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 68, NUMBER 1 *CONTENTS* **D1 JULY 2003**

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

RAPID COMMUNICATIONS

Study of the charmless inclusive $B \to \eta' X$ decay *(5 pages)* . . . . . 011101(R)
G. Bonvicini *et al.* (CLEO Collaboration)
Search for baryons in the radiative penguin decay $b \to s\gamma$ *(5 pages)* . . . . . 011102(R)
K. W. Edwards *et al.* (CLEO Collaboration)
Improved measurement of the partial-rate *CP* asymmetry in $B^+ \to K^0\pi^+$ and $B^- \to \overline{K}^0\pi^-$ decays *(6 pages)* . . . . . 011103(R)
Y. Unno *et al.* (Belle Collaboration)
BABAR resonance as a new window of hadron physics *(3 pages)* . . . . . 011501(R)
K. Terasaki
Gauge dependence identities for color superconducting QCD *(5 pages)* . . . . . 011502(R)
A. Gerhold and A. Rebhan

ARTICLES

Evidence for *CP*-violating asymmetries in $B^0 \to \pi^+\pi^-$ decays and constraints on the CKM angle ϕ_2 *(15 pages)* 012001
K. Abe *et al.* (Belle Collaboration)
Very long baseline neutrino oscillation experiments for precise measurements of mixing parameters and *CP* violating effects *(10 pages)* 012002
M. V. Diwan, D. Beavis, Mu-Chun Chen, J. Gallardo, R. L. Hahn, S. Kahn, H. Kirk, W. Marciano, W. Morse, Z. Parsa, N. Samios, Y. Semertzidis, B. Viren, W. Weng, P. Yamin, M. Yeh, W. Frati, K. Lande, A. K. Mann, R. Van Berg, P. Wildenhain, J. R. Klein, I. Mocioiu, R. Shrock, and K. T. McDonald
Momentum distribution of charged particles in jets in dijet events in $p\overline{p}$ collisions at $\sqrt{s} = 1.8$ TeV and comparisons to perturbative QCD predictions *(19 pages)* 012003
D. Acosta *et al.* (CDF Collaboration)
Search for $B \to \overline{p}e^-\overline{\nu}_e X$ decay using a partial reconstruction method *(9 pages)* 012004
N. E. Adam *et al.* (CLEO Collaboration)
Higgs boson production in bottom quark fusion at next-to-next-to-leading order *(14 pages)* 013001
Robert V. Harlander and William B. Kilgore
Realistic Earth matter density for *CP* violation in a very long baseline neutrino oscillation *(7 pages)* 013002
Lian-You Shan, Yi-Fang Wang, Chang-Gen Yang, Xinmin Zhang, Fu-Tian Liu, and Bing-Lin Young
SU(3) predictions for weak decays of doubly heavy baryons, including SU(3) breaking terms *(33 pages)* 013003
David A. Egolf, Roxanne P. Springer, and Jörg Urban

Copyright 2003 by The American Physical Society

(Continued)

0556-2821(20030701)68:1;1-3

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 68, NUMBER 1** **D1 JULY 2003**

