

# Chinese Physics C Subject Index to Vol. 48 (2024)

No. 1

## PARTICLES AND FIELDS

- 013001 **Identification of deuterons at BESIII**  
Wei Wang, Bo Zheng, Jia-Jia Qin, Zhi-Yong Wang
- 013101 **Magnetic and quadrupole moments of the  $Z_c(4020)^+$ ,  $Z_c(4050)^+$ , and  $Z_c(4600)^+$  states in the diquark-antidiquark picture**  
Ulaş Özdem
- 013102 **Strong vertices of bottom mesons  $B$  and  $B^*$  and bottomonia  $\Upsilon$ ,  $\eta_b$**   
Jie Lu, Guo-Liang Yu, Zhi-Gang Wang, Bin Wu
- 013103 **Resonant contribution of the three-body decay process  $\bar{B}_s \rightarrow K^+ K^- P$  in perturbative QCD**  
Gang Lü, Chang-Chang Zhang, Yan-Lin Zhao, Li-Ying Zhang
- 013104 **Dark matter interactions from an extra  $U(1)$  gauge symmetry with kinetic mixing and Higgs charge**  
Lianyou Shan, Zhao-Huan Yu
- 013105 **Jet modification in absence of QGP-medium: the role of multiparton interactions and color reconnection**  
Prottoy Das, Abhi Modak, Debjani Banerjee, Rathijit Biswas, Supriya Das, Sanjay K. Ghosh, Sibaji Raha, Sidharth Kumar Prasad

## NUCLEAR PHYSICS

- 014001 **Reactions induced by 30 MeV  ${}^3\text{He}$  beam on  ${}^9\text{Be}$  : cluster transfer reactions**  
B. A. Urazbekov, T. Issatayev, S. M. Lukyanov, A. Azhibekov, A. S. Denikin, K. Mendibayev, D. M. Janseitov, Yu E. Penionzhkevich, K. A. Kuterbekov, T. K. Zholdybayev
- 014101 **Elastic scattering and total reaction cross sections of  ${}^6\text{Li}$  examined via a microscopic continuum discretized coupled-channels model**  
Wendi Chen, Danyang Pang, Hairui Guo, Tao Ye, Weili Sun, Yangjun Ying
- 014102 **Microscopic shell-model description of irrotational-flow dynamics in  ${}^{102}\text{Pd}$**   
H. G. Ganev
- 014103 **Bethe-Heitler lepton pair production in the deuteron breakup reaction**  
Mengchu Cai, Tianbo Liu, Bo-Qiang Ma
- 014104 **Uncertainties of critical temperatures based on higher-order fluctuations of the largest fragment charge**  
Erxi Xiao, Xin Lei, Yingge Huang, Yujie Feng, Long Zhu, Jun Su
- 014105 **Theoretical predictions on cluster radioactivity of superheavy nuclei with  $Z = 119, 120$**   
Jiejie Liu, Zhen Wang, Hantao Zhang, Zhongzhou Ren
- 014106 **Further monopole effects in neutron-rich Sb isotopes**  
Han-Kui Wang, Yu-Le Sun, Bo-Wen Jiang, Fan-Fei Zeng, Min-Liang Liu
- 014107 **Evolution of  $N = 20, 28, 50$  shell closures in the  $20 \leq Z \leq 30$  region in deformed relativistic Hartree-Bogoliubov theory in continuum**  
Ru-You Zheng, Xiang-Xiang Sun, Guo-fang Shen, Li-Sheng Geng

## PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 015101 **Gauss-Bonnet solution with a cloud of strings in de Sitter and anti-de Sitter space**  
Wenxi Zhai, Xiangdong Zhang
- 015102 **Holographic Schwinger effect in spinning black hole backgrounds**  
Yi-Ze Cai, Zi-Qiang Zhang
- 015103 **Thermal analysis and Joule-Thomson expansion of black hole exhibiting metric-affine gravity**  
Muhammad Yasir, Tiecheng Xia, Faisal Javed, G. Mustafa
- 015104 **Strong gravitational lensing of blazar gamma-radiation and intergalactic magnetic fields**  
Yu. N. Eroshenko

No. 2

## PARTICLES AND FIELDS

- 023001 **Performance and calibration of quark/gluon-jet taggers using  $140 \text{ fb}^{-1}$  of  $pp$  collisions at  $\sqrt{s} = 13 \text{ TeV}$  with the ATLAS detector**  
G. Aad *et al.* The ATLAS Collaboration
- 023101  **$U(1)_{L_\mu-L_\tau}$  breaking phase transition, muon  $g-2$ , dark matter, collider, and gravitational wave**  
Jie Wang, Jinghong Ma, Jing Gao, Xiao-Fang Han, Lei Wang
- 023102 **Temperature and volume dependence of pion-pion scattering lengths**  
Qing-Wu Wang, Hua-Zhong Guo
- 023103 **Radiative decays  $D^*_{(s)} \rightarrow D_{(s)}\gamma$  in covariant confined quark model**  
C. T. Tran, M. A. Ivanov, P. Santorelli, Q. C. Vo
- 023104 **Observability of parameter space for charged Higgs boson in its bosonic decays in two Higgs doublet model Type-1**  
Ijaz Ahmed, Waqas Ahmad, M. S. Amjad, Jamil Muhammad
- 023105 **Strong decay of  $Y(4230) \rightarrow J/\psi f_0(980)$  in light cone sum rules**  
Yiling Xie, Hao Sun

## NUCLEAR PHYSICS

- 024001 **Investigation of  $^{58}\text{Ni}$  ( $n, p$ )  $^{58}\text{Co}$  reaction cross-section with covariance analysis**  
Akash Hingu, S. Mukherjee, Siddharth Parashari, Arora Sangeeta, A. Gandhi, Mahima Upadhyay, Mahesh Choudhary, Sumit Bamal, Namrata Singh, G. Mishra, Sukanya De, Saurav Sood, Sajin Prasad, G. Saxena, Ajay Kumar, R.G. Thomas, B.K. Agrawal, K. Katovsky, A. Kumar
- 024002 **Photonuclear reactions on stable isotopes of selenium at bremsstrahlung end-point energies of 10–23 MeV**  
F.A. Rasulova, N.V. Aksenen, S.I. Alekseev, R.A. Aliev, S.S. Belyshev, I. Chuprakov, N.Yu. Fursova, A.S. Madumarov, J.H. Khushvaktov, A.A. Kuznetsov, B.S. Yuldashev
- 024101 **From masses and radii of neutron stars to EOS of nuclear matter through neural network**  
Zehan Wu, Dehua Wen
- 024102 **Nuclear mass predictions based on a deep neural network and finite-range droplet model (2012)**  
To Chung Yiu, Haozhao Liang, Jenny Lee
- 024103 **Dynamics of  $^7\text{Li}$  breakup and its influence on elastic scattering: a study of  $^7\text{Li} + ^{144}\text{Sm}$  system**  
A. Morzabayev, N. Amangeldi, Awad A. Ibraheem, D. Soldatkan, G. Yergaliuly, B. Mauyey, Anuar. A. Orazalievna, Sh. Hamada
- 024104 **Interaction of photons with silver and indium nuclei at energies up to 20 MeV**  
J. H. Khushvaktov, M. A. Demichev, D. L. Demin, S. A. Evseev, M. I. Gostkin, V. V. Kobets, F. A. Rasulova, S. V. Rozov, E. T. Ruziev, A. A. Solnyshkin, T. N. Tran, E. A. Yakushev, B. S. Yuldashev
- 024105 **Analysis of data for  $\gamma p \rightarrow f_1(1285)p$  photoproduction**  
Ai-Chao Wang, Neng-Chang Wei, Fei Huang
- 024106 **Description of elastic scattering for  $^7\text{Li}$ -induced reactions on 1p-shell nuclei**  
Yong-Li Xu, Xin-Wu Su, Zhi-Hao Sun, Yin-Lu Han, Xiao-Jun Sun, Dong-Hong Zhang, Chong-Hai Cai

## PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 025101 **Radiation properties of the accretion disk around a black hole in Einstein-Maxwell-scalar theory**  
Mirzabek Alloqulov, Sanjar Shaymatov, Bobomurat Ahmedov, Abdul Jawad
- 025102 **Cosmic implications of the  $^{12}\text{C}(n, \gamma)^{13}\text{C}$  reaction: a nuclear astrophysical perspective**  
Soumya Saha
- 025103 **Impact of a nearby subhalo on the constraint of dark matter annihilation from cosmic ray antiprotons**  
Yi Zhao, Xiao-Jun Bi, Su-Jie Lin, Peng-Fei Yin
- 025104 **Shadow and weak gravitational lensing for Ellis-Bronnikov wormhole**  
Mirzabek Alloqulov, Farruh Atamurotov, Ahmadjon Abdujabbarov, Bobomurat Ahmedov, Vokhid Khamidov

No. 3

## PARTICLES AND FIELDS

- 033101 **Time-reversal asymmetries in  $\Lambda_b \rightarrow \Lambda(\rightarrow p\pi^-)\ell^+\ell^-$**   
Chao-Qiang Geng, Chia-Wei Liu, Zheng-Yi Wei
- 033102  **$J/\psi$  pair hadroproduction at next-to-leading order in nonrelativistic-QCD at ATLAS**  
Li-Ping Sun
- 033103 **Solving the strong  $CP$  problem via a  $\bar{\theta}$ -characterized mirror symmetry**  
Pei-Hong Gu
- 033104 **Fully-light vector tetraquark states with explicit  $P$ -wave via QCD sum rules**  
Qi Xin, Zhi-Gang Wang
- 033105 **Influence of low-energy supersymmetric vector-like quirk particles on  $W$  mass increment and muon  $g-2$  anomaly**  
Ping Zhou
- 033106 **Reconstructing parton distribution function based on maximum entropy method**  
Sihan Zhang, Xiaobin Wang, Tao Lin, Lei Chang
- 033107 **Nonlinear corrections for the nuclear gluon distribution in  $eA$  processes**  
G.R. Boroun, B. Rezaei, F. Abdi

## NUCLEAR PHYSICS

- 034001 **Elastic scattering of  $^{13}\text{C}$  and  $^{14}\text{C}$  isotopes on a  $^{208}\text{Pb}$  target at energies of approximately five times the Coulomb barriers**  
Guo Yang, Fang-Fang Duan, Kang Wang, Yan-Yun Yang, Zhi-Yu Sun, Valdir Guimarães, Dan-Yang Pang, Wen-Di Chen, Lei Jin, Shi-Wei Xu, Jun-Bing Ma, Peng Ma, Zhen Bai, Ling-Hao Wang, Quan Liu, Hooi-Jin Ong, Bing-Feng Lv, Song Guo, Mukhi Kumar Raju, Xiu-Hua Wang, Rong-Hua Li, Yu-Hu Zhang, Xiao-Hong Zhou, Zheng-Guo Hu, Hu-Shan Xu
- 034002 **Ground-state mass of  $^{22}\text{Al}$  and test of state-of-the-art *ab initio* calculations**  
M.Z. Sun *et al.* Q. Zeng
- 034003 **Measurement of yields and angular distributions of  $\gamma$ -quanta from the interaction of 14.1 MeV neutrons with oxygen, phosphorus, and sulfur**  
D. N. Grozdanov, N. A. Fedorov, S. B. Dabylova, Yu. N. Kopatch, I. N. Ruskov, V. R. Skoy, T. Yu. Tretyakova, C. Hramco, P. I. Kharlamov, G. V. Pampushik, P. G. Filonchik, A. V. Andreev
- 034101 **What can we learn from recent  $2\nu\beta\beta$  experiments?**  
Dong-Liang Fang
- 034102 **Wobbling motion for a triaxial rotor plus a single quasiparticle**  
Si-Hua Li, Hua-Ming Dai, Qi-Bo Chen, Xian-Rong Zhou

- 034103**  **$\alpha$ -decay properties of superheavy nuclei with  $117 \leq Z \leq 120$  from the systematics of decay chains and isotopic chains**  
Tao Wan, Shu-Lin Tang, Yi-Bin Qian
- 034104** **Empirical model for fusion cross sections of Ca-induced reactions**  
Reddi Rani. L, N. Sowmya, K. N Sridhar, H C. Manjunatha, M. M. Armstrong Arasu
- 034105** **Neutron star core-crust transition and the crustal moment of inertia in the nonlinear relativistic Hartree approximation**  
Niu Li, Si-Na Wei, Rong-Yao Yang, Jing Ye, Wei-Zhou Jiang
- 034106** **Complexity growth in a holographic QCD model**  
Wen-Bin Chang, De-fu Hou
- 034107** **Impact of the Brink-Axel hypothesis on unique first-forbidden  $\beta$ -transitions for *r*-process nuclei**  
Fakeha Farooq, Jameel-Un Nabi, Ramoona Shehzadi
- 034108** **Proton-neutron symplectic model description of  $^{106}\text{Cd}$**   
H. G. Ganev

#### PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 035101** **Post-Newtonian binary dynamics in the effective field theory of Horndeski gravity**  
Wen-Hao Wu, Yong Tang
- 035102** **Quasinormal modes and isospectrality of Bardeen (Anti-) de Sitter black holes**  
Ying Zhao, Wentao Liu, Chao Zhang, Xiongjun Fang, Jiliang Jing

No. 4

#### LETTERS

- 041001** **A discussion on the anomalous threshold enhancement of  $J/\psi -\psi(3770)$  couplings and  $X(6900)$  peak**  
Ye Lu, Chang Chen, Guang-You Qin, Han-Qing Zheng

#### PARTICLES AND FIELDS

- 043001** **Search for production of dark fermion candidates in association with heavy neutral gauge boson decaying to dimuon in proton-proton collisions at  $\sqrt{s} = 8$  TeV using CMS open data**  
Y. Mahmoud, H. Abdallah, M. T. Hussein, S. Elgammal
- 043002** **SANC Monte Carlo programs for small-angle Bhabha scattering**  
A.B. Arbuzov, S.G. Bondarenko, I.R. Boyko, L.V. Kalinovskaya, A.A. Kampf, R.R. Sadykov, V.L. Yermolchyk
- 043003** **Solar neutrino background in high-pressure gaseous  $^{82}\text{SeF}_6$  TPC neutrinoless double beta decay experiments**  
Jiemiao Wang, Hulin Wang, Dongliang Zhang
- 043101** **Leptonic di-flavor and di-number violation processes at high energy  $\mu^+\mu^-$  colliders**  
Jin-Lei Yang, Chao-Hsi Chang, Tai-Fu Feng
- 043102** **Some remarks on compositeness of  $T_{cc}^+$**   
Chang Chen, Ce Meng, Zhiguang Xiao, Han-Qing Zheng
- 043103** **Searching for the light leptophilic gauge boson  $Z_x$  via four-lepton final states at the CEPC**  
Chong-Xing Yue, Yan-Yu Li, Mei-Shu-Yu Wang, Xin-Meng Zhang
- 043104** **Higgs-like (pseudo)scalars in  $\text{AdS}_4$ , marginal and irrelevant deformations in  $\text{CFT}_3$ , and instantons on  $S^3$**   
M. Naghdi
- 043105** **Revisiting the top-quark pair production at future  $e^+e^-$  colliders**  
Jin Ma, Sheng-Quan Wang, Ting Sun, Jian-Ming Shen, Xing-Gang Wu

