

PM  
p59/rc

# PHYSICAL REVIEW D<sub>TM</sub>

## PARTICLES, FIELDS, GRAVITATION, AND COSMOLOGY

Articles Published in NOVEMBER 2013

### D15

*Published by*  
AMERICAN PHYSICAL SOCIETY<sub>TM</sub>

Volume 88

Third Series

Number 10

### RAPID COMMUNICATIONS

Limits on anisotropic inflation from the Planck data (5 pages) .....	101301(R)
Jaiseung Kim and Eiichiro Komatsu	
Thermal g-modes and unexpected convection in superfluid neutron stars (5 pages) .....	101302(R)
Mikhail E. Gusakov and Elena M. Kantor	
“Exotic” black holes with torsion (3 pages) .....	101501(R)
M. Blagojević, B. Cvetković, and M. Vasilčić	
Reentrant phase transitions in rotating anti-de Sitter black holes (5 pages) .....	101502(R)
Natacha Altamirano, David Kubizňák, and Robert B. Mann	
Extremal black holes and the first law of thermodynamics (6 pages) .....	101503(R)
Maria Johnstone, M.M. Sheikh-Jabbari, Joan Simón, and Hossein Yavartanoo	
Multicritical symmetry breaking and naturalness of slow Nambu-Goldstone bosons (6 pages) .....	101701(R)
Tom Griffin, Kevin T. Grosvenor, Petr Hořava, and Ziqi Yan	

### ARTICLES

Limits on violations of Lorentz symmetry from Gravity Probe B (9 pages) .....	102001
Quentin G. Bailey, Ryan D. Everett, and James M. Overduin	
Directed search for continuous gravitational waves from the Galactic center (13 pages) .....	102002
J. Aasi <i>et al.</i> (LIGO Scientific Collaboration and Virgo Collaboration)	
Constraints on axionlike particles with H.E.S.S. from the irregularity of the PKS 2155 – 304 energy spectrum (12 pages) .....	102003
A. Abramowski <i>et al.</i> (H.E.S.S. Collaboration)	
Constraining the co genesis of visible and dark matter with AMS-02 and Xenon-100 (8 pages) .....	103001
Kazunori Kohri and Narendra Sahu	
Time delay between relativistic images as a probe of cosmic censorship (10 pages) .....	103002
Satyabrata Sahu, Mandar Patil, D. Narasimha, and Pankaj S. Joshi	
Long-lived PeV–EeV neutrinos from gamma-ray burst blastwave (11 pages) .....	103003
Soebur Razzaque	
Freezing out early dark energy (11 pages) .....	103004
Jannis Bielefeld, W.L. Wu, Robert R. Caldwell, and Olivier Doré	
Tilted torus magnetic fields in neutron stars and their gravitational wave signatures (15 pages) .....	103005
Paul D. Lasky and Andrew Melatos	
Einstein-Yang-Mills theory: Asymptotic symmetries (5 pages) .....	103006
Glenn Barnich and Pierre-Henry Lambert	
Regular phantom black hole gravitational lensing (9 pages) .....	103007
Ernesto F. Eiroa and Carlos M. Sendra	



