

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

Part A consists of articles 061101–063531, Part B articles 063534–064067, and Part C articles 064068–069901(E)

PART A

LETTERS

Constraints on the velocity of gravitational waves from the NANOGrav 15-year data set (6 pages)	L061101
Yan-Chen Bi, Yu-Mei Wu, Zu-Cheng Chen, and Qing-Guo Huang	
Implications for the non-Gaussianity of curvature perturbation from pulsar timing arrays (8 pages)	L061301
Lang Liu, Zu-Cheng Chen, and Qing-Guo Huang	
Spin-down of a pulsar with a yielding crust (5 pages)	L061302
Denis Nikolaevich Sob'yanin	
Falsifying Pati-Salam models with LIGO (7 pages)	L061303
Peter Athron, Csaba Balázs, Tomás E. Gonzalo, and Matthew Pearce	
Horizons and null infinity: A fugue in four voices (6 pages)	L061501
Abhay Ashtekar and Simone Speziale	
Unveiling the graviton mass bounds through the analysis of 2023 pulsar timing array data releases (6 pages)	L061502
Sai Wang and Zhi-Chao Zhao	
Consistent first-order action functional for gauge theories (8 pages)	L061503
Priidik Gallagher, Tomi S. Koivisto, Luca Marzola, Ludovic Varrin, and Tom Zlosnik	
Tilting space of boundary conformal field theories (7 pages)	L061701
Christopher P. Herzog and Vladimir Schaub	
Long-range correlations of the stress tensor near the Cauchy horizon (6 pages)	L061702
Christiane Klein and Jochen Zahn	
Polyakov blocks for the 1D conformal field theory mixed-correlator bootstrap (7 pages)	L061703
Kausik Ghosh, Apratim Kaviraj, and Miguel F. Paulos	
Holographic dictionary from bulk reduction (7 pages)	L061901
Wen-Bin Liu and Jiang Long	
Deriving the Gibbons-Maldacena-Nunez no-go theorem from the Raychaudhuri equation (7 pages)	L061902
Mir Mehedi Faruk	
Defect two-point functions in 6D (2,0) theories (8 pages)	L061903
Junding Chen (陈俊定), Aleix Gimenez-Grau, and Xinan Zhou (周稀楠)	

ARTICLES

Payload architecture and pointing control strategies for TianQin (14 pages)	062001
Yuzhou Fang, Xuefeng Zhang, Fangyuan Fu, and Hongyin Li	



(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).

Discovery prospects with the Dark-photons & Axion-Like particles Interferometer (14 pages)	062002
Javier De Miguel, Juan F. Hernández-Cabrera, Elvio Hernández-Suárez, Enrique Joven-Álvarez, Chiko Otani, and J. Alberto Rubiño-Martín On behalf of the DALI Collaboration	
Atmospheric positron flux modulation during thunderstorms (7 pages)	062003
A. Chilingarian and B. Sargsyan	
Fundamental physics measurements with Galileo FOC satellites and the Galileo for science project. I. A 3D-CAD and a box wing for modeling the effects of nonconservative forces (25 pages)	062004
David Lucchesi, Massimo Visco, Carlo Lefevre, Marco Lucente, Francesco Santoli, Feliciano Sapio, Marco Cinelli, Alessandro Di Marco, Emiliano Fiorenza, Pasqualino Loffredo, Carmelo Magnafico, Roberto Peron, and Francesco Vespe	
Fundamental physics measurements with Galileo FOC satellites and the Galileo for science project. II. A box wing for modeling direct solar radiation pressure and preliminaries orbit determinations (31 pages)	062005
Feliciano Sapio, David Lucchesi, Massimo Visco, Roberto Peron, Marco Lucente, Carlo Lefevre, Marco Cinelli, Alessandro Di Marco, Emiliano Fiorenza, Pasqualino Loffredo, Carmelo Magnafico, Francesco Santoli, and Francesco Vespe	
Revisiting the evidence for precession in GW200129 with machine learning noise mitigation (8 pages)	062006
Ronaldas Macas, Andrew Lundgren, and Gregory Ashton	
Confirmation of the spectral excess in DAMIC at SNOLAB with skipper CCDs (8 pages)	062007
A. Aguilar-Arevalo <i>et al.</i> (DAMIC, DAMIC-M and SENSEI Collaborations)	
Search for continuous gravitational waves directed at subthreshold radiometer candidates in O3 LIGO data (20 pages)	062008
Alan M. Knee, Helen Du, Evan Goetz, Jess McIver, Julian B. Carlin, Ling Sun, Liam Dunn, Lucy Strang, Hannah Middleton, and Andrew Melatos	
Common origin of the multimessenger spectral anomaly of Galactic cosmic rays (8 pages)	063001
Yu-Hua Yao, Xu-Lin Dong, Yi-Qing Guo, and Qiang Yuan	
Constraining axionlike particles with invisible neutrino decay using the IceCube observations of NGC 1068 (11 pages)	063002
Bhanu Prakash Pant	
Constraints on axionlike particles from observations of Mrk 421 using the CL _s method (10 pages)	063003
Lin-Qing Gao, Xiao-Jun Bi, Jun-Guang Guo, Wenbin Lin, and Peng-Fei Yin	
Could long-period transients be powered by primordial black hole capture? (5 pages)	063004
Thomas W. Baumgarte and Stuart L. Shapiro	
Black hole in a combined magnetic field: Ionized accretion disks in the jetlike and looplike configurations (18 pages)	063005
Saltanat Kenzhebayeva, Saken Toktarbay, Arman Tursunov, and Martin Kološ	
Nonlinear aspects of stochastic particle acceleration (17 pages)	063006
Martin Lemoine, Kohta Murase, and Frank Rieger	
GRB221009A gamma-ray events from nonstandard neutrino self-interactions (11 pages)	063007
Mansi Dhuria	
Effects of a phase transition in hybrid stars from quark-meson coupling hadronic matter to deconfined quark matter (13 pages)	063008
Yida Yang, Chen Wu, and Ji-Feng Yang	
Gravity- and temperature-driven phase transitions in a model for collapsed axionic condensates (14 pages)	063009
Sanjay Shukla, Akhilesh Kumar Verma, Marc E. Brachet, and Rahul Pandit	
Comprehensive constraints on heavy sterile neutrinos from core-collapse supernovae (17 pages)	063010
Pierluca Carenza, Giuseppe Lucente, Leonardo Mastrototaro, Alessandro Mirizzi, and Pasquale Dario Serpico	
Dependence of the parallel mean free path of high-energy galactic cosmic rays in the heliosphere on their rigidity, and solar activity as measured by the GRAPES-3 experiment (12 pages)	063011
H. Kojima, T. Koi, A. Oshima, S. Shibata, T. Tabata, H. Takamaru, K. Yamazaki, S. K. Gupta, B. Hariharan, P. Jagadeesan, A. Jain, P. K. Mohanty, S. D. Morris, P. K. Nayak, K. Ramesh, M. Rameez, B. S. Rao, L. V. Reddy, M. Zuberi, Y. Hayashi, S. Kawakami, T. Nakamura, T. Nonaka, S. Ogio, and K. Tanaka	
Phenomenological gravitational-wave model for precessing black-hole binaries with higher multipoles and asymmetries (27 pages)	063012
Jonathan E. Thompson, Eleanor Hamilton, Lionel London, Shrobana Ghosh, Panagiota Kolitsidou, Charlie Hoy, and Mark Hannam	