#### NUCLEAR PHYSICS

- 044001** **Correlations of baryon and charge stopping in heavy ion collisions**  
Wendi Lv, Yang Li, Ziyang Li, Rongrong Ma, Zebo Tang, Prithwish Tribedy, Chun Yuen Tsang, Zhangbu Xu, Wangmei Zha
- 044101** **Tensor force impact on shell evolution in neutron-rich Si and Ni isotopes**  
S.V. Sidorov, A.S. Kornilova, T.Yu. Tretyakova
- 044102** **Theoretical calculations of proton emission half-lives based on a deformed Gamow-like model**  
Dong-Meng Zhang, Xiao-Yuan Hu, Lin-Jing Qi, Hong-Ming Liu, Ming Li, Xiao-Hua Li
- 044103** **Exploration of the ground state properties of neutron-rich sodium isotopes using the deformed relativistic mean field theory in complex momentumrepresentations with BCS pairings**  
Yu-Xuan Luo, Quan Liu, Jian-You Guo
- 044104** **Astrophysical *S*-factor and reaction rate for  $^{15}\text{N}(p,\gamma)^{16}\text{O}$  within the modified potential cluster model**  
S. B. Dubovichenko, A. S. Tkachenko, R. Ya. Kezerashvili, N. A. Burkova, B. M. Yeleusheva
- 044105**  **$\alpha$ -particle preformation factors in heavy and superheavy nuclei**  
Song Luo, Dong-Meng Zhang, Lin-Jing Qi, Xun Chen, Peng-Cheng Chu, Xiao-Hua Li

#### PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 045101** **Simulating gamma-ray production from cosmic rays interacting with the solar atmosphere in the presence of coronal magnetic fields**  
Zhe Li, Kenny C. Y. Ng, Songzhan Chen, Yuncheng Nan, Huihai He
- 045102** **Rastall gravity: accretion disk image in the context of radiation fields and visual transformations compared to Reissner-Nordström black hole**  
Yu-Xiang Huang, Sen Guo, Yu Liang, Yu-Hao Cui, Qing-Quan Jiang, Kai Lin

- 045103 Radiative capture of proton through the  $^{14}\text{N}(p,\gamma)^{15}\text{O}$  reaction at low energy**  
B.F. Irgaziev, Abdul Kabir, Jameel-Un Nabi
- 045104 Higgs inflation model with non-minimal coupling in hybrid Palatini approach**  
Brahim Asfour, Aatifa Bargach, Ahmed Errahmani, Taoufik Ouali
- 045105 Reconstruction of aether scalar tensor theory for various cosmological scenarios**  
Qi-Ming Fu, Meng-Ci He, Tao-Tao Sui, Xin Zhang
- 045106 Gravitational wave footprints from Higgs-portal scalegenesis with multiple dark chiral scalars**  
He-Xu Zhang, Shinya Matsuzaki, Hiroyuki Ishida
- 045107 Analytical solutions of equatorial geodesic motion in Kerr spacetime**  
Yan Liu, Bing Sun
- 045108 Efficient parameter inference for gravitational wave signals in the presence of transient noises using temporal and time-spectral fusion normalizing flow**  
Tian-Yang Sun, Chun-Yu Xiong, Shang-Jie Jin, Yu-Xin Wang, Jing-Fei Zhang, Xin Zhang

No. 5

#### LETTERS

- 051001 Dark energy and matter interacting scenario to relieve  $H_0$  and  $S_8$  tensions**  
Li-Yang Gao, She-Sheng Xue, Xin Zhang

#### PARTICLES AND FIELDS

- 053001 A scheme to fix multiple solutions in amplitude analyses**  
Yuanning Gao, Tianze Rong, Zhenwei Yang, Chenjia Zhang, Yanxi Zhang
- 053101 One-loop contributions for  $h \rightarrow \ell\bar{\ell}\gamma$  and  $e^-e^+ \rightarrow h\gamma$  in the  $U(1)_{B-L}$  extension of the standard model**  
Tran Dzung Tri, Thanh Huy Nguyen, Khiem Hong Phan
- 053102 Strong decays of the  $P_c(4312)$  and its isospin cousin via the QCD sum rules**  
Xiu-Wu Wang, Zhi-Gang Wang
- 053103 Thermodynamic properties and phase diagram of quark matter within non-extensive Polyakov chiral  $SU(3)$  quark mean field model**  
Dhananjay Singh, Arvind Kumar
- 053104  $B$  meson rare decays in the TNMSSM**  
Hai-Xiang Chen, Sheng-Kai Cui, Ning-Yu Zhu, Zhao-Yang Zhang, Huai-Cong Hu
- 053105 Bubble nucleation in the two-flavor quark-meson model**  
Junrong Wang, Ziwan Yu, Hong Mao
- 053106 Production of charmonium pentaquarks from  $b$ -baryon and  $B$ -meson decays:  $SU(3)$  analysis**  
Wei-Hao Han, Ye Xing, Ji Xu
- 053107 Correlation function and the inverse problem in the  $BD$  interaction**  
Hai-Peng Li, Jing-Yu Yi, Chu-Wen Xiao, De-Liang Yao, Wei-Hong Liang, Eulogio Oset
- 053108 Multiplicity dependence of the freezeout parameters in high energy hadron-hadron collisions**  
Muhammad Ajaz, Majid Shehzad, Muhammad Waqas, Haifa I. Alrebdi, Mohammad Ayaz Ahmad, Antalov Jagnandan, Shawn Jagnandan, Murad Badshah, Jalal Hasan Baker, Abdul Mosawir Quraishi
- 053109 Refined symmetry-resolved Page curve and charged black holes**  
Pan Li, Yi Ling
- 053110 Molecular components in  $J/\psi$  and  $\rho\pi$  puzzle**  
Xing-Dao Guo, Dian-Yong Chen, Xue-Qian Li, Zhong-Yuan Yuan, Shijing Sang
- 053111 Study of the topological quantities of lattice QCD using a modified DCGAN frame**  
Lin Gao, Heping Ying, Jianbo Zhang
- 053112 Different coalescence sources of light nucleus production in Au-Au collisions at  $\sqrt{s_{NN}} = 3$  GeV**  
Rui-Qin Wang, Ji-Peng Lv, Yan-Hao Li, Jun Song, Feng-Lan Shao
- 053113 Precise determination of the top-quark on-shell mass  $M_t$  via its scale- invariant perturbative relation to the top-quark  $\overline{\text{MS}}$  mass  $\overline{m}_t(\overline{m}_t)$**   
Xu-Dong Huang, Xing-Gang Wu, Xu-Chang Zheng, Jiang Yan, Zhi-Fei Wu, Hong-Hao Ma
- 053114 Revisiting the spin effects induced by thermal vorticity**  
Jian-Hua Gao, Shi-Zheng Yang

#### NUCLEAR PHYSICS

- 054101 Systematic study of cluster radioactivity in trans-lead nuclei with various versions of proximity potential formalisms**  
Xiao Liu, Jie-Dong Jiang, Xi-Jun Wu, Xiao-Hua Li
- 054102 Gravitational form factors of the proton from near-threshold vector meson photoproduction**  
Xiao-Yun Wang, Fancong Zeng, Jiyuan Zhang
- 054103 Probing valence quark width of the proton in deeply virtual Compton scattering at high energies**  
Wenchang Xiang, Dewen Cao, Daicui Zhou
- 054104 Cross sections for 14 MeV neutron interaction with lutetium isotopes and their theoretical excitation functions**  
Yueli Song, Fengqun Zhou, Yong Li, Xiaopeng Zhang, Pengfei Ji, Xiaojun Sun

## PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 055101** **Pair of dyon production near magnetized dyonic Reissner-Nordstrom black holes**  
Haryanto M. Sahaan
- 055102** **Black hole shadows in Einstein-Bel-Robinson gravity**  
B. Hamil, B. C. Lütfüoğlu
- 055103** **Merger estimates for a disformal Kerr black hole in quadratic degenerate higher-order scalar-tensor theories**  
Hongxin Jiang, Xinyi Du, Qiyuan Pan, Songbai Chen, Jiliang Jing
- 055104** **Test particles and quasiperiodic oscillations around Kiselev black hole with cloud of strings**  
Javlon Rayimbaev, Uktambek Eshimbetov, Bushra Majeed, Ahmadjon Abdujabbarov, Alisher Abduvokhidov, Bakhrom Abdulazizov, Akram Xalmirzayev
- 055105** **Study of bending angle and shadow in a new Schwarzschild-like black hole affected by plasma and non-plasma mediums**  
Riasat Ali, Tiecheng Xia, Muhammad Awais, Rimsha Babar