Effects of dark energy perturbations on cosmological tests of general relativity ( <i>16 pages</i> ) .....	103008
Jason N. Dossett and Mustapha Ishak	
Collapse of nonlinear gravitational waves in moving-puncture coordinates ( <i>12 pages</i> ) .....	103009
David Hilditch, Thomas W. Baumgarte, Andreas Weyhausen, Tim Dietrich, Bernd Brügmann, Pedro J. Montero, and Ewald Müller	
Viable $f(T)$ models are practically indistinguishable from $\Lambda$ CDM ( <i>16 pages</i> ) .....	103010
S. Nesseris, S. Basilakos, E.N. Saridakis, and L. Perivolaropoulos	
Constraints on the multi-lognormal magnetic fields from the observations of the cosmic microwave background and the matter power spectrum ( <i>7 pages</i> ) .....	103011
Dai G. Yamazaki, Kiyotomo Ichiki, and Keitaro Takahashi	
Reconciliation of modified Newtonian dynamics and dark matter theory ( <i>4 pages</i> ) .....	103501
Man Ho Chan	
Spectral distortion in a radially inhomogeneous cosmology ( <i>12 pages</i> ) .....	103502
R.R. Caldwell and N.A. Maksimova	
Chaotic brane inflation ( <i>6 pages</i> ) .....	103503
Benjamin Shlaer	
Quantum instability of the emergent universe ( <i>6 pages</i> ) .....	103504
Anthony Aguirre and John Kehayias	
Nonlinear power spectra of dark and luminous matter in the halo model of structure formation ( <i>18 pages</i> ) .....	103505
Yuriy Kulinich, Bohdan Novosyadlyj, and Stepan Apunevych	
Number counts and non-Gaussianity ( <i>14 pages</i> ) .....	103506
Sarah Shandera, Adrienne L. Erickcek, Pat Scott, and Jhon Yana Galarza	
Revisiting the matter power spectra in $f(R)$ gravity ( <i>13 pages</i> ) .....	103507
Jian-hua He, Baojiu Li, and Y.P. Jing	
Static spherically symmetric solution of the Einstein-aether theory ( <i>8 pages</i> ) .....	103508
Changjun Gao and You-Gen Shen	
Dynamical Dark Matter and the positron excess in light of AMS results ( <i>19 pages</i> ) .....	103509
Keith R. Dienes, Jason Kumar, and Brooks Thomas	
Peculiar velocity decomposition, redshift space distortion, and velocity reconstruction in redshift surveys. II. Dark matter velocity statistics ( <i>20 pages</i> ) .....	103510
Yi Zheng, Pengjie Zhang, Yipeng Jing, Weipeng Lin, and Jun Pan	
Semiclassical and quantum behavior of the mixmaster model in the polymer approach ( <i>17 pages</i> ) .....	103511
Orchidea Maria Lecian, Giovanni Montani, and Riccardo Moriconi	
Cosmological perturbations in inflationary models with anisotropic space-time scaling in a Lifshitz background ( <i>14 pages</i> ) .....	103512
Mohsen Alishahiha, Hassan Firouzjahi, Kazuya Koyama, and Mohammad Hossein Namjoo	
General dynamics of varying-alpha universes ( <i>21 pages</i> ) .....	103513
John D. Barrow and Alexander A. Graham	
$R$ -symmetry breaking in supersymmetric hybrid inflation ( <i>10 pages</i> ) .....	103514
Matthew Civate, Mansoor Ur Rehman, Eric Sabo, Qaisar Shafi, and Joshua Wickman	
Mechanism for the suppression of quantum noise at large scales on expanding space ( <i>19 pages</i> ) .....	103515
Samuel Colin and Antony Valentini	
Fast and precise way to calculate the posterior for the local non-Gaussianity parameter $f_{nl}$ from cosmic microwave background observations ( <i>12 pages</i> ) .....	103516
Sebastian Dorn, Niels Oppermann, Rishi Khatri, Marco Selig, and Torsten A. Enßlin	
Anisotropic power-law $k$ -inflation ( <i>11 pages</i> ) .....	103517
Junko Ohashi, Jiro Soda, and Shinji Tsujikawa	
Enhancing inflationary tensor modes through spectator fields ( <i>5 pages</i> ) .....	103518
Matteo Biagetti, Matteo Fasiello, and Antonio Riotto	
Holographic cosmology from the first law of thermodynamics and the generalized uncertainty principle ( <i>5 pages</i> ) .....	103519
James E. Lidsey	

