

The Table of Contents is a total listing of Parts A, B and C.

Part A consists of articles 041301–043516, Part B articles 043517–044051, and Part C articles 044052–046027(A)

PART A

LETTERS

Enhancing events in neutrino telescopes through deep-learning-driven superresolution (6 pages)	L041301
Felix J. Yu, Nicholas Kamp, and Carlos A. Argüelles	
Capturing primordial non-Gaussian signatures in the late Universe by multiscale extrema of the cosmic log-density field (7 pages)	L041302
Yun Wang (王云) and Ping He (何平)	
Matching current observational constraints with nonminimally coupled dark energy (8 pages)	L041303
William J. Wolf, Pedro G. Ferreira, and Carlos García-García	
Bounding the photon mass with gravitationally lensed fast radio bursts (6 pages)	L041304
Chen-Ming Chang, Jun-Jie Wei, Ke-Lai Meng, Song-Bo Zhang, Hao-Xuan Gao, Jin-Jun Geng, and Xue-Feng Wu	
Probing flavored regimes of leptogenesis with gravitational waves from cosmic strings (7 pages)	L041305
Marco Chianese, Satyabrata Datta, Gennaro Miele, Rome Samanta, and Ninetta Saviano	
Beyond Hawking evaporation of black holes formed by dark matter in compact stars (6 pages)	L041306
Ujjwal Basumatary, Nirmal Raj, and Anupam Ray	
Symmetry restoration and vacuum decay from accretion around black holes (6 pages)	L041501
James Marsden, Josu C. Aurrekoetxea, Katy Clough, and Pedro G. Ferreira	
Black-hole hair in scalar-Gauss-Bonnet gravity is altered by cosmology (6 pages)	L041502
Eugeniy Babichev, Ignacy Sawicki, and Leonardo G. Trombetta	
Black hole thermodynamics from an ensemble-averaged theory (8 pages)	L041503
Peng Cheng, Yu-Xiao Liu, and Shao-Wen Wei	
Rotating black holes experience dynamical tides (6 pages)	L041504
Rajendra Prasad Bhatt, Sumanta Chakraborty, and Sukanta Bose	
Inner-extremal regular black holes from pure gravity (6 pages)	L041505
Francesco Di Filippo, Ivan Kolář, and David Kubizňák	
Nonlinear effects in black hole ringdown made simple: Quasinormal modes as adiabatic modes (5 pages)	L041506
A. Kehagias and A. Riotto	
Exact results for scaling dimensions of neutral operators in scalar conformal field theories (6 pages)	L041701
Oleg Antipin, Jahmall Bersini, and Francesco Sannino	
Significant circular Unruh effect at small acceleration (7 pages)	L041702
Yuebing Zhou, Jiawei Hu, and Hongwei Yu	
Unitarity method for holographic defects (8 pages)	L041703
Junding Chen (陈俊定), Aleix Gimenez-Grau, Hynek Paul, and Xinan Zhou (周稀楠)	



(Continued)



2470-0010(20250215)111:4;1-L



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. D **90**, 020001 (2014).

ARTICLES

Performance of an instrumented baffle placed at the entrance of Virgo's end mirror vacuum tower during O5 (9 pages) M. Andrés-Carcasona, M. Martínez, Ll. M. Mir, J. Mundet, and H. Yamamoto	042001
Signatures of linearized gravity in atom interferometers: A simplified computational framework (27 pages) Leonardo Badurina, Yufeng Du, Vincent S. H. Lee, Yikun Wang, and Kathryn M. Zurek	042002
Development of ion-beam sputtered silicon nitride thin films for low-noise mirror coatings of gravitational-wave detectors (17 pages) A. Amato, M. Bazzan, G. Cagnoli, M. Canepa, M. Coulon, J. Degallaix, N. Demos, A. Di Michele, M. Evans, F. Fabrizi, G. Favaro, D. Forest, S. Gras, D. Hofman, A. Lemaître, G. Maggioni, M. Magnozzi, V. Martinez, L. Mereni, C. Michel, V. Milotti, M. Montani, A. Paolone, A. Pereira, F. Piergiovanni, V. Pierro, L. Pinard, I. M. Pinto, E. Placidi, S. Samandari, B. Sassolas, N. Shcheblanov, J. Teillon, I. Vickridge, and M. Granata	042003
Postprocessing of tilt-to-length noise with coefficient drifts in TianQin using a null time-delay interferometry channel (16 pages) Zhizhao Wang, Shuju Yang, Kaihang Wu, Xiaojie Wang, Huizong Duan, Xuefeng Zhang, Hsien-Chi Yeh, and Yurong Liang	042004
Mechanical loss reduction at low temperature after crystallization in a titania-tantala film (9 pages) Peter G. Murray, Jessica Steinlechner, Hafizah Noor Isa, Rebecca B. Cummings, Raymond Robie, Kieran Craig, Matthew R. Abernathy, Riccardo Bassiri, Martin M. Fejer, James Hough, Ian MacLaren, Sheila Rowan, and Iain W. Martin	042005
Enhanced model for characterizing the radiometer effect in space-borne gravitational wave detection (13 pages) Jiao-Jiao Mao, Yu-Jie Tan, Jun Ke, Jie Luo, and Cheng-Gang Shao	042006
Precision measurements of the magnetic parameters of LISA Pathfinder test masses (13 pages) M. Armano <i>et al.</i>	042007
Searching for ultralight dark matter through frequency modulation of gravitational waves (24 pages) Diego Blas, Silvia Gasparotto, and Rodrigo Vicente	042008
Accelerated parameter estimation of supermassive black hole binaries in LISA using a meshfree approximation (16 pages) Abhishek Sharma, Anand S. Sengupta, and Suvodip Mukherjee	042009
Machine-learning pipeline for real-time detection of gravitational waves from compact binary coalescences (13 pages) Ethan Marx, William Benoit, Alec Gunny, Rafia Omer, Deep Chatterjee, Ricco C. Venterea, Lauren Wills, Muhammed Saleem, Eric Moreno, Ryan Raikman, Ekaterina Govorkova, Malina Desai, Jeffrey Krupa, Dylan Rankin, Michael W. Coughlin, Philip Harris, and Erik Katsavounidis	042010
The NANOGrav 15 yr dataset: Posterior predictive checks for gravitational-wave detection with pulsar timing arrays (20 pages) Gabiella Agazie <i>et al.</i> (NANOGrav Collaboration)	042011
Realizability-preserving discontinuous Galerkin method for spectral two-moment radiation transport in special relativity (40 pages) Joseph Hunter, Eirik Endeve, M. Paul Laiu, and Yulong Xing	043001
Constraining viscous dark matter in light of CMB spectral distortion (10 pages) Shibsankar Si, Alekha C. Nayak, and Pravin Kumar Natwariya	043002
Luminescence-quenching model for nuclear recoils in rare-gas liquids for direct dark matter searches (16 pages) Akira Hitachi, Kiseki Nakamura, and Masaki Yamashita	043003
Pair production with capture by energetic cosmic ray nuclei in a photon background (11 pages) AmirFarzan Esmaili, Arman Esmaili, and Pasquale Dario Serpico	043004
Black holes from Fermi ball collapse (13 pages) Yifan Lu, Zachary S. C. Picker, Stefano Profumo, and Alexander Kusenko	043005
Identifying thermal effects in neutron star merger remnants with model-agnostic waveform reconstructions and third-generation detectors (19 pages) Miquel Miravet-Tenés, Davide Guerra, Milton Ruiz, Pablo Cerdá-Durán, and José A. Font	043006
Final state radiation from high and ultrahigh energy neutrino interactions (15 pages) Ryan Plestid and Bei Zhou	043007