No. 6

## PARTICLES AND FIELDS

- 063001** **Determination of the resonant parameters of  $\chi_{c0}(3915)$  with global fit**  
Chunhua Li, Xijun Wang, Chen Wu
- 063101** **Mass suppression effect in QCD radiation and hadron angular distribution in jet**  
Chuan-Hui Jiang, Hai Tao Li, Shi-Yuan Li, Zong-Guo Si
- 063102**  **$B - L$  model with  $D_4 \times Z_4 \times Z_2$  symmetry for fermion mass hierarchies and mixings**  
V. V. Vien
- 063103** **QCD sum rule study of  $J^P = 1^\pm$  exotic states with two heavy quarks in the molecular picture**  
T.M. Aliev, S. Bilmis, M. Savci
- 063104** **Analysis of the gluon distribution with next-to-leading order splitting function at small- $x$**   
Jingxuan Chen, Xiaopeng Wang, Yanbing Cai, Xurong Chen, Qian Wang
- 063105** **Electrodynamics with violations of Lorentz and  $U(1)$  gauge symmetries and their Hamiltonian structures**  
Xiu-Peng Yang, Bao-Fei Li, Tao Zhu
- 063106** **Exploring dark matter-gauge boson effective interactions at current and future colliders**  
Yu Zhang, Yi-Wei Huang, Wei-Tao Zhang, Mao Song, Ran Ding
- 063107**  **$D^+ \rightarrow \pi^+ \nu \bar{\nu}$  decay process within the QCDSR approach**  
Yu Chen, Hai-Bing Fu, Tao Zhong, Sheng-Bo Wu, Dong Huang
- 063108**  **$\rho$ -meson longitudinal leading-twist distribution amplitude revisited and the  $D \rightarrow \rho$  semileptonic decay**  
Tao Zhong, Ya-Hong Dai, Hai-Bing Fu
- 063109**  **$X(3960)$ ,  $X_0(4140)$ , and other compact  $c\bar{s}\bar{s}$  states**  
Shi-Yuan Li, Yan-Rui Liu, Zi-Long Man, Zong-Guo Si, Jing Wu

## NUCLEAR PHYSICS

- 064001** **TALYS calculation and a short review of the experimental status of proton capture studies on  $p$ -nuclei: A guide to future investigation**  
Indrani Ray, Argha Deb
- 064002** **Prompt neutron emission in  $^{250}\text{No}$  spontaneous fission associated with ground and isomeric state decays**  
R.S. Mukhin, A.V. Isaev, A.V. Andreev, M.L. Chelnokov, V.I. Chepigin, H.M. Devaraja, I.N. Izosimov, A.A. Kuznetsova, O.N. Malyshev, A.G. Popeko, Yu.A. Popov, A. Rahmatinejad, B. Sailaubekov, T.M. Shneidman, E.A. Sokol, A.I. Svirikhin, M.S. Tezekbayeva, M.A. Bychkov, A.V. Yeremin, O. Dorvaux, B. Gall, K. Kessaci, K. Hauschild, A. Lopez-Martens
- 064101** **Systematic study of cluster radioactivity within the generalized liquid drop model**  
Jun-Gang Deng, Jun-Hao Cheng, Xiao-Jun Bao, Hong-Fei Zhang
- 064102** **A study of U-isotope ground state properties with covariant energy density functional**  
Junchen Wang, Yuan Tian, Ruirui Xu, Ying Cui, Xi Tao, Xiaodong Sun, Zhi Zhang, Yue Zhang, Yinlu Han, Zhigang Ge, Nengchuan Shu
- 064103** **Isoscaling properties for neutron-rich fragments in highly asymmetric heavy ion collision systems**  
Dan Peng, Chun-Wang Ma, Chun-Yuan Qiao, Xing-Quan Liu, Hui-Ling Wei
- 064104** **Sequential decay analysis of  $^{235}\text{U}(n^{\text{th}}, f)$  reaction using fragmentation approach**  
Nitin Sharma, Ashutosh Kaushik, Manoj K. Sharma
- 064105** **Implications of neutron skin measurements on Skyrme equations of state**  
Da Wei Guan, Jun Chen Pei, Chong Ji Jiang
- 064106** **Transfer learning and neural networks in predicting quadrupole deformation**  
Yuan Lin, Jia-Xing Li, Hong-Fei Zhang

## PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 065001** **Optimization of performance of the KM2A full array using the Crab Nebula**  
Zhen Cao *et al.* (LHAASO Collaboration)
- 065101** **Critical behavior and Joule-Thomson expansion of charged AdS black holes surrounded by exotic fluid with modified Chaplygin equation of state**  
Meng-Yao Zhang, Hao Chen, Hassan Hassanabad, Zheng-Wen Long, Hui Yang
- 065102** **Cosmological constraints on neutrino mass within consistent cosmological models**  
Ye-Huang Pang, Xue Zhang, Qing-Guo Huang

- 065103 Impacts of gravitational-wave background from supermassive black hole binaries on the detection of compact binaries by LISA**  
 Fan Huang, Yan-Chen Bi, Zhoujian Cao, Qing-Guo Huang
- 065104 New results on the dynamics of critical collapse**  
 Jun-Qi Guo, Yu Hu, Pan-Pan Wang, Cheng-Gang Shao
- 065105 Observational appearance and extra photon rings of an asymmetric thin-shell wormhole with a Bardeen profile**  
 Ke-Jian He, Zhi Luo, Sen Guo, Guo-Ping Li
- 065106 Surface growth approach for bulk reconstruction in the AdS/BCFT correspondence**  
 Xi-Hao Fang, Fang-Zhong Chen, Jia-Rui Sun
- 065107 Constraints on axion-like particles from the observation of Galactic sources by the LHAASO**  
 Jun Li, Xiao-Jun Bi, Lin-Qing Gao, Xiaoyuan Huang, Run-Min Yao, Peng-Fei Yin
- 065108 Constraints on real scalar inflation from preheating using LATTICEEASY**  
 Wei Cheng, Tong Qin, Jiujiang Jiang, Ruiyu Zhou
- 065109 Photon orbits and phase transition for Letelier AdS black holes immersed in perfect fluid dark matter**  
 Ashima Sood, Md Sabir Ali, J. K. Singh, Sushant G. Ghosh

No. 7

#### PARTICLES AND FIELDS

- 073001 Waveform simulation in PandaX-4T**  
 Jiafu Li *et al.* Zhizhen Zhou
- 073002 Detecting neutrinos from supernova bursts in PandaX-4T**  
 Binyu Pang *et al.* Yubo Zhou
- 073003 Prospects to study hyperon-nucleon interactions at BESIII**  
 Jianping Dai, Hai-Bo Li, Han Miao, Jianyu Zhang
- 073004 Calibration of the cryogenic measurement system of a resonant haloscope cavity**  
 Dong He, Jie Fan, Xin Gao, Yu Gao, Nick Houston, Zhongqing Ji, Yirong Jin, Chuang Li, Jinmian Li, Tianjun Li, Shi-hang Liu, Jia-Shu Niu, Zhihui Peng, Liang Sun, Zheng Sun, Jia Wang, Puxian Wei, Lina Wu, Zhongchen Xiang, Qiaoli Yang, Chi Zhang, Wenxing Zhang, Xin Zhang, Dongning Zheng, Ruifeng Zheng, Jian-yong Zhou
- 073101 Rediscovery of numerical Lüscher's formula from the neural network**  
 Yu Lu, Yi-Jia Wang, Ying Chen, Jia-Jun Wu
- 073102 Production of higher excited quarkonium pair at the super Z factory**  
 Qi-Li Liao, Jun Jiang
- 073103 Neutrino oscillations in the Non-Kerr black hole with quantum phenomenon**  
 Husan Alibekov, Farruh Atamurotov, Ahmadjon Abdujabbarov, Vokhid Khamidov
- 073104 Search for an exotic vectorlike X-quark in same-sign dilepton final states at the future 3 TeV CLIC**  
 Yan-Ju Zhang, Jin-Long Chang, Tai-Gang Liu
- 073105 95 GeV light Higgs in the top-pair-associated diphoton channel at the LHC in the minimal dilaton model**  
 Kun Wang, Jingya Zhu
- 073106 The  $\bar{q}q\bar{s}Q$  ( $q=u, d; Q=c, b$ ) tetraquark system in a chiral quark model**  
 Gang Yang, Jialun Ping, Jorge Segovia

