

PHYSICAL REVIEW D

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

SECOND CLASS
Postmaster send address changes to:
American Institute of Physics
500 Sunnyside Boulevard
Woodbury, NY 11797-2999

THIRD SERIES, VOLUME 53, NUMBER 12

CONTENTS

15 JUNE 1996

RAPID COMMUNICATIONS

Galactic cosmic strings as sources of primary antiprotons	R6711
Glenn D. Starkman and Tanmay Vachaspati	
CP^{N-1} model and the quantized two-dimensional black holes	R6715
Kazuo Ghoroku	
Focusing and the holographic hypothesis	R6720
Steven Corley and Ted Jacobson	
M theory on $(K3 \times S^1)/Z_2$	R6725
Ashoke Sen	

ARTICLES

Relativity parameters determined from lunar laser ranging	6730
J. G. Williams, X. X. Newhall, and J. O. Dickey	
Testing for gravitationally preferred directions using the lunar orbit	6740
Thibault Damour and David Vokrouhlický	
Search templates for gravitational waves from inspiraling binaries: Choice of template spacing	6749
Benjamin J. Owen	
Seismic detection of nuclearites	6762
Eugene T. Herrin and Vigdor L. Teplitz	
Galactic periodicity and the oscillating G model	6771
Marcelo Salgado, Daniel Sudarsky, and Hernando Quevedo	
Statistics of the microwave background anisotropies caused by squeezed cosmological perturbations	6784
L. P. Grishchuk	
Gaussian nature of the COBE data from multipoint correlations	6796
Samuel I. Vainshtein, Andrea Malagoli, and Katepalli R. Sreenivasan	
Particle production and dissipative cosmic field	6805
H. Fujisaki, K. Kumekawa, M. Yamaguchi, and M. Yoshimura	
Nonminimal coupling of the scalar field and inflation	6813
Valerio Faraoni	
Dependence of inflationary reconstruction upon cosmological parameters	6822
Michael S. Turner and Martin White	
Long-range effects of cosmic string structure	6829
Bruce Allen, Bernard S. Kay, and Adrian C. Ottewill	
Schild's null strings in flat and curved backgrounds	6842
Sayan Kar	
Lifetime of quasistationary wiggly loops	6847
Xavier Martin	
Bubble collisions and defect formation in a damping environment	6852
Antonio Ferrera and Alejandra Melfo	
Inflation in multidimensional quantum cosmology	6863
Enrico Carugno, Marco Litterio, Franco Occhionero, and Giuseppe Pollifrone	
No-boundary wave function for a simplicial anisotropic universe	6875
Yasuhiko Furihata	

(Continued)



0556-2821(19960615)53:12;1-Q

Zel'dovich-type approximation for an inhomogeneous universe in general relativity: Second-order solutions	6881
Heinz Russ, Masaaki Morita, Masumi Kasai, and Gerhard Börner	
Cosmological model with a traversable wormhole	6889
Sung-Won Kim	
Description of chaos in simple relativistic systems	6893
Marek Szydłowski and Adam Krawiec	
Spectral representation of the spacetime structure: The “distance” between universes with different topologies	6902
Masafumi Seriu	
Transport processes in the gravitational collapse of an anisotropic fluid	6921
J. Martínez	
Three generations or more for an attractive gravity?	6941
Masahiro Tanaka	
Search for “polarized” instantons in the vacuum	6946
M. Yu. Kuchiev	
Validity of the ADM formulation in two-dimensional quantum gravity	6960
K. Ghoroku and K. Kaneko	
Is the third coefficient of the Jones knot polynomial a quantum state of gravity?	6966
Jorge Griego	
Path integrals and instantons in quantum gravity: Minisuperspace models	6979
Donald Marolf	
Initial singularity problem in two-dimensional quantum cosmology	6991
J. Gamboa	
Soluble models in two-dimensional dilaton gravity	6995
A. Fabbri and J. G. Russo	
Stochastic theory of accelerated detectors in a quantum field	7003
Alpan Raval, B. L. Hu, and James Anglin	
Principle of nongravitating vacuum energy and some of its consequences	7020
E. I. Guendelman and A. B. Kaganovich	
Field theoretical quantum effects on the Kerr geometry	7026
Y. Satoh	
Quasinormal modes of maximally charged black holes	7033
Hisashi Onozawa, Takashi Mishima, Takashi Okamura, and Hideki Ishihara	
Quantum stability of accelerated black holes	7041
Piljin Yi	
Decoherence of black holes by Hawking radiation	7050
Jean-Guy Demers and Claus Kiefer	
Fundamental thermodynamical equation of a self-gravitating system	7062
Erik A. Martinez	
Hawking radiation entropy and horizon divergences	7073
F. Belgiorno and M. Martellini	
On the origin of the outgoing black hole modes	7082
Ted Jacobson	
Validity of the semiclassical approximation and back reaction	7089
Sukanta Bose, Leonard Parker, and Yoav Peleg	
Black hole in thermal equilibrium with a spin-2 quantum field	7094
David Hochberg and Sergey V. Sushkov	
Pair creation of black holes by domain walls	7103
R. R. Caldwell, H. A. Chamblin, and G. W. Gibbons	