Signatures of first stars in galaxy surveys: Multitracer analysis of the supersonic relative velocity effect and the constraints from the BOSS power spectrum measurements ( <i>19 pages</i> ) .....	103520
Jaiyul Yoo and Uroš Seljak	
Stabilization of the Friedmann big bang by the shear stresses ( <i>11 pages</i> ) .....	103521
V. A. Belinski	
Viscous dark matter growth in (neo-)Newtonian cosmology ( <i>10 pages</i> ) .....	103522
H. Velten, D.J. Schwarz, J.C. Fabris, and W. Zimdahl	
Weighing neutrinos in $f(R)$ gravity ( <i>13 pages</i> ) .....	103523
Jian-hua He	
Dimensional reduction in momentum space and scale-invariant cosmological fluctuations ( <i>9 pages</i> ) .....	103524
Giovanni Amelino-Camelia, Michele Arzano, Giulia Gubitosi, and João Magueijo	
Intermediate inflation from rainbow gravity ( <i>4 pages</i> ) .....	103525
John D. Barrow and João Magueijo	
Noether symmetries and analytical solutions in $f(T)$ cosmology: A complete study ( <i>12 pages</i> ) .....	103526
S. Basilakos, S. Capozziello, M. De Laurentis, A. Paliathanasis, and M. Tsamparlis	
General relativistic $N$ -body simulations in the weak field limit ( <i>18 pages</i> ) .....	103527
Julian Adamek, David Daverio, Ruth Durrer, and Martin Kunz	
Nonparametric reconstruction of dynamical dark energy via observational Hubble parameter data ( <i>6 pages</i> ) .....	103528
Hao-Ran Yu, Shuo Yuan, and Tong-Jie Zhang	
Quantum-reduced loop gravity: Relation with the full theory ( <i>5 pages</i> ) .....	104001
Emanuele Alesci, Francesco Cianfrani, and Carlo Rovelli	
Generalized Bondi-Sachs equations for characteristic formalism of numerical relativity ( <i>11 pages</i> ) .....	104002
Zhoujian Cao and Xiaokai He	
Quantum entanglement generation in de Sitter spacetime ( <i>5 pages</i> ) .....	104003
Jiawei Hu and Hongwei Yu	
Black hole binary inspiral and trajectory dominance ( <i>10 pages</i> ) .....	104004
Richard H. Price, Gaurav Khanna, and Scott A. Hughes	
Accretion onto a higher dimensional black hole ( <i>7 pages</i> ) .....	104005
Anslyn J. John, Sushant G. Ghosh, and Sunil D. Maharaj	
AdS solitons with conformal scalar hair ( <i>15 pages</i> ) .....	104006
Yves Brihaye, Betti Hartmann, and Sardor Tojiev	
Strong gravitational lensing in a black-hole spacetime dominated by dark energy ( <i>9 pages</i> ) .....	104007
Chikun Ding, Changqing Liu, Yuanyuan Xiao, Liqun Jiang, and Rong-Gen Cai	
Binary systems in Palatini $f(R)$ gravity ( <i>9 pages</i> ) .....	104008
Kari Enqvist, Hannu J. Nyrhinen, and Tomi Koivisto	
Frequency-domain algorithm for the Lorenz-gauge gravitational self-force ( <i>22 pages</i> ) .....	104009
Sarp Akcay, Niels Warburton, and Leor Barack	
Comparison between Jordan and Einstein frames of Brans-Dicke gravity a la loop quantum cosmology ( <i>10 pages</i> ) .....	104010
Michał Artymowski, Yongge Ma, and Xiangdong Zhang	
Topological black holes for Einstein-Gauss-Bonnet gravity with a nonminimal scalar field ( <i>7 pages</i> ) .....	104011
Moisés Bravo Gaete and Mokhtar Hassaine	
Zoology of instanton solutions in flat potential barriers ( <i>19 pages</i> ) .....	104012
Lorenzo Battarra, George Lavrelashvili, and Jean-Luc Lehners	
Statistical physics of black holes as quantum-mechanical systems ( <i>10 pages</i> ) .....	104013
Steven B. Giddings	
BKL maps, Poincaré sections, and quantum scars ( <i>17 pages</i> ) .....	104014
Orchidea Maria Lecian	
Stress-energy tensor of the quantized massive fields in Friedman-Robertson-Walker spacetimes ( <i>9 pages</i> ) .....	104015
Jerzy Matyjasek and Paweł Sadurski	
Acceleration of particles by acceleration horizons ( <i>13 pages</i> ) .....	104016
O.B. Zaslavskii	