(Continued)



Radial oscillations of protoneutron stars (<i>12 pages</i>)	043008
T. T. Sun (孙婷婷), Z. Y. Zheng (郑子岳), H. Chen (陈欢), J. B. Wei (魏金标), G. F. Burgio, and H.-J. Schulze	
Confronting the dark matter capture rate with a continuous gravitational wave probe of local neutron stars (<i>15 pages</i>)	043009
Pooja Bhattacharjee and Amit Dutta Banik	
Ultraheavy multiscattering dark matter: DUNE, CYGNUS, other kilotonne detectors, and tidal streams (<i>12 pages</i>)	043010
Harsh Aggarwal and Nirmal Raj	
Probing axionlike particles through the gamma-ray production from cosmic-ray scattering in the Milky Way dark matter halo (<i>10 pages</i>)	043011
Victor P. Goncalves, Emmanuel Moulin, Igor Reis, and Aion Viana	
Gravitational wave forecasts constrained by JWST AGN observations for early massive black hole mergers (<i>24 pages</i>)	043012
Hanpu Liu and Kohei Inayoshi	
Influence of muons, pions, and trapped neutrinos on neutron star mergers (<i>23 pages</i>)	043013
Michael A. Pajkos and Elias R. Most	
☞ Absence of TeV halos around millisecond pulsars (<i>11 pages</i>)	043014
A. U. Abeysekara <i>et al.</i> (HAWC Collaboration)	
Inhomogeneous energy injection in the 21-cm power spectrum: Sensitivity to dark matter decay (<i>32 pages</i>)	043015
Yitian Sun, Joshua W. Foster, Hongwan Liu, Julian B. Muñoz, and Tracy R. Slatyer	
Impact of dark matter distribution on neutron star properties (<i>16 pages</i>)	043016
Ankit Kumar and Hajime Sotani	
Three-flavor collective neutrino oscillation simulations on a qubit quantum annealer (<i>27 pages</i>)	043017
Ivan A. Chernyshev	
Extracting astrophysical information of highly eccentric binaries in the millihertz gravitational wave band (<i>25 pages</i>)	043018
Zeyuan Xuan, Smadar Naoz, Alvin K. Y. Li, Bence Kocsis, Erik Petigura, Alan M. Knee, Jess McIver, Kyle Kremer, and Will M. Farr	
New approach to search for long transient gravitational waves from inspiraling compact binary systems (<i>19 pages</i>)	043019
M. Andrés-Carcasona, O. J. Piccinni, M. Martínez, and Ll. M. Mir	
On the mass distribution of the LIGO-Virgo-KAGRA events (<i>14 pages</i>)	043020
Mehdi El Bouhaddouti and Ilias Cholis	
Axion-induced pair production: A new strategy for axion detection (<i>13 pages</i>)	043021
Fernando Arias-Aragón, Maurizio Giannotti, Giovanni Grilli di Cortona, and Federico Mescia	
Non-Gaussian statistics of nanohertz stochastic gravitational waves (<i>15 pages</i>)	043022
Xiao Xue, Zhen Pan, and Liang Dai	
Pair creation from radial electromagnetic perturbation of a compact astrophysical object (<i>10 pages</i>)	043023
Mikalai Prakapenia and Gregory Vereshchagin	
High-frequency gravitational waves detection with the BabyIAXO haloscopes (<i>13 pages</i>)	043024
José Reina-Valero, Jose R. Navarro-Madrid, Diego Blas, Alejandro Díaz-Morcillo, Igor García Irastorza, Benito Gimeno, and Juan Monzó-Cabrera	
Polarization signals from axion-photon resonant conversion in a neutron star magnetosphere (<i>7 pages</i>)	043025
Ningqiang Song, Liangliang Su, and Lei Wu	
Hierarchical search method for gravitational waves from stellar-mass binary black holes in noisy space-based detector data (<i>16 pages</i>)	043026
Yao Fu, Yan Wang, and Soumya D. Mohanty	
Detection and characterization of quasiperiodic oscillations in the Seyfert galaxy NGC 4151 (<i>8 pages</i>)	043027
Yan Yongkang, Zhang Peng, Lu Zhou, Bao Tong, Liu Dejian, Liu Gaochao, Liu Qingzhong, Yan Jingzhi, and Zeng Xiangyun	
Resolution requirements for numerical modeling of neutrino quantum kinetics (<i>11 pages</i>)	043028
Hiroki Nagakura, Masamichi Zaizen, Jiabao Liu, and Lucas Johns	
Three-body exchanges with primordial black holes (<i>16 pages</i>)	043029
Badal Bhalla, Benjamin V. Lehmann, Kuver Sinha, and Tao Xu	
Daily modulation of low-energy nuclear recoils from sub-GeV dark matter (<i>25 pages</i>)	043030
Connor Stratman and Tongyan Lin	

(Continued)



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. D **90**, 020001 (2014).