Nucleation of p -branes and fundamental strings	7115
Fay Dowker, Jerome P. Gauntlett, Gary W. Gibbons, and Gary T. Horowitz	
BFF quantization of chiral-boson theories	7129
R. Amorim and J. Barcelos-Neto	
Some remarks on the BRST quantization of massive Abelian two-form gauge fields	7138
C. Bizdadea	
Extended BPH renormalization of cutoff scalar field theories	7143
Gordon Chalmers	
Confinement-deconfinement transition in three-dimensional QED	7157
G. Grignani, G. Semenoff, and P. Sodano	
Vacuum instability in external fields	7162
S. P. Gavrilov and D. M. Gitman	
Lagrangian Becchi-Rouet-Stora-Tyutin treatment of collective coordinates	7176
Juan P. Garrahan, Martín Kruczenski, and Daniel R. Bes	
D strings and F strings from string loops	7187
S. P. de Alwis and K. Sato	
(1,2) heterotic string with gauge symmetry	7197
David M. Pierce	
S duality and dyonic p -brane solutions in type II string theory	7206
Eric Bergshoeff, Harm Jan Boonstra, and Tomás Ortín	
Spin precession of ultrarelativistic electrons in a circularly polarized electromagnetic wave	7213
Victor V. Tikhomirov	
Random matrix model for chiral symmetry breaking	7223
A. D. Jackson and J. J. M. Verbaarschot	
Chiral perturbation theory in the Schwinger model	7231
J. P. Vary, T. J. Fields, and H.-J. Pirner	
Perturbative renormalization group approach to the light-front Hamiltonian	7239
Takanori Sugihara and Masanobu Yahiro	
Two phases for compact $U(1)$ pure gauge theory in three dimensions	7250
Tim R. Morris	
Interplay between mass, volume, vacuum angle, and chiral condensate in N -flavor two-dimensional QED	7255
J. E. Hetrick, Y. Hosotani, and S. Iso	
Einstein-Infeld-Hoffman method and soliton dynamics in a parity noninvariant system	7260
Jacek Dziarmaga	
Finite-temperature Feynman propagator in operator form	7265
H. Arthur Weldon	
Contrasting real-time dynamics with screening phenomena at finite temperature	7270
Suzhou Huang and Marcello Lissia	
Free energy of high temperature QED to order e^5 from effective field theory	7286
Jens O. Andersen	
Generalized dual symmetry for non-Abelian Yang-Mills fields	7293
Chan Hong-Mo, J. Faridani, and Tsou Sheung Tsun	
Dynamical symmetry breaking with large anomalous dimension in semisimple chiral gauge theories	7306
Yuhsuke Yoshida	
Scales of Euclidean and Hamiltonian lattice gauge theory in three dimensions	7316
C. J. Hamer	
Chiral symmetry breaking in the gauged NJL model in curved spacetime	7321
B. Geyer and S. D. Odintsov	
Decoherence of quantum fields: Pointer states and predictability	7327
J. R. Anglin and W. H. Zurek	

CONTENTS - *Continued*

PHYSICAL REVIEW D

THIRD SERIES, VOLUME 53, NUMBER 12

15 JUNE 1996

Interpretation of time-reparametrization-invariant quantum mechanics: An exactly soluble model	7336
Ian D. Lawrie and Richard J. Epp	
Anomalous Ward identities in D -dimensional conformal theory	7345
E. S. Fradkin, M. Ya. Palchik, and V. N. Zaikin	
Koebe 1/4 theorem and inequalities in $N=2$ supersymmetric QCD	7354
Marco Matone	

BRIEF REPORTS

Ultratransparent Antarctic ice as a supernova detector	7359
F. Halzen, J. E. Jacobsen, and E. Zas	
Perturbation growth and cosmic microwave background anisotropies in the stringlike matter-dominated universe	7362
Jerzy Stelmach	
Warp drive and causality	7365
Allen E. Everett	
Magnetohydrodynamics in a homogeneous cosmological background	7369
A. Sil, N. Banerjee, and S. Chatterjee	
Mass inflation in a rotating charged black hole	7373
Alfio Bonanno	
Searching for nonminimally coupled scalar hairs	7377
Alberto Saa	
Connection between certain massive and massless diagrams	7381
A. I. Davydychev and J. B. Tausk	
Ghost decoupling in the 't Hooft spectrum for mesons	7385
A. Bassetto and L. Griguolo	
Cumulative Author Index	7388