PHYSICAL REVIEW D

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 1550-7998)

PERIODICALS

Postmaster send address changes to:

APS Subscription Services
P.O. Box 41
Annapolis Junction, MD 20701

THIRD SERIES, VOLUME 104, NUMBER 6 *CONTENTS* D15 SEPTEMBER 2021

The Table of Contents is a total listing of Parts A and B.
Part A consists of articles 061101–064003, and Part B articles 064004–069906(E)

PART A

LETTERS

Search for non-Newtonian interactions at micrometer scale with a levitated test mass *(7 pages)* L061101
Charles P. Blakemore, Alexander Fieguth, Akio Kawasaki, Nadav Priel, Denzal Martin, Alexander D. Rider, Qidong Wang, and Giorgio Gratta

Gravitational waves from axionlike particle cosmic string-wall networks *(7 pages)* L061301
Graciela B. Gelmini, Anna Simpson, and Edoardo Vitagliano

Galilean first-order formulation for the nonrelativistic expansion of general relativity *(6 pages)* L061501
Dennis Hansen, Jelle Hartong, Niels A. Obers, and Gerben Oling

Causality constraints in large N QCD coupled to gravity *(7 pages)* L061901
Jared Kaplan and Sandipan Kundu

Supersymmetry of higher-derivative supergravity in AdS_4 holography *(8 pages)* L061902
Pietro Benetti Genolini and Paul Richmond

Statistics of limit root bundles relevant for exact matter spectra of F-theory MSSMs *(8 pages)* L061903
Martin Bies, Mirjam Cvetič, and Muyang Liu

ARTICLES

Cryogenic vacuum considerations for future gravitational wave detectors *(12 pages)* 062001
L. Spallino, M. Angelucci, A. Pasqualetti, K. Battes, C. Day, S. Grohmann, E. Majorana, F. Ricci, and R. Cimino

Impact of Earth's gravity on Gaussian beam propagation in hemispherical cavities *(11 pages)* 062002
S. Ulbricht, J. Dickmann, R. A. Müller, S. Kroker, and A. Surzhykov

Sensitivity limits of space-based interferometric gravitational wave observatories from the solar wind *(14 pages)* 062003
Oliver Jennrich, Nora Luetzgendorf, James Ira Thorpe, Jacob Slutsky, and Curt Cutler

Early warning of coalescing neutron-star and neutron-star-black-hole binaries from the nonstationary noise background using neural networks *(16 pages)* 062004
Hang Yu, Rana X. Adhikari, Ryan Magee, Surabhi Sachdev, and Yanbei Chen

Constraints on effective field theory couplings using 311.2 days of LUX data *(19 pages)* 062005
D. S. Akerib *et al.* (LUX Collaboration)

LIGO's quantum response to squeezed states *(29 pages)* 062006
L. McCuller *et al.*

Calibration of the air shower energy scale of the water and air Cherenkov techniques in the LHAASO experiment *(12 pages)* 062007
F. Aharonian *et al.* (LHAASO Collaboration)

Copyright 2021 American Physical Society

(Continued)

2470-0010(20210915)104:6;1-G

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).

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 104, NUMBER 6** **D15 SEPTEMBER 2021**

Axion dark matter search using arm cavity transmitted beams of gravitational wave detectors *(10 pages)* 062008
Koji Nagano, Hiromasa Nakatsuka, Soichiro Morisaki, Tomohiro Fujita, Yuta Michimura, and Ippei Obata

On the importance of source population models for gravitational-wave cosmology *(19 pages)* 062009
S. Mastrogiovanni, K. Leyde, C. Karathanasis, E. Chassande-Mottin, D. A. Steer, J. Gair, A. Ghosh, R. Gray, S. Mukherjee, and S. Rinaldi

Small-scale shear: Peeling off diffuse subhalos with gravitational waves *(24 pages)* 063001
Han Gil Choi, Chanung Park, and Sunghoon Jung

Effect on dark matter exclusion limits from new silicon photoelectric absorption measurements *(9 pages)* 063002
B. von Krosigk, M. J. Wilson, C. Stanford, B. Cabrera, R. Calkins, D. Jardin, N. A. Kurinsky, F. Ponce, and C.-P. Wu

Impact of the PSR J0740 + 6620 radius constraint on the properties of high-density matter *(20 pages)* 063003
Isaac Legred, Katerina Chatziioannou, Reed Essick, Sophia Han (韩君), and Philippe Landry

Magnetospheres of black hole-neutron star binaries *(16 pages)* 063004
Federico Carrasco, Masaru Shibata, and Oscar Reula

Magnetic diffusion and interaction effects on ultrahigh energy cosmic rays: Protons and nuclei *(13 pages)* 063005
Juan Manuel González, Silvia Mollerach, and Esteban Roulet

