

PHYSICAL REVIEW D

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

PERIODICALS
Postmaster send address changes to:
PHYSICAL REVIEW D
APS Subscription Services
Suite 1N01
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 78, NUMBER 2

CONTENTS

D15 JULY 2008

Physical Review D Editorial Policies and Practices	iii
Physical Review D Information for Contributors	vii

RAPID COMMUNICATIONS

Is a dissipative regime during inflation in agreement with observations? (5 pages)	021301(R)
Alessandro Cerioni, Fabio Finelli, and Alessandro Gruppuso	
Toward a solution of the coincidence problem (5 pages)	021302(R)
Sergio del Campo, Ramón Herrera, and Diego Pavón	
Black holes can have curly hair (5 pages)	021501
K. A. Bronnikov and O. B. Zaslavskii	

ARTICLES

Bayesian approach to the follow-up of candidate gravitational wave signals (10 pages)	022001
J. Veitch and A. Vecchio	
Improved constraints on non-Newtonian forces at 10 microns (12 pages)	022002
Andrew A. Geraci, Sylvia J. Smullin, David M. Weld, John Chiaverini, and Aharon Kapitulnik	
Solar system constraints on the Dvali-Gabadadze-Porrati braneworld theory of gravity (7 pages)	022003
James B. Battat, Christopher W. Stubbs, and John F. Chandler	
Effect of energy deposited by cosmic-ray particles on interferometric gravitational wave detectors (12 pages)	022004
Kazuhiro Yamamoto, Hideaki Hayakawa, Atsushi Okada, Takashi Uchiyama, Shinji Miyoki, Masatake Ohashi, Kazuaki Kuroda, Nobuyuki Kanda, Daisuke Tatsumi, and Yoshiki Tsunesada	
Two-photon transitions in primordial hydrogen recombination (27 pages)	023001
Christopher M. Hirata	
Cosmological parameters from WMAP 5-year temperature maps (9 pages)	023002
Antony Lewis	
CMB anisotropy power spectrum using linear combinations of WMAP maps (23 pages)	023003
Rajib Saha, Simon Prunet, Pankaj Jain, and Tarun Souradeep	
Constraints on primordial black holes by distortions of the cosmic microwave background (10 pages)	023004
Hiroyuki Tashiro and Naoshi Sugiyama	
High-energy cosmic-ray nuclei from high- and low-luminosity gamma-ray bursts and implications for multimessenger astronomy (22 pages)	023005
Kohta Murase, Kunihito Ioka, Shigehiro Nagataki, and Takashi Nakamura	
Type Ia supernovae as speed sensors at intermediate redshifts (6 pages)	023006
Pengjie Zhang and Xuelei Chen	
Ultrahigh energy neutrinos from Centaurus A and the Auger hot spot (5 pages)	023007
A. Cuoco and S. Hannestad	
Primary caustics and critical points behind a Kerr black hole (7 pages)	023008
Mauro Sereno and Fabiana De Luca	



Copyright 2008 by The American Physical Society

(Continued)