(Continued)



CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 109, NUMBER 6

D15 MARCH 2024

Calibrating signal-to-noise ratio detection thresholds using gravitational-wave catalogs (10 pages)	063013
Matthew Mould, Christopher J. Moore, and Davide Gerosa	
Choked accretion onto Kerr-Sen black holes in Einstein-Maxwell-dilaton-axion gravity (17 pages)	063014
Haiyuan Feng, Yingdong Wu, Rong-Jia Yang, and Leonardo Modesto	
Neutrino signals from neutron star implosions to black holes (9 pages)	063015
Yossef Zenati, Conrado Albertus, M. Ángeles Pérez-García, and Joseph Silk	
Dark matter velocity distributions: Comparing numerical simulations to analytic results (8 pages)	063016
Katharena Christy, Jason Kumar, and Louis E. Strigari	
Hybrid stars in light of the HESS J1731-347 remnant and the PREX-II experiment (16 pages)	063017
P. Laskos-Patkos, P. S. Koliogiannis, and Ch. C. Moustakidis	
Neutron stars as dark matter detectors (24 pages)	063018
Ariel Zhitnitsky	
Determining the core-collapse supernova explosion mechanism with current and future gravitational-wave observatories (12 pages)	063019
Jade Powell, Alberto Iess, Miquel Llorens-Monteagudo, Martin Obergaulinger, Bernhard Müller, Alejandro Torres-Forné, Elena Cuoco, and José A. Font	
Radial and nonradial oscillations of inverted hybrid stars (11 pages)	063020
Chen Zhang, Yudong Luo, Hong-Bo Li, Lijing Shao, and Renxin Xu	
Collisions and collective flavor conversion: Integrating out the fast dynamics (14 pages)	063021
Damiano F. G. Fiorillo, Ian Padilla-Gay, and Georg G. Raffelt	
Quark-hadron pasta phase in neutron stars: The role of medium-dependent surface and curvature tensions (18 pages)	063022
Mauro Mariani and Germán Lugones	
Geometric and thermodynamic characterization of binary neutron star accretion discs (23 pages)	063023
Alessandro Camilletti, Albino Perego, Federico Maria Guercilena, Sebastiano Bernuzzi, and David Radice	
Legacy analysis of dark matter annihilation from the Milky Way dwarf spheroidal galaxies with 14 years of <i>Fermi</i> -LAT data (20 pages)	063024
Alex McDaniel, Marco Ajello, Christopher M. Karwin, Mattia Di Mauro, Alex Drlica-Wagner, and Miguel A. Sánchez-Conde	
Excluded volume effects in the quark-mass density-dependent model: Implications for the equation of state and compact star structure (19 pages)	063025
G. Lugones and A. G. Grunfeld	
Probing high frequency gravitational waves with pulsars (7 pages)	063026
Asuka Ito, Kazunori Kohri, and Kazunori Nakayama	
New understanding of nuclei spectra properties observed by the AMS-02 experiment (8 pages)	063027
Xu-Lin Dong, Yu-Hua Yao, Yi-Qing Guo, and Shu-Wang Cui	
Bayesian inference from gravitational waves in fast-rotating, core-collapse supernovae (22 pages)	063028
Carlos Pastor-Marcos, Pablo Cerdá-Durán, Daniel Walker, Alejandro Torres-Forné, Ernazar Abdikamalov, Sherwood Richers, and José A. Font	
Space-based gravitational wave observatories will be able to use eccentricity to unveil stellar-mass binary black hole formation (7 pages)	063029
Han Wang (王晗), Ian Harry, Alexander Nitz, and Yi-Ming Hu (胡一鸣)	
Interferometric pattern of the relativistic images of a Schwarzschild star (16 pages)	063030
Yuan-Xing Gao (高原兴) and Yi Xie (谢懿)	
Discreteness effects in N -body simulations of warm dark matter (18 pages)	063031
Yuri Shtanov and Valery I. Zhdanov	
Gravitational bremsstrahlung in plasmas and clusters (13 pages)	063032
Andrew M. Steane	
Signatures of solar chameleons in the Earth's magnetic field (11 pages)	063033
Tanmoy Kumar and Sourov Roy	
Cosmic-ray boosted dark matter confronted by constraints on new light mediators (9 pages)	063034
Nicole F. Bell, Jayden L. Newstead, and Iman Shaukat Ali	

(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).