Constraints on high density equation of state from maximum neutron star mass *(11 pages)* 063006
Márcio Ferreira and Constança Providência

Wet extreme mass ratio inspirals may be more common for spaceborne gravitational wave detection *(9 pages)* 063007
Zhen Pan, Zhenwei Lyu, and Huan Yang

Spins of primordial black holes formed in different cosmological scenarios *(6 pages)* 063008
Marcos M. Flores and Alexander Kusenko

Simulation of collective neutrino oscillations on a quantum computer *(13 pages)* 063009
Benjamin Hall, Alessandro Roggero, Alessandro Baroni, and Joseph Carlson

Axionlike particle inflation and dark matter *(7 pages)* 063010
Wei Cheng, Ligong Bian, and Yu-Feng Zhou

Eccentric binary neutron star search prospects for Cosmic Explorer *(9 pages)* 063011
Amber K. Lenon, Duncan A. Brown, and Alexander H. Nitz

Ultrahigh-energy photons from LHAASO as probes of Lorentz symmetry violations *(8 pages)* 063012
Chengyi Li and Bo-Qiang Ma

Medium effects in supernovae constraints on light mediators *(16 pages)* 063013
David G. Cerdeño, Marina Cermeño, M. Ángeles Pérez-García, and Elliott Reid

New method for detecting fast neutrino flavor conversions in core-collapse supernova models with two-moment neutrino transport *(13 pages)* 063014
Hiroki Nagakura and Lucas Johns

Using gravitational wave parallax to measure the Hubble parameter with pulsar timing arrays *(11 pages)* 063015
Daniel J. D'Orazio and Abraham Loeb

Realistic finite-temperature effects in neutron star merger simulations *(19 pages)* 063016
Carolyn A. Raithel, Vasileios Paschalidis, and Feryal Özel

Effective theory of nuclear scattering for a WIMP of arbitrary spin *(31 pages)* 063017
Paolo Gondolo, Sunghyun Kang, Stefano Scopel, and Gaurav Tomar

Phenomenology of nuclear scattering for a WIMP of arbitrary spin *(20 pages)* 063018
Paolo Gondolo, Injun Jeong, Sunghyun Kang, Stefano Scopel, and Gaurav Tomar

Hubble tension in lepton asymmetric cosmology with an extra radiation *(7 pages)* 063019
Osamu Seto and Yo Toda

Particle acceleration in strong MHD turbulence *(24 pages)* 063020
Martin Lemoine

Exploring dark sector parameters in light of neutron star temperatures *(14 pages)* 063021
Guey-Lin Lin and Yen-Hsun Lin

Time resolved 3D interferometric imaging of a section of a negative leader with LOFAR *(11 pages)* 063022
O. Scholten, B. M. Hare, J. Dwyer, N. Liu, C. Sterpka, S. Buitink, T. Huege, A. Nelles, and S. ter Veen

(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).

PHYSICAL REVIEW D THIRD SERIES, VOLUME 104, NUMBER 6 D15 SEPTEMBER 2021

Direct detection of dark energy: The XENON1T excess and future prospects *(24 pages)* 063023
Sunny Vagnozzi, Luca Visinelli, Philippe Brax, Anne-Christine Davis, and Jeremy Sakstein

Extended search for supernovalike neutrinos in NOvA coincident with LIGO/Virgo detections *(10 pages)* 063024
M. A. Acero *et al.* (The NOvA Collaboration)

Correlation of gravitational wave background noises and statistical loss for angular averaged sensitivity curves *(10 pages)* 063025
Naoki Seto

Long-term evolution of neutron-star merger remnants in general relativistic resistive magnetohydrodynamics with a mean-field dynamo term *(22 pages)* 063026
Masaru Shibata, Sho Fujibayashi, and Yuichiro Sekiguchi

Epicyclic oscillations of test particles near marginally stable circular orbits around charged Kiselev black holes *(29 pages)* 063027
Dmitriy Ovchinnikov, Muhammad Umar Farooq, Ibrar Hussain, Ahmadjon Abdujabbarov, Bobomurat Ahmedov, and Zdeněk Stuchlík

Dark matter admixed neutron star as a possible compact component in the GW190814 merger event *(6 pages)* 063028
H. C. Das, Ankit Kumar, and S. K. Patra

Modeling the optical Cherenkov signals by cosmic ray extensive air showers directly observed from suborbital and orbital altitudes *(18 pages)* 063029
A. L. Cummings, R. Aloisio, J. Eser, and J. F. Krizmanic

Detecting gravitational waves with disparate detector responses: Two new binary black hole mergers *(13 pages)* 063030
Barak Zackay, Liang Dai, Tejaswi Venumadhav, Javier Roulet, and Matias Zaldarriaga