Instability of a Kerr black hole in $f(R)$ gravity (6 pages) .....	104017
Yun Soo Myung	
Effect of magnetic fields on the r-modes of slowly rotating relativistic neutron stars (12 pages) .....	104018
Cecilia Chirenti and Jozef Skákala	
Einstein static universe in hybrid metric-Palatini gravity (10 pages) .....	104019
Christian G. Böhrer, Francisco S. Lobo, and Nicola Tamanini	
Applicability of the Newman-Janis algorithm to black hole solutions of modified gravity theories (9 pages) ....	104020
Devin Hansen and Nicolás Yunes	
Octahedron configuration for a displacement noise-cancelling gravitational wave detector in space (16 pages)	104021
Yan Wang, David Keitel, Stanislav Babak, Antoine Petiteau, Markus Otto, Simon Barke, Fumiko Kawazoe, Alexander Khalaidovski, Vitali Müller, Daniel Schütze, Holger Wittel, Karsten Danzmann, and Bernard F. Schutz	
Instabilities and (anti)-evaporation of Schwarzschild–de Sitter black holes in modified gravity (17 pages) .....	104022
L. Sebastiani, D. Momeni, R. Myrzakulov, and S.D. Odintsov	
New perspectives on Hawking radiation (13 pages) .....	104023
Matteo Smerlak and Suprit Singh	
Wald entropy of black holes: Logarithmic corrections and trace anomaly (6 pages) .....	104024
Rodrigo Aros, Danilo E. Díaz, and Alejandra Montecinos	
Black hole remnant of black hole-neutron star coalescing binaries (16 pages) .....	104025
Francesco Pannarale	
Tolman IV solution in the Randall-Sundrum braneworld (10 pages) .....	104026
J. Ovalle and F. Linares	
C metric with a conformally coupled scalar field in a magnetic universe (12 pages) .....	104027
Marco Astorino	
Dynamical bar-mode instability in rotating and magnetized relativistic stars (19 pages) .....	104028
Luca Franci, Roberto De Pietri, Kyriaki Dionysopoulou, and Luciano Rezzolla	
Minimal length and small scale structure of spacetime (6 pages) .....	104029
Dawood Kothawala	
Gravitational corrections to the scattering of scalar particles (8 pages) .....	104030
A.C. Lehum	
A new scheme for matching general relativistic ideal magnetohydrodynamics to its force-free limit (23 pages)	104031
Vasileios Paschalidis and Stuart L. Shapiro	
Three-dimensional gravity with propagating torsion: Hamiltonian structure of the scalar sector (15 pages) .....	104032
M. Blagojević and B. Cvetković	
Brane worlds in critical gravity (8 pages) .....	104033
Feng-Wei Chen, Yu-Xiao Liu, Yuan Zhong, Yong-Qiang Wang, and Shao-Feng Wu	
Spherically symmetric charged-dS solution in $f(T)$ gravity theories (6 pages) .....	104034
Gamal G. Nashed	
Hořava-Lifshitz gravity effects on Casimir energy in weak field approximation and infrared regime (6 pages)	104035
C.R. Muniz, V.B. Bezerra, and M.S. Cunha	
Fourth order gravity, scalar-tensor-vector gravity, and galaxy rotation curves (9 pages) .....	104036
Priti Mishra and Tejinder P. Singh	
Theory of post-Newtonian radiation and reaction (33 pages) .....	104037
Ofek Birnholtz, Shahar Hadar, and Barak Kol	
Vector volume and black holes (17 pages) .....	104038
William Ballik and Kayll Lake	
BRST-invariant boundary conditions and strong ellipticity (12 pages) .....	104039
Ian G. Moss	
Constraining the equation of state of nuclear matter with gravitational wave observations: Tidal deformability and tidal disruption (12 pages) .....	104040
Andrea Maselli, Leonardo Gualtieri, and Valeria Ferrari	
Dissipation in the effective field theory for hydrodynamics: First-order effects (14 pages) .....	105001
Solomon Endlich, Alberto Nicolis, Rafael A. Porto, and Junpu Wang	