Which first order phase transitions to quark matter are possible in neutron stars? (14 pages)	063035
Jan-Erik Christian, Jürgen Schaffner-Bielich, and Stephan Rosswog	
Constraints on the annihilation of heavy dark matter in dwarf spheroidal galaxies with gamma-ray observations (12 pages)	063036
Xiao-Song Hu, Ben-Yang Zhu, Tian-Ci Liu, and Yun-Feng Liang	
Postinflationary production of particle dark matter: Hilltop and Coleman-Weinberg inflation (15 pages)	063037
Anish Ghoshal, Maxim Yu. Khlopov, Zygmunt Lalak, and Shiladitya Porey	
Dynamical friction in self-interacting ultralight dark matter (17 pages)	063501
Noah Glennon, Nathan Musoke, Ethan O. Nadler, Chanda Prescod-Weinstein, and Risa H. Wechsler	
Observational constraints on noncold dark matter and phenomenological emergent dark energy (8 pages)	063502
Yan-Hong Yao, Jun-Chao Wang, and Xin-He Meng	
Measuring μ distortions from the thermal Sunyaev-Zeldovich effect (16 pages)	063503
David Zegeye, Thomas Crawford, and Wayne Hu	
Flat to nonflat: Calculating nonlinear power spectra of biased tracers for a nonflat Λ CDM model (19 pages)	063504
Ryo Terasawa, Ryuichi Takahashi, Takahiro Nishimichi, and Masahiro Takada	
Strongly lensed extreme mass-ratio inspirals (19 pages)	063505
Martina Toscani, Ollie Burke, Chang Liu, Nour Bou Zamel, Nicola Tamanini, and Federico Pozzoli	
Detected stochastic gravitational waves and subsolar-mass primordial black holes (11 pages)	063506
Keisuke Inomata, Kazunori Kohri, and Takahiro Terada	
Dark matter isocurvature from curvature (8 pages)	063507
Ian Holst, Wayne Hu, and Leah Jenks	
Standard siren measurement of the Hubble constant using GW170817 and the latest observations of the electromagnetic counterpart afterglow (11 pages)	063508
A. Palmese, R. Kaur, A. Hajela, R. Margutti, A. McDowell, and A. MacFadyen	
21-cm foreground removal using AI and the frequency-difference technique (19 pages)	063509
Feng Shi, Haoxiang Chang, Le Zhang, Huanyuan Shan, Jiajun Zhang, Suiping Zhou, Ming Jiang, and Zitong Wang	
Non-Gaussianities and the large $ \eta $ approach to inflation (17 pages)	063510
Gianmassimo Tasinato	
Machine learning unveils the linear matter power spectrum of modified gravity (10 pages)	063511
J. Bayron Orjuela-Quintana, Savvas Nesseris, and Domenico Sapone	
New absorption window into composite dark matter and large scale structure (38 pages)	063512
Anoma Ganguly, Rishi Khatri, and Tuhin S. Roy	
Statistics of thermal gas pressure as a probe of cosmology and galaxy formation (16 pages)	063513
Ziyang Chen, Drew Jamieson, Eiichiro Komatsu, Sownak Bose, Klaus Dolag, Boryana Hadzhiyska, César Hernández-Aguayo, Lars Hernquist, Rahul Kannan, Rüdiger Pakmor, and Volker Springel	
Twin sterile neutrino dark matter (9 pages)	063514
Ian Holst, Dan Hooper, Gordan Krnjaic, and Deheng Song	
Merger rate of supermassive primordial black hole binaries (8 pages)	063515
Hai-Long Huang, Jun-Qian Jiang, and Yun-Song Piao	
Hints of neutrino dark matter scattering in the CMB? Constraints from the marginalized and profile distributions (36 pages)	063516
William Giarè, Adrià Gómez-Valent, Eleonora Di Valentino, and Carsten van de Bruck	
Relaxing cosmological constraints on current neutrino masses (15 pages)	063517
Vitor da Fonseca, Tiago Barreiro, and Nelson J. Nunes	
Generalized early dark energy and its cosmological consequences (14 pages)	063518
Tatsuki Kodama, Takumi Shinohara, and Tomo Takahashi	
Effective volume of supernovae samples and sample variance (11 pages)	063519
Zhongxu Zhai, Will J. Percival, and Zhejie Ding	
Ability of LISA, Taiji, and their networks to detect the stochastic gravitational wave background generated by cosmic strings (14 pages)	063520
Bo-Rui Wang and Jin Li	
Probing modified gravitational-wave propagation with extreme mass-ratio inspirals (15 pages)	063521
Chang Liu, Danny Laghi, and Nicola Tamanini	

(Continued)



Testing graviton parity and Gaussianity with Planck T -, E -, and B -mode bispectra (18 pages)	063522
Oliver H. E. Philcox and Maresuke Shiraishi	
Late time modification of structure growth and the S_8 tension (7 pages)	063523
Meng-Xiang Lin, Bhuvnesh Jain, Marco Raveri, Eric J. Baxter, Chihway Chang, Marco Gatti, Sujeong Lee, and Jessica Muir	
Deep learning insights into cosmological structure formation (18 pages)	063524
Luisa Lucie-Smith, Hiranya V. Peiris, Andrew Pontzen, Brian Nord, and Jeyan Thiyaalingam	
Attractive proposal for resolving the Hubble tension: Dynamical attractors that unify early and late dark energy (13 pages)	063525
Omar F. Ramadan, Tanvi Karwal, and Jeremy Sakstein	
Explaining pulsar timing array observations with primordial gravitational waves in parity-violating gravity (10 pages)	063526
Chengjie Fu, Jing Liu, Xing-Yu Yang, Wang-Wei Yu, and Yawen Zhang	
Cosmological parameter forecasts for a CMB-HD survey (28 pages)	063527
Amanda MacInnis, Neelima Sehgal, and Miriam Rothenmel	
Testing the dynamical stability and the validity of the generalized second law within the phantom dynamical dark energy model (14 pages)	063528
Naseeba K. M., Sarath Nelleri, and Navaneeth Poonthottathil	
Observable imprints of primordial gravitational waves on the temperature anisotropies of the cosmic microwave background (11 pages)	063529
Miguel-Angel Sanchis-Lozano and Veronica Sanz	
Atacama Cosmology Telescope: High-resolution component-separated maps across one third of the sky (32 pages)	063530
William Coulton <i>et al.</i>	
Characterization of the gravitational wave spectrum from sound waves within the sound shell model (27 pages)	063531
Alberto Roper Pol, Simona Procacci, and Chiara Caprini	

