

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 73, NUMBER 2

CONTENTS

D15 JANUARY 2006

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

RAPID COMMUNICATIONS

Detecting a small perturbation through its non-Gaussianity (5 pages)	021301
Lotfi Boubekeur and David H. Lyth	
Accretion disk onto boson stars: A way to supplant black hole candidates (5 pages)	021501
F. Siddhartha Guzmán	
Nonsymmetric trapped surfaces in the Schwarzschild and Vaidya spacetimes (5 pages)	021502
Erik Schnetter and Badri Krishnan	
Universality and backreaction in a general-relativistic accretion of steady fluids (5 pages)	021503
Janusz Karkowski, Bogusz Kinasiewicz, Patryk Mach, Edward Malec, and Zdobysław Świerczyński	

ARTICLES

Sensitivity of a small matter-wave interferometer to gravitational waves (9 pages)	022001
Stefano Foffa, Alice Gasparini, Michele Papucci, and Riccardo Sturani	
Practical design of the optical lever intracavity topology of gravitational-wave detectors (15 pages)	022002
S.L. Danilishin and F.Ya. Khalili	
Neutrino dispersion in external magnetic fields (8 pages)	023001
A. V. Kuznetsov, N. V. Mikheev, G. G. Raffelt, and L. A. Vassilevskaya	
Nonlinear evolution of cosmic magnetic fields and cosmic microwave background anisotropies (22 pages)	023002
Hiroyuki Tashiro, Naoshi Sugiyama, and Robi Banerjee	
Constraints on supernovae dimming from photon-pseudoscalar coupling (6 pages)	023003
Yong-Seon Song and Wayne Hu	
Simultaneous flavor transformation of neutrinos and antineutrinos with dominant potentials from neutrino-neutrino forward scattering (14 pages)	023004
George M. Fuller and Yong-Zhong Qian	
Cosmological constraints on the very low frequency gravitational-wave background (9 pages)	023005
Naoki Seto and Asantha Cooray	
Strong lensing systems as a probe of dark energy in the universe (6 pages)	023006
Marek Biesiada	
Anisotropically inflating universes (5 pages)	023007
John D. Barrow and Sigbjørn Hervik	
Clarifying inflation models: Slow roll as an expansion in $1/N_{\text{efolds}}$ (11 pages)	023008
D. Boyanovsky, H.J. de Vega, and N.G. Sanchez	
Reduced shear power spectrum (6 pages)	023009
Scott Dodelson, Charles Shapiro, and Martin White	



Copyright 2006 by The American Physical Society

(Continued)