#### NUCLEAR PHYSICS

- 074001 Further investigation on the fusion of  ${}^6\text{Li}$  with  ${}^{209}\text{Bi}$  target at near-barrier energies**  
 G. L. Zhang *et al.* J. Lubian
- 074101 Evaluation of neutron cross sections of  ${}^{48}\text{Ti}$  based on the Unified-Monte-Carlo-B method**  
 Hou-Qiong Xia, Rui-Rui Xu, Ping Liu, Roberto Capote, Yuan Tian, Xi Tao, Xiao-Fei Wu, Yue Zhang, Zhi-Gang Ge, Neng-Chuan Shu, Song Feng
- 074102 An improved simple model for  $\alpha$  decay half-lives**  
 Xiao-Yan Zhu, Song Luo, Wei Gao, Lin-Jing Qi, Ming Li, Xiao-Hua Li, Wen-Bin Lin
- 074103 Role of magnetic fields on the outer crust in a magnetar**  
 Wei Jiang, Yan-jun Chen
- 074104 Systematic investigation of nucleon optical model potentials in  $(p, d)$  transfer reactions**  
 Silu Chen, Zixuan Liu, Zhi Zhang, Ruirui Xu, Danyang Pang, Yiping Xu
- 074105 Nuclear decay database in fission product mass region**  
 Xiao-Long Huang, Dong Yang, Zhi-Gang Ge, Xiang-Han Wang, Yang-Yang Liu, Yong-Li Jin, Jian Li
- 074106 Ab initio valence-space in-medium similarity renormalization group calculations for neutron-rich P, Cl, and K isotopes**  
 M. R. Xie, L. Y. Shen, J. G. Li, H. H. Li, Q. Yuan, W. Zuo

#### PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 075101 Preliminary analyses of the dynamics and thermodynamics of rotating regular black holes**  
 Hao Yang, Chang-Jiang Yu, Yan-Gang Miao
- 075102 Possible bias of the constraints on the Hubble constant owing to the quasi-Gaussian distribution of DM<sub>IGM</sub> in fast radio bursts**  
 Gui-Yao Chen, Xin Li
- 075103 Distinguishing the observational signatures of hot spots orbiting Reissner-Nordström spacetime**  
 Tianshu Wu, Yiqian Chen

- 075104 Thermodynamics of charged black holes in Maxwell-dilaton-massive gravity**  
Rui-Hong Yue, Kai-Qiang Qian, Bo Liu, De-Cheng Zou
- 075105 Can the late dark energy parameterization reconcile the Hubble tension?**  
Ming-Jian Zhang, Li Chen, Maoyou Yang, Junmei Wang
- 075106 Linear instability of hairy black holes in Horndeski theory**  
Chao Zhang, Tao Zhu
- 075107 Curvature-enhanced multipartite coherence in the multiverse**  
Shu-Min Wu, Chun-Xu Wang, Rui-Di Wang, Jin-Xuan Li, Xiao-Li Huang, Hao-Sheng Zeng
- 075108 Physical properties and maximum allowable mass-radius relation of complexity-free compact stellar objects within modified  $f(\mathcal{R}, T)$  gravity formalism**  
M. K. Jasim, S. K. Maurya, Abdelghani Errehmy, Ali Khalid Jassim, Kottakkaran Sooppy Nisar, Abdel-Haleem Abdel-Aty

No. 8

## LETTERS

- 081001 New signature of low mass  $Z'$  in  $J/\psi$  decays**  
Chao-Qiang Geng, Chia-Wei Liu, Jiabao Zhang

## PARTICLES AND FIELDS

- 083001 Amplitude analysis of the decays  $D^0 \rightarrow \pi^+ \pi^- \pi^+ \pi^-$  and  $D^0 \rightarrow \pi^+ \pi^- \pi^0 \pi^0$**   
M. Ablikim *et al.* (BESIII Collaboration)
- 083101 Analysis of strong decays of  $SU(3)$  partners of  $\Omega(2012)$  baryon**  
T. M. Aliev, S. Bilmis, M. Savci
- 083102 Moving doubly heavy baryon in a strongly coupled plasma via holography**  
Xuan Liu, Jia-Jie Jiang, Xun Chen, Mitsutoshi Fujita, Akira Watanabe
- 083103 Analysis of  $b \rightarrow c\tau\bar{\nu}_\tau$  anomalies using weak effective Hamiltonian with complex couplings and their impact on various physical observables**  
Muhammad Arslan, Tahira Yasmeen, Saba Shafaq, Ishtiaq Ahmed, Muhammad Jamil Aslam
- 083104 Féeton ( $B$ - $L$  gauge boson) dark matter for the 511-keV gamma-ray excess and the prediction of low-energy neutrino flux**  
Jie Sheng, Yu Cheng, Weikang Lin, Tsutomu T. Yanagida
- 083105 Masses of the conjectured  $H$ -dibaryon at different temperatures**  
Liang-Kai Wu, Han Tang, Ning Li, Xin-Yang Wang
- 083106 Pion-photon and kaon-photon transition distribution amplitudes in the Nambu–Jona-Lasinio model**  
Jin-Li Zhang, Jun Wu
- 083107 Next-to-leading-order relativistic and QCD corrections to prompt  $J/\psi$  pair photoproduction at future  $e^+e^-$  colliders**  
Zhi-Guo He, Xiao-Bo Jin, Bernd A. Kniehl, Rong Li
- 083108 A comparative lattice analysis of  $SU(2)$  dark glueballs**  
Min-Huan Chu, Jun-Hui Lai, Wei Wang, Jialu Zhang, Qianteng Zhu
- 083109 Invisible and semi-invisible decays of bottom baryons**  
Yong Zheng, Jian-Nan Ding, Dong-Hao Li, Lei-Yi Li, Cai-Dian Lü, Fu-Sheng Yu

## NUCLEAR PHYSICS

- 084001 Measurement of the neutron total cross section of  ${}^9\text{Be}$  at the Back- $n$  white neutron source of CSNS**  
Jiangbo Bai *et al.* Kejun Zhu
- 084101 Inclusive quasielastic neutrino-nucleus scattering with energy density functional nuclear models**  
K. S. Kim, Soonchul Choi, Hana Gil, Chang Ho Hyun
- 084102 Calculation of the energy dependence of fission fragments yields and kinetic energy distributions for neutron-induced  ${}^{235}\text{U}$  fission**  
Ya-Ning Han, Zheng Wei, Yi-Xuan Wang, Dong-Ying Huo, Peng-Qi Zhang, Ming Li, Jun Ma, Kang Wu, Yong-Guang Zheng, Yuan He, Zhi-Yong Deng, Tian-Zhi Jiang, Xiang-Lin Zhuo, Jin Li, Yun Zhang, Yu Zhang, Jun-Run Wang, Xiao-Dong Su, Ze-En Yao
- 084103 Applying deep learning technique to chiral magnetic wave search**  
Yuan-Sheng Zhao, Xu-Guang Huang
- 084104 Correlation between the charge radii difference in mirror partner nuclei and the symmetry energy slope**  
Xiao-Rong Ma, Shuai Sun, Rong An, Li-Gang Cao
- 084105 Uncertainties of nuclear level density estimated using Bayesian neural networks**  
Xinyu Wang, Ying Cui, Yuan Tian, Kai Zhao, Yingxun Zhang
- 084106 Quenching and flow of charm and bottom quarks via semi-leptonic decay of  $D$  and  $B$  mesons in Pb+Pb collisions at the LHC**  
Shu-Qing Li, Wen-Jing Xing, Shanshan Cao, Guang-You Qin

## PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 085101 Spatial covariant gravity with two degrees of freedom in the presence of an auxiliary scalar field: Perturbation analysis**  
Zhi-Chao Wang, Xian Gao
- 085102 Teukolsky-like equations with various spins in spherically symmetric spacetime**  
Ya Guo, Hiroaki Nakajima, Wenbin Lin
- 085103 Periapsis shift in spherically symmetric spacetimes and effects of electric interactions**  
Qianchuan Wang, Junji Jia

- 085104** **Imprints of a gravitational wave through the weak field deflection of photons**  
Reggie C. Pantig, Ali Övgün
- 085105** **Quasi-normal modes, emission rate, and shadow of charged AdS black holes with perfect fluid dark matter**  
Hao Chen, Shi-Hai Dong, Sepehr Hassanabadi, Narges Heidari, Hassan Hassanabadi
- 085106** **Observational signatures of rotating black holes in the semiclassical gravity with trace anomaly**  
Zhenyu Zhang, Yehui Hou, Minyong Guo
- 085107** **Discovery potential of the Glashow resonance in an air shower neutrino telescope**  
Guo-Yuan Huang

No. 9

## LETTERS

- 091001** **Measurement of solar  $pp$  neutrino flux using electron recoil data from PandaX-4T commissioning run**  
Xiaoying Lu *et al.* (PandaX Collaboration)

## PARTICLES AND FIELDS

- 093001** **Determination of the number of  $\psi(3686)$  events taken at BESIII**  
M. Ablikim *et al.* (BESIII Collaboration)
- 093101** **Higgs boson decays  $h \rightarrow MZ$  in the TNMSSM**  
Huai-Cong Hu, Zhao-Yang Zhang, Ning-Yu Zhu, Hai-Xiang Chen
- 093102** **Heavy neutral leptons in gauged  $U(1)_{L_\mu - L_\tau}$  at muon collider**  
Ru-Yi He, Jia-Qi Huang, Jin-Yuan Xu, Fa-Xin Yang, Zhi-Long Han, Feng-Lan Shao
- 093103**  **$0^-$  hidden-heavy tetraquark states via QCD sum rules**  
Bing-Dong Wan, Hong-Tai Xu
- 093104** **Probing dipole operators and four-fermion operators at low-energy lepton colliders**  
Yanyan Hu, Xinheng Guo
- 093105** **Top-quark rare decays with flavor violation**  
Ming-Yue Liu, Shu-Min Zhao, Song Gao, Xing-Yu Han, Tai-Fu Feng
- 093106** **Model dependent analysis of  $D_{(s)}^+ \rightarrow \eta^{(\prime)} l^+ \nu_l$  decays in beyond standard model**  
S. Mahata, M. Mandal, H. Mahapatra, S. Biswas, S. Sahoo
- 093107** **Light quarkonium and charmonium mass shifts in an unquenched quark model**  
Xiaoyun Chen, Yue Tan
- 093108** **Exploration of heavy Higgs bosons at a 100 TeV hadron collider within the semi-constrained next-to-minimal supersymmetric standard model**  
Kun Wang, Pengfu Tian, Jingya Zhu
- 093109** **Comparative analysis of jet and underlying event properties across various models as a function of charged particle multiplicity at 7 TeV**  
Maryam Waqar, Haifa I. Alrebdi, Muhammad Waqas, K.S. Al-mugren, Muhammad Ajaz
- 093110** **Exploring the impact of anti-shadowing effect on unintegrated gluon distributions in the MD-BFKL equation**  
Xiaopeng Wang, Yanbing Cai, Xurong Chen

## NUCLEAR PHYSICS

- 094001** **Fusion and one-neutron stripping process for  ${}^6\text{Li} + {}^{94}\text{Zr}$  system around the Coulomb Barrier**  
Xuedou Su, Guangxin Zhang, Shipeng Hu, Peiwei Wen, H. O. Soler, Gaolong Zhang, Boshuai Cai, Cenxi Yuan, J. L. Ferreira, Zhenwei Jiao, Mingli Wang, Xiaoyu Wang, Zhen Huang, Huanqiao Zhang, Chunlei Zhang, Xiaoguang Wu, Yun Zheng, Congbo Li, Tianxiao Li, J. Lubian
- 094101** **Re-analysis of temperature dependent neutron capture rates and stellar  $\beta$ -decay rates of  ${}^{95-98}\text{Mo}$**   
Abdul Kabir, Jameel-Un Nabi, Muhammad Tahir, Abdul Muneem, Zain Ul Abideen
- 094102** **Emerging  $\gamma$ -soft-like spectrum in  ${}^{196}\text{Pt}$  in the SU3-IBM (I)**  
Tao Wang, Bing-Cheng He, Chun-Xiao Zhou, Dong-Kang Li, Lorenzo Fortunato
- 094103** **Fission barriers with the Weizsäcker-Skyrme mass model**  
Ning Wang, Min Liu
- 094104** **Comprehensive analysis of uncertainty quantification for the  ${}^{58}\text{Ni}(n, p){}^{58}\text{Co}$  reaction cross section**  
Mahesh Choudhary, Aman Sharma, Namrata Singh, Mahima Upadhyay, Punit Dubey, A. Gandhi, Akash Hingu, G Mishra, Sukanya De, L. S. Danu, Ajay Kumar, R. G. Thomas, Saurav Sood, Sajin Prasad, S. Mukherjee, I. N. Ruskov, Yu. N. Kopatch, A. Kumar

## PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 095001** **A versatile framework for analyzing galaxy image data by incorporating Human-in-the-loop in a large vision model**  
Ming-Xiang Fu, Yu Song, Jia-Meng Lv, Liang Cao, Peng Jia, Nan Li, Xiang-Ru Li, Ji-Feng Liu, A-Li Luo, Bo Qiu, Shi-Yin Shen, Liang-Ping Tu, Li-Li Wang, Shou-Lin Wei, Hai-Feng Yang, Zhen-Ping Yi, Zhi-Qiang Zou
- 095101** **Thermodynamic phase transition and winding number for the third-order Lovelock black hole**  
Yu-Shan Wang, Zhen-Ming Xu, Bin Wu
- 095102** **Dynamical system analysis of Dirac-Born-Infeld scalar field cosmology in coincident  $f(Q)$  gravity**  
Sayantan Ghosh, Raja Solanki, P.K. Sahoo
- 095103** **Detecting secondary spin with extreme mass ratio inspirals in scalar-tensor theory**  
Hong Guo, Chao Zhang, Yunqi Liu, Rui-Hong Yue, Yun-Gui Gong, Bin Wang

- 095104 Prospects for weighing neutrinos in interacting dark energy models using joint observations of gravitational waves and  $\gamma$ -ray bursts**  
Lu Feng, Tao Han, Jing-Fei Zhang, Xin Zhang
- 095105 Shadows and weak gravitational lensing for black holes within Einstein-Maxwell-scalar theory**  
Ahmad Al-Badawi, Mirzabek Alloqulov, Sanjar Shaymatov, Bobomurat Ahmedov
- 095106 Bulk-boundary and RPS thermodynamics from topology perspective**  
Jafar Sadeghi, Mohammad Reza Alipour, Saeed Noori Gashti, Mohammad Ali S. Afshar
- 095107 Chaplygin gas inspired warm inflation and swampland conjectures through various scalar potentials**  
Abdul Jawad, Nadeem Azhar, Shama Sadiq, Shamaila Rani
- 095108 Dynamics of holographic images of scalar-tensor-vector gravity-AdS black holes**  
Xin-Yun Hu, M. Israr Aslam, Rabia Saleem, Xiao-Xiong Zeng
- 095109 Topology of charged AdS black hole in restricted phase space**  
Han Wang, Yun-Zhi Du

No. 10

#### LETTERS

- 101001 CP violation of baryon decays with  $N\pi$  rescatterings**  
Jian-Peng Wang, Fu-Sheng Yu