Vector dark matter halo: From polarization dynamics to direct detection (12 pages)	043031
Jiajun Chen, Le Hoang Nguyen, and David J. E. Marsh	
Unveiling a multicomponent stochastic gravitational-wave background with the TianQin + LISA network (18 pages)	043032
Zheng-Cheng Liang (梁正程), Zhi-Yuan Li (李知圆), En-Kun Li (李恩坤), Jian-dong Zhang (张建东), and Yi-Ming Hu (胡一鸣)	
Towards resolving the Galactic center GeV excess with millisecond-pulsars-like sources using machine learning (13 pages)	043033
Dmitry V. Malyshev	
Charged quark stars and extreme compact objects in regularized 4D Einstein-Gauss-Bonnet gravity (15 pages)	043034
Michael Gammon, Robert B. Mann, and Sarah Rourke	
Neutrino luminosity and the energy spectrum of a nova outburst (14 pages)	043035
Hao Wang, Chunhua Zhu, Guoliang Lü, Lin Li, Helei Liu, Sufen Guo, and Xizhen Lu	
Influence of neutrino-electron scattering and neutrino-pair annihilation on hypermassive neutron star (17 pages)	043036
Patrick Chi-Kit Cheong, Francois Foucart, Harry Ho-Yin Ng, Arthur Offermans, Matthew D. Duez, Nishad Muhammed, and Pavan Chawhan	
Strange stars admixed with mirror dark matter: Confronting observations of XTE J1814-338 (9 pages)	043037
Shu-Hua Yang, Chun-Mei Pi, and Fridolin Weber	
Qutrit and qubit circuits for three-flavor collective neutrino oscillations (19 pages)	043038
Francesco Turro, Ivan A. Chernyshev, Ramya Bhaskar, and Marc Illa	
Next-to-leading order corrections to scalar perturbations of Kerr-anti-de Sitter black holes (11 pages)	043039
Xiang-hao Chu, Yi-qing Chu, Shou-shan Bao, and Hong Zhang	
Geometric template bank for the detection of spinning low-mass compact binaries with moderate orbital eccentricity (28 pages)	043040
Khun Sang Phukon, Patricia Schmidt, and Geraint Pratten	
Revealing physical properties of a tidal disruption event iPTF16fnl (16 pages)	043041
Mageshwaran Tamilan, Gargi Shaw, Sudip Bhattacharyya, and Kimitake Hayasaki	
Axion minicluster halo limits from wide binary disruption (11 pages)	043042
Zihang Wang and Yu Gao	
Entering the window of primordial black hole dark matter with x-ray microlensing (12 pages)	043043
Manish Tamta, Nirmal Raj, and Prateek Sharma	
Cross sections and inelasticity distributions of high-energy neutrino deep inelastic scattering (25 pages)	043044
Philip L. R. Weigel, Janet M. Conrad, and Alfonso Garcia-Soto	
Premereger observation and characterization of massive black hole binaries (16 pages)	043045
Gareth Cabourn Davies, Ian Harry, Michael J. Williams, Diganta Bandopadhyay, Leor Barack, Jean-Baptiste Bayle, Charlie Hoy, Antoine Klein, Hannah Middleton, Christopher J. Moore, Laura Nuttall, Geraint Pratten, Alberto Vecchio, and Graham Woan	
Data-driven approach for modeling the temporal and spectral evolution of kilonova systematic uncertainties (13 pages)	043046
Sahil Jhavar, Thibaut Wouters, Peter T. H. Pang, Mattia Bulla, Michael W. Coughlin, and Tim Dietrich	
Discriminating sub-TeV gamma and hadron-induced showers through their footprints (12 pages)	043047
R. Conceição, B. S. González, A. Guillén, M. Pimenta, and B. Tomé	
Postprocessing subtraction of tilt-to-length noise in LISA in the presence of gravitational wave signals (12 pages)	043048
M.-S. Hartig, S. Paczkowski, M. Hewitson, G. Heinzel, and G. Wanner	
Gravitational wave signatures and detectability of the mass transfer effect in compact binaries (10 pages)	043049
Zi-Han Zhang, Tan Liu, Shenghua Yu, and Zong-Kuan Guo	
Generating ultracompact neutron stars with bosonic dark matter (11 pages)	043050
Sarah Louisa Pitz and Jürgen Schaffner-Bielich	
Quantum geometric formulation of Brans-Dicke theory for Bianchi I spacetime (15 pages)	043501
Manabendra Sharma, Gustavo S. Vicente, Leila L. Graef, Rudnei O. Ramos, and Anzhong Wang	
Modeling beam chromaticity for high-resolution CMB analyses (10 pages)	043502
S. Giardiello, A. J. Duivenvoorden, E. Calabrese, G. Galloni, M. Hasselfield, J. C. Hill, A. La Posta, T. Louis, M. Madhavacheril, and L. Pagano	

(Continued)



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. D **90**, 020001 (2014).

