# Current Rapid Communications

*Rapid Communications in Physical Review are short reports of important new work which are of sufficient interest to be given priority handling in the publication process. The following papers have been accepted for publication as Rapid Communications and appear as indicated in the designated Physical Review issues.*

**Physical Review A, Vol. 55, February 1997, Issue 2**


Correcting quantum errors in higher spin systems ..... H. F. Chau R839
Ionization of $Au^{78+}$ and electron capture by $Au^{79+}$ at 10.8 GeV/nucleon ..... N. Claytor, A. Belkacem, T. Dinneen, B. Feinberg, and Harvey Gould R842
Scattering of alkali atoms and ions from alkali-halide surfaces: No evidence found for electronic surface states within the band gap of the insulator ..... A. Mertens, C. Auth, H. Winter, and A. G. Borisov R846
Optical measurements of the condensate phase ..... A. Imamoglu and T. A. B. Kennedy R849
Breathing modes and hidden symmetry of trapped atoms in two dimensions ..... L. P. Pitaevskii and A. Rosch R853
Observation of atomic tunneling from an accelerating optical potential ..... C. F. Bharucha, K. W. Madison, P. R. Morrow, S. R. Wilkinson, Bala Sundaram, and M. G. Raizen R857
Anomalous ellipticity dependence of high-order harmonic generation ..... M. Kakehata, H. Takada, H. Yumoto, and K. Miyazaki R861
Very-high-*n* Stark wave packets generated by an electric-field step ..... M. T. Frey, F. B. Dunning, C. O. Reinhold, and J. Burgdörfer R865


**Physical Review B, Vol. 55, 15 January 1997, Issue 4**


First-principles Wannier functions of silicon and gallium arsenide ..... Pablo Fernández, Andrea Dal Corso, Francesco Mauri, and Alfonso Baldereschi R1909
Application of the Friedel sum rule to symmetric molecular conductors ..... Supriyo Datta and Weidong Tian R1914
Asymmetries of spin-flip electronic Raman scattering in a III-V semiconductor quantum well ..... A. G. Mal'shukov, K. A. Chao, and M. Willander R1918
Current-carrying states in a random magnetic field ..... Kun Yang and R. N. Bhatt R1922
Dynamics of compressible edge and bosonization ..... J. H. Han and D. J. Thouless R1926
Surface photovoltage spectroscopy of porous silicon ..... L. Burstein, Y. Shapira, J. Partee, J. Shinar, Y. Lubianiker, and I. Balberg R1930
Skyrmions in quantum Hall systems with realistic force laws ..... N. R. Cooper R1934
Recombination dynamics of localized excitons in $In_{0.20}Ga_{0.80}N$-$In_{0.05}Ga_{0.95}N$ multiple quantum wells ..... Yukio Narukawa, Yoichi Kawakami, Shizuo Fujita, Shigeo Fujita, and Shuji Nakamura R1938
LO-phonon-enhanced microcavity polariton emission ..... S. Pau, G. Björk, H. Cao, F. Tassone, R. Huang, Y. Yamamoto, and R. P. Stanley R1942
Magnetic-field symmetry of dynamic capacitances ..... T. Christen and M. Büttiker R1946
Magnetoplasmon mode in connected quantum-wire pairs ..... W. R. Frank, A. O. Govorov, J. P. Kotthaus, C. Steinebach, V. Gudmundsson, W. Hansen, and M. Holland R1950
Specific heat of quantum Hall systems ..... Tapash Chakraborty and P. Pietiläinen R1954
Experimental and theoretical approach to spin splitting in modulation-doped $In_xGa_{1-x}As/InP$ quantum wells for $B \rightarrow 0$ ..... G. Engels, J. Lange, Th. Schäpers, and H. Lüth R1958
Atomic-scale surface structure and ultrasmooth morphology of molecular-beam-epitaxy-grown AlAs(001)-$(3 \times 2)$ ..... Shangjr Gwo, Hirotaka Ohno, and Hiroshi Tokumoto R1962
Magnetotunneling spectroscopy of one-dimensional wires ..... B. Kardynal, C. H. W. Barnes, E. H. Linfield, D. A. Ritchie, J. T. Nicholls, K. M. Brown, G. A. C. Jones, and M. Pepper R1966
Electric-field-induced ionization of negatively charged excitons in quantum wells ..... A. J. Shields, F. M. Bolton, M. Y. Simmons, M. Pepper, and D. A. Ritchie R1970
Self-consistent rate theory of submonolayer homoepitaxy with attachment/detachment kinetics ..... G. S. Bales and A. Zangwill R1973
Photoemission study of the transition from the insulating to metallic state in ultrathin layers ..... D. J. Huang, G. Reisfeld, and M. Strongin R1977
Conductance through a single atom ..... H. Mehrez, S. Ciraci, A. Buldum, and Inder P. Batra R1981
Quantitative determination of electric and magnetic second-order susceptibility tensors of chiral surfaces ..... Martti Kauranen, Jeffery J. Maki, Thierry Verbiest, Sven Van Elshocht, and André Persoons R1985
Ultrathin magnetic films: Electrochemistry versus molecular-beam epitaxy ..... W. Schindler and J. Kirschner R1989