Python-based reduced order quadrature building code for fast gravitational wave inference *(14 pages)* 063031
Hong Qi and Vivien Raymond

Constraints on the phase transition and nuclear symmetry parameters from PSR J0740 + 6620 and multimessenger data of other neutron stars *(11 pages)* 063032
Shao-Peng Tang, Jin-Liang Jiang, Ming-Zhe Han, Yi-Zhong Fan, and Da-Ming Wei

511 keV excess and primordial black holes *(9 pages)* 063033
Celeste Keith and Dan Hooper

Detecting gravitational waves in data with non-stationary and non-Gaussian noise *(17 pages)* 063034
Barak Zackay, Tejaswi Venumadhav, Javier Roulet, Liang Dai, and Matias Zaldarriaga

Neutron star deformability with hyperonization in density-dependent relativistic mean-field models *(8 pages)* 063035
W. Z. Shangguan, Z. Q. Huang, S. N. Wei, and W. Z. Jiang

Phenomenological QCD equations of state for neutron star dynamics: Nuclear-2SC continuity and evolving effective couplings *(24 pages)* 063036
Toru Kojo, Defu Hou, Jude Okafor, and Hajime Togashi

Solar neutrinos and dark matter detection with diurnal modulation *(11 pages)* 063037
Sebastian Sassi, Abolfazl Dinmohammadi, Matti Heikinheimo, Nader Mirabolfathi, Kai Nordlund, Hossein Safari, and Kimmo Tuominen

Stellar disruption of axion miniclusters in the Milky Way *(29 pages)* 063038
Bradley J. Kavanagh, Thomas D. P. Edwards, Luca Visinelli, and Christoph Weniger

Strongly magnetized hot QCD matter and stochastic gravitational wave background *(12 pages)* 063039
Mohsen Khodadi, Ujjal Kumar Dey, and Gaetano Lambiase

Universal 10^{20} Hz stochastic gravitational waves from photon spheres of black holes *(7 pages)* 063040
Kaishu Saito, Jiro Soda, and Hirotaka Yoshino

Bounding dark charges on binary black holes using gravitational waves *(9 pages)* 063041
Pawan Kumar Gupta, Thomas F. M. Spieksma, Peter T. H. Pang, Gideon Koekoek, and Chris Van Den Broeck

Radiation from matter-antimatter annihilation in the quark nugget model of dark matter *(17 pages)* 063042
V. V. Flambaum and I. B. Samsonov

Nature of the ultrarelativistic prompt emission phase of GRB 190114C *(18 pages)* 063043
R. Moradi, J. A. Rueda, R. Ruffini, Liang Li, C. L. Bianco, S. Campion, C. Cherubini, S. Filippi, Y. Wang, and S. S. Xue

Gravitational waves from a dark $U(1)_D$ phase transition in light of NANOGrav 12.5 yr data *(10 pages)* 063501
Debasish Borah, Arnab Dasgupta, and Sin Kyu Kang

(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).

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 104, NUMBER 6** **D15 SEPTEMBER 2021**

Helical magnetic fields from Riemann coupling lead to baryogenesis *(14 pages)* 063502
Ashu Kushwaha and S. Shankaranarayanan

Disentangling Doppler modulation, aberration and the temperature dipole in the CMB *(16 pages)* 063503
Pedro da Silveira Ferreira and Miguel Quartin

Laguerre reconstruction of the BAO feature in halo-based mock galaxy catalogues *(11 pages)* 063504
Farnik Nikakhtar, Ravi K. Sheth, and Idit Zehavi

Reionization effective likelihood from *Planck* 2018 data *(15 pages)* 063505
Chen Heinrich and Wayne Hu

CMB lensing in a modified ΛCDM model in light of the H_0 tension *(9 pages)* 063506
Hossein Moshafi, Shant Baghram, and Nima Khosravi

Early-time thermalization of cosmic components? A hint for solving cosmic tensions *(9 pages)* 063507
Hermano Velten, Ingrid Costa, and Winfried Zimdahl

Generating a seed magnetic field *à la* the chiral Biermann battery *(7 pages)* 063508
Arun Kumar Pandey and Sampurn Anand

Confronting the magnetically-induced holographic composite inflation with observation *(7 pages)* 063509
M. Ahmadvand, A. Ashoorioon, and K. Bitaghsir Fadafan

Implication of the Hubble tension for the primordial Universe in light of recent cosmological data *(7 pages)* 063510
Gen Ye, Bin Hu, and Yun-Song Piao

High resolution calibration of the cosmic strings velocity dependent one-scale model *(14 pages)* 063511
J. R. C. C. C. Correia and C. J. A. P. Martins

Cosmological perturbations without the Boltzmann hierarchy *(8 pages)* 063512
Marc Kamionkowski