PART B

Dark Energy Survey Year 3 results: Simulation-based cosmological inference with wavelet harmonics, scattering transforms, and moments of weak lensing mass maps. Validation on simulations (30 pages)	063534
M. Gatti <i>et al.</i> (DES Collaboration)	
Evolution of resonant self-interacting dark matter halos (18 pages)	063535
Ayuki Kamada and Hee Jung Kim	
Probing interacting dark sector models with future weak lensing-informed galaxy cluster abundance constraints from SPT-3G and CMB-S4 (18 pages)	063536
Asmaa Mazoun, Sebastian Bocquet, Mathias Garny, Joseph J. Mohr, Henrique Rubira, and Sophie M. L. Vogt	
Challenges in interpreting the NANOGrav 15-year dataset as early Universe gravitational waves produced by an ALP induced instability (13 pages)	063537
Michael Geller, Subhjit Ghosh, Sida Lu, and Yuhsin Tsai	
Comprehensive constraints on dark radiation injection after BBN (27 pages)	063538
Alexander C. Sobotka, Adrienne L. Erickcek, and Tristan L. Smith	
Induced gravitational waves via warm natural inflation (8 pages)	063539
Miguel Correa, Mayukh R. Gangopadhyay, Nur Jaman, and Grant J. Mathews	
Dark dimension and decaying dark matter gravitons (17 pages)	063540
Georges Obied, Cora Dvorkin, Eduardo Gonzalo, and Cumrun Vafa	
What can galaxy shapes tell us about physics beyond the standard model? (32 pages)	063541
Oliver H. E. Philcox, Morgane J. König, Stephon Alexander, and David N. Spergel	
Screening fifth forces in scalar-vector-tensor theories (15 pages)	063542
Manuel Gonzalez-Espinoza, Giovanni Otalora, Lucila Kraiselburd, and Susana J. Landau	
Gravitational neutrino reheating (7 pages)	063543
Md Riajul Haque, Debaprasad Maity, and Rajesh Mondal	
Effects of orbital precession on hyperbolic encounters (12 pages)	064001
Marienza Caldarola, Sachiko Kuroyanagi, Savvas Nesseris, and Juan Garcia-Bellido	

(Continued)



CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 109, NUMBER 6

D15 MARCH 2024

Solving the Einstein constraints numerically on compact three-manifolds using hyperbolic relaxation (7 pages)	064002
Fan Zhang and Lee Lindblom	
Field transformations and invariant quantities in scalar-teleparallel theories of gravity (25 pages)	064003
Manuel Hohmann	
General relativistic dynamical tides in binary inspirals without modes (27 pages)	064004
Tristan Pitre and Eric Poisson	
Signature quasinormal modes of Ellis-Bronnikov wormhole embedded in warped braneworld background (15 pages)	064005
Antariksha Mitra and Suman Ghosh	
Caustic and hydrostatic mass bias: Implications for modified gravity (17 pages)	064006
Minahil Adil Butt, Balakrishna S. Haridasu, Yacer Boumechta, Francesco Benetti, Lorenzo Pizzuti, Carlo Baccigalupi, and Andrea Lapi	
Electric traversable wormhole supported by a charged scalar field (18 pages)	064007
Victor Jaramillo, Mariana Lira, Daniel Martínez-Carbajal, and Darío Núñez	
Shadows of Kerr–de Sitter naked singularities (49 pages)	064008
Zdeněk Stuchlík and Daniel Charbulák	
Kilohertz gravitational waves from binary neutron star mergers: Numerical-relativity informed postmerger model (23 pages)	064009
Matteo Breschi, Sebastiano Bernuzzi, Kabir Chakravarti, Alessandro Camilletti, Aviral Prakash, and Albino Perego	
Platform and environment requirements of a satellite quantum test of the weak equivalence principle at the 10^{-17} level (19 pages)	064010
Christian Struckmann, Robin Corgier, Sina Loriani, Gina Kleinsteinberg, Nina Gox, Enno Giese, Gilles Métris, Naceur Gaaloul, and Peter Wolf	
Analysis of improved dynamics of nonrotating charged black holes (11 pages)	064011
Floresencia Benítez, Esteban Mato, and Javier Olmedo	
Scalar fields around a loop quantum gravity black hole in de Sitter spacetime: Quasinormal modes, late-time tails and strong cosmic censorship (13 pages)	064012
Cai-Ying Shao, Cong Zhang, Wei Zhang, and Cheng-Gang Shao	
Black holes in massive Einstein-dilaton gravity (15 pages)	064013
Bo Liu, Rui-Hong Yue, De-Cheng Zou, Lina Zhang, Zhan-Ying Yang, and Qiyuan Pan	
Cosmological constant, inflaton, and dark matter all naturally originated from Poincaré gauge gravity (7 pages)	064014
Hongchao Zhang, Tao Zhu, and Anzhong Wang	
Unmasking noise transients masquerading as intermediate-mass black hole binaries (11 pages)	064015
Sayantan Ghosh, Koustav Chandra, and Archana Pai	
General covariance and dynamics with a Gauss law (8 pages)	064016
Viqar Husain and Hassan Mehmood	
Long-lived quasinormal modes and oscillatory tails of the Bardeen spacetime (9 pages)	064017
S. V. Bolokhov	
Junction conditions in gravity theories with extra scalar degrees of freedom (26 pages)	064018
João Luís Rosa	
Future null singularity due to gravitational collapse (8 pages)	064019
Ashok B. Joshi, Karim Mosani, and Pankaj S. Joshi	
Weyl geometric effects on the propagation of light in gravitational fields (25 pages)	064020
Marius A. Oancea and Tiberiu Harko	
Definition of a photon surface in an invariant spin frame (12 pages)	064021
Dipanjan Dey, Alan A. Coley, and Nicholas T. Layden	
Measuring scalar charge with compact binaries: High accuracy modeling with self-force (16 pages)	064022
Andrew Spiers, Andrea Maselli, and Thomas P. Sotiriou	
Nonsingular collapse of a spherical dust cloud (10 pages)	064023
Asier Alonso-Bardaji and David Brizuela	