#### PARTICLES AND FIELDS

- 103001 Searching for  ${}^{76}\text{Ge}$  neutrinoless double beta decay with the CDEX-1B experiment**  
Bing-Tao Zhang *et al.* (CDEX Collaboration)
- 103101 Building imaginary-time thermal field theory with artificial neural networks**  
Tian Xu, Lingxiao Wang, Lianyi He, Kai Zhou, Yin Jiang
- 103102 Searches for multi- $Z$  boson productions and anomalous gauge boson couplings at a muon collider**  
Ruobing Jiang, Chuqiao Jiang, Alim Ruzi, Tianyi Yang, Yong Ban, Qiang Li
- 103103 Ground states and first radial excitations of vector tetraquark states with explicit  $P$ -waves via QCD sum rules**  
Zhi-Gang Wang
- 103104  $B_c$  meson and its scalar cousin with QCD sum rules**  
Zhi-Gang Wang
- 103105 Testing Bell inequality through  $h \rightarrow \tau\tau$  at CEPC**  
Kai Ma, Tong Li
- 103106 Probing inelastic signatures of dark matter detection via polarized nucleus**  
Zai Yun, Junwei Sun, Bin Zhu, Xuewen Liu
- 103107 Effects of family non-universal  $Z'$  model in angular observables of  $B \rightarrow (\rho, a_1)\mu^+\mu^-$  decays**  
Nimra Farooq, Marwah Zaki, M. Ali Paracha, Faisal Munir Bhutta
- 103108 Radiative leptonic decay of heavy quarkonia**  
Junle Pei, Xinchou Lou, Yaquan Fang, Jinfei Wu, Manqi Ruan
- 103109 Chromomagnetic dipole moments of light quarks in the bestest little Higgs model**  
T. Cisneros-Pérez, E. Cruz-Albaro, A. Y. Ojeda-Castañeda, S. E. Solís-Núñez
- 103110 Masses and decays of triply-heavy pentaquarks**  
Chang-Le Liu, Wen-Xuan Zhang, Duo-Jie Jia
- 103111 Estimating the production of dark photons with  $\eta$  decay in high-energy collisions**  
Wei Kou, Xurong Chen

#### NUCLEAR PHYSICS

- 104001 Cross section measurement for the  ${}^{232}\text{Th}(n,f)$  reaction in the 4.50–5.40 MeV region using a time projection chamber**  
Haofan Bai, Han Yi, Yankun Sun, Yiwei Hu, Jie Liu, Zepeng Wu, Cong Xia, Wenkai Ren, Wentian Cao, Tieshuan Fan, Guohui Zhang, Ruirui Fan, Yang Li, Wei Jiang, Yonghao Chen, You Lv, Changjun Ning, Weihua Jia, Zhiyong Zhang, Haolei Chen, Zhen Chen, Maoyuan Zhao, Changqing Feng, Shubin Liu
- 104002 New measurement of the neutron-induced total cross-sections of  ${}^{\text{nat}}\text{Cr}$  in a wide energy range on the Back-n at CSNS**  
Baoqian Li, Min Xiao, Yonghao Chen, Jieming Xue, Xinxiang Li, Han Yi, Pinjing Cheng, Rong Liu, Yiwei Yang, Zijie Han, Dajun Zhao, Haoqiang Wang, Jirong Zhao, Peng Luan, Jing Liu, Zijun Liu, Chaomin Chen, Wen Luo, Bo Zheng, Song Feng
- 104101 Description of moment of inertia and the interplay between anti-pairing and pairing correlations in  ${}^{244}\text{Pu}$  and  ${}^{248}\text{Cm}$**   
Anshul Dadwal, Xiao-Tao He
- 104102 Collective flow and fluid behavior in  $p/d/{}^3\text{He} + \text{Au}$  collisions at  $\sqrt{s_{NN}} = 200$  GeV**  
Zeming Wu, Baochi Fu, Shujun Zhao, Runsheng Liu, Huichao Song
- 104103 Angular distribution of products in multinucleon transfer reactions**  
Xian-Kai Le, Kuan Fan, Feng-Zhu Xing, Shu-Qing Guo, Nan Wang
- 104104 High-precision inverse potentials for neutron-proton scattering using piece-wise smooth Morse functions**  
Ayushi Awasthi, Arushi Sharma, Ishwar Kant, O. S. K. S. Sastri
- 104105 Inner fission barriers of uranium isotopes in the deformed relativistic Hartree-Bogoliubov theory in continuum**  
Wei Zhang, Jin-Ke Huang, Ting-Ting Sun, Jing Peng, Shuang-Quan Zhang
- 104106 Anisotropic pressure effect on central EOS of PSR J0740+6620 in the light of dimensionless TOV equation**  
Zhihao Yang, Dehua Wen

**104107 Dependence of thermodynamic quantities at freeze-out on pseudorapidity and collision energy in  $p$ - $p$  collisions at LHC energies**

Murad Badshah, Yahia A.H. Obaidat, Haifa I. Alrebdi, M. Waqas, Muhammad Ajaz, Refka Ghodhbani

**104108 A simple model for two-proton radioactivity**

Jie-Dong Jiang, Xiao Liu, Dong-Meng Zhang, Ming Li, Xi-Jun Wu, Xiao-Hua Li

**PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY****105001 Generating Baikal-GVD high energy cascade-like neutrino events with a GEANT4-based simulation toolkit**

Zike Wang, A.D. Avrorin, Zhen Cao, Mingjun Chen, Peiyuan Chu, Zh.-A.M. Dzhilkibaev, Bo Gao, Tianqi Huang, Jiali Liu, Ying Qi, Xiaohao You, D.N. Zaborov

**105101 Newtonian limit of Einstein equation with a cosmological constant**

Li-Fang Li, Zhoujian Cao, Xiaokai He

**105102 Inferring the spin distribution of binary black holes using deep learning**

Li Tang, Xi-Long Fan

**105103 The ring-shaped shadow of a rotating naked singularity with a complete photon sphere**

Mingzhi Wang, Guanghai Guo, Pengfei Yan, Songbai Chen, Jiliang Jing

No. 11

**PARTICLES AND FIELDS****113101 Investigating higgsino dark matter in the semi-constrained NMSSM**

Kun Wang, Jingya Zhu

**113102  $W$  boson mass in NP models with an extra  $U(1)$  gauge group**

Jin-Lei Yang, Zhao-Feng Ge, Xiu-Yi Yang, Sheng-Kai Cui, Tai-Fu Feng

**113103 Polarized and unpolarized off-shell  $H^* \rightarrow ZZ \rightarrow 4\ell$  decay above the  $2m_Z$  threshold**

A. I. Hernández-Juárez, R. Gaitán, G. Tavares-Velasco

**113104 Analytical formula for the cross section of hadron production from  $e^+e^-$  collisions around the narrow charmonium resonances**

Ya-Nan Wang, Ya-Di Wang, Ping Wang

**113105 Form factor for Dalitz decays from  $J/\psi$  to light pseudoscalars**

Chunjiang Shi, Ying Chen, Xiangyu Jiang, Ming Gong, Zhaofeng Liu, Wei Sun

**113106 Principles and prospects of Bose-Einstein correlation study at BESIII**

Hai-Ming Hu, Guang-Shun Huang

**NUCLEAR PHYSICS****114001 Investigating the level structure of  $^{206}\text{Rn}$ : evolution from seniority regime to collective dynamics**

Rui Guo, Li-Hua Zhu, Jing-Bin Lu, Guan-Jian Fu, Meng Wang, Bao-Hua Sun, Gao-Long Zhang, Zhen Ren, Yi-Heng Wu, Yun Zheng, Chuang-Ye He, Jin-Long Wang, Xiao-Guang Wu, Shun-He Yao

**114002 Photonuclear reactions on  $^{59}\text{Co}$  at bremsstrahlung end-point energies of 40–130 MeV**

F. A. Rasulova, S. S. Belyshev, M. A. Demichev, D. L. Demin, S. A. Evseev, N. Yu. Fursova, M. I. Gostkin, J. H. Khushvaktov, V. V. Kobets, A. A. Kuznetsov, S. V. Rozov, E. T. Ruziev, A. A. Solnyshkin, T. N. Tran, E. A. Yakushev, B. S. Yuldashev