Decoding the phases of early and late time reheating through imprints on primordial gravitational waves *(27 pages)* 063513
Md Riajul Haque, Debaprasad Maity, Tanmoy Paul, and L. Sriramkumar

Constraining reionization with the first measurement of the cross-correlation between the CMB optical-depth fluctuations and the Compton *y*-map *(13 pages)* 063514
Toshiya Namikawa, Anirban Roy, Blake D. Sherwin, Nicholas Battaglia, and David N. Spergel

Double-peaked inflation model: Scalar induced gravitational waves and primordial-black-hole suppression from primordial non-Gaussianity *(14 pages)* 063515
Fengge Zhang (张丰阁), Jiong Lin (林炯), and Yizhou Lu (卢一洲)

Measuring anisotropic stress with relativistic effects *(7 pages)* 063516
Daniel Sobral Blanco and Camille Bonvin

Cosmological dynamics of interacting dark energy and dark matter in viable models of $f(R)$ gravity *(15 pages)* 063517
Daris Samart, Bhuddhanubhap Silasan, and Phongpichit Channuie

Fundamental physics using the temporal gravitational wave background *(12 pages)* 063518
Suvodip Mukherjee and Joseph Silk

Quantum coherence of photons to cosmological distances *(11 pages)* 063519
Arjun Berera, Suddhasattwa Brahma, Robert Brandenberger, Jaime Calderón-Figueroa, and Alan Heavens

Adiabatic duality: Duality of cosmological models with varying slow-roll parameter and sound speed *(10 pages)* 063520
Jiaming Shi, Zheng Fang, and Taotao Qiu

Generalized emergent dark energy model and the Hubble constant tension *(11 pages)* 063521
Weiqiang Yang, Eleonora Di Valentino, Supriya Pan, Arman Shafieloo, and Xiaolei Li

CMB and 21-cm bounds on early structure formation boosted by primordial black hole entropy fluctuations *(13 pages)* 063522
Hiroyuki Tashiro and Kenji Kadota

Self-interacting neutrinos, the Hubble parameter tension, and the cosmic microwave background *(40 pages)* 063523
Thejs Brinckmann, Jae Hyeok Chang, and Marilena LoVerde

Consistency tests of ΛCDM from the early integrated Sachs-Wolfe effect: Implications for early-time new physics and the Hubble tension *(16 pages)* 063524
Sunny Vagnozzi

Axion-CMB scenario in a supercooled universe *(21 pages)* 063525
Satoshi Iso, Kiyoharu Kawana, and Kengo Shimada

(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).

PHYSICAL REVIEW D THIRD SERIES, VOLUME 104, NUMBER 6 D15 SEPTEMBER 2021

Constraining the initial primordial black hole clustering with CMB distortion *(6 pages)* 063526
V. De Luca, G. Franciolini, and A. Riotto

Wave function of simple universes analytically continued from negative to positive potentials *(13 pages)* 063527
Jean-Luc Lehners

Constraints on accreting primordial black holes with the global 21-cm signal *(6 pages)* 063528
Yupeng Yang

Dark sector interaction and the supernova absolute magnitude tension *(8 pages)* 063529
Rafael C. Nunes and Eleonora Di Valentino

Nonsingular cosmological models with strong gravity in the past *(23 pages)* 063530
Y. Ageeva, P. Petrov, and V. Rubakov

Relic cosmological vector fields and inflationary gravitational waves *(19 pages)* 063531
Avery J. Tishue and Robert R. Caldwell

Constraining quantum initial conditions before inflation *(16 pages)* 063532
T. Gessey-Jones and W. J. Handley

CP-violating inflation and its cosmological imprints *(9 pages)* 063533
Venus Keus and Kimmo Tuominen

Perturbed recombination from inhomogeneous photon injection and application to accreting primordial black holes *(25 pages)* 063534
Trey W. Jensen and Yacine Ali-Haïmoud

Can small-scale baryon inhomogeneities resolve the Hubble tension? An investigation with ACT DR4 *(10 pages)* 063535
Leander Thiele, Yilun Guan, J. Colin Hill, Arthur Kosowsky, and David N. Spergel

Probing compensated isocurvature with the 21-cm signal during cosmic dawn *(14 pages)* 063536
Selim C. Hotinli, Thomas Binnie, Julian B. Muñoz, Bikash R. Dinda, and Marc Kamionkowski

First-order velocity memory effect from compact binary coalescing sources *(14 pages)* 064001
Atul K. Divakarla and Bernard F. Whiting

Double gravitational layer traversable wormholes in hybrid metric-Palatini gravity *(11 pages)* 064002
João Luís Rosa

Effective thermodynamical system of Schwarzschild–de Sitter black holes from Rényi statistics *(21 pages)* 064003
Ratchaphat Nakarachinda, Ekapong Hirunsirisawat, Lunchakorn Tannukij, and Pitayuth Wongjun