(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).

Endowing black holes with beyond-Horndeski primary hair: An exact solution framework for scalarizing in every dimension (<i>13 pages</i>)	064024
Olaf Baake, Adolfo Cisterna, Mokhtar Hassaine, and Ulises Hernandez-Vera	
Asymptotically de Sitter black holes have nonzero tidal Love numbers (<i>17 pages</i>)	064025
Sreejith Nair, Sumanta Chakraborty, and Sudipta Sarkar	
Boundary terms and Brown-York quasilocal parameters for scalar-tensor theory: A study on both timelike and null hypersurfaces (<i>22 pages</i>)	064026
Krishnakanta Bhattacharya and Kazuharu Bamba	
Spherically symmetric vacuum solutions in one-parameter new general relativity and their phenomenology (<i>16 pages</i>)	064027
Helen Asukūla, Manuel Hohmann, Vasiliki Karanasou, Sebastian Bahamonde, Christian Pfeifer, and João Luís Rosa	
Quasinormal modes of Kerr black holes using a spectral decomposition of the metric perturbations (<i>13 pages</i>)	064028
Jose Luis Blázquez-Salcedo, Fech Scen Khoo, Jutta Kunz, and Luis Manuel González-Romero	
Gravitational lensing for interstellar power transmission (<i>20 pages</i>)	064029
Slava G. Turyshev	
Extreme mass-ratio inspiral and waveforms for a spinning body into a Kerr black hole via osculating geodesics and near-identity transformations (<i>41 pages</i>)	064030
Lisa V. Drummond, Philip Lynch, Alexandra G. Hanselman, Devin R. Becker, and Scott A. Hughes	
Photon ring autocorrelations from gravitational fluctuations around a black hole (<i>16 pages</i>)	064031
Qing-Hua Zhu	
Gravitational-wave imprints of nonconvex dynamics in binary neutron star mergers (<i>14 pages</i>)	064032
Giuseppe Riveccio, Davide Guerra, Milton Ruiz, and José A. Font	
Identification of resonant frequencies in LIGO-like suspension with finite-element modeling (<i>5 pages</i>)	064033
Orion Sauter, Ninad Bhagwat, John Conklin, and D. B. Tanner	
From the Lorentz invariant to the coframe form of $f(\mathbb{T})$ gravity (<i>13 pages</i>)	064034
Milutin Blagojević and James M. Nester	
Black branes in asymptotically Lifshitz spacetimes with arbitrary exponents in κ -Horndeski gravity (<i>8 pages</i>)	064035
Fabiano F. Santos and Henrique Boschi-Filho	
Multiparameter multipolar test of general relativity with gravitational waves (<i>8 pages</i>)	064036
Parthapratim Mahapatra, Shilpa Kastha, Anuradha Gupta, B. S. Sathyaprakash, and K. G. Arun	
Scale invariant elastic stars in general relativity (<i>8 pages</i>)	064037
Artur Alho, José Natário, Paolo Pani, and Guilherme Raposo	
Regularizing rotating black strings with a new black-bounce solution (<i>9 pages</i>)	064038
A. Lima, G. Alencar, and Diego Sáez-Chillón Gómez	
Scalar hairy black holes with an inverted Mexican-hat potential (<i>12 pages</i>)	064039
Xiao Yan Chew and Kok-Geng Lim	
Bayesian power spectral estimation of gravitational wave detector noise revisited (<i>11 pages</i>)	064040
Toral Gupta and Neil J. Cornish	
Normal modes of Proca fields in AdS_d spacetime (<i>17 pages</i>)	064041
David Lopes, Tiago V. Fernandes, and José P. S. Lemos	
Geodesic motion in a swirling universe: The complete set of solutions (<i>12 pages</i>)	064042
Rogério Capobianco, Betti Hartmann, and Jutta Kunz	
Galactic wormholes: Geometry, stability, and echoes (<i>23 pages</i>)	064043
Shauvik Biswas, Chiranjeeb Singha, and Sumanta Chakraborty	
Time delay in the gravitational field of an axisymmetric body with full mass and spin multipole structure (<i>16 pages</i>)	064044
Sven Zschocke	
Motion of a rotating black hole in a homogeneous electromagnetic field (<i>10 pages</i>)	064045
Valeri P. Frolov	
Improvement of graviton mass constraints using GRAVITY's detection of Schwarzschild precession in the orbit of S2 star around the Galactic Center (<i>16 pages</i>)	064046
Predrag Jovanović, Vesna Borka Jovanović, Duško Borka, and Alexander F. Zakharov	

(Continued)