Exploring alternative cosmologies with the LSST: Simulated forecasts and current observational constraints (<i>13 pages</i>)	043503
Dharmendra Kumar, Ayan Mitra, Shah Nawaz A. Adil, and Anjan A. Sen	
Parity-breaking galaxy 4-point function from lensing by chiral gravitational waves (<i>10 pages</i>)	043504
Keisuke Inomata, Leah Jenks, and Marc Kamionkowski	
CMB polarization non-Gaussianity from accreting primordial black holes (<i>22 pages</i>)	043505
Trey W. Jensen and Yacine Ali-Haïmoud	
Cosmological dynamics in interacting scalar-torsion $f(T, \phi)$ gravity: Investigating energy and momentum couplings (<i>17 pages</i>)	043506
Carlos Rodriguez-Benites, Manuel Gonzalez-Espinoza, Giovanni Otalora, and Manuel Alva-Morales	
Brisk estimator for the angular multipoles of the redshift space bispectrum (<i>12 pages</i>)	043507
Sukhdeep Singh Gill and Somnath Bharadwaj	
Interpreting pulsar timing array data of gravitational waves with Ekpyrosis-bouncing cosmology (<i>15 pages</i>)	043508
Taotao Qiu and Mian Zhu	
Hunting for ultralight dark matter with cosmographic H_0 signal (<i>16 pages</i>)	043509
Kfir Blum and Luca Teodori	
Moving lens effect: Simulations, forecasts, and foreground mitigation (<i>17 pages</i>)	043510
Ali Beheshti, Emmanuel Schaan, and Arthur Kosowsky	
Gravitational waves from graviton bremsstrahlung with kination phase (<i>10 pages</i>)	043511
Ryoto Inui, Yusuke Mikura, and Shuichiro Yokoyama	
Validating a main beam treatment of parametric, pixel-based component separation in the context of CMB observations (<i>18 pages</i>)	043512
Arianna Rizzieri, Josquin Errard, and Radek Stompor	
Confronting interacting radiation models for the Hubble tension with Lyman- α data (<i>23 pages</i>)	043513
Hengameh Bagherian, Melissa Joseph, Martin Schmaltz, and Eashwar N. Sivarajan	
Isotropic cosmic birefringence from an oscillating axionlike field (<i>7 pages</i>)	043514
Kai Murai	
Early dark energy effects on the 21-cm signal (<i>14 pages</i>)	043515
Tal Adi, Jordan Flitter, and Ely D. Kovetz	
Dispersion in the Hubble-Lemaître constant measurements from gravitational clustering (<i>9 pages</i>)	043516
Swati Gavas, J. S. Bagla, and Nishikanta Khandai	

PART B

Graviton- and inflaton-mediated dark matter production after large field polynomial inflation (<i>13 pages</i>)	043517
Nicolás Bernal, Julia Harz, Martin A. Mojahed, and Yong Xu	
Barrow cosmology and big-bang nucleosynthesis (<i>10 pages</i>)	043518
Ahmad Sheykhi and Ava Shahbazi Sooraki	
Constraints on $f(R)$ gravity from thermal-Sunyaev-Zeldovich-effect-selected SPT galaxy clusters and weak lensing mass calibration from DES and HST (<i>22 pages</i>)	043519
S. M. L. Vogt <i>et al.</i> (SPT and DES Collaborations)	
Status of neutrino cosmology: Standard Λ CDM, extensions, and tensions (<i>21 pages</i>)	043520
Helena García Escudero and Kevork N. Abazajian	
Cosmic velocity, density, and halo mass function: Insights from deep learning (<i>14 pages</i>)	043521
Saba Etezad-Razavi, Erfan Abbasgholinejad, Mohammad-Hadi Sotoudeh, Farbod Hassani, Sadegh Raeisi, and Shant Baghran	
Compaction function analysis of CMB μ distortion constraints on primordial black holes (<i>10 pages</i>)	043522
Junyue Yang, Xiaoding Wang, Xiao-Han Ma, Dongdong Zhang, Sheng-Feng Yan, Amara Ilyas, and Yi-Fu Cai	
Gravitational wave signatures from reheating in axion-Chern-Simons running-vacuum cosmology (<i>18 pages</i>)	043523
Charalampos Tzerefos, Theodoros Papanikolaou, Spyros Basilakos, Emmanuel N. Saridakis, and Nick E. Mavromatos	
Redshift space distortions in Lagrangian space and the linear large scale velocity field of dark matter (<i>11 pages</i>)	043524
Emily Tyhurst, Hamsa Padmanabhan, and Ue-Li Pen	

(Continued)



