Md Naimuddin</i> | 1259–1262 |
| Search for the Higgs boson in $H \rightarrow WW \rightarrow 2l2\nu$ mode with the CMS detector | <i>N Nishu and S B Beri</i> | 1263–1266 |
| Angular distribution of cosmic muons using INO–ICAL prototype detector at TIFR | <i>S Pal, G Majumder, N K Mondal, D Samuel and B Satyanarayana</i> | 1267–1270 |
| Radiative see-saw formula in nonsupersymmetric $SO(10)$ with dark matter | <i>Mina K Parida</i> | 1271–1274 |
| Top-spin analysis of new scalar and tensor interactions in $e^+ e^-$ collisions with transverse beam polarization | <i>B Ananthanarayan, Monalisa Patra and Saurabh D Rindani</i> | 1275–1279 |
| B_s data at Tevatron and possible new physics | <i>Amol Dighe, Diptimoy Ghosh, Anirban Kundu and Sunando Kumar Patra</i> | 1281–1284 |
| W/Z +jet(s) production in pp collisions at $\sqrt{s} = 7$ TeV | <i>S B Beri, L K Saini and A P Singh</i> | 1285–1288 |
| Search for a SM Higgs boson in dilepton plus missing transverse energy final state with the DØ detector at $\sqrt{s} = 1.96$ TeV | <i>Ruchika Nayyar and Kirti Ranjan</i> | 1289–1292 |
| Anomalous top magnetic couplings | <i>G González-Sprinberg, R Martinez and Jorge Vidal</i> | 1293–1296 |
| Top polarization and exploration of $t\bar{t}$ forward–backward asymmetry | <i>Pratishruti Saha</i> | 1297–1300 |
| Quantifying uncertainties in the high-energy neutrino cross-section | <i>A Cooper-Sarkar, P Mertsch and S Sarkar</i> | 1301–1308 |
| Triggering on hadronic tau decays: ATLAS meets the challenge | <i>Mark Scarcella</i> | 1309–1312 |
| Event shape variables in supersymmetry searches at 7 TeV LHC | <i>Dipan Sengupta</i> | 1313–1315 |
| The pion form factor from analyticity and unitarity | <i>B Ananthanarayan, Irinel Caprini and I Sentitemsu Imsong</i> | 1317–1320 |
| Search for the Standard Model Higgs boson in the decay channel $H \rightarrow ZZ^{(*)} \rightarrow 4l$ at CMS | <i>Chahal Gurpreet Singh</i> | 1321–1324 |
| Measurement of neutral current cross-sections at high Bjorken- x with the ZEUS detector at HERA | <i>Inderpal Singh</i> | 1325–1329 |
| Low-energy neutrino and dark matter physics with sub-keV germanium detectors | <i>A K Soma, L Singh, M K Singh, V Singh and H T Wong</i> | 1331–1335 |

- Tau reconstruction, energy calibration and identification at ATLAS
Michel Trottier-McDonald 1337–1340
- Search for a Higgs boson decaying into two photons in the CMS detector
Roberta Volpe 1341–1344
- Open flavour charmed mesons in a quantum chromodynamics potential model
Krishna Kingkar Pathak and D K Choudhury 1385–1393
- Quantitative assessment of target dependence of pion fluctuation in hadronic interactions – estimation through erraticity
Dipak Ghosh, Argha Deb, Mitali Mondal, Arindam Mondal and Sitaram Pal 1395–1405

Nuclear Physics

- Production parameters of the therapeutic ^{105}Rh radionuclide using medium energy cyclotron
Mayeen Uddin Khandaker, Kwangsoo Kim and Guinyun Kim 243–248
- Measurement of $^{232}\text{Th}(n, \gamma)$ and $^{232}\text{Th}(n, 2n)$ cross-sections at neutron energies of 13.5, 15.5 and 17.28 MeV using neutron activation techniques
Sadhana Mukerji, H Naik, S V Suryanarayana, S Chachara, B S Shivashankar, V Mulik, Rita Crasta, Sudipta Samanta, B K Nayak, A Saxena, S C Sharma, P V Bhagwat, K K Rasheed, R N Jindal, S Ganesan, A K Mohanty, A Goswami and P D Krishnani 249–262
- Design of a 10 MeV, 352.2 MHz drift tube Linac
Nita S Kulkarni 263–274
- Nuclear structure of ^{216}Ra at high spin
S Muralithar, G Rodrigues, R P Singh, R K Bhowmik, P Mukherjee, B Sethi and I Mukherjee 403–415
- The isospin mixing and the superallowed Fermi beta decay
A E Çalik, M Gerçeklioğlu and D I Salamov 417–426
- Sensitivity in the trajectory of long-range α -particle
P V Kunhikrishnan, A Rajan Nambiar and K P Santhosh 427–434
- Transverse momentum distributions of identified particles produced in pp , $p(d)A$, and AA collisions at high energies
Ya-Qin Gao, Cai-Xing Tian, Mai-Ying Duan, Bao-Chun Li and Fu-Hu Liu 1407–1423