**CONTENTS - Continued**

**PHYSICAL REVIEW D**

**THIRD SERIES, VOLUME 88, NUMBER 10**

**D15 NOVEMBER 2013**

FRW universe in the laboratory ( <i>11 pages</i> ) Neven Bilić and Dijana Tolić	105002
Beta functions of $U(1)^d$ gauge invariant just renormalizable tensor models ( <i>15 pages</i> ) Dine Ousmane Samary	105003
Quantum dissipative effects in graphenelike mirrors ( <i>8 pages</i> ) César D. Fosco, Fernando C. Lombardo, Francisco D. Mazzitelli, and María L. Remaggi	105004
Point multimonopoles in $SU(3)$ gauge theory ( <i>5 pages</i> ) Maxim Popov	105005
Holographic interpretation of renormalization group approach to singular perturbations in nonlinear differential equations ( <i>4 pages</i> ) Yu Nakayama	105006
Finite temperature Casimir effect for charged massless scalars in a magnetic field ( <i>9 pages</i> ) Andrea Erdas and Kevin P. Seltzer	105007
Battle of the bulge: Decay of the thin, false cosmic string ( <i>6 pages</i> ) Bum-Hoon Lee, Wonwoo Lee, Richard MacKenzie, M.B. Paranjape, U.A. Yajnik, and Dong-han Yeom	105008
Transport equations for oscillating neutrinos ( <i>11 pages</i> ) Yunfan Zhang and Adam Burrows	105009
Cluster transformations from bipartite field theories ( <i>9 pages</i> ) Sebastián Franco	105010
Lorentz violation in a uniform Newtonian gravitational field ( <i>12 pages</i> ) Yuri Bonder	105011
Ultraviolet to infrared evolution of chiral gauge theories ( <i>9 pages</i> ) Thomas Appelquist and Robert Shrock	105012
Higgs sector of the supersymmetric reduced 331 model ( <i>10 pages</i> ) J.G. Ferreira, Jr., C.A. Pires, P.S. da Silva, and A. Sampieri	105013
Resonance mass spectra of gravity and fermion on Bloch branes ( <i>19 pages</i> ) Qun-Ying Xie, Jie Yang, and Li Zhao	105014
Magnetic catalysis effect in the $(2 + 1)$ -dimensional Gross-Neveu model with Zeeman interaction ( <i>13 pages</i> ) K.G. Klimenko and R.N. Zhokhov	105015
Dynamic AdS/QCD and the spectrum of walking gauge theories ( <i>12 pages</i> ) Timo Alho, Nick Evans, and Kimmo Tuominen	105016
Charmonia and bottomonia in a magnetic field ( <i>18 pages</i> ) Jeremy Alford and Michael Strickland	105017
Relevance of the axial anomaly at the finite-temperature chiral transition in QCD ( <i>12 pages</i> ) Andrea Pelissetto and Ettore Vicari	105018
Interplay between $\omega$ -nucleon interaction and nucleon mass in dense baryonic matter ( <i>16 pages</i> ) Won-Gi Paeng, Hyun Kyu Lee, Mannque Rho, and Chihiro Sasaki	105019
Decomposition of one-loop QCD amplitudes into primitive amplitudes based on shuffle relations ( <i>24 pages</i> ) Christian Reuschle and Stefan Weinzierl	105020
Instabilities near the QCD phase transition in the holographic models ( <i>11 pages</i> ) Umut Gürsoy, Shu Lin, and Edward Shuryak	105021
Nonequilibrium Wilson loops in $\mathcal{N} = 4$ super Yang-Mills theory ( <i>10 pages</i> ) Ville Keränen	105022
Space-time structure of polynomiality and positivity for generalized parton distributions ( <i>7 pages</i> ) I.V. Anikin and I.O. Cherednikov	105023
A scattering theory of ultrarelativistic solitons ( <i>20 pages</i> ) Mustafa A. Amin, Eugene A. Lim, and I-Sheng Yang	105024
Model of the AdS/QFT duality ( <i>12 pages</i> ) Stanisław D. Głazek and Arkadiusz P. Trawiński	105025
Orbifold instantons, moment maps, and Yang-Mills theory with sources ( <i>10 pages</i> ) Tatiana A. Ivanova, Olaf Lechtenfeld, Alexander D. Popov, and Richard J. Szabo	105026

(Continued)