1550-7998(20080715)78:2;1-I

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 78, NUMBER 2

D15 JULY 2008

Adiabatic instability in coupled dark energy/dark matter models (21 pages)	023009
Rachel Bean, Éanna É. Flanagan, and Mark Trodden	
Faraday rotation, stochastic magnetic fields, and CMB maps (37 pages)	023010
Massimo Giovannini and Kerstin E. Kunze	
How to distinguish dark energy and modified gravity? (7 pages)	023011
Hao Wei and Shuang Nan Zhang	
Constraints on the evolution of black hole spin due to magnetohydrodynamic accretion (16 pages)	023012
Masaaki Takahashi and Akira Tomimatsu	
CMB quadrupole depression produced by early fast-roll inflation: Monte Carlo Markov chains analysis of WMAP and SDSS data (18 pages)	023013
C. Destri, H.J. de Vega, and N.G. Sanchez	
Rigorous approach to gravitational lensing (6 pages)	023014
Minjoon Park	
Quintessence cosmologies with a growing matter component (5 pages)	023015
Luca Amendola, Marco Baldi, and Christof Wetterich	
Neutrino oscillation signatures of oxygen-neon-magnesium supernovae (13 pages)	023016
C. Lunardini, B. Müller, and H.-Th. Janka	
Cosmic string dynamics and evolution in warped spacetime (12 pages)	023501
A. Avgoustidis	
Circumscribing late dark matter decays model-independently (7 pages)	023502
Hasan Yüksel and Matthew D. Kistler	
Cosmic string Y-junctions: A comparison between field theoretic and Nambu-Goto dynamics (17 pages)	023503
Neil Bevis and Paul M. Saffin	
Can quantum gravitational effects influence the entire history of the Universe? (6 pages)	023504
Edésio M. Barboza, Jr. and Nivaldo A. Lemos	
Dynamics of dark energy with a coupling to dark matter (8 pages)	023505
Christian G. Böhrer, Gabriela Caldera-Cabral, Ruth Lazkoz, and Roy Maartens	
Intuitive understanding of non-Gaussianity in ekpyrotic and cyclic models (10 pages)	023506
Jean-Luc Lehnert and Paul J. Steinhardt	
Hunting the lightest lightest neutralinos (14 pages)	023507
Stefano Profumo	
Effect of the trace anomaly on the cosmological constant (14 pages)	023508
Jurjen F. Koksma and Tomislav Prokopec	
Brane inflation is attractive (12 pages)	023509
Bret Underwood	
Impact of stochastic primordial magnetic fields on the scalar contribution to cosmic microwave background anisotropies (14 pages)	023510
Fabio Finelli, Francesco Paci, and Daniela Paoletti	
Estimation of primordial spectrum with post-WMAP 3-year data (10 pages)	023511
Arman Shafieloo and Tarun Souradeep	
Perihelion precession for modified Newtonian gravity (10 pages)	023512
Hans-Jürgen Schmidt	
Non-Gaussianity, spectral index, and tensor modes in mixed inflaton and curvaton models (21 pages)	023513
Kazuhide Ichikawa, Teruaki Suyama, Tomo Takahashi, and Masahide Yamaguchi	
Typicality derived (7 pages)	023514
Don N. Page	
Recollapsing quantum cosmologies and the question of entropy (12 pages)	023515
Martin Bojowald and Reza Tavakol	
Phase-space noncommutative quantum cosmology (10 pages)	023516
Catarina Bastos, Orfeu Bertolami, Nuno Costa Dias, and João Nuno Prata	
Reconstructing a general inflationary action (17 pages)	023517
Rachel Bean, Daniel J. Chung, and Ghazal Geshnizjani	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 78, NUMBER 2

D15 JULY 2008

“Phantom” inflation in warped compactification (6 pages)	023518
Yun-Song Piao	
Natural inflation in 5D warped backgrounds (9 pages)	023519
R. González Felipe and N.M. Santos	
Dangerous angular Kaluza-Klein/glueball relics in string theory cosmology (27 pages)	023520
J.F. Dufaux, L. Kofman, and M. Peloso	
Statistical mechanics of strings with Y-junctions (13 pages)	023521
R.J. Rivers and D.A. Steer	
Torsion cosmology and the accelerating universe (16 pages)	023522
Kun-Feng Shie, James M. Nester, and Hwei-Jang Yo	
Analytic model for the bispectrum of galaxies in redshift space (26 pages)	023523
Robert E. Smith, Ravi K. Sheth, and Román Scoccimarro	
Lepton-number-driven sterile neutrino production in the early universe (14 pages)	023524
Chad T. Kishimoto and George M. Fuller	
Stationary rotating strings as relativistic particle mechanics (10 pages)	023525
Kouji Ogawa, Hideki Ishihara, Hiroshi Kozaki, Hiroyuki Nakano, and Shinya Saito	
Test of the Chevallier-Polarski-Linder parametrization for rapid dark energy equation of state transitions (8 pages)	023526
Sebastian Linden and Jean-Marc Virey	
Statistical properties of the linear tidal shear (13 pages)	023527
Vincent Desjacques and Robert E. Smith	
Supersymmetric flat direction decay: The prospect of particle production and preheating investigated in the unitary gauge (13 pages)	023528
Anders Basbøll	
How accurately can 21 cm tomography constrain cosmology? (22 pages)	023529
Yi Mao, Max Tegmark, Matthew McQuinn, Matias Zaldarriaga, and Oliver Zahn	
Isocurvature, non-Gaussianity, and the curvaton model (10 pages)	023530
María Beltrán	
Static charged fluid around a magnetized mass (3 pages)	024001
I. Cabrera-Munguia and V.S. Manko	
Mixed hyperbolic—second-order-parabolic formulations of general relativity (19 pages)	024002
Vasileios Paschalidis	
Subleading contributions to the black hole entropy in the brick wall approach (22 pages)	024003
Sudipta Sarkar, S. Shankaranarayanan, and L. Sriramkumar	
Extended monopole solution of the Blandford-Znajek mechanism: Higher order terms for a Kerr parameter (7 pages)	024004
Kentarou Tanabe and Shigehiro Nagataki	
Static and symmetric wormholes respecting energy conditions in Einstein-Gauss-Bonnet gravity (10 pages)	024005
Hideki Maeda and Masato Nozawa	
Unique factor ordering in the continuum limit of loop quantum cosmology (6 pages)	024006
William Nelson and Mairi Sakellariadou	
Quasinormal modes of brane-localized standard model fields in Gauss-Bonnet theory (7 pages)	024007
A. Zhidenko	
Does the mass of a black hole decrease due to the accretion of phantom energy? (11 pages)	024008
Changjun Gao, Xuelei Chen, Valerio Faraoni, and You-Gen Shen	
Effective one body approach to the dynamics of two spinning black holes with next-to-leading order spin-orbit coupling (18 pages)	024009
Thibault Damour, Piotr Jaranowski, and Gerhard Schäfer	
From Rindler space to the electromagnetic energy-momentum tensor of a Casimir apparatus in a weak gravitational field (9 pages)	024010
Giuseppe Bimonte, Giampiero Esposito, and Luigi Rosa	
Electromagnetic absorption cross section of Reissner-Nordström black holes (6 pages)	024011
Luís C. Crispino and Ednilton S. Oliveira	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 78, NUMBER 2