Magnetically induced vacuum decay *(6 pages)* 013004
She-Sheng Xue
ρ polarization and model independent extraction of $|V_{ub}|/|V_{cd}|$ from $D\to\rho\ell\nu$ and $B\to\rho\ell\nu$ *(5 pages)* 013005
W. Roberts
Do the KamLAND and solar neutrino data rule out solar density fluctuations? *(7 pages)* 013006
A. B. Balantekin and H. Yüksel
Neutrino flavor conversion in a neutrino background: Single- versus multi-particle description *(12 pages)* . . . 013007
Alexander Friedland and Cecilia Lunardini
Comparing the Higgs sector of electroweak theory with the scalar sector of low energy QCD *(16 pages)* 013008
Abdou Abdel-Rehim, Deirdre Black, Amir H. Fariborz, Salah Nasri, and Joseph Schechter
Solar neutrino masses and mixing from bilinear *R*-parity broken supersymmetry: Analytical versus numerical results *(15 pages)* 013009
M. A. Díaz, M. Hirsch, W. Porod, J. C. Romão, and J. W. F. Valle
Complementarity of eastern and western hemisphere long-baseline neutrino oscillation experiments *(12 pages)* 013010
Hisakazu Minakata, Hiroshi Nunokawa, and Stephen Parke
Chiral QCD, general QCD parametrization, and constituent quark models *(6 pages)* 014001
G. Dillon and G. Morpurgo
Parton distributions from deep-inelastic-scattering data *(11 pages)* 014002
S. I. Alekhin
Statistical approach for unpolarized fragmentation functions for the octet baryons *(6 pages)* 014003
Claude Bourrely and Jacques Soffer
Low-mass baryon-antibaryon enhancements in *B* decays *(4 pages)* 014004
Jonathan L. Rosner
Pomeron in exclusive vector meson production *(9 pages)* 014005
R. Fiore, L. L. Jenkovszky, F. Paccanoni, and A. Prokudin
New analysis of the KLOE data on the $\phi\to\eta\pi^0\gamma$ decay *(6 pages)* 014006
N. N. Achasov and A. V. Kiselev
New physics contributions to the $B\to\phi K_S$ decay *(9 pages)* 014007
Cheng-Wei Chiang and Jonathan L. Rosner
Calculating quenching weights *(20 pages)* 014008
Carlos A. Salgado and Urs Achim Wiedemann
QCD phase diagram at nonzero temperature, baryon, and isospin chemical potentials in random matrix theory *(13 pages)* 014009
B. Klein, D. Toublan, and J. J. M. Verbaarschot
New 5-flavor LO analysis and parametrization of parton distributions in the real photon *(18 pages)* 014010
F. Cornet, P. Jankowski, M. Krawczyk, and A. Lorca
Pion and sigma meson properties in a relativistic quark model *(24 pages)* 014011
Amand Faessler, Th. Gutsche, M. A. Ivanov, V. E. Lyubovitskij, and P. Wang
Event shape–energy flow correlations *(25 pages)* 014012
Carola F. Berger, Tibor Kúcs, and George Sterman
Next-to-next-to-leading order prediction for the photon-to-pion transition form factor *(36 pages)* 014013
B. Melić, D. Müller, and K. Passek-Kumerički
Latent heat in the chiral phase transition *(5 pages)* 014014
Masaharu Iwasaki and Hiyoshi Kiuchi
Hadronic charmed meson decays involving tensor mesons *(6 pages)* 014015
Hai-Yang Cheng
One-loop helicity amplitudes for parton level virtual Compton scattering *(9 pages)* 014016
H. W. Huang and T. Morii

(Continued)

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 68, NUMBER 1** **D1 JULY 2003**

Study of parton k_T smearing effects in direct photon production at the Fermilab Tevatron *(10 pages)* 014017
Ashish Kumar, Kirti Ranjan, Manoj K. Jha, Ashutosh Bhardwaj, B. M. Sodermark, and R. K. Shivpuri
QCD analysis of quark recombination for leading particle effect *(12 pages)* 014018
Chao-Hsi Chang, Jian-Ping Ma, and Zong-Guo Si
Diphoton signature of Higgs bosons in gauge mediated supersymmetry breaking models at the CERN LHC *(8 pages)* 014019
J. Lorenzo Diaz-Cruz, Dilip Kumar Ghosh, and Stefano Moretti
New physics effects on the CP asymmetries in $B\rightarrow\phi K_S$ and $B\rightarrow\eta' K_S$ decays *(10 pages)* 014020
Anjan K. Giri and Rukmani Mohanta
Standard model CP violation in polarized $b\rightarrow d l^+ l^-$ *(9 pages)* 014021
K. S. Babu, K. R. S. Balaji, and I. Schienbein
Calculation of nonleptonic kaon decay amplitudes from $K\rightarrow\pi$ matrix elements in quenched domain-wall QCD *(36 pages)* 014501
J. Noaki, S. Aoki, Y. Aoki, R. Burkhalter, S. Ejiri, M. Fukugita, S. Hashimoto, N. Ishizuka, Y. Iwasaki, T. Izubuchi, K. Kanaya, T. Kaneko, Y. Kuramashi, V. Lesk, K. I. Nagai, M. Okawa, Y. Taniguchi, A. Ukawa, and T. Yoshié (CP-PACS Collaboration)
Renormalization-group-improved action on anisotropic lattices *(11 pages)* 014502
S. Ejiri, K. Kanaya, Y. Namekawa, and T. Umeda
Lattice study of the two-dimensional Wess-Zumino model *(9 pages)* 014503
Simon Catterall and Sergey Karamov
Infinite temperature limit of meson spectral functions calculated on the lattice *(11 pages)* 014504
F. Karsch, E. Laermann, S. Stickan, and P. Petreczky
Perturbative determination of $O(a)$ boundary improvement coefficients for the Schrödinger functional coupling at 1 loop with improved gauge actions *(9 pages)* 014505
Shinji Takeda, Sinya Aoki, and Kiyotomo Ide
Self-energy of improved staggered quarks *(6 pages)* 014506
Thomas Becher and Kirill Melnikov
Equation of state for two flavor QCD at nonzero chemical potential *(17 pages)* 014507
C. R. Allton, S. Ejiri, S. J. Hands, O. Kaczmarek, F. Karsch, E. Laermann, and C. Schmidt
Mass predictions based on a supersymmetric SU(5) fixed point *(20 pages)* 015001
Javier Ferrandis
Rare top quark decays $t\rightarrow cV$ in the top-color-assisted technicolor model *(7 pages)* 015002
Gongru Lu, Furong Yin, Xuelei Wang, and Lingde Wan
TeV resonances in top quark physics at the CERN LHC *(9 pages)* 015003
T. Han, D. Rainwater, and G. Valencia
SU(3) relations and the CP asymmetries in B decays to $\eta' K_S$, ϕK_S, and $K^+K^-K_S$ *(12 pages)* 015004
Yuval Grossman, Zoltan Ligeti, Yosef Nir, and Helen Quinn
Constraining the top squark in the R-parity violating supersymmetry model using existing Fermilab Tevatron data *(8 pages)* 015005
Subhendu Chakrabarti, Monoranjan Guchait, and N. K. Mondal
Neutralino dark matter, b-τ Yukawa unification, and nonuniversal sfermion masses *(23 pages)* 015006
S. Profumo
Discriminating graviton exchange effects from other new physics scenarios in e^+e^- collisions *(10 pages)* . . . 015007
P. Osland, A. A. Pankov, and N. Paver
Decays of Higgs bosons to $b\bar{b}$, $\tau\bar{\tau}$, and $c\bar{c}$ as signatures of supersymmetry and CP phases *(13 pages)* 015008
Tarek Ibrahim and Pran Nath
Electroweak phase diagram at finite lepton number density *(15 pages)* 016001
A. Gynther
Application of Feynman-Kleinert approximants to the massive Schwinger model on a lattice *(7 pages)* 016002
T. M. R. Byrnes, C. J. Hamer, Zheng Weihong, and S. Morrison