Euclidean self-dual gravity: Ashtekar variables without gauge fixing (17 pages)	064047
J. Fernando Barbero G., Marc Basquens, and Eduardo J. S. Villaseñor	
Bayesian investigation of the neutron star equation of state vs gravity degeneracy (9 pages)	064048
Bhaskar Biswas, Evangelos Smyrniotis, Ioannis Liodis, and Nikolaos Stergioulas	
Shadows and photon motions in the axially symmetric Finslerian extension of a Schwarzschild black hole (9 pages)	064049
Ke-Jian He, Jin-Tao Yao, Xiao Zhang, and Xin Li	
Light rings on stationary axisymmetric spacetimes: Blind to the topology and able to coexist (17 pages)	064050
Pedro V. P. Cunha, Carlos A. R. Herdeiro, and João P. A. Novo	
Post-Newtonian gravitational waves with cosmological constant Λ from the Einstein-Hilbert theory (22 pages)	064051
Ricardo Escobedo, Claudia Moreno, and Rafael Hernández-Jiménez	
Lensing-band approach to spacetime constraints (25 pages)	064052
Alejandro Cárdenas-Avendaño and Aaron Held	
Absorption and unbounded superradiance in a static regular black hole spacetime (16 pages)	064053
Marco A. A. de Paula, Luiz C. S. Leite, Sam R. Dolan, and Luís C. B. Crispino	
SO(2, n)-compatible embeddings of conformally flat n -dimensional submanifolds in $\mathbb{R}^{n+2}$ (3 pages)	064054
E. Huguet, J. Queva, and J. Renaud	
Spinning black hole in a fluid (7 pages)	064055
Surojit Dalui, Arpan Krishna Mitra, Deeshani Mitra, and Subir Ghosh	
Gravitational wave populations and cosmology with neural posterior estimation (21 pages)	064056
Konstantin Leyde, Stephen R. Green, Alexandre Toubiana, and Jonathan Gair	
Crossing the singularity of a gravitational wave collision (9 pages)	064057
Tekin Dereli, Ozay Gurtug, and Kivanç İ. Ünlütürk	
Dynamical tidal response of Kerr black holes from scattering amplitudes (35 pages)	064058
M. V. S. Saketh, Zihan Zhou, and Mikhail M. Ivanov	
About the ability of agnostic x-ray tests of the Kerr hypothesis to discover new physics (11 pages)	064059
Shuaitongze Zhao, Shafqat Riaz, and Cosimo Bambi	
Black hole spectroscopy beyond Kerr: Agnostic and theory-based tests with next-generation interferometers (34 pages)	064060
Andrea Maselli, Sophia Yi, Lorenzo Pierini, Vania Vellucci, Luca Reali, Leonardo Gualtieri, and Emanuele Berti	
Hybrid approach to long-term binary neutron-star simulations (28 pages)	064061
Harry Ho-Yin Ng, Jin-Liang Jiang, Carlo Musolino, Christian Ecker, Samuel D. Tootle, and Luciano Rezzolla	
Magnetic Penrose process in the magnetized Kerr spacetime (15 pages)	064062
Chandrachur Chakraborty, Parth Patil, and G. Akash	
Light propagation in a plasma on Kerr spacetime. II. Plasma imprint on photon orbits (26 pages)	064063
Volker Perlick and Oleg Yu. Tsupko	
Prospects for future experimental tests of gravity with black hole imaging: Spherical symmetry (13 pages)	064064
Prashant Kocherlakota, Luciano Rezzolla, Rittick Roy, and Maciek Wielgus	
Penrose process in Reissner-Nordström-AdS black hole spacetimes: Black hole energy factories and black hole bombs (18 pages)	064065
Duarte Feiteira, José P. S. Lemos, and Oleg B. Zaslavskii	
Boundary conditions for Ashtekar-Barbero variables in the context of asymptotically flat spacetimes which lead to supertranslations at spatial infinity (28 pages)	064066
Sepideh Bakhoda	
Triangular solution to the planar elliptic three-body problem in the parametrized post-Newtonian formalism (5 pages)	064067
Yuya Nakamura and Hideki Asada	

PART C

Structural aspects of the anti-de Sitter black hole pseudospectrum (20 pages)	064068
Valentin Boyanov, Vitor Cardoso, Kyriakos Destounis, José Luis Jaramillo, and Rodrigo Panosso Macedo	
Stability of symmetric teleparallel scalar-tensor cosmologies with alternative connections (23 pages)	064069
Laur Järv and Laxmipriya Pati	

(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).

