

Chinese Physics B

Volume 32 Number 2 February 2023

Contents

DATA PAPER

029801 Atlas of dynamic spectra of fast radio burst FRB 20201124A

Bo-Jun Wang, Heng Xu, Jin-Chen Jiang, Jiang-Wei Xu, Jia-Rui Niu, Ping Chen, Ke-Jia Lee, Bing Zhang, Wei-Wei Zhu, Su-Bo Dong, Chun-Feng Zhang, Hai Fu, De-Jiang Zhou, Yong-Kun Zhang, Pei Wang, Yi Feng, Ye Li, Dong-Zi Li, Wen-Bin Lu, Yuan-Pei Yang, R. N. Caballero, Ce Cai, Mao-Zheng Chen, Zi-Gao Dai, A. Esamdin, Heng-Qian Gan, Jin-Lin Han, Long-Fei Hao, Yu-Xiang Huang, Peng Jiang, Cheng-Kui Li, Di Li, Hui Li, Xin-Qiao Li, Zhi-Xuan Li, Zhi-Yong Liu, Rui Luo, Yun-Peng Men, Chen-Hui Niu, Wen-Xi Peng, Lei Qian, Li-Ming Song, Jing-Hai Sun, Fa-Yin Wang, Min Wang, Na Wang, Wei-Yang Wang, Xue-Feng Wu, Shuo Xiao, Shao-Lin Xiong, Yong-Hua Xu, Ren-Xin Xu, Jun Yang, Xuan Yang, Rui Yao, Qi-Bin Yi, You-Ling Yue, Dong-Jun Yu, Wen-Fei Yu, Jian-Ping Yuan, Bin-Bin Zhang, Song-Bo Zhang, Shuang-Nan Zhang, Yi Zhao, Wei-Kang Zheng, Yan Zhu and Jin-Hang Zou

INSTRUMENTATION AND MEASUREMENT

020703 Measurement of T wave in magnetocardiography using tunnel magnetoresistance sensor

Zhihong Lu, Shuai Ji and Jianzhong Yang

020705 Direct measurement of an energy-dependent single-event-upset cross-section with time-of-flight method at CSNS

Biao Pei, Zhixin Tan, Yongning He, Xiaolong Zhao and Ruirui Fan

RAPID COMMUNICATION

024212 Estimation of far-field wavefront error of tilt-to-length distortion coupling in space-based gravitational wave detection

Ya-Zheng Tao, Hong-Bo Jin and Yue-Liang Wu

027501 Bismuth doping enhanced tunability of strain-controlled magnetic anisotropy in epitaxial $\text{Y}_3\text{Fe}_5\text{O}_{12}(111)$ films

Yunpeng Jia, Zhengguo Liang, Haolin Pan, Qing Wang, Qiming Lv, Yifei Yan, Feng Jin, Dazhi Hou, Lingfei Wang and Wenbin Wu

027505 Magnetic triangular bubble lattices in bismuth-doped yttrium iron garnet

Tao Lin, Chengxiang Wang, Zhiyong Qiu, Chao Chen, Tao Xing, Lu Sun, Jianhui Liang, Yizheng Wu, Zhong Shi and Na Lei

(Continued on the Bookbinding Inside Back Cover)

028202 Different roles of surfaces' interaction on lattice mismatched/matched surfaces in facilitating ice nucleation

Xuanhao Fu and Xin Zhou

GENERAL

020201 Matrix integrable fifth-order mKdV equations and their soliton solutions

Wen-Xiu Ma

020202 Comparison of differential evolution, particle swarm optimization, quantum-behaved particle swarm optimization, and quantum evolutionary algorithm for preparation of quantum states

Xin Cheng, Xiu-Juan Lu, Ya-Nan Liu and Sen Kuang

020204 Explicit K-symplectic methods for nonseparable non-canonical Hamiltonian systems

Beibei Zhu, Lun Ji, Aiqing Zhu and Yifa Tang

020206 Molecular dynamics study of interactions between edge dislocation and irradiation-induced defects in Fe–10Ni–20Cr alloy

Tao-Wen Xiong, Xiao-Ping Chen, Ye-Ping Lin, Xin-Fu He, Wen Yang, Wang-Yu Hu, Fei Gao and Hui-Qiu Deng