1550-7998(20060115)73:2;1-A

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 73, NUMBER 2

D15 JANUARY 2006

Equation of state and beginning of thermalization after preheating (15 pages)	023501
Dmitry Podolsky, Gary N. Felder, Lev Kofman, and Marco Peloso	
Asymptotic behavior of the warm inflation scenario with viscous pressure (12 pages)	023502
José P. Mimoso, Ana Nunes, and Diego Pavón	
Precision measurement of the mean curvature (7 pages)	023503
Lloyd Knox	
Direct detection of the inflationary gravitational-wave background (14 pages)	023504
Tristan L. Smith, Marc Kamionkowski, and Asantha Cooray	
Dimensionless constants, cosmology, and other dark matters (28 pages)	023505
Max Tegmark, Anthony Aguirre, Martin J. Rees, and Frank Wilczek	
Aspects of thermal leptogenesis in braneworld cosmology (7 pages)	023506
M.C. Bento, R. González Felipe, and N.M. Santos	
Constraining gravitino dark matter with the cosmic microwave background (7 pages)	023507
Raphaël Lamon and Ruth Durrer	
Hiding cosmic strings in supergravity D -term inflation (7 pages)	023508
Osamu Seto and Jun'ichi Yokoyama	
Big-bang nucleosynthesis with an evolving radion in the brane world scenario (10 pages)	023509
B. Li and M.-C. Chu	
Inner caustics of cold dark matter halos (18 pages)	023510
Aravind Natarajan and Pierre Sikivie	
Constraining topology in harmonic space (20 pages)	023511
M. Kunz, N. Aghanim, L. Cayon, O. Forni, A. Riazuelo, and J.P. Uzan	
Analytic results for a flat universe dominated by dust and dark energy (5 pages)	023512
A. Gruppuso and F. Finelli	
Sudden gravitational transition (8 pages)	023513
Robert R. Caldwell, William Komp, Leonard Parker, and Daniel A. Vanzella	
Baryon and lepton numbers in two scenarios of leptogenesis (9 pages)	023514
A. Kartavtsev	
Inflation and dark energy arising from geometrical tachyons (11 pages)	023515
Sudhakar Panda, M. Sami, and Shinji Tsujikawa	
Observational test of holographic inflation (7 pages)	023516
James E. Lidsey and David Seery	
What can be learned from the lensed cosmic microwave background B-mode polarization power spectrum? (15 pages)	023517
Sarah Smith, Anthony Challinor, and Graça Rocha	
Alternative methods of describing structure formation in the Lemaitre-Tolman model (12 pages)	023518
Charles Hellaby and Andrzej Krasinski	
Fate of an accelerating universe (8 pages)	023519
Je-An Gu and W.-Y. P. Hwang	
Non-Abelian Einstein-Born-Infeld-dilaton cosmology (16 pages)	023520
A. Füzfa and J.-M. Alimi	
Anisotropy of the cosmic gamma-ray background from dark matter annihilation (15 pages)	023521
Shin'ichiro Ando and Eiichiro Komatsu	
Non-Gaussianity from broken symmetries (7 pages)	023522
Edward W. Kolb, Antonio Riotto, and Alberto Vallinotto	
Fluctuations of the luminosity distance (24 pages)	023523
Camille Bonvin, Ruth Durrer, and M. Alice Gasparini	
Distribution function of dark matter (7 pages)	023524
N. Wyn Evans and Jin H. An	
Modular inflation and the orthogonal axion as the curvaton (24 pages)	023525
K. Dimopoulos and G. Lazarides	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 73, NUMBER 2

D15 JANUARY 2006

Midpoint rule as a variational-symplectic integrator: Hamiltonian systems (11 pages)	024001
J. David Brown	
Towards a wave-extraction method for numerical relativity. III. Analytical examples for the Beetle-Burko radiation scalar (19 pages)	024002
Lior M. Burko, Thomas W. Baumgarte, and Christopher Beetle	
Selection rules for black-hole quantum transitions (4 pages)	024003
Shahar Hod and Uri Keshet	
Boundary conditions in first order gravity: Hamiltonian and ensemble (11 pages)	024004
Rodrigo Aros	
Noether charges and black hole mechanics in Einstein-aether theory (7 pages)	024005
Brendan Z. Foster	
No hair conjecture, non-Abelian hierarchies, and anti-de Sitter spacetime (19 pages)	024006
Eugen Radu and D.H. Tchrakian	
Virtual gravitons and brane field scattering in the Randall-Sundrum model with a small curvature (8 pages)	024007
A.V. Kisselev	
Thermoinertial bouncing of a relativistic collapsing sphere: A numerical model (7 pages)	024008
L. Herrera, A. Di Prisco, and W. Barreto	
Massive vector field perturbations in the Schwarzschild background: Stability and quasinormal spectrum (10 pages)	024009
R.A. Konoplya	
Metric of a tidally perturbed spinning black hole (17 pages)	024010
Nicolás Yunes and José A. González	
Invariant class operators in the decoherent histories analysis of timeless quantum theories (18 pages)	024011
J. J. Halliwell and P. Wallden	
Dynamical evolution of black hole-neutron star binaries in general relativity: Simulations of tidal disruption (31 pages)	024012
Joshua A. Faber, Thomas W. Baumgarte, Stuart L. Shapiro, Keisuke Taniguchi, and Frederic A. Rasio	
Eigenvalues and eigenfunctions of spin-weighted spheroidal harmonics in four and higher dimensions (22 pages)	024013
Emanuele Berti, Vitor Cardoso, and Marc Casals	
Instabilities of the static, spherically symmetric $SU(2)$ Einstein-Yang-Mills-Dilaton solitons and black holes (5 pages)	024014
Walter H. Aschbacher	
Role of dipole charges in black hole thermodynamics (9 pages)	024015
Keith Copsey and Gary T. Horowitz	
Accelerating black diholes and static black dirings (11 pages)	024016
Edward Teo	
Geometry of higher-dimensional black hole thermodynamics (7 pages)	024017
Jan E. Ćman and Narit Pidokrajt	
Cosmological expansion and the uniqueness of the gravitational action (5 pages)	024018
T. Multamäki and I. Vilja	
Asymptotic quasinormal frequencies of different spin fields in spherically symmetric black holes (8 pages)	024019
H.T. Cho	
Swimming versus swinging effects in spacetime (5 pages)	024020
Eduardo Guéron, Clóvis A. Maia, and George E. Matsas	
Observational constraints on hyperons in neutron stars (8 pages)	024021
Benjamin D. Lackey, Mohit Nayyar, and Benjamin J. Owen	
First law of black ring thermodynamics in higher dimensional dilaton gravity with $p + 1$ strength forms (4 pages)	024022
Marek Rogatko	
Foliations and 2 + 1 causal dynamical triangulation models (8 pages)	024023
Tomasz Konopka	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 73, NUMBER 2