PART B

Solid-liquid phase transition and heat engine in an asymptotically flat Schwarzschild black hole via the Rényi extended phase space approach *(15 pages)* 064004
Chatchai Promsiri, Ekapong Hirunsirisawat, and Watchara Liewrian

Distance between collapsing matter and apparent horizon in evaporating black holes *(8 pages)* 064005
Pei-Ming Ho, Yoshinori Matsuo, and Yuki Yokokura

Criticality of lower dimensional AdS_d black holes *(11 pages)* 064006
Aditya Dhumuntarao and Robert Mann

Generalized proof of the linearized second law in general quadric corrected Einstein-Maxwell gravity *(24 pages)* 064007
Xin-Yang Wang and Jie Jiang

Science with the TianQin Observatory: Preliminary results on testing the no-hair theorem with extreme mass ratio inspirals *(9 pages)* 064008
Tieguang Zi (訾铁光), Jian-dong Zhang (张建东), Hui-Min Fan (范会敏), Xue-Ting Zhang (张雪婷), Yi-Ming Hu (胡一鸣), Changfu Shi (石常富), and Jianwei Mei (梅健伟)

Oscillations in the extreme mass-ratio inspiral gravitational wave phase correction as a probe of a reflective boundary of the central black hole *(8 pages)* 064009
Norichika Sago and Takahiro Tanaka

Asymptotic symmetries and the subleading soft graviton theorem in higher dimensions *(12 pages)* 064010
Dimitri Colferai and Stefano Lionetti

Hypersymmetric extensions of Maxwell-Chern-Simons gravity in $2+1$ dimensions *(15 pages)* 064011
Ricardo Caroca, Patrick Concha, Javier Matulich, Evelyn Rodríguez, and David Tempo

(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).

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 104, NUMBER 6** **D15 SEPTEMBER 2021**

Calculation of multipole moments of axistationary electrovacuum spacetimes *(20 pages)* 064012
Gyula Fodor, Etevaldo dos Santos Costa Filho, and Betti Hartmann

Early warning of precessing compact binary merger with third-generation gravitational-wave detectors *(11 pages)* 064013
Takuya Tsutsui, Atsushi Nishizawa, and Soichiro Morisaki

Conformal gravity does not predict flat galaxy rotation curves *(13 pages)* 064014
M. P. Hobson and A. N. Lasenby

Slowly rotating black holes and their scalarization *(7 pages)* 064015
Yun Soo Myung and De-Cheng Zou

Particle motion around a static axially symmetric wormhole *(12 pages)* 064016
Bakhtiyor Narzilloev, Daniele Malafarina, Ahmadjon Abdujabbarov, Bobomurat Ahmedov, and Cosimo Bambi

Curvature scalarization of black holes in $f(R)$ gravity *(14 pages)* 064017
Zi-Yu Tang, Bin Wang, Thanasis Karakasis, and Eleftherios Papantonopoulos

Dark gravitational sectors on a generalized scalar-tensor vector bundle model and cosmological applications *(18 pages)* 064018
Spyros Konitopoulos, Emmanuel N. Saridakis, P. C. Stavrinos, and A. Triantafyllopoulos

Gravitational multipole moments for asymptotically de Sitter spacetimes *(17 pages)* 064019
Sumanta Chakraborty, Sk Jahanur Hoque, and Roberto Oliveri

Kaluza-Klein theories in the framework of polymer quantum mechanics *(15 pages)* 064020
Giovanni Montani and Sebastiano Segreto

Correlation analysis for isotropic stochastic gravitational wave backgrounds with maximally allowed polarization degrees *(15 pages)* 064021
Hidetoshi Omiya and Naoki Seto

Gravitational lensing by two photon spheres in a black-bounce spacetime in strong deflection limits *(18 pages)* 064022
Naoki Tsukamoto

Gravitational-wave glitches: Resonant islands and frequency jumps in nonintegrable extreme-mass-ratio inspirals *(13 pages)* 064023
Kyriakos Destounis and Kostas D. Kokkotas

Odd-parity stability of black holes in Einstein-aether gravity *(14 pages)* 064024
Shinji Tsujikawa, Chao Zhang, Xiang Zhao, and Anzhong Wang

Asymptotic behavior of null geodesics near future null infinity: Significance of gravitational waves *(14 pages)* 064025
Masaya Amo, Keisuke Izumi, Yoshimune Tomikawa, Hirotaka Yoshino, and Tetsuya Shiromizu

Self-dual gravitational instantons in conformal gravity: Conserved charges and thermodynamics *(12 pages)* 064026
Cristóbal Corral, Gastón Giribet, and Rodrigo Olea

New test on the Einstein equivalence principle through the photon ring of black holes *(16 pages)* 064027
Chunlong Li, Hongsheng Zhao, and Yi-Fu Cai