D15 JULY 2008

General relativistic simulations of magnetized binary neutron star mergers (20 pages)	024012
Yuk Tung Liu, Stuart L. Shapiro, Zachariah B. Etienne, and Keisuke Taniguchi	
Extended matter coupled to BF theory (21 pages)	024013
Winston J. Fairbairn and Alejandro Perez	
Enhanced black hole horizon fluctuations (21 pages)	024014
R. T. Thompson and L. H. Ford	
Distinguishing modified gravity from dark energy (13 pages)	024015
Edmund Bertschinger and Phillip Zukin	
Thermodynamic curvature and phase transitions in Kerr-Newman black holes (13 pages)	024016
George Ruppeiner	
Spin expansion for binary black hole mergers: New predictions and future directions (33 pages)	024017
Latham Boyle and Michael Kesden	
Stability of thin-shell wormholes with spherical symmetry (9 pages)	024018
Ernesto F. Eiroa	
Classical and quantum gravitational collapse in d -dimensional AdS spacetime. II. Quantum states and Hawking radiation (12 pages)	024019
Cenalo Vaz, Rakesh Tibrewala, and T. P. Singh	
Kaluza-Klein towers for spinors in flat space (9 pages)	024020
Fernand Grard and Jean Nuyts	
Gravitoelectromagnetic analogy based on tidal tensors (8 pages)	024021
L. Filipe Costa and Carlos A. Herdeiro	
Towards adiabatic waveforms for inspiral into Kerr black holes. II. Dynamical sources and generic orbits (13 pages)	024022
Pranesh A. Sundararajan, Gaurav Khanna, Scott A. Hughes, and Steve Drasco	
Relativistic radiation magnetohydrodynamics in dynamical spacetimes: Numerical methods and tests (20 pages)	024023
Brian D. Farris, Tsz Ka Li, Yuk Tung Liu, and Stuart L. Shapiro	
Gravitational waves from pulsations of neutron stars described by realistic equations of state (16 pages)	024024
Sebastiano Bernuzzi and Alessandro Nagar	
Momentum-space representation of Green's functions with modified dispersion relations on general backgrounds (7 pages)	024025
Massimiliano Rinaldi	
Static charged fluid around a massive magnetic dipole (7 pages)	024026
José D. Polanco, Patricio S. Letelier, and Maximiliano Ujevic	
Imprints of cosmic strings on the cosmological gravitational wave background (8 pages)	024027
K Kleidis, D B Papadopoulos, E Verdaguer, and L Vlahos	
Note on tachyon moduli and closed strings (9 pages)	024028
Bruno Carneiro da Cunha	
Evolution of neutron stars with toroidal magnetic fields: Axisymmetric simulation in full general relativity (19 pages)	024029
Kenta Kiuchi, Masaru Shibata, and Shijun Yoshida	
Numerical techniques for solving the quantum constraint equation of generic lattice-refined models in loop quantum cosmology (10 pages)	024030
William Nelson and Mairi Sakellariadou	
Model of dark matter and dark energy based on gravitational polarization (22 pages)	024031
Luc Blanchet and Alexandre Le Tiec	
Ray-tracing in four and higher dimensional black hole spacetimes: An analytical approximation (12 pages)	024032
Patrick Connell and Valeri P. Frolov	
Gravitomagnetism and lunar laser ranging (8 pages)	024033
Michael Soffel, Sergei Klioner, Jürgen Müller, and Liliane Biskupek	
Is loop quantization in cosmology unique? (13 pages)	024034
Alejandro Corichi and Parampreet Singh	
Geodesic equation in Schwarzschild-(anti-)de Sitter space-times: Analytical solutions and applications (22 pages)	024035
Eva Hackmann and Claus Lämmerzahl	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 78, NUMBER 2