020301 Engineering topological state transfer in four-period Su–Schrieffer–Heeger chain

Xi-Xi Bao, Gang-Feng Guo and Lei Tan

020302 Spontaneous emission of a moving atom in a waveguide of rectangular cross section

Jing Zeng, Jing Lu and Lan Zhou

020303 Novel traveling quantum anonymous voting scheme via GHZ states

Wenhao Zhao and Min Jiang

020304 Performance of phase-matching quantum key distribution based on wavelength division multiplexing technology

Haiqiang Ma, Yanxin Han, Tianqi Dou and Pengyun Li

020305 Hall conductance of a non-Hermitian two-band system with k -dependent decay rates

Junjie Wang, Fude Li and Xuexi Yi

020306 Realization of the iSWAP-like gate among the superconducting qutrits

Peng Xu, Ran Zhang and Sheng-Mei Zhao

020501 Realizing reliable XOR logic operation via logical chaotic resonance in a triple-well potential system

Huamei Yang and Yuangen Yao

020502 Epilepsy dynamics of an astrocyte-neuron model with ammonia intoxication

Zhixuan Yuan, Mengmeng Du, Yangyang Yu and Ying Wu

- 020503 Lossless embedding: A visually meaningful image encryption algorithm based on hyper-chaos and compressive sensing**
Xing-Yuan Wang, Xiao-Li Wang, Lin Teng, Dong-Hua Jiang and Yongjin Xian
- 020504 Localized nonlinear waves in a myelinated nerve fiber with self-excitable membrane**
Nkeh Oma Nfor, Patrick Guemkam Ghomsi and Francois Marie Moukam Kakmeni
- 020505 Current bifurcation, reversals and multiple mobility transitions of dipole in alternating electric fields**
Wei Du, Kao Jia, Zhi-Long Shi and Lin-Ru Nie
- 020506 Entanglement and thermalization in the extended Bose–Hubbard model after a quantum quench: A correlation analysis**
Xiao-Qiang Su, Zong-Ju Xu and You-Quan Zhao
- 020507 Simulation based on a modified social force model for sensitivity to emergency signs in subway station**
Zheng-Yu Cai, Ru Zhou, Yin-Kai Cui, Yan Wang and Jun-Cheng Jiang
- 020601 Precise measurement of ^{171}Yb magnetic constants for 1S_0 – 3P_0 clock transition**
Ang Zhang, Congcong Tian, Qiang Zhu, Bing Wang, Dezhi Xiong, Zhuanxian Xiong, Lingxiang He and Baolong Lyu
- 020602 *In situ* temperature measurement of vapor based on atomic speed selection**
Lu Yu, Li Cao, Ziqian Yue, Lin Li and Yueyang Zhai
- 020701 Achieving highly-efficient H_2S gas sensor by flower-like SnO_2 – SnO /porous GaN hetero-junction**
Zeng Liu, Ling Du, Shao-Hui Zhang, Ang Bian, Jun-Peng Fang, Chen-Yang Xing, Shan Li, Jin-Cheng Tang, Yu-Feng Guo and Wei-Hua Tang
- 020702 Dual-channel fiber-optic surface plasmon resonance sensor with cascaded coaxial dual-waveguide D-type structure and microsphere structure**
Ling-Ling Li, Yong Wei, Chun-Lan Liu, Zhuo Ren, Ai Zhou, Zhi-Hai Liu and Yu Zhang
- 020704 Improvement of coercivity thermal stability of sintered 2:17 SmCo permanent magnet by Nd doping**
Chao-Zhong Wang, Lei Liu, Ying-Li Sun, Jiang-Tao Zhao, Bo Zhou, Si-Si Tu, Chun-Guo Wang, Yong Ding and A-Ru Yan

ATOMIC AND MOLECULAR PHYSICS

- 023101 Formation of nanobubbles generated by hydrate decomposition: A molecular dynamics study**
Zilin Wang, Liang Yang, Changsheng Liu and Shiwei Lin

023201 Wavelength- and ellipticity-dependent photoelectron spectra from multiphoton ionization of atoms

Keyu Guo, Min Li, Jintai Liang, Chuanpeng Cao, Yueming Zhou and Peixiang Lu

023301 Generation of a blue-detuned optical storage ring by a metasurface and its application in optical trapping of cold molecules