Holographic three-point functions from higher curvature gravities in arbitrary dimensions (<i>14 pages</i>)	064070
Fei-Yu Chen and H. Lü	
Cracking and complexity of self-gravitating dissipative compact objects (<i>13 pages</i>)	064071
L. Herrera and A. Di Prisco	
Linear dynamics and classical tests of the gravitational quantum field theory (<i>7 pages</i>)	064072
Yuan-Kun Gao, Da Huang, Yong-Liang Ma, Yong Tang, Yue-Liang Wu, and Yu-Feng Zhou	
Gravitational Aharonov-Bohm effect (<i>7 pages</i>)	064073
R. Y. Chiao, N. A. Inan, M. Scheibner, J. Sharping, D. A. Singleton, and M. E. Tobar	
Spatially regular charged black holes supporting charged massive scalar clouds (<i>7 pages</i>)	064074
Shahar Hod	
Linear versus nonlinear modeling of black hole ringdowns (<i>18 pages</i>)	064075
Yi Qiu, Xisco Jiménez Forteza, and Pierre Mourier	
Spacetime geometry from Dirac spinor theory (<i>6 pages</i>)	064076
Yuri N. Obukhov and G. E. Volovik	
Parameterizing black hole orbits for adiabatic inspiral (<i>11 pages</i>)	064077
Scott A. Hughes	
Testing quantum gravity using pulsed optomechanical systems (<i>24 pages</i>)	064078
Jordan Wilson-Gerow, Yanbei Chen, and P. C. E. Stamp	
Symmetry charges on reduced phase space and asymptotic flatness (<i>35 pages</i>)	064079
Muxin Han, Zichang Huang, and Hongwei Tan	
Gravitational bremsstrahlung and the Fulling-Davies-Unruh thermal bath (<i>15 pages</i>)	064080
João P. B. Brito, Luís C. B. Crispino, and Atsushi Higuchi	
Probing spin-induced quadrupole moments in precessing compact binaries (<i>15 pages</i>)	064081
Zhenwei Lyu, Michael LaHaye, Huan Yang, and Béatrice Bonga	
Spontaneous deformation of an AdS spherical black hole (<i>15 pages</i>)	064082
Zhuan Ning, Qian Chen, Yu Tian, Xiaoning Wu, and Hongbao Zhang	
Appearance of the regular black hole with a stable inner horizon (<i>11 pages</i>)	064083
Li-Ming Cao, Long-Yue Li, Xia-Yuan Liu, and Yu-Sen Zhou	
Nonexistence of short hairs for static black holes (<i>6 pages</i>)	064084
Soham Acharya and Sudipta Sarkar	
Ultracold neutrons in the low curvature limit: Remarks on the post-Newtonian effects (<i>17 pages</i>)	064085
Benjamin Koch, Enrique Muñoz, and Alessandro Santoni	
Measuring supermassive black hole properties via gravitational radiation from eccentrically orbiting stellar mass black hole binaries (<i>18 pages</i>)	064086
Andrew Laeuger, Brian Seymour, Yanbei Chen, and Hang Yu	
Horizon brightened accelerated radiation in the background of braneworld black holes (<i>13 pages</i>)	064087
Ashmita Das, Soham Sen, and Sunandan Gangopadhyay	
Scalaron dynamics from the UV to the IR regime (<i>18 pages</i>)	064088
Philippe Brax and Pierre Vanhove	
Gravitational waves from extreme-mass-ratio inspirals in the semiclassical gravity spacetime (<i>11 pages</i>)	064089
Tieguang Zi and Peng-Cheng Li	
Quantum signature of gravity in optomechanical systems with conditional measurement (<i>12 pages</i>)	064090
Daisuke Miki, Akira Matsumura, and Kazuhiro Yamamoto	
Weak-field regime of scalar-tensor theories with an instantaneous mode (<i>13 pages</i>)	064091
Tsutomu Kobayashi and Takashi Hiramatsu	
Toward a consistent calculation of the lunar response to gravitational waves (<i>9 pages</i>)	064092
Han Yan, Xian Chen, Jinhai Zhang, Fan Zhang, Mengyao Wang, and Lijing Shao	
Ambient temperature versus ambient acceleration in the circular motion Unruh effect (<i>19 pages</i>)	065001
Cameron R. D. Bunney, Leo Parry, T. Rick Perche, and Jorma Louko	
Casimir effect in axion electrodynamics with lattice regularizations (<i>12 pages</i>)	065002
Katsumasa Nakayama and Kei Suzuki	

(Continued)



Master formulas for N -photon tree level amplitudes in plane wave backgrounds (20 pages)	065003
Patrick Copinger, James P. Edwards, Anton Ilderton, and Karthik Rajeev	
Particle detector models from path integrals of localized quantum fields (22 pages)	065004
Bruno de S. L. Torres	
Lorentz invariance violation and the CPT -odd electromagnetic response of a tilted anisotropic Weyl semimetal (21 pages)	065005
Andrés Gómez, R. Martínez von Dossow, A. Martín-Ruiz, and Luis F. Urrutia	
UV massive resonance from IR double copy consistency (23 pages)	065006
John Joseph M. Carrasco and Nicolas H. Pavao	
Lorentz boosted parallel plate Casimir cavity (8 pages)	065007
Matthew J. Gorban, William D. Julius, and Gerald B. Cleaver	
Superradiant black hole rocket (20 pages)	065008
Lucas Acito, Nicolás E. Grandi, and Pablo Pisani	
Rényi entanglement asymmetry in $(1+1)$ -dimensional conformal field theories (15 pages)	065009
Miao Chen and Hui-Huang Chen	
Relativistic dynamics of moving mirrors in CFT_2 : Quantum backreaction and black holes (11 pages)	065010
Piyush Kumar, Ignacio A. Reyes, and Jakob Wintergerst	
Modular symmetry in magnetized T^{2g} torus and orbifold models (31 pages)	065011
Shota Kikuchi, Tatsuo Kobayashi, Kaito Nasu, Shohei Takada, and Hikaru Uchida	
Poincaré symmetries and representations in pseudo-Hermitian quantum field theory (22 pages)	065012
Esra Sablevice and Peter Millington	
Fracton gravity from spacetime dipole symmetry (16 pages)	065013
Evangelos Afxonidis, Alessio Caddeo, Carlos Hoyos, and Daniele Musso	
Composite higher derivative operators in $d = 2 + \epsilon$ dimensions and the spectrum of asymptotically safe gravity (14 pages)	065014
Riccardo Martini, Dario Sauro, and Omar Zanusso	
Positivity restrictions on the mixing of dimension-eight SMEFT operators (16 pages)	065015
Mikael Chala and Xu Li	
Nonperturbative aspects of two-dimensional $T\bar{T}$ -deformed scalar theory from functional renormalization group (13 pages)	065016
Jie Liu, Junichi Haruna, and Masatoshi Yamada	
Universal role of curvature in vacuum entanglement (24 pages)	065017
Hari K, Subhajit Barman, and Dawood Kothawala	
Note on Gauss operators and quantizations of Yang-Mills theories (7 pages)	065018
Bruno Bucciotti and Franco Strocchi	
Equivalence of EFTs and timelike extra dimensions (16 pages)	065019
Kurt Hinterbichler and Samanta Saha	
Relativistic quantum broadcast channel (15 pages)	065020
Ian Bernardes Barcellos and André G. S. Landulfo	
$U(N)$ torus link invariants in the large N limit from the matrix model approach (22 pages)	065021
Archana Maji, Kushal Chakraborty, Suvankar Dutta, and P. Ramadevi	
Near horizon linearized gravity and soft theorem (12 pages)	065022
Pujian Mao, Kai-Yu Zhang, and Bochen Zhou	
Hawking radiation inside a rotating black hole (29 pages)	065023
Tyler McMaken and Andrew J. S. Hamilton	
Particle-field duality in QFT measurements (9 pages)	065024
Maria Papageorgiou, Jose de Ramón, and Charis Anastopoulos	
An exactly solvable relativistic quantum Otto engine (8 pages)	065025
Nikos K. Kollas and Dimitris Moustos	
Nontrivial self-consistent backreaction of quantum fields in 2D dilaton gravity (6 pages)	065026
E. T. Akhmedov, P. A. Anempodistov, and K. V. Bazarov	
Dynamical vacuum compressibility of space (25 pages)	065027
Yu-Cun Xie, Jen-Tsung Hsiang, and Bei-Lok Hu	

