

Chinese Physics C

Volume 50 Number 1 January 2026

CONTENTS

LETTERS

- 011001 **Towards a detection of reactor $\bar{\nu}_e \rightarrow \bar{\nu}_\mu$ and $\bar{\nu}_e \rightarrow \bar{\nu}_\tau$ oscillations with possible CP violation**
Yifang Wang, Zhi-zhong Xing, Shun Zhou
- 011002 **Rephasing invariant formulae for CP phases in general parameterizations of flavor mixing matrix and exact sum rules with unitarity triangles**
Masaki J. S. Yang
- 011003 **UrQMD simulations of higher-order cumulants in Au+Au collisions at high baryon density**
Xin Zhang, Yu Zhang, Xiaofeng Luo, Nu Xu

PARTICLES AND FIELDS

- 013001 **Energy dependence of the elliptic flow ratio $v_2^{\text{PP}}/v_2^{\text{RP}}$ in heavy-ion collisions using the AMPT model**
Shaowei Lan, Qiuhua Liu, Yong Li, Shusu Shi
- 013101 **Charmed meson structure across crossover from $SU(4)$ Polyakov quark meson model with isospin asymmetry**
Abdel Magied DIAB
- 013102 **Soft pattern of gravitational Rutherford scattering from heavy target mass expansion**
Yu Jia, Jichen Pan, Jia-Yue Zhang
- 013103 **Valence quark distributions of pions: insights from Tsallis entropy**
Jingxuan Chen, Xiaopeng Wang, Yanbing Cai, Xurong Chen, Qian Wang
- 013104 **Anisotropic quark propagation and Zeeman effect in an external magnetic field**
Minghui Ding, Fei Gao, Sebastian M. Schmidt
- 013105 **$\rho \rightarrow \pi\pi$ hadronic decay in the Nambu-Jona-Lasinio model: Mass-Width interplay and Beyond-RPA corrections**
Qing-Wu Wang, Xiao-Fu Lü, Hua-Zhong Guo
- 013106 **Numerical study on the gauge symmetry of electroweak amplitudes**
Wang-Fa Li, Junmou Chen, Qian-Jiu Wang, Zhao-Huan Yu
- 013107 **Search for the lepton number violating process $J/\psi \rightarrow K^+ K^+ e^- e^- + c.c.$**
M. Ablikim *et al.* (BESIII Collaboration)
- 013108 **95 GeV Higgs boson and nano-Hertz gravitational waves from domain walls in the next-to-two-Higgs-doublet model**
Haotian Xu, Yufei Wang, Xiao-Fang Han, Lei Wang

NUCLEAR PHYSICS

- 014101 **Correlation between Zero-Sound modes and nuclear equation of state stiffness detected by light vector boson**
Jing Ye, Wei-Zhou Jiang
- 014102 **Probing the cluster structure of ${}^6\text{Li}$ with the ${}^6\text{Li} + {}^{12}\text{C}$ nuclear reaction at 68 MeV**
B. A. Urazbekov, E. K. Almanbetova, A. Azhibekov, B. S. Baimurzinova, K. Dyussebayeva, T. Issatayev, D. M. Janseitov,

(Continued on inside back cover)

S. M. Lukyanov, Yu. E. Penionzhkevich, K. Mendibayev, T. K. Zholdybayev

014103 **Systematic study of α decay half-life within cluster-formation model**

Wen-Chao Dai, Jie-Dong Jiang, Yin Fan, Xiao Liu, Peng-Cheng Chu, Xi-Jun Wu, Xiao-Hua Li

014104 **^3H and ^3He nuclei production in a combined thermal and coalescence framework for heavy-ion collisions in the few-GeV energy regime**

Zbigniew Drogosz, Wojciech Florkowski, Nikodem Witkowski, Radoslaw Ryblewski

014105 **Ground-state properties of finite nuclei in relativistic Hartree-Bogoliubov theory with an improved quark mass density-dependent model**

Renli Xu, Chen Wu, Jian Liu, Bin Hong, Jie Peng, Xiong Li, Ruxian Zhu, Zhizhen Zhao, Zhongzhou Ren

014106 **The role of fission in mass sensitivity study of the r -process**

Yi Wei Hao, Yi Fei Niu, Zhong Ming Niu

014107 **Study of yrast and yrare low-lying excited states using machine learning approaches**

Zhi Long Li, Bing Feng Lv, Yong Jia Wang, C. M. Petrache

014108 **Extracting the kinetic freeze-out properties of high energy pp collisions at the LHC with event shape classifiers**

Jialin He, Xinye Peng, Zhongbao Yin, Liang Zheng

014109 **Examination of proton radioactivity in exotic nuclei with a deformed Gamow-like model**

Zhe Wang, Quan Liu, Jian-You Guo

014110 **Nuclear temperature of spectator source extracted by neutron spectra in ^{124}Sn , $^{107}\text{Sn} + ^{120}\text{Sn}$ collisions at 600 MeV/nucleon**

Huixiao Duan, Fan Zhang, Kailei Wang, Jun Su

014111 **Alpha-decay systematics and a new scaling law in heavy and superheavy nuclei**

Hisham Anwer, A. R. Abdulghany

014112 **Tilted-axis-cranking covariant density functional theory for high-spin spectroscopy of ^{69}Ga**

Y. P. Wang, Y. K. Wang, P. W. Zhao

014113 **$0\nu\beta\beta$ decay nuclear matrix elements under Left-Right symmetric model from the spherical quasi-particle random phase approximation method with realistic force**

Ri-Guang Huang, You-Cai Chen, Dong-Liang Fang

PARTICLE AND NUCLEAR ASTROPHYSICS AND COSMOLOGY

015101 **Testing Einstein-Maxwell Power-Yang-Mills hair via black hole photon rings**

Zuting Luo, Meirong Tang, Zhaoyi Xu

015102 **Revised classification of the CHIME fast radio bursts with machine learning**

Liang Liu, Hai-Nan Lin, Li Tang

015103 **Hawking tunneling radiation with thermodynamic pressure**

Cheng Hu, Xiao-Xiong Zeng

015104 **Dark matter subhalo evaporation by Coulomb-like interaction with galactic gas**

Yugen Lin, Yu Gao

015105 **Prospects for searching for sterile neutrinos in dynamical dark energy cosmologies using joint observations of gravitational waves and γ -ray bursts**

Lu Feng, Tao Han, Jing-Fei Zhang, Xin Zhang

015106 **Globally stable dark energy in $F(R)$ gravity**

Hua Chen

015107 **Null test of cosmic curvature using deep learning method**

Li Tang, Liang Liu, Ying Wu

015108 **Axisymmetric generalization of zero-scalar-curvature solutions from the Schwarzschild metric via the Newman-Janis algorithm**

Chen Lan, Zi-Xiao Liu, Yan-Gang Miao