Chen Ling, Yaling Yin, Yang Liu, Lin Li and Yong Xia

023601 Fine and hyperfine structures of pionic helium atoms

Zhi-Da Bai, Zhen-Xiang Zhong, Zong-Chao Yan and Ting-Yun Shi

023701 Quantum degenerate Bose–Fermi atomic gas mixture of ^{23}Na and ^{40}K

Ziliang Li, Zhengyu Gu, Zhenlian Shi, Pengjun Wang and Jing Zhang

ELECTROMAGNETISM, OPTICS, ACOUSTICS, HEAT TRANSFER, CLASSICAL MECHANICS, AND FLUID DYNAMICS

024201 High efficiency of broadband transmissive metasurface terahertz polarization converter

Qiangguo Zhou, Yang Li, Yongzhen Li, Niangjuan Yao and Zhiming Huang

024202 Research on the model of high robustness computational optical imaging system

Yun Su, Teli Xi and Xiaopeng Shao

024203 Laser shaping and optical power limiting of pulsed Laguerre–Gaussian laser beams of high-order radial modes in fullerene C_{60}

Jie Li, Wen-Hui Guan, Shuo Yuan, Ya-Nan Zhao, Yu-Ping Sun and Ji-Cai Liu

024204 A band-pass frequency selective surface with polarization rotation

Bao-Qin Lin, Wen-Zhun Huang, Jian-Xin Guo, Zhe Liu, Yan-Wen Wang and Hong-Jun Ye

024205 Multi-band polarization switch based on magnetic fluid filled dual-core photonic crystal fiber

Lianzhen Zhang, Xuedian Zhang, Xiantong Yu, Xuejing Liu, Jun Zhou, Min Chang, Na Yang and Jia Du

024206 Optomagnonically tunable whispering gallery cavity laser wavelength conversion

Yining Zhu, Zixu Zhu, Anbang Pei and Yong-Pan Gao

024207 A cladding-pumping based power-scaled noise-like and dissipative soliton pulse fiber laser

Zhiguo Lv, Hao Teng and Zhiyi Wei

024208 Tightly focused properties of a partially coherent radially polarized power-exponent-phase vortex beam

Kang Chen, Zhi-Yuan Ma and You-You Hu

024209 Wavelength switchable mode-locked fiber laser with a few-mode fiber filter

Shaokang Bai, Yujin Xiang and Zuxing Zhang

024210 Real-time observation of soliton pulsation in net normal-dispersion dissipative soliton fiber laser

Xu-De Wang, Xu Geng, Jie-Yu Pan, Meng-Qiu Sun, Meng-Xiang Lu, Kai-Xin Li and Su-Wen Li

024211 Asymmetrical spiral spectra and orbital angular momentum density of non-uniformly polarized vortex beams in uniaxial crystals

Ling-Yun Shu, Ke Cheng, Sai Liao, Meng-Ting Liang and Ceng-Hao Yang

024213 Coupled-generalized nonlinear Schrödinger equations solved by adaptive step-size methods in interaction picture

Lei Chen, Pan Li, He-Shan Liu, Jin Yu, Chang-Jun Ke and Zi-Ren Luo

024214 A simulation study of polarization characteristics of ultrathin CsPbBr₃ nanowires with different cross-section shapes and sizes

Kang Yang, Huiqing Hu, Jiaojiao Wang, Lingling Deng, Yunqing Lu and Jin Wang

024215 Generation of elliptical airy vortex beams based on all-dielectric metasurface

Xiao-Ju Xue, Bi-Jun Xu, Bai-Rui Wu, Xiao-Gang Wang, Xin-Ning Yu, Lu Lin and Hong-Qiang Li