(Continued)



Entanglement entropy in scalar quantum electrodynamics (9 pages)	065028
Samuel Fedida, Anupam Mazumdar, Sougato Bose, and Alessio Serafini	
Origin of higher Schwarzians (7 pages)	065029
S. Krivonos	
Asymptotic safety in the Litim-Sannino model at four loops (26 pages)	065030
A. V. Bednyakov and A. I. Mukhaeva	
Decoherence from horizons: General formulation and rotating black holes (23 pages)	065031
Samuel E. Gralla and Hongji Wei	
Toward a theory of Yangians (9 pages)	066001
Dmitry Galakhov, Alexei Morozov, and Nikita Tselousov	
$W(0, b)$ algebra and the dual theory of 3D asymptotically flat higher spin gravity (19 pages)	066002
Nabamita Banerjee, Arindam Bhattacharjee, Surajit Biswas, Arpita Mitra, and Debangshu Mukherjee	
Democratic Lagrangians from topological bulk (8 pages)	066003
Oleg Evnin, Euihun Joung, and Karapet Mkrtchyan	
Order parameter and spectral function in d -wave holographic superconductors (14 pages)	066004
Debabrata Ghorai, Taewon Yuk, and Sang-Jin Sin	
Alternative effective mass functions in the modified Mukhanov-Sasaki equation of loop quantum cosmology (11 pages)	066005
Bao-Fei Li and Parampreet Singh	
Boundary terms in the Witten-Sakai-Sugimoto model at finite density (16 pages)	066006
Lorenzo Bartolini and Sven Bjarke Gudnason	
Bulk reconstruction using timelike entanglement in (A)dS (28 pages)	066007
Avijit Das, Shivrat Sachdeva, and Debajyoti Sarkar	
Generalized Amit-Roginsky model from perturbations of 3D quantum gravity (15 pages)	066008
Victor Nador, Daniele Oriti, Xiankai Pang, Adrian Tanasa, and Yi-Li Wang	
Ambiguous power spectrum from a quantum bounce (17 pages)	066009
Jaime de Cabo Martin, Przemysław Małkiewicz, and Patrick Peter	
Krylov complexity for nonlocal spin chains (11 pages)	066010
Aranya Bhattacharya, Pingal Pratyush Nath, and Himanshu Sahu	
Universal IR holography, scalar fluctuations, and glueball spectra (10 pages)	066011
Andrés Anabalón and Horatiu Nastase	
Asymptotic safety in Lorentzian quantum gravity (9 pages)	066012
Edoardo D'Angelo	
Excitations of bubbling geometries for line defects (8 pages)	066013
Yasuyuki Hatsuda and Tadashi Okazaki	
Geometric resolution of the Schwarzschild horizon (7 pages)	066014
Ibrahima Bah and Pierre Heidmann	
Time-dependent backgrounds from marginal deformations of minimal strings in AdS_3 (9 pages)	066015
Eoin Dowd and Gaston Giribet	
Traversable wormholes via a double trace deformation involving $U(1)$ conserved current operators (18 pages)	066016
Byoungjoon Ahn, Viktor Jahnke, Sang-Eon Bak, and Keun-Young Kim	
Connecting flux vacua through scalar field excursions (10 pages)	066017
Gary Shiu, Flavio Tonioni, Vincent Van Hemelryck, and Thomas Van Riet	
Symplectic formulation of the type IIB scalar potential with U -dual fluxes (23 pages)	066018
George K. Leontaris and Pramod Shukla	
Rotation effect on the deconfinement phase transition in holographic QCD (8 pages)	066019
Jia-Hao Wang and Sheng-Qin Feng	
Weakly constrained double field theory as the double copy of Yang-Mills theory (27 pages)	066020
Roberto Bonezzi, Christoph Chiaffrino, Felipe Díaz-Jaramillo, and Olaf Hohm	
Scalar cosmological perturbations from quantum entanglement within Lorentzian quantum gravity (42 pages)	066021
Alexander F. Jercher, Luca Marchetti, and Andreas G. A. Pithis	

(Continued)



CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 109, NUMBER 6

D15 MARCH 2024

Generalized Gaussian states in group field theory and $\mathfrak{su}(1, 1)$ quantum cosmology (25 pages)	066022
Andrea Calcinari and Steffen Gielen	
Restricted quantum focusing (11 pages)	066023
Arvin Shahbazi-Moghaddam	
Exotic potentials and Bianchi identities in $SL(5)$ exceptional field theory (23 pages)	066024
Kirill Gubarev and Edvard T. Musaev	

ERRATA

Erratum: Interaction of symmetric higher-spin gauge fields [Phys. Rev. D 108 , 086031 (2023)] (1 pages)	069901
V. E. Didenko and A. V. Korybut	



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).