Big bang nucleosynthesis constraints on the energy-momentum squared gravity: The $\mathbb{T}^2$ model (7 pages)	043525
Dukjae Jang, Mayukh R. Gangopadhyay, Myung-Ki Cheoun, Toshitaka Kajino, and M. Sami	
Neutrino-dark sector equilibration and primordial element abundances (7 pages)	043526
Cara Giovanetti, Martin Schmaltz, and Neal Weiner	
Dynamics-based halo model for large scale structure (17 pages)	043527
Edgar M. Salazar, Eduardo Rozo, Rafael García, Nickolas Kokron, Susmita Adhikari, Benedikt Diemer, and Calvin Osinga	
Scale-dependence in Λ CDM parameters inferred from the CMB: A possible sign of early dark energy (12 pages)	043528
Jun-Qian Jiang	
Accurate connected modeling of gas thermodynamics and matter distribution (21 pages)	043529
Shivam Pandey, Jaime Salcido, Chun-Hao To, J. Colin Hill, Dhayaa Anbajagane, Eric J. Baxter, and Ian G. McCarthy	
Exploring cosmological imprints of phantom crossing with dynamical dark energy in Horndeski gravity (15 pages)	043530
Yashi Tiwari, Ujjwal Upadhyay, and Rajeev Kumar Jain	
Sign switching in dark sector coupling interactions as a candidate for resolving cosmological tensions (12 pages)	043531
Miguel A. Sabogal, Emanuelly Silva, Rafael C. Nunes, Suresh Kumar, and Eleonora Di Valentino	
Evidence for asymmetric reionization histories from a joint analysis of the cosmic microwave background and astrophysical data (15 pages)	043532
Daniela Paoletti, Dhiraj Kumar Hazra, Fabio Finelli, and George F. Smoot	
Temperature-redshift relation in energy-momentum-powered gravity models (10 pages)	043533
C. J. A. P. Martins and A. M. M. Vieira	
What do we learn by mapping dark energy to a single value of w ? (5 pages)	043534
Samuel S. Taylor and Robert J. Scherrer	
Atacama Cosmology Telescope: DR6 gravitational lensing and SDSS BOSS cross-correlation measurement and constraints on gravity with the E_G statistic (31 pages)	043535
Lukas Wenzl, Rui An, Nick Battaglia, Rachel Bean, Erminia Calabrese, Shi-Fan Chen, Steve K. Choi, Omar Darwish, Jo Dunkley, Gerrit S. Farren, Simone Ferraro, Yilun Guan, Ian Harrison, Joshua Kim, Thibaut Louis, Niall MacCrann, Mathew S. Madhavacheril, Gabriela A. Marques, Yogesh Mehta, Michael D. Niemack, Frank J. Qu, Neelima Sehgal, Shabbir Shaikh, Blake D. Sherwin, Cristóbal Sifón, Alexander van Engelen, and Edward J. Wollack	
Confronting cold new early dark energy and its equation of state with updated CMB, supernovae, and BAO data (22 pages)	043536
Aleksandr Chatrchyan, Florian Niedermann, Vivian Poulin, and Martin S. Sloth	
Gravitational reheating formulas and bounds in oscillating backgrounds. II. Constraints on the spectral index and gravitational dark matter production (15 pages)	043537
Jaume de Haro and Supriya Pan	
Reconstructing primordial black hole power spectra from gravitational waves (14 pages)	043538
Daniel Frolovsky, Florian Kühnel, and Ioanna Stamou	
Removal of interloper contamination to line-intensity maps using correlations with ancillary tracers of the large-scale structure (15 pages)	043539
José Luis Bernal and Antón Baleato Lizancos	
Interpreting DESI 2024 BAO: Late-time dynamical dark energy or a local effect? (9 pages)	043540
Ioannis D. Gialamas, Gert Hütsi, Kristjan Kannike, Antonio Racioppi, Martti Raidal, Martin Vasar, and Hardi Veermäe	
Spectra of magnetic fields from electroweak symmetry breaking (11 pages)	043541
Tanmay Vachaspati and Axel Brandenburg	
Constraints on the sharpness of the curvature power spectrum (11 pages)	043542
Keisuke Inomata and Xuheng Luo	
Observational constraints on vectorlike dark energy (14 pages)	043543
C. S. C. M. Coelho, A.-L. Y. Gschrey, and C. J. A. P. Martins	
Natural validation of the second law of thermodynamics in cosmology (6 pages)	043544
Sergei D. Odintsov, Tanmoy Paul, and Soumitra SenGupta	

(Continued)



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. D **90**, 020001 (2014).

Gravity-induced birefringence in spherically symmetric spacetimes (17 pages)	044001
Sebastian Murk, Daniel R. Terno, and Rama Vadapalli	
Quasinormal modes of a Schwarzschild black hole within the Bondi-Sachs framework (9 pages)	044002
Bishop Mongwane, Siphon Nkele, Didam G. A. Duniya, and Nigel T. Bishop	
Charging the Love numbers: Charged scalar response coefficients of Kerr-Newman black holes (11 pages)	044003
Liang Ma, Ze-Hua Wu, Yi Pang, and H. Lü	
Frames and slicings for angular momentum in post-Minkowski scattering (16 pages)	044004
Samuel E. Gralla, Kunal Lobo, and Hongji Wei	
Hawking radiation inside a charged, cosmological black hole (19 pages)	044005
Devayani Ravuri and Tyler McMaken	
Microscopic entropy of static black holes in 3D Lovelock gravities (12 pages)	044006
Gökhan Alkaç, Luis Guajardo, and Hikmet Özşahin	
Inflation in Weyl-invariant Einstein-Cartan gravity (9 pages)	044007
Ioannis D. Gialamas and Kyriakos Tamvakis	
Can rotating black holes have short hairs? (6 pages)	044008
Rajes Ghosh and Chiranjeeb Singha	
Spinning particles near Kerr black holes: Orbits and gravitational-wave fluxes through the Hamilton-Jacobi formalism (42 pages)	044009
Gabriel Andres Piovano, Christiana Pantelidou, Jake Mac Uilliam, and Vojtěch Witzany	
Observational signatures from higher-order images of moving hotspots in accretion disks (24 pages)	044010
Qing-Hua Zhu	
Charges in general relativity and black hole thermodynamics (11 pages)	044011
M. Golshani, M. M. Sheikh-Jabbari, V. Taghiloo, and M. H. Vahidinia	
Vacuum transitions with the Gauss-Bonnet term in D dimensions (10 pages)	044012
Yang Liu	
Tidal Love numbers of gravitational atoms (38 pages)	044013
Ricardo Arana, Richard Brito, and Gonçalo Castro	
Correspondence between two gravitational lens equations in a static and spherically symmetric spacetime (7 pages)	044014
Ryuya Kudo and Hideki Asada	
Eccentric binary black hole simulations with numerical relativity (13 pages)	044015
Giuseppe Ficarra and Carlos O. Lousto	
Rapid eccentric spin-aligned binary black hole waveform generation based on deep learning (13 pages)	044016
Ruijun Shi, Yue Zhou, Tianyu Zhao, Zun Wang, Zhixiang Ren, and Zhoujian Cao	
Scalar waves in a topological star spacetime: Self-force and radiative losses (18 pages)	044017
Massimo Bianchi, Donato Bini, and Giorgio Di Russo	
Strong deflection of massive particles in spherically symmetric spacetimes (17 pages)	044018
Fabiano Feleppa, Valerio Bozza, and Oleg Yu. Tsupko	
Traversable wormholes with multiple unstable critical curves (13 pages)	044019
A. Rueda and E. Contreras	
Universal black hole solutions for all $F(R)$ gravitational theories (15 pages)	044020
Cristobal Laporte and Agustín Silva	
Spacetime superpositions as fluctuating geometries (22 pages)	044021
Källan Berglund, Martin Bojowald, Aurora Colter, and Manuel Díaz	
Note on the local calculation of decoherence of quantum superpositions in de Sitter spacetime (12 pages)	044022
Ran Li	
LISA double white dwarf binaries as Galactic accelerometers (20 pages)	044023
Reza Ebadi, Vladimir Strokov, Erwin H. Tanin, Emanuele Berti, and Ronald L. Walsworth	
Numerical-relativity surrogate model for hyperbolic encounters of black holes: Challenges in parameter estimation (18 pages)	044024
Joan Fontbuté, Tomas Andrade, Raimon Luna, Juan Calderón Bustillo, Gonzalo Morrás, Santiago Jaraba, Juan García-Bellido, and Germán López Izquierdo	