*(Continued)*

# Current Rapid Communications-*Continued*

**Physical Review B, Vol. 55, 1 February 1997, Issue 6**


X-ray-fluorescence holography and multiple-energy x-ray holography: A critical comparison of atomic images ..... P. M. Len, T. Gog, C. S. Fadley, and G. Materlik R3323
Decay of localized vibrational states in glasses: A one-dimensional example ..... Jaroslav Fabian R3328
Protracted screening in the periodic Anderson model ..... A. N. Tahvildar-Zadeh, M. Jarrell, and J. K. Freericks R3332
Matrix-product-states approach to Heisenberg ferrimagnetic spin chains ..... A. K. Kolezhuk, H.-J. Mikeska, and Shoji Yamamoto R3336
Low-energy properties of antiferromagnetic spin-$\frac{1}{2}$ Heisenberg ladders with an odd number of legs ..... Beat Frischmuth, Stephan Haas, German Sierra, and T. M. Rice R3340
Integrabilities of the long-range $t$-$J$ models with twisted boundary conditions ..... James T. Liu and D. F. Wang R3344
Free carrier-induced ferromagnetism in structures of diluted magnetic semiconductors ..... T. Dietl, A. Haury, and Y. Merle d'Aubigné R3347
Alternating commensurate-incommensurate structures in the magnetic phase diagram of $CsNiF_3$ ..... C. Pich and F. Schwabl R3351
High-resolution angle-resolved photoemission study of CeP: Narrow-band formation of 4$f$ electrons ..... H. Kumigashira, S.-H. Yang, T. Yokoya, A. Chainani, T. Takahashi, A. Uesawa, and T. Suzuki R3355
Dynamics of the one-dimensional Heisenberg model and optical absorption of spinons in cuprate antiferromagnetic chains ..... J. Lorenzana and R. Eder R3358
Magnetoimpedance aftereffect in a soft magnetic amorphous wire .... M. Knobel, M. L. Sartorelli, and J. P. Sinnecker R3362
Alkali-metal stoichiometry and structure of $K_4C_{60}$ and $Rb_4C_{60}$ ..... Christine A. Kuntscher, Götz M. Bendele, and Peter W. Stephens R3366
Capillary waves in $^3$He-$^4$He solutions and the properties of localized electrons on the helium surface ..... Sviatoslav S. Sokolov, Guo-Qiang Hai, and Nelson Studart R3370
Coexistence of magnetism and superconductivity $R_{1.4}Ce_{0.6}RuSr_2Cu_2O_{10-\delta}$($R$ = Eu and Gd) ..... I. Felner, U. Asaf, Y. Levi, and O. Millo R3374
Electromagnetic response of a superconductor near its critical temperature ..... Chung-Yu Mou R3378
Effect of field tilting on the dynamics of vortices pinned by correlated disorder ..... N. Shnerb R3382
Effect of Ca substitution and pressure on the transport and magnetic properties of $Sr_{14}Cu_{24}O_{41}$ with doped two-leg Cu-O ladders ..... N. Motoyama, T. Osafune, T. Kakeshita, H. Eisaki, and S. Uchida R3386
Nonmonotonic evolution of out-of-plane resistivity with Pr doping in $Y_{1-x}Pr_xBa_2Cu_3O_{7-\delta}$ single crystals ..... C. N. Jiang, A. R. Baldwin, G. A. Levin, T. Stein, C. C. Almasan, D. A. Gajewski, S. H. Han, and M. B. Maple R3390
Slow antiferromagnetic dynamics in the low-temperature tetragonal phase of $La_{2-x}Sr_xCuO_4$ as revealed by ESR of Gd spin probes ..... V. Kataev, B. Rameev, B. Büchner, N. Hucker, and R. Borowski R3394
Evidence for a Josephson tunnel current in all *in situ* $c$-$YBa_2Cu_3O_7$/Pb junctions ..... J. Lesueur, M. Aprili, A. Goulon, T. J. Horton, and L. Dumoulin R3398
Anomalous magnetization peak effect in spiral-grown $Bi_2Sr_2CaCu_2O_y$ crystals ..... X. L. Wang, J. Horvat, H. K. Liu, J. N. Li, and S. X. Dou R3402
Observation of Pr magnetic order in $PrBa_2Cu_3O_7$ ... S. Skanthakumar, J. W. Lynn, N. Rosov, G. Cao, and J. E. Crow R3406
Superconducting order parameter in partially substituted $Bi_2Sr_2CaCu_2O_{8+x}$ single crystals as measured by the tunneling effect ..... H. Hancotte, R. Deltour, D. N. Davydov, A. G. M. Jansen, and P. Wyder R3410
Doping-dependent quasiparticle band structure in cuprate superconductors ..... R. Eder, Y. Ohta, and G. A. Sawatzky R3414


**Physical Review D, Vol. 55, 15 January 1997, Issue 2**


Detectability of inflation-produced gravitational waves ..... Michael S. Turner R435
Fine structure of Choptuik's mass-scaling relation ..... Shahar Hod and Tsvi Piran R440
Critical amplitudes in two-dimensional theories ..... A. V. Smilga R443


**Physical Review D, Vol. 55, 1 February 1997, Issue 3**


Search for $\phi$ mesons in $\tau$ lepton decay ..... P. Avery *et al.* (CLEO Collaboration) R1119
Is factorization for isolated photon cross sections broken? ..... P. Aurenche, M. Fontannaz, J. Ph. Guillet, A. Kotikov, and E. Pilon R1124
Long distance contribution to $D \to \pi l^+ l^-$ ..... Paul Singer and Da-Xin Zhang R1127
Forward scattering amplitude of virtual longitudinal photons at zero energy ..... B. L. Ioffe R1130
Improving flavor symmetry in the Kogut-Susskind hadron spectrum ..... Tom Blum, Carleton DeTar, Steven Gottlieb, Kari Rummukainen, Urs M. Heller, James E. Hetrick, Doug Toussaint, R. L. Sugar, and Matthew Wingate R1133
Anomalous U(1)-mediated supersymmetry breaking, fermion masses, and natural suppression of FCNC and $CP$-violating effects ..... R. N. Mohapatra and Antonio Riotto R1138