Dynamical aspects of asymmetric Eddington gravity with scalar fields *(9 pages)* 064028
Hemza Azri and Salah Nasri

T-model field equations: The general solution *(11 pages)* 064029
Joan Josep Ferrando and Salvador Mengual

MOND fiducial specific angular momentum of disc galaxies *(6 pages)* 064030
Mordehai Milgrom

Divergences in gravitational-wave emission and absorption from extreme mass ratio binaries *(11 pages)* 064031
Enrico Barausse, Emanuele Berti, Vitor Cardoso, Scott A. Hughes, and Gaurav Khanna

Effect of tidal curvature on dynamics of accelerated probes *(11 pages)* 064032
Hari K and Dawood Kothawala

Chern-Simons caps for rotating black holes *(9 pages)* 064033
Stephon Alexander, Gregory Gabadadze, Leah Jenks, and Nicolás Yunes

Analytical computation of quasinormal modes of slowly rotating black holes in dynamical Chern-Simons gravity *(19 pages)* 064034
Manu Srivastava, Yanbei Chen, and S. Shankaranarayanan

Particle scattering in a sonic analogue of special relativity *(23 pages)* 064035
Scott L. Todd, Giacomo Pantaleoni, Valentina Baccetti, and Nicolas C. Menicucci

(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).

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 104, NUMBER 6** **D15 SEPTEMBER 2021**

Matter matters in Einstein-Cartan gravity *(15 pages)* 064036
Georgios K. Karananas, Mikhail Shaposhnikov, Andrey Shkerin, and Sebastian Zell

Quasinormal modes and dual resonant states on de Sitter space *(11 pages)* 064037
Peter Hintz and YuQing Xie

Black holes with many horizons in the theories of nonlinear electrodynamics *(17 pages)* 064038
Changjun Gao

Shadow analysis for rotating black holes in the presence of plasma for an expanding universe *(11 pages)* 064039
Abhishek Chowdhuri and Arpan Bhattacharyya

New classes of exact interior nonvacuum solutions to the GR field equations for spacetimes sourced by a rigidly rotating stationary cylindrical anisotropic fluid *(10 pages)* 064040
Marie-Noëlle Célérier

Motion of a gyroscope on a closed timelike curve *(15 pages)* 064041
Brien C. Nolan

Conformal transformation with multiple scalar fields and geometric property of field space with Einstein-like solutions *(9 pages)* 064042
Yong Tang and Yue-Liang Wu

Quasiperiodic oscillations in rotating Ellis wormhole spacetimes *(17 pages)* 064043
Efthimia Deligianni, Burkhard Kleihaus, Jutta Kunz, Petya Nedkova, and Stoytcho Yazadjiev

Constraining a bulk viscous Bianchi type I dark energy dominated universe with recent observational data *(13 pages)* 064044
Anil Kumar Yadav, Avinash K. Yadav, Manvinder Singh, Rajendra Prasad, Nafis Ahmad, and Kangujam Priyokumar Singh

Nonlinear stability of soliton solutions for massive tensor-multiscalar theories *(10 pages)* 064045
Riccardo Falcone, Daniela D. Doneva, Kostas D. Kokkotas, and Stoytcho S. Yazadjiev

Extraction of binary black hole gravitational wave signals from detector data using deep learning *(12 pages)* 064046
Chayan Chatterjee, Linqing Wen, Foivos Diakogiannis, and Kevin Vinsen

Fast extreme-mass-ratio-inspiral waveforms: New tools for millihertz gravitational-wave data analysis *(25 pages)* 064047
Michael L. Katz, Alvin J. K. Chua, Lorenzo Speri, Niels Warburton, and Scott A. Hughes

Spherically symmetric black holes in metric gravity *(14 pages)* 064048
Sebastian Murk and Daniel R. Terno

Ricci-Determinant gravity: Dynamical aspects and astrophysical implications *(11 pages)* 064049
Hemza Azri, K. Yavuz Ekşi, Canan Karahan, and Salah Nasri

Parametrized second post-Newtonian framework with conservation laws *(19 pages)* 064050
Yu-Mei Wu and Qing-Guo Huang

Improving significance of binary black hole mergers in Advanced LIGO data using deep learning: Confirmation of GW151216 *(11 pages)* 064051
Shreejit Jadhav, Nikhil Mukund, Bhooshan Gadre, Sanjit Mitra, and Sheelu Abraham

Can $f(Q)$ gravity challenge ΛCDM? *(5 pages)* 064052
Luís Atayde and Noemi Frusciante

Axion-plasmon or magnetized plasma effect on an observable shadow and gravitational lensing of a Schwarzschild black hole *(15 pages)* 064053
Farruh Atamurotov, Kimet Jusufi, Mubasher Jamil, Ahmadjon Abdujabbarov, and Mustapha Azreg-Aïnou