Atomic and Molecular Physics

- Total (complete) and ionization cross-sections of argon and krypton by positron impact from 15 to 2000 eV – Theoretical investigations
Harshit N Kothari and K N Joshipura 435–442
- Electric field enhancement at multiple densities in laser-irradiated nanotube plasma
U Chakravarty, P A Naik and P D Gupta 443–456

Laser and Optics

- Analytical model of transient temperature and thermal stress in continuous wave double-end-pumped laser rod: Thermal stress minimization study
Khalid S Shibib, Mayada M Tahir and Haqi I Qatta 287–297

- Generation of tunable 16 μm radiation from CO_2 by cascade lasing *Utpal Nundy and Manoj Kumar* 1425–1441
- Influence of pseudorandom bit format on the direct modulation performance of semiconductor lasers *Moustafa Ahmed, Safwat W Z Mahmoud and Alaa A Mahmoud* 1443–1456
- Acoustics**
- On wave characteristics of piezoelectromagnetics *A A Zakharenko* 275–285
- Classical Mechanics**
- Effect of hydrostatic pressure on the structural, elastic and electronic properties of (B3) boron phosphide *Salah Daoud, Kamel Loucif, Nadhira Bioud, Noudjoud Lebga and Laarbi Belagraa* 95–106
- Fluid Dynamics**
- Heat transfer in MHD flow of dusty viscoelastic (Walters' liquid model-B) stratified fluid in porous medium under variable viscosity *Om Prakash, Devendra Kumar and Y K Dwivedi* 1457–1470
- Plasma Physics**
- A note on the drift waves in the presence of electrons added by meteors by ablation phenomena or by thermionic emissions *V H Kulkarni and Shobha Kadam* 107–111
- Main reaction process simulation of hydrogen gas discharge in a cold cathode electric vacuum device *Jing-Ye Liu, Yuan Gao and Gang Wang* 113–124
- Calibration-free laser-induced breakdown spectroscopy for quantitative elemental analysis of materials *V K Unnikrishnan, K Mridul, R Nayak, K Alti, V B Kartha, C Santhosh, G P Gupta and B M Suri* 299–310
- Dynamic imaging and hydrodynamics study of high velocity, laser-accelerated thin foil targets using multiframe optical shadowgraphy *S Tripathi, S Chaurasia, P Leshma and L J Dhareshwar* 1471–1483
- Condensed Matter Physics**
- Electron transport in wurtzite InN *F M Abou El-Ela and B M El-Assy* 125–136
- The relationship between the doping levels and some physical properties of $\text{SnO}_2\text{:F}$ thin films spray-deposited on optical glass *Demet Tatar and Bahattin Düzgün* 137–150
- Lekhnitskii's formalism of one-dimensional quasicrystals and its application *Yang Gao* 311–318
- Collapse of a Bose gas: Kinetic approach *Shyamal Biswas* 319–325
- Electronic structure and equilibrium properties of hcp titanium and zirconium *B P Panda* 327–335

- Swelling/deswelling of polyacrylamide gels in aqueous NaCl solution: Light scattering and macroscopic swelling study *M Sivanantham and B V R Tata* 457–469
- Probing ultrafast carrier dynamics, nonlinear absorption and refraction in core–shell silicon nanowires *Sunil Kumar, M Khorasaninejad, M M Adachi, K S Karim, S S Saini and A K Sood* 471–481
- The effect of impurity on transition frequency of bound polaron in quantum rods *Wei Xiao and Jing-Lin Xiao* 1485–1493
- Effect of oxygen deficiency on the magnetic field-dependent entropy in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ *A Pattanaik and P Nayak* 1495–1501

Interdisciplinary Physics

- AlGaIn/GaN-based HEMT on SiC substrate for microwave characteristics using different passivation layers *T R Lenka and A K Panda* 151–163
- Physics of the fastest communication *Mukesh Monga* 165–172
- Statistical analysis of the road network of India *Satyam Mukherjee* 483–491
- A simple consensus algorithm for distributed averaging in random geographical networks *Mahdi Jalili* 493–499
- Effect of different donors and a polymer environment on photophysical and energy transfer studies using C540 as the acceptor *N Sessa Bamini, A Ramalingam and V S Gowri* 1503–1524
- Single-mode fibre coupler as refractometer sensor *Pabitra Nath and Mridul Buragohain* 1525–1532

Astronomy and Astrophysics

- Non-adiabatic radiative collapse of a relativistic star under different initial conditions *Ranjan Sharma and Ramesh Tikekar* 501–509