PHYSICAL REVIEW D

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 0556-2821)

PERIODICALS
Postmaster send address changes to:
American Institute of Physics
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 63, NUMBER 4 *CONTENTS* **15 FEBRUARY 2001**

RAPID COMMUNICATIONS

Inflation on a single brane: Exact solutions *(5 pages)* . . . . . 041301(R)
Rachael M. Hawkins and James E. Lidsey

Spin foam model for Lorentzian general relativity *(5 pages)* . . . . . 041501(R)
Alejandro Perez and Carlo Rovelli

Generally covariant model of a scalar field with high frequency dispersion and the cosmological horizon problem *(4 pages)* . . . . . 041502(R)
Ted Jacobson and David Mattingly

Quantum metric fluctuations and Hawking radiation *(4 pages)* . . . . . 041503(R)
R. Parentani

ARTICLES

Cosmological parameters from the first results of Boomerang *(8 pages)* 042001
A. E. Lange, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, K. Coble, B. P. Crill, P. de Bernardis, P. Farese, P. Ferreira, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, L. Martinis, S. Masi, P. D. Mauskopf, A. Melchiorri, T. Montroy, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, S. Prunet, S. Rao, G. Romeo, J. E. Ruhl, F. Scaramuzzi, and D. Sforna

Efficient filter for detecting gravitational wave bursts in interferometric detectors *(9 pages)* 042002
Thierry Pradier, Nicolas Arnaud, Marie-Anne Bizouard, Fabien Cavalier, Michel Davier, and Patrice Hello

Excess power statistic for detection of burst sources of gravitational radiation *(20 pages)* 042003
Warren G. Anderson, Patrick R. Brady, Jolien D. E. Creighton, and Éanna É. Flanagan

Adaptive filtering techniques for gravitational wave interferometric data: Removing long-term sinusoidal disturbances and oscillatory transients *(15 pages)* 042004
E. Chassande-Mottin and S. V. Dhurandhar

How to fool cosmic microwave background parameter estimation *(6 pages)* 043001
William H. Kinney

General-relativistic theory of elastic deformable astronomical bodies *(11 pages)* 043002
Chongming Xu, Xuejun Wu, and Michael Soffel

Neutrinos as the source of ultrahigh energy cosmic rays in extra dimensions *(5 pages)* 043003
Ashok Goyal, Abhinav Gupta, and Namit Mahajan

Testing standard and degenerate big bang nucleosynthesis with BOOMERANG and MAXIMA-1 *(4 pages)* . . 043004
S. Esposito, G. Mangano, A. Melchiorri, G. Miele, and O. Pisanti

Weakly interacting massive particle annual modulation signal and nonstandard halo models *(6 pages)* 043005
Anne M. Green

Copyright 2001 by The American Physical Society

(Continued)

0556-2821(20010215)63:4;1-0

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 63, NUMBER 4** **15 FEBRUARY 2001**

Can there be a quark matter core in a magnetar? *(5 pages)* 043006
Tanusri Ghosh and Somenath Chakrabarty
Towards a refined cosmic concordance model: Joint 11-parameter constraints from the cosmic microwave background and large-scale structure *(14 pages)* 043007
Max Tegmark, Matias Zaldarriaga, and Andrew J. S. Hamilton
Active-sterile neutrino oscillations and big bang nucleosynthesis plus cosmic microwave background radiation constraints *(9 pages)* 043008
P. Di Bari and R. Foot
Reconstructing the inflationary power spectrum from cosmic microwave background radiation data *(7 pages)* 043009
Steen Hannestad
CMB *B* polarization to map the large-scale structures of the universe *(14 pages)* 043501
K. Benabed, F. Bernardeau, and L. van Waerbeke
Stars and black holes in varying speed of light theories *(14 pages)* 043502
João Magueijo
Bimetric gravity and ''dark matter'' *(13 pages)* 043503
I. T. Drummond
Cosmic acceleration without quintessence *(5 pages)* 043504
Narayan Banerjee and Diego Pavón
Cosmic concordance and the fine structure constant *(10 pages)* 043505
Richard A. Battye, Robert Crittenden, and Jochen Weller
New inflation in supergravity with a chaotic initial condition *(5 pages)* 043506
Masahide Yamaguchi and Jun'ichi Yokoyama
Angular signatures for galactic halo weakly interacting massive particle scattering in direct detectors: Prospects and challenges *(13 pages)* 043507
Craig J. Copi and Lawrence M. Krauss
Inflationary perturbations near horizon crossing *(7 pages)* 043508
Samuel M. Leach and Andrew R. Liddle
Limits on cosmic matter-antimatter domains from big bang nucleosynthesis *(20 pages)* 043509
Jan B. Rehm and Karsten Jedamzik
Action of singular instantons of Hawking-Turok type *(5 pages)* 043510
Masashi Hashimoto
Backreaction and the parametric resonance of cosmological fluctuations *(11 pages)* 043511
J. P. Zibin, R. Brandenberger, and Douglas Scott
Giant gravitons, Bogomol'nyi-Prasad-Sommerfield bounds, and noncommutativity *(7 pages)* 044001
Sumit R. Das, Antal Jevicki, and Samir D. Mathur
Boundary conditions and the entropy bound *(7 pages)* 044002
Sergey N. Solodukhin
Qualitative dynamical properties of a spatially closed FRW universe conformally coupled to a scalar field *(4 pages)* 044003
M. A. Castagnino, H. Giacomini, and L. Lara
Notion of potential in quantum gravity *(10 pages)* 044004
Kirill A. Kazakov
Regular magnetic black holes and monopoles from nonlinear electrodynamics *(6 pages)* 044005
K. A. Bronnikov
Gravitational field and equations of motion of spinning compact binaries to 2.5 post-Newtonian order *(14 pages)* 044006
Hideyuki Tagoshi, Akira Ohashi, and Benjamin J. Owen
Exact solution for (2+1)-dimensional critical collapse *(5 pages)* 044007
David Garfinkle