D15 JANUARY 2006

Comparison of the velocity distribution between the adhesion approximation and the Euler-Jeans-Newton model (8 pages)	024024
Hajime Sotani and Takayuki Tatekawa	
Plane waves in metric-affine gravity (6 pages)	024025
Yuri N. Obukhov	
Exact wave propagation in a spacetime with a cosmic string (15 pages)	024026
Teruaki Suyama, Takahiro Tanaka, and Ryuichi Takahashi	
Gravitational wave snapshots of generic extreme mass ratio inspirals (26 pages)	024027
Steve Drasco and Scott A. Hughes	
Nonlinear realization of supersymmetric AdS space isometries (8 pages)	025001
T.E. Clark and S.T. Love	
Semiclassical analysis of a complex quartic Hamiltonian (5 pages)	025002
Carl M. Bender, Dorje C. Brody, and Hugh F. Jones	
Zeta-function approach to Casimir energy with singular potentials (13 pages)	025003
Nail R. Khusnutdinov	
Big bang nucleosynthesis constraints on universal extra dimensions and varying fundamental constants (15 pages) B. Li and M.-C. Chu	025004
Boltzmann collision term (9 pages)	025005
Steffen Weinstock	
QCD plasma instabilities: The non-Abelian cascade (12 pages)	025006
Peter Arnold and Guy D. Moore	
Scalar Casimir effect between Dirichlet spheres or a plate and a sphere (14 pages)	025007
Aurel Bulgac, Piotr Magierski, and Andreas Wirzba	
Quantum deformation of the Dirac bracket (12 pages)	025008
M.I. Krivoruchenko, A.A. Raduta, and Amand Faessler	
Quantum electrodynamics near a dielectric half-space (16 pages)	025009
Claudia Eberlein and Dieter Robaschik	
Muon anomalous magnetic moment due to the brane stretching effect (8 pages)	025010
Konosuke Sawa	
“Root” action for $\mathcal{N} = 4$ supersymmetric mechanics theories (9 pages)	025011
S. Bellucci, S. Krivonos, A. Marrani, and E. Orazi	
Improved Hartree-Fock resummations and spontaneous symmetry breaking (15 pages)	025012
Andrea Sartirana and Claudio Destri	
Turbulent spectrum created by non-Abelian plasma instabilities (9 pages)	025013
Peter Arnold and Guy D. Moore	
Ultraviolet cascade in the thermalization of the classical ϕ^4 theory in 3 + 1 dimensions (32 pages)	025014
C. Destri and H.J. de Vega	
Particle decay in false vacuum (9 pages)	025015
A. Gorsky and M.B. Voloshin	
Deformed defects with applications to braneworlds (7 pages)	025016
D. Bazeia and L. Losano	
Quantum anomaly and geometric phase: Their basic differences (13 pages)	025017
Kazuo Fujikawa	
High-energy scattering in noncommutative field theory (7 pages)	025018
Jason Kumar and Arvind Rajaraman	
Radiation reaction on charged particles in three-dimensional motion in classical and quantum electrodynamics (12 pages)	025019
Atsushi Higuchi and Giles D. Martin	
S-matrix renormalization in effective theories (27 pages)	025020
K. Semenov-Tian-Shansky, A. Vereshagin, and V. Vereshagin	
Waves on noncommutative spacetimes (9 pages)	025021
Aiyalam P. Balachandran, Kumar S. Gupta, and Seçkin Kürkçüoğlu	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 73, NUMBER 2