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

025201 Ignition dynamics of radio frequency discharge in atmospheric pressure cascade glow discharge

Ya-Rong Zhang, Qian-Han Han, Jun-Lin Fang, Ying Guo and Jian-Jun Shi

025202 Gyrokinetic simulation of low- n Alfvénic modes in tokamak HL-2A plasmas

Wen-Hao Lin, Ji-Quan Li, J Garcia and S Mazzi

025203 Effect of kinetic ions on the toroidal double-tearing modes

Ruibo Zhang, Lei Ye, Yang Chen, Nong Xiang and Xiaoqing Yang

025204 Correction of intense laser-plasma interactions by QED vacuum polarization in collision of laser beams

Wen-Bo Chen and Zhi-Gang Bu

025205 Influence of magnetic field on power deposition in high magnetic field helicon experiment

Yan Zhou, Peiyu Ji, Maoyang Li, Lanjian Zhuge and Xuemei Wu

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

026101 Surface structure modification of ReSe₂ nanosheets via carbon ion irradiation

Mei Qiao, Tie-Jun Wang, Yong Liu, Tao Liu, Shan Liu and Shi-Cai Xu

026801 Liquid-liquid phase transition in confined liquid titanium

Di Zhang, Yunrui Duan, Peiru Zheng, Yingjie Ma, Junping Qian, Zhichao Li, Jian Huang, Yanyan Jiang and Hui Li

026802 Evolution of microstructure, stress and dislocation of AlN thick film on nanopatterned sapphire substrates by hydride vapor phase epitaxy

Chuang Wang, Xiao-Dong Gao, Di-Di Li, Jing-Jing Chen, Jia-Fan Chen, Xiao-Ming Dong, Xiaodan Wang, Jun Huang, Xiong-Hui Zeng and Ke Xu

026803 High repetition granular Co/Pt multilayers with improved perpendicular remanent magnetization for high-density magnetic recording

Zhi Li, Kun Zhang, Ao Du, Hongchao Zhang, Weibin Chen, Ning Xu, Runrun Hao, Shishen Yan, Weisheng Zhao and Qunwen Leng

CONDENSED MATTER: ELECTRONIC STRUCTURE, ELECTRICAL, MAGNETIC, AND OPTICAL PROPERTIES

027101 First-principles prediction of quantum anomalous Hall effect in two-dimensional Co₂Te lattice

Yuan-Shuo Liu, Hao Sun, Chun-Sheng Hu, Yun-Jing Wu and Chang-Wen Zhang

027102 Mobility edges generated by the non-Hermitian flatband lattice

Tong Liu and Shujie Cheng

027103 Magnetic ground state of plutonium dioxide: DFT+*U* calculations

Yue-Fei Hou, Wei Jiang, Shu-Jing Li, Zhen-Guo Fu and Ping Zhang

027104 Blue phosphorene/MoSi₂N₄ van der Waals type-II heterostructure: Highly efficient bifunctional materials for photocatalytics and photovoltaics

Xiaohua Li, Baoji Wang and Sanhuang Ke

027201 A novel monoclinic phase and electrically tunable magnetism of van der Waals layered magnet CrTe₂

Qidi Ren, Kang Lai, Jiahao Chen, Xiaoxiang Yu and Jiayu Dai

027301 Chiral symmetry protected topological nodal superconducting phase and Majorana Fermi arc

Mei-Ling Lu, Yao Wang, He-Zhi Zhang, Hao-Lin Chen, Tian-Yuan Cui and Xi Luo

027302 Demonstration and modeling of unipolar-carrier-conduction GaN Schottky-pn junction diode with low turn-on voltage

Lijian Guo, Weizong Xu, Qi Wei, Xinghua Liu, Tianyi Li, Dong Zhou, Fangfang Ren, Dunjun Chen, Rong Zhang, Youdou Zheng and Hai Lu

027401 Effect of thickness on magnetic properties of single domain GdBCO bulk superconductors

Ping Gao, Wan-Min Yang, Ting-Ting Wu, Miao Wang and Kun Liu

027502 Magnetocaloric properties of phenolic resin bonded La(Fe,Si)₁₃-based plates and its use in a hybrid magnetic refrigerator

Shao-Shan Xu, Qi Fu, Yi-Fan Zhou, Ling Peng, Xin-Qiang Gao, Zhen-Xing Li, Mao-Qiong Gong, Xue-Qiang Dong and Jun Shen

027503 Giant low-field cryogenic magnetocaloric effect in polycrystalline LiErF₄ compound

Zhaojun Mo, Jianjian Gong, Huicai Xie, Lei Zhang, Qi Fu, Xinqiang Gao, Zhenxing Li and Jun Shen