(Continued)



Peierls substitution and Hall motion in exotic Carroll dynamics (13 pages)	044025
H. X. Zeng, Q. L. Zhao, P. M. Zhang, and P. A. Horvathy	
Systematic biases due to waveform mismodeling in parametrized post-Einsteinian tests of general relativity:	
The impact of neglecting spin precession and higher modes (51 pages)	044026
Rohit S. Chandramouli, Kaitlyn Prokup, Emanuele Berti, and Nicolás Yunes	
Positive mass in general relativity without energy conditions (24 pages)	044027
Níckolas de Aguiar Alves, André G. S. Landulfo, and Bruno Arderucio Costa	
Connecting gravitational perturbations: From Bertotti-Robinson to extreme Reissner-Nordström black holes (14 pages)	044028
Marco de Cesare, Roberto Oliveri, and Achilleas P. Porfyriadis	
Finitely supertranslated Schwarzschild black hole and its perturbations (21 pages)	044029
Shaoqi Hou (侯绍齐), Kai Lin (林恺), and Zong-Hong Zhu (朱宗宏)	
Propagating degrees of freedom on maximally symmetric backgrounds in $f(R)$ theories of gravity (15 pages)	044030
Adrián Casado-Turrión, Álvaro de la Cruz-Dombriz, and Antonio Dobado	
Conformal cores of quantum black holes in quadratic gravity (14 pages)	044031
Ruolin Liu, Jerome Quintin, and Niayesh Afshordi	
Actions of spinning compact binaries: Spinning particle in Kerr matched to dynamics at 1.5 post-Newtonian order (25 pages)	044032
Vojtěch Witzany, Viktor Skoupý, Leo C. Stein, and Sashwat Tanay	
Quantum corrected Einstein-Yang-Mills black holes in semiclassical gravity (15 pages)	044033
Ben Kain	
Regular black holes inspired by quasitopological gravity (18 pages)	044034
Valeri P. Frolov, Alex Koek, Jose Pinedo Soto, and Andrei Zelnikov	
Lense-Thirring effect at work in M87* (12 pages)	044035
Lorenzo Iorio	
Testing eccentric corrections to the radiation-reaction force in the test-mass limit of effective-one-body models (27 pages)	044036
Guglielmo Faggioli, Maarten van de Meent, Alessandra Buonanno, Aldo Gamboa, Mohammed Khalil, and Gaurav Khanna	
Hamiltonian normal forms for the post-Newtonian binary problem (17 pages)	044037
C. Aykroyd, A. Bourgoïn, and C. Le Poncin-Lafitte	
Postmerger multimessenger analysis of binary neutron stars: Effect of the magnetic field strength and topology (34 pages)	044038
Jamie Bamber, Antonios Tsokaros, Milton Ruiz, and Stuart L. Shapiro	
Searching for stellar-origin binary black holes in LISA Data Challenge 1b: Yorsh (8 pages)	044039
Diganta Bandopadhyay and Christopher J. Moore	
How cosmological expansion affects communication between distant quantum systems (21 pages)	044040
Alessio Laponi, Orlando Luongo, and Stefano Mancini	
New probe of gravitational parity violation through nonobservation of the stochastic gravitational-wave background (30 pages)	044041
Thomas Callister, Leah Jenks, Daniel E. Holz, and Nicolás Yunes	
Slowly moving black holes in khronometric model (20 pages)	044042
A. Kovachik and S. Sibiryakov	
Absorptive effects in black hole scattering (26 pages)	044043
Yilber Fabian Bautista, Yu-Tin Huang, and Jung-Wook Kim	
Measuring gravitational wave memory with LISA (19 pages)	044044
Henri Inchauspé, Silvia Gasparotto, Diego Blas, Lavinia Heisenberg, Jann Zosso, and Shubhanshu Tiwari	
Direct current memory effects in effective-one-body waveform models (17 pages)	044045
Elisa Grilli, Andrea Placidi, Simone Albanesi, Gianluca Grignani, and Marta Orselli	
Potential impact of noise correlation in next-generation gravitational wave detectors (8 pages)	044046
Isaac C. F. Wong, Peter T. H. Pang, Milan Wils, Francesco Cireddu, Walter Del Pozzo, and Tjonnje G. F. Li	
Canonical analysis of unimodular Plebański gravity (11 pages)	044047
Steffen Gielen and Elliot Nash	
Forecasting the population properties of merging black holes (17 pages)	044048
Viola De Renzi, Francesco Iacovelli, Davide Gerosa, Michele Mancarella, and Costantino Pacilio	

(Continued)



Can black holes be formed by focusing radiation? (<i>4 pages</i>)	044049
Diego Blas, Vitor Cardoso, and Jose María Ezquiaga	
Gauging the scale invariance of Einstein equations: Weyl-invariant equations for gravity (<i>11 pages</i>)	044050
Máximo Bañados	
Throat effects on strong gravitational lensing in Kerr-like wormholes (<i>25 pages</i>)	044051
Tien Hsieh, Da-Shin Lee, and Chi-Yong Lin	