D15 JANUARY 2006

Fermionic determinant for $SU(N)$ caloron with nontrivial holonomy (15 pages)	025022
Nikolay Gromov and Sergey Slizovskiy	
Induced curvature in brane worlds by surface terms in string effective actions with higher-curvature corrections (8 pages)	026001
Nick E. Mavromatos and Eleftherios Papantonopoulos	
Hairy strings (11 pages)	026002
Vatche Sahakian	
Stringy effects during inflation and reheating (29 pages)	026003
Andrew R. Frey, Anupam Mazumdar, and Robert C. Myers	
Instantons, assisted inflation, and heterotic M theory (12 pages)	026004
John Ward	
Phase transitions in q -deformed 2D Yang-Mills theory and topological strings (14 pages)	026005
Xerxes Arsiwalla, Rutger Boels, Marcos Mariño, and Annamaria Sinkovics	
D-branes in overcritical electric fields (7 pages)	026006
Harald Dorn, Mario Salizzoni, and Alessandro Torrielli	
Semiclassical strings in electric and magnetic field deformed $AdS_5 \times S^5$ spacetimes (9 pages)	026007
Wung-Hong Huang	

BRIEF REPORTS

Alternative proposal to modified Newtonian dynamics (4 pages)	027301
Juan M. Romero and Adolfo Zamora	
Local Lorentz invariance in $N = 1$ supergravity (4 pages)	027501
Alfredo Macías, Hernando Quevedo, and Alberto Sánchez	
Strongly coupled quantum field theory (4 pages)	027701
Marco Frasca	
Gauss-Bonnet brane cosmology with radion stabilization (4 pages)	027702
G.L. Alberghi and A. Tronconi	

ERRATA

Erratum: Second-order gravitational effects of local inhomogeneities on CMB anisotropies and non-Gaussian signatures [Phys. Rev. D 72 , 103506 (2005)] (1 page)	029901
Kenji Tomita	
Erratum: Self-dual teleparallel formulation of general relativity and the positive energy theorem [Phys. Rev. D 68 , 044006 (2003)] (1 page)	029902
G. Y. Chee	
Publisher's Note: Neutrino dispersion in external magnetic fields [Phys. Rev. D 73 , 023001 (2006)] (1 page)	029903
A. V. Kuznetsov, N. V. Mikheev, G. G. Raffelt, and L. A. Vassilevskaya	
Erratum: Generalized Smarr relation for Kerr-AdS black holes from improved surface integrals [Phys. Rev. D 71 , 044016 (2005)] (1 page)	029904
Glenn Barnich and Geoffrey Compère	
Publisher's Note: Quantum deformation of the Dirac bracket [Phys. Rev. D 73 , 025008 (2006)] (1 page)	029905
M. I. Krivoruchenko, A. A. Raduta, and Amand Faessler	