Gauge-invariant functional measure for gauge fields on $\mathbb{C}\mathbb{P}^2$ (9 pages) .....	105027
V.P. Nair	
Spontaneously generated inhomogeneous phases via holography (9 pages) .....	105028
James Alsup, Eleftherios Papantonopoulos, George Siopsis, and Kubra Yeter	
Maxwell theory on a compact manifold as a topologically ordered system (17 pages) .....	105029
Ariel R. Zhitnitsky	
Phase structure of two-dimensional QED at zero temperature with flavor-dependent chemical potentials and the role of multidimensional theta functions (11 pages) .....	105030
Robert Lohmayer and Rajamani Narayanan	
External sources in Lee-Wick theories (7 pages) .....	105031
F. A. Barone, G. Flores-Hidalgo, and A. A. Nogueira	
Matrix model fixed point of noncommutative $\phi^4$ theory (30 pages) .....	106001
Badis Ydri and Rachid Ahmim	
A semilocal holographic minimal model (18 pages) .....	106002
Chi-Ming Chang and Xi Yin	
Bounded scalar perturbations in bouncing brane world cosmologies (15 pages) .....	106003
Rodrigo Maier, Francesco Pace, and Ivano Damião Soares	
Universal resistivity from holographic massive gravity (9 pages) .....	106004
Mike Blake and David Tong	
1/16 BPS states in $\mathcal{N} = 4$ super-Yang-Mills theory (8 pages) .....	106005
Chi-Ming Chang and Xi Yin	
Holography, entanglement entropy, and conformal field theories with boundaries or defects (30 pages) .....	106006
Kristan Jensen and Andy O'Bannon	

**BRIEF REPORTS**

Critical magnetic field in a holographic superconductor in Gauss-Bonnet gravity with Born-Infeld electrodynamics (5 pages) .....	107501
Sheng-liang Cui and Zhao Xue	
Skewon no-go theorem (4 pages) .....	107502
Yakov Itin	
Magnetic effects on spontaneous symmetry breaking/restoration in a toroidal topology (5 pages) .....	107701
L. M. Abreu, C. A. Linhares, A. P. Malbouisson, and J. M. Malbouisson	

**COMMENTS**

Comment on “Nonexistence of the final first integral in the Zipoy-Voorhees space-time” (2 pages) .....	108501
Georgios Lukes-Gerakopoulos	

**ERRATA**

Erratum: Additional light sterile neutrinos and cosmology [Phys. Rev. D <b>87</b> , 083515 (2013)] (1 page) .....	109901(E)
Thomas D. Jacques, Lawrence M. Krauss, and Cecilia Lunardini	
Erratum: Evolution of circular, nonequatorial orbits of Kerr black holes due to gravitational-wave emission [Phys. Rev. D <b>61</b> , 084004 (2000)] (1 page) .....	109902(E)
Scott A. Hughes	
Erratum: Modeling the horizon-absorbed gravitational flux for equatorial-circular orbits in Kerr spacetime [Phys. Rev. D <b>88</b> , 044001 (2013)] (1 page) .....	109903(E)
Andrea Taracchini, Alessandra Buonanno, Scott A. Hughes, and Gaurav Khanna	
Erratum: Extreme mass-ratio inspirals in the effective-one-body approach: Quasicircular, equatorial orbits around a spinning black hole [Phys. Rev. D <b>83</b> , 044044 (2011)] (1 page) .....	109904(E)
Nicolás Yunes, Alessandra Buonanno, Scott A. Hughes, Yi Pan, Enrico Barausse, M. Coleman Miller, and William Throwe	

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 88, NUMBER 10

D15 NOVEMBER 2013

Erratum: Gravitational wave snapshots of generic extreme mass ratio inspirals [Phys. Rev. D <b>73</b> , 024027 (2006)] (1 page) .....	109905(E)
Steve Drasco and Scott A. Hughes	
Publisher's Note: Cosmology with nonminimal kinetic coupling and a power-law potential [Phys. Rev. D <b>88</b> , 083539 (2013)] (1 page) .....	109906(E)
Maria A. Skugoreva, Sergey V. Sushkov, and Alexei V. Toporensky	
Publisher's Note: Strong gravitational lensing in a black-hole spacetime dominated by dark energy [Phys. Rev. D <b>88</b> , 104007 (2013)] (1 page) .....	109907(E)
Chikun Ding, Changqing Liu, Yuanyuan Xiao, Liqun Jiang, and Rong-Gen Cai	