**114101 Study of one-step and two-step neutron transfer in the reaction  $^6\text{Li} + ^9\text{Be}$** 

A.K. Azhibekov, S.M. Lukyanov, Yu.E. Penionzhkevich, B.A. Urazbekov, M.A. Naumenko, V.V. Samarin, T. Issatayev, V.A. Maslov, K. Mendibayev, D. Aznabayev, T.K. Zholdybayev, A. Temirzhanov

**114102 Thermal pairing treatment within the path integral formalism**

M. Fellah, N.H. Allal, M. R. Oudih

**PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY****115101 Holographic Einstein ring of a charged Rastall AdS black hole with bulk electromagnetic field**

M. Israr Aslam, Xiao-Xiong Zeng, Rabia Saleem, Xin-Yun Hu

**115102 Effects of torsion charge on optical appearance and additional photon rings of an asymmetric thin-shell wormhole**

Qi-Qin Jing, Ke-Jian He, Zhi Luo

**115103 Cosmological constraints on the background dynamics of a two-field nonsingular bounce model**

Kang Song Ri, Sin Chol Hwang, Hyon Chol Ri

**115104 Nonexistence of Majorana fermions in Kerr-Newman type spacetimes with nontrivial charge**

He-Qun Zhang, Xiao Zhang

**115105 A new perspective on the diffuse gamma-ray emission excess**

En-Sheng Chen, Kun Fang, Xiao-Jun Bi

**115106 Generated genuine tripartite steering and its monogamy in the background of a Kerr-Newman black hole**

Xiaoli Huang, Haoyu Wu, Shumin Wu

**115107 Isotropization of the magnetic universe in Horndeski theory with  $G_3(X,\phi)$  and  $G_5(X)$** 

Ruslan K. Muharlyamov, Tatiana N. Pankratyeva, Shehabaldeen O.A. Bashir

**115108 Tidal force effects and bound orbits in null naked singularity spacetime**

Siddharth Madan, Parth Bambhaniya

**115109 Cosmological test of dark energy parametrizations within the framework of Horava-Lifshitz gravity via baryon acoustic oscillation**

Himanshu Chaudhary, Shibesh Kumar Jas Pacif, Ujjal Debnath, Farook Rahaman, G. Mustafa

- 115110** **Polytropic gas cosmology and late-time acceleration**  
Safae Dahmani, Himanshu Chaudhary, Amine Bouali, Shibesh Kumar Jas Pacif, Taoufik Ouali
- 115111** **Maxwell's equal area law for Vaidya-Bonner-de Sitter black hole under Lorentz invariance violation**  
Yenshembam Priyobarta Singh, Telem Ibungochouba Singh, Sapam Niranjan Singh
- 115112** **Determination of dark matter distribution in Ursa Major III and constraints on dark matter annihilation**  
Yi Zhao, Xiao-Jun Bi, Su-Jie Lin, Peng-Fei Yin
- 115113** **Holographic timelike entanglement entropy from Rindler method**  
Peng-Zhang He, Hai-Qing Zhang
- 115114** **Critical collapse of massless scalar fields in asymptotically anti-de Sitter spacetime**  
Li-Jie Xin, Cheng-Gang Shao
- 115115** **Thermodynamic topology of quantum corrected AdS-Reissner-Nordstrom black holes in Kiselev spacetime**  
Jafar Sadeghi, Saeed Noori Gashti, Mohammad Reza Alipour, Mohammad Ali S. Afshar
- 115116** **Shadow and gravitational weak lensing for quantum improved charged black hole in plasma**  
Mirzabek Alloqulov, Farruh Atamurotov, Ahmadjon Abdujabbarov, Bobomurat Ahmedov, Nozima Juraeva

No. 12

#### PARTICLES AND FIELDS

- 123001** **Measurement of integrated luminosity of data collected at 3.773 GeV by BESIII from 2021 to 2024**  
M. Ablikim *et al.* (BESIII Collaboration)
- 123101** **Beauty-charm meson family with coupled channel effects and their strong decays**  
Wei Hao, Ruilin Zhu
- 123102** **Semileptonic and nonleptonic decays of  $B_{u,d,s}^*$  in the covariant light-front approach**  
Si-Yang Wang, You-Ya Yang, Zhi-Jie Sun, Hao Yang, Peng Li, Zhi-Qing Zhang
- 123103** **Comprehensive constraints on fermionic dark matter-quark tensor interactions in direct detection experiments**  
Jin-Han Liang, Yi Liao, Xiao-Dong Ma, Hao-Lin Wang
- 123104** **Charm physics with overlap fermions on 2+1-flavor domain wall fermion configurations**  
Dong-Hao Li, Ying Chen, Ming Gong, Keh-Fei Liu, Zhaofeng Liu, Ting-Xiao Wang, ( $\chi$ QCD Collaboration)
- 123105** **Study of singly anti-charmed pentaquark production in  $b$ -factory**  
Xiao-Hui Hu, Ye Xing
- 123106** **Operators of quantum theory of Dirac's free field**  
Ion I. Cotăescu

#### NUCLEAR PHYSICS

- 124001** **Measurements of the  $^{128}\text{Te}(n, 2n)^{127\text{m},\text{g}}\text{Te}$  reaction cross sections and isomeric cross section ratio of  $^{127\text{m},\text{g}}\text{Te}$  at the neutron energy of 14 MeV**  
Junhua Luo, Long He, Liang Zhou, Li Jiang
- 124101** **Scissors vibration and its collective rotation in a microscopic investigation**  
Fang-Qi Chen
- 124102** **Predicting  $^{28}\text{Si}$  projectile fragmentation cross sections with Bayesian neural network method**  
Ying-Hua Dang, Jun-Sheng Li, Dong-Hai Zhang
- 124103** ***Ab initio* study of  $Z(N) = 6$  magicity**  
He Li, H. J. Ong, Dong-Liang Fang, I. A. Mazur, I. J. Shin, A. M. Shirokov, J. P. Vary, Peng Yin, Xing-Bo Zhao, Wei Zuo
- 124104** **Pairing phase transition in the odd- $A$  nuclei: identification and classification**  
Yumeng Wang, Yuhang Gao, Lang Liu
- 124105** **Possibility of synthesizing  $Z=119$  superheavy nuclei with  $Z>20$  projectiles**  
Shi Hao Zhu, Tian-Liang Zhao, Xiao Jun Bao

#### PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

- 125101** **FLRW cosmology in metric-affine  $F(R,Q)$  gravity**  
Dinesh Chandra Maurya, K. Yesmakhanova, R. Myrzakulov, G. Nugmanova
- 125102** **Warm inflation triggered by entropies of some recent dark energy models within  $f(Q)$  gravity**  
Rabia Saleem, Muhammad Hamza Rasool, M. Israr Aslam, Iqra Shahid
- 125103** **Stability analysis of static spherical spacetime in extended symmetric teleparallel gravity**  
M. Zeeshan Gul, M. Sharif, Adeeba Arooj
- 125104** **Additional observational features of the thin-shell wormhole by considering quantum corrections**  
Yun-Xian Chen, He-Bin Zheng, Ke-Jian He, Guo-Ping Li, Qing-Quan Jiang
- 125105** **Unraveling the early universe's equation of state and primordial black hole production with PTA, BBN, and CMB observations**  
Qing-Hua Zhu, Zhi-Chao Zhao, Sai Wang, Xin Zhang
- 125106** **The thermodynamic stability and phase structure of the Einstein-Euler-Heisenberg-AdS black holes**  
Yinan Zhao, Hongbo Cheng
- 125107** **Rapid identification of time-frequency domain gravitational wave signals from binary black holes using deep learning**  
Yu-Xin Wang, Shang-Jie Jin, Tian-Yang Sun, Jing-Fei Zhang, Xin Zhang