Regular scalar charged clouds around a Reissner-Nordstrom black hole and no-hair theorems *(14 pages)* 064054
Gustavo García and Marcelo Salgado

Quasitopological electromagnetism: Reissner-Nordström black strings in Einstein and Lovelock gravities *(14 pages)* 064055
Adolfo Cisterna, Carla Henríquez-Báez, Nicolás Mora, and Leonardo Sanhueza

Gravitational wave memory of the binary black hole events in GWTC-2 *(10 pages)* 064056
Zhi-Chao Zhao, Xiaolin Liu, Zhoujian Cao, and Xiaokai He

General features of the thermalization of particle detectors and the Unruh effect *(14 pages)* 065001
T. Rick Perche

Circuit complexity as a novel probe of quantum entanglement: A study with black hole gas in arbitrary dimensions *(26 pages)* 065002
Kiran Adhikari, Sayantan Choudhury, Satyaki Chowdhury, K. Shirish, and Abinash Swain

(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).

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 104, NUMBER 6** **D15 SEPTEMBER 2021**

Noninvertible 1-form symmetry and Casimir scaling in 2D Yang-Mills theory *(6 pages)* 065003
Mendel Nguyen, Yuya Tanizaki, and Mithat Ünsal

Inversion of statistics and thermalization in the Unruh effect *(10 pages)* 065004
Julio Arrechea, Carlos Barceló, Luis J. Garay, and Gerardo García-Moreno

Complexity for link complement states in Chern-Simons theory *(16 pages)* 065005
Robert G. Leigh and Pin-Chun Pai

Acceleration radiation of an atom freely falling into a Kerr black hole and near-horizon conformal quantum mechanics *(11 pages)* 065006
A. Azizi, H. E. Camblong, A. Chakraborty, C. R. Ordóñez, and M. O. Scully

Exactly solvable vacuum decays with gravity *(15 pages)* 065007
J. R. Espinosa, J.-F. Fortin, and J. Huertas

Modular flavor symmetries of three-generation modes on magnetized toroidal orbifolds *(20 pages)* 065008
Shota Kikuchi, Tatsuo Kobayashi, and Hikaru Uchida

Self-dual solitons in a Born-Infeld baby Skyrme model *(11 pages)* 065009
Rodolfo Casana and André C. Santos

Spectral representation of the shear viscosity for local scalar QFTs at finite temperature *(13 pages)* 065010
Peter Lowdon, Ralf-Arno Tripolt, Jan M. Pawlowski, and Dirk H. Rischke

Hawking radiation of massive fields in 2D *(15 pages)* 065011
O. Diatlyk

Chiral anomalies induced by gravitational waves *(21 pages)* 065012
Adrian del Rio

Interference in the Heisenberg picture of quantum field theory, local elements of reality, and fermions *(6 pages)* 065013
Chiara Marletto, Nicetu Tibau Vidal, and Vlatko Vedral

Spinning black hole binary dynamics, scattering amplitudes, and effective field theory *(50 pages)* 065014
Zvi Bern, Andres Luna, Radu Roiban, Chia-Hsien Shen, and Mao Zeng

Geometric free field realization for the genus-two class $\mathcal{S}$ theory of type $\mathfrak{a}_1$ *(11 pages)* 065015
Christopher Beem and Carlo Meneghelli

Angular momentum based graviton detector *(9 pages)* 065016
J. P. M. Pitelli and T. Rick Perche

Casimir densities induced by a sphere in the hyperbolic vacuum of de Sitter spacetime *(29 pages)* 065017
A. A. Saharian and T. A. Petrosyan

Some exact results in chiral gauge theories *(7 pages)* 065018
Csaba Csáki, Hitoshi Murayama, and Ofri Telem

Trinity of relational quantum dynamics *(51 pages)* 066001
Philipp A. Höhn, Alexander R. H. Smith, and Maximilian P. E. Lock

Hydrodynamic gradient expansion in linear response theory *(10 pages)* 066002
Michal P. Heller, Alexandre Serantes, Michał Spaliński, Viktor Svensson, and Benjamin Withers

Momentum relaxation in a holographic Weyl semimetal *(9 pages)* 066003
Junkun Zhao

New chiral generalized minimal massive gravity *(7 pages)* 066004
Mohammad Reza Setare, Seyed Naseh Sajadi, Suat Dengiz, and Ercan Kilicarslan

Holography, 1-form symmetries, and confinement *(9 pages)* 066005
Fabio Apruzzi, Marieke van Beest, Dewi S. W. Gould, and Sakura Schäfer-Nameki

Chaos in the $SU(2)$ Yang-Mills Chern-Simons matrix model *(17 pages)* 066006
K. Başkan and S. Kürkçüoğlu

Twisted kink crystal in holographic superconductor *(12 pages)* 066007
Masataka Matsumoto and Ryosuke Yoshii

Three-dimensional Yang-Mills-Chern-Simons theory from a D3-brane background with D-instantons *(15 pages)* 066008
Si-wen Li, Sen-kai Luo, and Mu-zhi Tan

Minkowski spacetime and non-Ricci-flat compactification in heterotic supergravity *(5 pages)* 066009
Takanao Tsuyuki

(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).