(Continued)

PHYSICAL REVIEW D **THIRD SERIES, VOLUME 68, NUMBER 1** **D1 JULY 2003**

Chiral symmetry restoration in linear sigma models with different numbers of quark flavors *(19 pages)* 016003
Dirk Röder, Jörg Ruppert, and Dirk H. Rischke
Lepton dipole moments and rare decays in the *CP*-violating MSSM with nonuniversal soft-supersymmetry breaking *(21 pages)* 016004
Tai-Fu Feng, Tao Huang, Xue-Qian Li, Xin-Min Zhang, and Shu-Min Zhao
Fermi surface phenomena in the (2+1)D four-Fermi model *(15 pages)* 016005
Simon Hands, John B. Kogut, Costas G. Strouthos, and Thao N. Tran
Weak charge of the proton and new physics *(11 pages)* 016006
Jens Erler, Andriy Kurylov, and Michael J. Ramsey-Musolf
Spontaneous symmetry breaking in gauge theories via Bose-Einstein condensation *(11 pages)* 016007
Francesco Sannino and Kimmo Tuominen
Field dynamics and kink-antikink production in rapidly expanding systems *(12 pages)* 016008
G. Holzwarth

BRIEF REPORTS

Measurement of the charge asymmetry in $B\rightarrow K^*(892)^{\pm}\pi^{\mp}$ *(5 pages)* 017101
B. I. Eisenstein *et al.* (CLEO Collaboration)
Symmetric textures in $SO(10)$ and large mixing angle solution for solar neutrinos *(4 pages)* 017301
Mu-Chun Chen and K. T. Mahanthappa
What can we learn from ϕ_1 and $B_d^0\rightarrow\pi^+\pi^-$? *(4 pages)* 017501
Tadashi Yoshikawa
Test of one-pion exchange and one-gluon exchange through mixing angles of negative parity N^* resonances in electromagnetic transitions *(4 pages)* 017502
He Jun and Dong Yu-bing

ERRATA

Erratum: Supersymmetric QCD and supersymmetric electroweak loop corrections to b, t, and τ masses including the effects of *CP* phases [Phys. Rev. D **67**, 095003 (2003)] *(1 page)* . . . . . 019901(E)
Tarek Ibrahim and Pran Nath
Cumulative Author Index xi