D15 JULY 2008

Resolution of curvature singularities in higher derivative gravity (7 pages)	024036
Philipp Höffer v. Loewenfeld and Ivo Sachs	
Flat rotation curves in Chern-Simons modified gravity (5 pages)	024037
Kohkichi Konno, Toyoki Matsuyama, Yasuhiro Asano, and Satoshi Tanda	
Rotating, inhomogeneous dust interior for the BTZ black hole (8 pages)	024038
Cenalo Vaz and K.R. Koehler	
Extra-large remnant recoil velocities and spins from near-extremal-Bowen-York-spin black-hole binaries (11 pages)	024039
Sergio Dain, Carlos O. Lousto, and Yosef Zlochower	
Black hole mimickers: Regular versus singular behavior (14 pages)	024040
José P. Lemos and Oleg B. Zaslavskii	
Using a polarized maser to detect high-frequency relic gravitational waves (10 pages)	024041
M.L. Tong, Y. Zhang, and F.Y. Li	
Solving parallel transport equations in the higher-dimensional Kerr-NUT-(A)dS spacetimes (13 pages)	024042
Patrick Connell, Valeri P. Frolov, and David Kubizňák	
Thin accretion disks in $f(R)$ modified gravity models (10 pages)	024043
C.S. Pun, Z. Kovács, and T. Harko	
Note on late-time tails of spherical nonlinear waves (4 pages)	024044
Piotr Bizoń, Tadeusz Chmaj, and Andrzej Rostworowski	
Entropy of charged dilaton-axion black hole (5 pages)	024045
Tanwi Ghosh and Soumitra SenGupta	
Holographic glueball structure (15 pages)	025001
Hilmar Forkel	
Einstein-Cartan formulation of Chern-Simons Lorentz-violating gravity (8 pages)	025002
Marcelo Botta Cantcheff	
Small amplitude quasibreathers and oscillons (16 pages)	025003
Gyula Fodor, Péter Forgács, Zsolt Horváth, and Árpád Lukács	
Nilpotent noncommutativity and renormalization (6 pages)	025004
R. Fresneda, D.M. Gitman, and D.V. Vassilevich	
Noether analysis of the twisted Hopf symmetries of canonical noncommutative spacetimes (8 pages)	025005
Giovanni Amelino-Camelia, Fabio Brischese, Giulia Gubitosi, Antonino Marcianò, Pierre Martinetti, and Flavio Mercati	
Fermion-fermion bound state condition for scalar exchanges (7 pages)	025006
Stefano De Leo and Pietro Rotelli	
Nonperturbative moduli superpotential with positive exponents (8 pages)	025007
Hiroyuki Abe, Tetsutaro Higaki, Tatsuo Kobayashi, and Osamu Seto	
Numerical tests of AdS/CFT at strong coupling (10 pages)	025008
David Berenstein, Randel Cotta, and Rodrigo Leonardi	
Fractionally charged Wilson loops as a probe of θ dependence in CP^{N-1} sigma models: Instantons versus large N (8 pages)	025009
Patrick Keith-Hynes and H.B. Thacker	
Gluon and ghost propagators in the Landau gauge: Deriving lattice results from Schwinger-Dyson equations (6 pages)	025010
A.C. Aguilar, D. Binosi, and J. Papavassiliou	
Electron-positron pair production in space- or time-dependent electric fields (18 pages)	025011
Hagen Kleinert, Remo Ruffini, and She-Sheng Xue	
Low-scale gaugino mass unification (17 pages)	025012
Motoi Endo and Koichi Yoshioka	
Perturbative Yukawa theory at finite density: The role of masses and renormalization group flow at two loops (16 pages)	025013
Letícia F. Palhares and Eduardo S. Fraga	
Remarks on bell-shaped lumps: Stability and fermionic modes (5 pages)	025014
Y. Brihaye and T. Delsate	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 78, NUMBER 2