PART C

Waveform models for the gravitational-wave memory effect: Extreme mass-ratio limit and final memory offset (<i>25 pages</i>)	044052
Arwa Elhashash and David A. Nichols	
Boson star superradiance with spinning effects and in time domain (<i>27 pages</i>)	044053
Fu-Ming Chang, He-Yu Gao, Víctor Jaramillo, Xin Meng, and Shuang-Yong Zhou	
Gravitational wave forms for extreme mass ratio collisions from supersymmetric gauge theories (<i>20 pages</i>)	044054
Francesco Fucito, Jose Francisco Morales, and Rodolfo Russo	
Gravitational waves in massive gravity: Waveforms generated by a particle plunging into a black hole and the excitation of quasinormal modes and quasibound states (<i>48 pages</i>)	044055
Mohamed Ould El Hadj	
Analytic solutions for the motion of spinning particles near braneworld black hole (<i>15 pages</i>)	044056
Yunlong Liu and Xiangdong Zhang	
Breaking the north-south symmetry: Dyonic spinning black holes with synchronized gauged scalar hair (<i>15 pages</i>)	044057
Pedro V.P. Cunha, Carlos A.R. Herdeiro, Eugen Radu, and Nuno M. Santos	
Cosmological Landsberg-Finsler spacetimes (<i>15 pages</i>)	044058
Annamária Friedl-Szász, Elena Popovici-Popescu, Nicoleta Voicu, Christian Pfeifer, and Sjors Heefer	
Black holes and naked singularities in four dimensional dS and AdS Chamseddine gravity (<i>8 pages</i>)	044059
B. Cvetković and D. Simić	
Einstein cluster as central spiky distribution of galactic dark matter (<i>15 pages</i>)	044060
Kei-ichi Maeda, Vitor Cardoso, and Anzhong Wang	
Modeling lunar response to gravitational waves using normal-mode approach and tidal forcing (<i>20 pages</i>)	044061
Josipa Majstorović, Léon Vidal, and Philippe Lognonné	
Self-gravity effects of ultralight boson clouds formed by black hole superradiance (<i>21 pages</i>)	044062
Taillie May, William E. East, and Nils Siemonsen	
Photon ring dimming as a signature of photon-axion conversion in Janis-Newman-Winicour naked singularity (<i>18 pages</i>)	044063
Ayush Hazarika, Premachand Mahapatra, and Subhadip Sau	
Nonlinear scalarization of Schwarzschild black holes in scalar-torsion teleparallel gravity (<i>18 pages</i>)	044064
P. A. González, Eleftherios Papantonopoulos, Joaquín Robledo, and Yerko Vásquez	
Trace anomaly in metric-affine gravity (<i>22 pages</i>)	044065
Sebastian Bahamonde, Yuichi Miyashita, and Masahide Yamaguchi	
Stability of the greybody factor of Hayward black holes (<i>16 pages</i>)	044066
Liang-Bi Wu, Rong-Gen Cai, and Libo Xie	
Stability and quasinormal modes for black holes with time-dependent scalar hair (<i>21 pages</i>)	044067
Sergi Sirera and Johannes Noller	
Particle content of (scalar curvature) ² gravities revisited (<i>16 pages</i>)	044068
Georgios K. Karananas	
Tidal Love numbers of analog black holes (<i>12 pages</i>)	044069
Valerio De Luca, Brandon Khek, Justin Khoury, and Mark Trodden	
Analyzing black-hole ringdowns. II. Data conditioning (<i>16 pages</i>)	044070
Harrison Siegel, Maximiliano Isi, and Will M. Farr	
Perturbation theory for gravitational shadows in static spherically symmetric spacetimes (<i>14 pages</i>)	044071
Kirill Kobialko and Dmitri Gal'tsov	

(Continued)



Entropy created when colliding particles fall into a black hole (6 pages)	044072
De-Chang Dai	
Identifying eccentricity in binary black hole mergers using a harmonic decomposition of the gravitational waveform (21 pages)	044073
Ben G. Patterson, Sharon Mary Tomson, and Stephen Fairhurst	
Numerical modeling of bulk viscosity in neutron stars (25 pages)	044074
Michail Chabanov and Luciano Rezzolla	
Relativistic QFT description for the interaction of a spin with a magnetic field (20 pages)	044075
Ruhi Shah, Eduardo Martín-Martínez, and T. Rick Perche	
Hilbert space of quantum field theory in de Sitter spacetime (56 pages)	045001
Joao Penedones, Kamran Salehi Vaziri, and Zimo Sun	
6D large charge and 2D Virasoro blocks (22 pages)	045002
Jonathan J. Heckman, Adar Sharon, and Masataka Watanabe	
Vacuum polarization effects in the background of a deformed compact object and implications for photon velocity (19 pages)	045003
Daniel Amaro and Shokoufe Faraji	
Stress-energy tensor of an Unruh-DeWitt detector (13 pages)	045004
T. Rick Perche, J. P. M. Pitelli, and Daniel A. T. Vanzella	
Probing hidden topology with quantum detectors (15 pages)	045005
Dyuman Bhattacharya, Jorma Louko, and Robert B. Mann	
Semifinite von Neumann algebras in gauge theory and gravity (12 pages)	045006
Shadi Ali Ahmad, Marc S. Klinger, and Simon Lin	
Equivalence theorem at work: Manifestly gauge-invariant Abelian Higgs model physics (15 pages)	045007
Bram Boeykens, David Dudal, and Thomas Oosthuyse	
Deformation of matrix geometry via Landau level evolution (25 pages)	045008
Kazuki Hasebe	
Hadamard regularization of the graviton stress tensor (15 pages)	045009
Anna Negro and Subodh P. Patil	
Mode-sum prescription for renormalized expectation values for a charged quantum scalar field on a charged black hole (22 pages)	045010
Cormac Breen, George Montagnon, Peter Taylor, and Elizabeth Winstanley	
Corrections to Hawking radiation from asteroid-mass primordial black holes: Numerical evaluation of dissipative effects (23 pages)	045011
Emily Koivu, John Kushan, Makana Silva, Gabriel Vasquez, Arijit Das, and Christopher M. Hirata	
Functional renormalization group analysis of the $O(3)$ nonlinear sigma model and non-Abelian bosonization duality (12 pages)	045012
Junichi Haruna, Keito Shimizu, and Masatoshi Yamada	
ϕ^n trajectory bootstrap (22 pages)	045013
Wenliang Li	
Effective description of open quantum dynamics in relativistic scattering (17 pages)	045014
Kaito Kashiwagi and Akira Matsumura	
All actions for free massive higher-spin fields (16 pages)	045015
William Delplanque	
Detector-based measurements for QFT: Two issues and an algebraic QFT proposal (18 pages)	045016
Nicola Pranzini and Esko Keski-Vakkuri	
Fermionic van der Waals and Casimir-Polder interactions (8 pages)	045017
C. D. Fosco and G. Hansen	
Vacuum and vortices in the inhomogeneous Abelian Higgs model (11 pages)	045018
Yoonbai Kim, SeungJun Jeon, O-Kab Kwon, Hanwool Song, and Chanju Kim	
Hidden amplitude zeros from the double-copy map (8 pages)	045019
Christoph Bartsch, Taro V. Brown, Karol Kampf, Umut Oktem, Shruti Paranjape, and Jaroslav Trnka	