(Continued)

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 63, NUMBER 4** **15 FEBRUARY 2001**

Quantum effects, brane tension, and large hierarchy in the brane world *(4 pages)* 044008
Shinji Mukohyama
Gauge dual and noncommutative extension of an $\mathcal{N}=2$ supergravity solution *(11 pages)* 044009
Alex Buchel, Amanda W. Peet, and Joseph Polchinski
Gravitational collapse in a constant potential bath *(6 pages)* 044010
S. Jhingan, N. Dadhich, and P. S. Joshi
Numerical evolution of Brill waves *(8 pages)* 044011
David Garfinkle and G. Comer Duncan
Post-Newtonian smoothed particle hydrodynamics calculations of binary neutron star coalescence. II. Binary mass ratio, equation of state, and spin dependence *(16 pages)* 044012
Joshua A. Faber, Frederic A. Rasio, and Justin B. Manor
Back reaction problem in the inflationary universe *(9 pages)* 044013
Yasusada Nambu
Generation of high frequency gravitational waves *(7 pages)* 044014
M. Portilla and R. Lapiedra
Brane-world inflation without inflaton on the brane *(8 pages)* 044015
Yoshiaki Himemoto and Misao Sasaki
Imprints of accretion on gravitational waves from black holes *(5 pages)* 044016
Philippos Papadopoulos and José A. Font
Vacuum polarization of a scalar field in wormhole spacetimes *(8 pages)* 044017
Arkadii A. Popov and Sergey V. Sushkov
Affine generalization of the Komar complex of general relativity *(4 pages)* 044018
Eckehard W. Mielke
New holographic entropy bound from quantum geometry *(4 pages)* 044019
Saurya Das, Romesh K. Kaul, and Parthasarathi Majumdar
Quantum corrections for an (anti)evaporating black hole *(8 pages)* 044020
Maja Burić and Voja Radovanović
Equivalence between the ADM-Hamiltonian and the harmonic-coordinates approaches to the third post-Newtonian dynamics of compact binaries *(11 pages)* 044021
Thibault Damour, Piotr Jaranowski, and Gerhard Schäfer
Density perturbations in the brane-world *(7 pages)* 044022
Christopher Gordon and Roy Maartens
Comparison of search templates for gravitational waves from binary inspiral *(14 pages)* 044023
Thibault Damour, Bala R. Iyer, and B. S. Sathyaprakash
Cubic couplings in $D=6$, $\mathcal{N}=4b$ supergravity on $AdS_3\times S^3$ *(10 pages)* 044024
G. Arutyunov, A. Pankiewicz, and S. Theisen
Calculation of the one-point Green's function for a $-g\phi^4$ quantum field theory *(10 pages)* 045001
Carl M. Bender, Peter N. Meisinger, and Haitang Yang
Electroweak bubble nucleation, nonperturbatively *(26 pages)* 045002
Guy D. Moore and Kari Rummukainen
Hamiltonian formalism for space-time noncommutative theories *(6 pages)* 045003
Joaquim Gomis, Kiyoshi Kamimura, and Josep Llosa
Bogomol'nyi-Prasad-Sommerfield solitons in M5-brane worldvolume theory with a constant three-form field *(6 pages)* 045004
Donam Youm
Dual projection and self-duality in three dimensions *(9 pages)* 045005
Rabin Banerjee and Clovis Wotzasek
Transverse spin in QCD: Radiative corrections *(18 pages)* 045006
A. Harindranath, Asmita Mukherjee, and Raghunath Ratabole

(Continued)

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 63, NUMBER 4** **15 FEBRUARY 2001**