D15 JULY 2008

Running coupling from the four-gluon vertex in Landau gauge Yang-Mills theory (20 pages)	025015
Christian Kellermann and Christian S. Fischer	
Chiral transition in a strong magnetic background (7 pages)	025016
Eduardo S. Fraga and Ana Júlia Mizher	
Functional approach to the fermionic Casimir effect (6 pages)	025017
C.D. Fosco and E.L. Losada	
Ambiguity of spontaneously broken gauge symmetry (11 pages)	025018
W. Caudy and J. Greensite	
Skyrmion on a three-cylinder (6 pages)	025019
Łukasz Bratek	
Spatially asymptotic S matrix from general boundary formulation (22 pages)	025020
Daniele Colosi and Robert Oeckl	
Perfect magnetic conductor Casimir piston in $d + 1$ dimensions (10 pages)	025021
Ariel Edery and Valery Marachevsky	
Exactly solvable $\mathcal{PT}$ -symmetric Hamiltonian having no Hermitian counterpart (20 pages)	025022
Carl M. Bender and Philip D. Mannheim	
Unparticles and inflation (10 pages)	025023
Hael Collins and R. Holman	
Role of twisted statistics in the noncommutative degenerate electron gas (10 pages)	025024
Subrata Khan, Biswajit Chakraborty, and Frederik G. Scholtz	
Dyons with potentials: Duality and black hole thermodynamics (16 pages)	025025
Glenn Barnich and Andrés Gomberoff	
Scattering theory with localized non-Hermiticities (10 pages)	025026
Miloslav Znojil	
Janus field theories from multiple M2 branes (7 pages)	025027
Yoshinori Honma, Satoshi Iso, Yoske Sumitomo, and Sen Zhang	
Index theorem in spontaneously symmetry-broken gauge theories on a fuzzy 2-sphere (15 pages)	025028
Hajime Aoki, Yoshiko Hirayama, and Satoshi Iso	
Ambiguities in the effective action in Lorentz-violating gravity (5 pages)	025029
M. Gomes, T. Mariz, J.R. Nascimento, E. Passos, A. Yu. Petrov, and A.J. da Silva	
Classical solutions for the Carroll-Field-Jackiw-Proca electrodynamics (10 pages)	025030
Rodolfo Casana, Manoel M. Ferreira Jr, and Carlos E. Santos	
Closed-form decomposition of one-loop massive amplitudes (24 pages)	025031
Ruth Britto, Bo Feng, and Pierpaolo Mastrolia	
Light-front dynamics and AdS/QCD correspondence: Gravitational form factors of composite hadrons (16 pages)	025032
Stanley J. Brodsky and Guy F. de Téramond	
Curvature driven diffusion, Rayleigh-Plateau instability, and Gregory-Laflamme instability (8 pages)	026001
Umpei Miyamoto	
Dynamical soft-wall AdS/QCD (5 pages)	026002
Brian Batell and Tony Gherghetta	
Quantum behavior near a spacelike boundary in the $c = 1$ matrix model (10 pages)	026003
Joanna L. Karczmarek	
Static strings in global AdS space and quark-antiquark potential (7 pages)	026004
C.A. Bayona and Cristine N. Ferreira	
Holographic duals of long open strings (17 pages)	026005
Ofer Aharony and David Kutasov	
Quantum wrapped giant magnon (9 pages)	026006
Nikolay Gromov, Sakura Schäfer-Nameki, and Pedro Vieira	

BRIEF REPORTS

Implications of the intermediate mass black hole in globular cluster G1 on dark matter detection (4 pages)	027301
Gabrijela Zaharijaš	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 78, NUMBER 2

D15 JULY 2008

COMMENTS

- Comment on “Can infrared gravitons screen Λ ?” (7 pages) 028501
N.C. Tsamis and R.P. Woodard

ERRATA

- Erratum: G_2 generating technique for minimal $D = 5$ supergravity and black rings [Phys. Rev. D **76**, 104032
(2007)] (1 page) 029901(E)
Adel Bouhareb, Gérard Clément, Chiang-Mei Chen, Dmitri V. Gal'tsov, Nikolai G. Scherbluk, and
Thomas Wolf