(Continued)



Carroll limit of a one-loop effective action (7 pages)	045020
Dmitri Vassilevich	
More on scattering processes of dressed particles with a time-dependent mass (19 pages)	045021
Yusuke Yamada	
Minkowski vacuum entanglement and accelerated oscillator chains (16 pages)	045022
Anatoly A. Svidzinsky, Marlan O. Scully, and William Unruh	
Are accelerated detectors sensitive to Planck scale changes? (13 pages)	045023
Harkirat Singh Sahota and Kinjalk Lochan	
Defining the root- $T\bar{T}$ operator (17 pages)	045024
Leszek Hadasz and Rikard von Unge	
Singularity resolution in spherically reduced 2D semiclassical gravity with negative central charge (11 pages)	045025
Adrián del Río, F. Javier Marañón-González, and José Navarro-Salas	
Holographic foliations: Self-similar quasicrystals from hyperbolic honeycombs (34 pages)	046001
Latham Boyle and Justin Kulp	
Spacetime and Planck mass generation from scale-invariant degenerate gravity (9 pages)	046002
Yadikaer Maitiniyazi, Shinya Matsuzaki, Kin-ya Oda, and Masatoshi Yamada	
2D Ising critical couplings from quantum gravity (10 pages)	046003
Etera R. Livine and Valentin Bonzom	
Quantum-gravitational noise correlation in nearby detectors (11 pages)	046004
Maulik Parikh and Francesco Setti	
Holographic Schwinger effect in flavor-dependent systems (9 pages)	046005
Sheng Lin, Xuan Liu, Xun Chen, Gen-Fa Zhang, and Jing Zhou	
Deconfinement and chiral restoration phase transition under rotation from holography in an anisotropic gravitational background (15 pages)	046006
Yidian Chen, Xun Chen, Danning Li, and Mei Huang	
Timelike supersymmetric solutions of $D = 3$, $N = 4$ supergravity (11 pages)	046007
Nihat Sadik Deger and Ceren Ayse Deral	
✂ Kontsevich-Segal criterion in the no-boundary state constrains anisotropy (17 pages)	046008
Thomas Hertog, Oliver Janssen, and Joel Karlsson	
Revisiting subregion holography using OPE blocks (23 pages)	046009
Mrityunjay Nath, Satyabrata Sahoo, and Debajyoti Sarkar	
Fluxification and scalarization of the conifold black holes (17 pages)	046010
Alex Buchel	
Holographic complexity in string and M theory (6 pages)	046011
Andrew R. Frey	
Wave function renormalization in asymptotically safe quantum gravity (8 pages)	046012
Hikaru Kawai and Nobuyoshi Ohta	
Beta-functions and RG flows for holographic QCD with heavy and light quarks: Isotropic case (22 pages)	046013
Irina Ya. Aref'eva, Ali Hajilou, Pavel Slepov, and Marina Usova	
✂ Dark dimension and the grand unification of forces (7 pages)	046014
Jonathan J. Heckman, Cumrun Vafa, Timo Weigand, and Fengjun Xu	
Islands in Bianchi type I universe (14 pages)	046015
Ido Ben-Dayan, Merav Hadad, and Ayushi Srivastava	
Resummation of multistress tensors in higher dimensions (22 pages)	046016
Kuo-Wei Huang	
Modulated instabilities and the AdS_2 point in dense holographic matter (32 pages)	046017
Jesús Cruz Rojas, Tuna Demircik, and Matti Järvinen	
Planar decomposition of bipartite HOMFLY polynomials in symmetric representations (24 pages)	046018
A. Anokhina, E. Lanina, and A. Morozov	
Consistent $\mathcal{N} = 4$, $D = 4$ truncation of type IIB supergravity on $S^1 \times S^5$ (10 pages)	046019
Adolfo Guarino, Colin Sterckx, and Mario Trigiante	

(Continued)



CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 111, NUMBER 4

D15 FEBRUARY 2025

Supergravity without gravity and its BV formulation (<i>11 pages</i>)	046020
Julian Kupka, Charles Strickland-Constable, and Fridrich Valach	
Semiclassical propagator for coherent state on twisted geometry (<i>21 pages</i>)	046021
Gaoping Long, Hongguang Liu, and Cong Zhang	
Continuous quiver gauge theories (<i>6 pages</i>)	046022
Evgeny Sobko	
Note on Seiberg duality for $N_f < N_c$ (<i>8 pages</i>)	046023
Adi Armoni and Ricardo Stuardo	
Toric gravitational instantons in gauged supergravity (<i>9 pages</i>)	046024
Pietro Benetti Genolini, Jerome P. Gauntlett, Yusheng Jiao, Alice Lüscher, and James Sparks	
Effective Kerr geometry from loop quantum gravity (<i>16 pages</i>)	046025
Francesco Fazzini	
Gravitational entanglement witness through Einstein ring image (<i>42 pages</i>)	046026
Youka Kaku and Yasusada Nambu	
Partial entanglement entropy threads in the island phase (<i>20 pages</i>)	046027
Qiang Wen, Mingshuai Xu, and Haocheng Zhong	



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. D **90**, 020001 (2014).