027504 Charge-mediated voltage modulation of magnetism in Hf_{0.5}Zr_{0.5}O₂/Co multiferroic heterojunction

Jia Chen, Peiyue Yu, Lei Zhao, Yanru Li, Meiyin Yang, Jing Xu, Jianfeng Gao, Weibing Liu, Junfeng Li, Wenwu Wang, Jin Kang, Weihai Bu, Kai Zheng, Bingjun Yang, Lei Yue, Chao Zuo, Yan Cui and Jun Luo

027801 Graphene metasurface-based switchable terahertz half-/quarter-wave plate with a broad bandwidth

Xiaoqing Luo, Juan Luo, Fangrong Hu and Guangyuan Li

027802 Effect of thickness of antimony selenide film on its photoelectric properties and microstructure

Xin-Li Liu, Yue-Fei Weng, Ning Mao, Pei-Qing Zhang, Chang-Gui Lin, Xiang Shen, Shi-Xun Dai and Bao-An Song

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

028101 Influence of the lattice parameter of the AlN buffer layer on the stress state of GaN film grown on (111) Si

Zhen-Zhuo Zhang, Jing Yang, De-Gang Zhao, Feng Liang, Ping Chen and Zong-Shun Liu

028201 Effects of π -conjugation-substitution on ESIPT process for oxazoline-substituted hydroxyfluorenes

Di Wang, Qiao Zhou, Qiang Wei and Peng Song

028401 Memristor's characteristics: From non-ideal to ideal

Fan Sun, Jing Su, Jie Li, Shukai Duan and Xiaofang Hu

028501 Transition-edge sensors using Mo/Au/Au tri-layer films

Hubing Wang, Yue Lv, Dongxue Li, Yue Zhao, Bo Gao and Zhen Wang

028502 Enhancement of holding voltage by a modified low-voltage trigger silicon-controlled rectifier structure for electrostatic discharge protection

Yuankang Chen, Yuanliang Zhou, Jie Jiang, Tingke Rao, Wugang Liao and Junjie Liu

028503 High performance SiC trench-type MOSFET with an integrated MOS-channel diode

Jie Wei, Qinfeng Jiang, Xiaorong Luo, Junyue Huang, Kemeng Yang, Zhen Ma, Jian Fang and Fei Yang

028504 Experiment and simulation on degradation and burnout mechanisms of SiC MOSFET under heavy ion irradiation

Hong Zhang, Hongxia Guo, Zhifeng Lei, Chao Peng, Zhangang Zhang, Ziwen Chen, Changhao Sun, Yujuan He, Fengqi Zhang, Xiaoyu Pan, Xiangli Zhong and Xiaoping Ouyang

- 028701 Analysis of refraction and scattering image artefacts in x-ray analyzer-based imaging**
Li-Ming Zhao, Tian-Xiang Wang, Run-Kang Ma, Yao Gu, Meng-Si Luo, Heng Chen, Zhi-Li Wang and Xin Ge
- 028702 Heterogeneous hydration patterns of G-quadruplex DNA**
Cong-Min Ji, Yusong Tu and Yuan-Yan Wu
- 028703 Thermally enhanced photoluminescence and temperature sensing properties of $\text{Sc}_2\text{W}_3\text{O}_{12}:\text{Eu}^{3+}$ phosphors**
Yu-De Niu, Yu-Zhen Wang, Kai-Ming Zhu, Wang-Gui Ye, Zhe Feng, Hui Liu, Xin Yi, Yi-Huan Wang and Xuan-Yi Yuan
- 028801 Micro-mechanism study of the effect of Cd-free buffer layers ZnXO ($X = \text{Mg}/\text{Sn}$) on the performance of flexible $\text{Cu}_2\text{ZnSn}(\text{S}, \text{Se})_4$ solar cell**
Caixia Zhang, Yaling Li, Beibei Lin, Jianlong Tang, Quanzhen Sun, Weihao Xie, Hui Deng, Qiao Zheng and Shuying Cheng
- 028901 Investigating the characteristic delay time in the leader–follower behavior in children single-file movement**
Shu-Qi Xue, Nirajan Shiwakoti, Xiao-Meng Shi and Yao Xiao
- 028902 Analysis of cut vertex in the control of complex networks**
Jie Zhou, Cheng Yuan, Zu-Yu Qian, Bing-Hong Wang and Sen Nie