Relaxing near the critical point *(25 pages)* 045007
D. Boyanovsky, H. J. de Vega, and M. Simionato
How frustrated strings would pull the black holes from the centers of galaxies *(5 pages)* 045008
Glenn D. Starkman and Dejan Stojkovic
Vortices and bags in $2+1$ dimensions *(10 pages)* 045009
C. D. Fosco and A. Kovner
Higgs mechanism and bulk gauge boson masses in the Randall-Sundrum model *(4 pages)* 045010
Stephan J. Huber and Qaisar Shafi
Massive random matrix ensembles at $\beta=1$ and 4: QCD in three dimensions *(22 pages)* 045011
Taro Nagao and Shinsuke M. Nishigaki
Distribution of the kth smallest Dirac operator eigenvalue *(6 pages)* 045012
Poul H. Damgaard and Shinsuke M. Nishigaki
Mass spectra of $N=2$ supersymmetric $SU(n)$ Chern-Simons-Higgs theories *(8 pages)* 045013
Hsien-chung Kao
Brane inflation in tachyonic and nontachyonic type 0B string theories *(7 pages)* 045014
Jin Young Kim
Abrikosov string in $\mathcal{N}=2$ supersymmetric QED *(4 pages)* 045015
Xinrui Hou
Gauge invariant derivative expansion of the effective action at finite temperature and density and the scalar field in $2+1$ dimensions *(19 pages)* 045016
C. García-Recio and L. L. Salcedo
Towards softer scales in hot QCD *(28 pages)* 045017
F. Guerin
Chiral condensates in the light-cone vacuum *(5 pages)* 045018
Frieder Lenz, Michael Thies, and Koichi Yazaki
Mesonic spectrum of two-dimensional supersymmetric theories *(11 pages)* 045019
Oleg Lunin and Stephen Pinsky
Properties of the Langevin and Fokker-Planck equations for scalar fields and their application to the dynamics of second order phase transitions *(10 pages)* 045020
Luís M. A. Bettencourt
Nonequilibrium dynamics in quantum field theory at high density: The ''tsunami'' *(19 pages)* 045021
F. J. Cao and H. J. de Vega
Renormalization of periodic potentials *(9 pages)* 045022
I. Nándori, J. Polonyi, and K. Sailer
Initial time singularities in nonequilibrium evolution of condensates and their resolution in the linearized approximation *(22 pages)* 045023
J. Baacke, D. Boyanovsky, and H. J. de Vega
Prospects for indirect detection of neutralino dark matter *(18 pages)* 045024
Jonathan L. Feng, Konstantin T. Matchev, and Frank Wilczek
Nonperturbative infrared dynamics of three-dimensional QED with a four-fermion interaction *(19 pages)* 045025
Valery Gusynin, Anthony Hams, and Manuel Reenders
Boltzmann suppression of interacting heavy particles *(9 pages)* 045026
Patrizia Bucci and Massimo Pietroni
Stable massive states in $(1+1)$-dimensional noncommutative open string theory *(7 pages)* 046001
Christopher P. Herzog and Igor R. Klebanov
Superstring action in $AdS_5\times S^5$: κ-symmetry light cone gauge *(18 pages)* 046002
R. R. Metsaev and A. A. Tseytlin
Relevant boundary perturbations of CFT: A case study *(8 pages)* 046003
Tasneem Zehra Husain and Maxim Zabzine

(Continued)

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 63, NUMBER 4** **15 FEBRUARY 2001**

Consistency relations for an implicit *n*-dimensional regularization scheme *(12 pages)* 046004
A. P. Baêta Scarpelli, M. Sampaio, and M. C. Nemes
Remarks on the racetrack scheme: Stabilizing the moduli of string theory *(8 pages)* 046005
Michael Dine and Yuri Shirman
Superstrings and superbranes with a modified measure *(8 pages)* 046006
E. I. Guendelman
Analytical construction of a nonperturbative vacuum for the open bosonic string *(14 pages)* 046007
V. Alan Kostelecký and Robertus Potting

BRIEF REPORTS

New mechanism for the generation of primordial seeds for the cosmic magnetic fields *(4 pages)* 047301
M. Gasperini
Exact black hole entropy bound in conformal field theory *(3 pages)* 047501
Danny Birmingham and Siddhartha Sen
Black hole no hair conjecture in the Einstein-Maxwell-scalar system in asymptotically de Sitter spacetime *(4 pages)* 047502
Takashi Torii, Kengo Maeda, and Makoto Narita
Note on solitons in brane worlds *(4 pages)* 047503
Donam Youm
Perturbative evolution of nonlinear initial data for binary black holes: Zerilli versus Teukolsky equation *(4 pages)* 047504
Carlos O. Lousto
Noncommutative fermionic field theories with smooth commutative limit *(4 pages)* 047701
Dongsu Bak, Sung Ku Kim, Kwang-Sup Soh, and Jae Hyung Yee

COMMENTS

Comment on ''Topological invariants, instantons, and the chiral anomaly on spaces with torsion'' *(4 pages)* 048501
Dirk Kreimer and Eckehard W. Mielke
Reply to ''Comment on 'Topological invariants, instantons, and the chiral anomaly on spaces with torsion' '' *(4 pages)* 048502
Osvaldo Chandía and Jorge Zanelli

ERRATA

Erratum: Deconfining by winding: The magnetic monopole vacua at high temperatures [Phys. Rev. D **62**, 105021 (2000)] *(1 page)* . . . . . 049901(E)
Ralf Hofmann
Erratum: Evolution of circular, nonequatorial orbits of Kerr black holes due to gravitational-wave emission [Phys. Rev. D **61**, 084004 (2000)] *(1 page)* . . . . . 049902(E)
Scott A. Hughes
Cumulative Author Index i