PHYSICAL REVIEW D THIRD SERIES, VOLUME 104, NUMBER 6 D15 SEPTEMBER 2021

Neutrino-nucleon DIS from holographic QCD: PDFs of sea and valence quarks, form factors, and structure functions of the proton *(50 pages)* 066010
Kiminad A. Mamo and Ismail Zahed

Insensitivity of the complexity rate of change to the conformal anomaly and Lloyd's bound as a possible renormalization condition *(21 pages)* 066011
Daniel Ávila, César Díaz, Leonardo Patiño, and Yaithd D. Olivas

Quantum gravitational corrections to the entropy of a Schwarzschild black hole *(4 pages)* 066012
Xavier Calmet and Folkert Kuipers

$O(9,9)$ symmetry of NS-NS couplings at order α'^3 *(9 pages)* 066013
Mohammad R. Garousi

AdS/BCFT correspondence and BTZ black hole thermodynamics within Horndeski gravity *(15 pages)* 066014
Fabiano F. Santos, Eduardo Folco Capossoli, and Henrique Boschi-Filho

End of a black hole's evaporation. II. *(10 pages)* 066015
Farshid Soltani, Carlo Rovelli, and Pierre Martin-Dussaud

Quantum improved charged black holes *(13 pages)* 066016
Akihiro Ishibashi, Nobuyoshi Ohta, and Daiki Yamaguchi

Analytic nonintegrability and *S*-matrix factorization *(8 pages)* 066017
Dimitrios Giataganas

Gravitons in a box *(6 pages)* 066019
Sougato Bose, Anupam Mazumdar, and Marko Toroš

Retarded Green's functions from rotating AdS black holes: Emergent CFT_2 and viscosity *(10 pages)* 066020
Jun Nian and Leopoldo A. Pando Zayas

Black-hole microstate spectroscopy: Ringdown, quasinormal modes, and echoes *(20 pages)* 066021
Taishi Ikeda, Massimo Bianchi, Dario Consoli, Alfredo Grillo, Josè Francisco Morales, Paolo Pani, and Guilherme Raposo

Gravitational positivity bounds on scalar potentials *(22 pages)* 066022
Toshifumi Noumi and Junsei Tokuda

Electroproduction of heavy vector mesons using holographic QCD: From near threshold to high energy regimes *(26 pages)* 066023
Kiminad A. Mamo and Ismail Zahed

Entropy of thermal CFTs on curved backgrounds *(12 pages)* 066024
D. Giataganas and N. Tetradis

COMMENTS

Comment on "Maximum force and cosmic censorship" *(2 pages)* 068501
Christoph Schiller

Reply to "Comment on 'Maximum force and cosmic censorship'" *(2 pages)* 068502
Valerio Faraoni

ERRATA

Erratum: Strong new limits on light dark matter from neutrino experiments [Phys. Rev. D **100**, 103011 (2019)] *(3 pages)* 069901
Christopher V. Cappiello and John F. Beacom

Erratum: Prospects for detection and application of the alignment of galaxies with the large-scale velocity field [Phys. Rev. D **102**, 123507 (2020)] *(2 pages)* 069902
I. R. van Gemeren and N. E. Chisari

Erratum: Neutron star sensitivities in Hořava gravity after GW170817 [Phys. Rev. D **100**, 084053 (2019)] *(1 pages)* 069903
Enrico Barausse

Erratum: Constraints on Hořava gravity from binary black hole observations [Phys. Rev. D **99**, 024034 (2019)] *(1 pages)* 069904
Oscar Ramos and Enrico Barausse

(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).

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 104, NUMBER 6** **D15 SEPTEMBER 2021**

Erratum: Gravitational waves from the quasicircular inspiral of compact binaries in Einstein-aether theory
[Phys. Rev. D **101**, 044002 (2020)] *(1 pages)* 069905
Chao Zhang, Xiang Zhao, Anzhong Wang, Bin Wang, Kent Yagi, Nicolas Yunes, Wen Zhao, and Tao Zhu
Erratum: Alternative flow equation for the functional renormalization group
[Phys. Rev. D **100**, 101702(R) (2019)] *(2 pages)* 069906
Elizabeth Alexander, Peter Millington, Jordan Nursey, and Paul M. Saffin

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).