

BRIEF REPORTS

Electronic structure: wide-band, narrow-band, and strongly correlated systems

Susceptibility model for the homogeneous electron gas (3 pages)	193101
Massimiliano Corradini and Rodolfo Del Sole	
Neutron scattering study of crystal fields in CeRhIn ₅ (4 pages)	193102
A. D. Christianson, J. M. Lawrence, P. G. Pagliuso, N. O. Moreno, J. L. Sarrao, J. D. Thompson, P. S. Riseborough, S. Kern, E. A. Goremychkin, and A. H. Lacerda	
Different routes to charge disproportionation in perovskite-type Fe oxides (4 pages)	193103
J. Matsuno, T. Mizokawa, A. Fujimori, Y. Takeda, S. Kawasaki, and M. Takano	
Poly(para-phenylene) with the end structure of CH ₂ -(C ₆ H ₄) _n -H provides nearly zero band gaps in long chains with $n > 6$ (4 pages)	193104
Yuriko Aoki, Tomofumi Tada, and Yuuichi Orimoto	
Screening in the exchange term of the electron-hole interaction of the Bethe-Salpeter equation (3 pages)	193105
Lorin X. Benedict	

Semiconductors II: surfaces, interfaces, microstructures, and related topics

Anisotropic spin and charge transport in presence of spin-orbit interaction (4 pages)	193301
T. P. Pareek	
Coherent control of biexcitonic polarization (3 pages)	193302
H. G. Breunig, T. Voss, I. Rückmann, and J. Gutowski	
Magneto-optical properties of charged excitons in quantum dots (4 pages)	193303
C. Schulhauser, D. Haft, R. J. Warburton, K. Karrai, A. O. Govorov, A. V. Kalameitsev, A. Chaplik, W. Schoenfeld, J. M. Garcia, and P. M. Petroff	
Stress relief from reconstructions on Sb/Si(001) (4 pages)	193304
Yao He, X. H. Zhang, and J. G. Che	
Strong carrier confinement and evidence for excited states in self-assembled InAs quantum islands grown on InP(001) (4 pages)	193305
B. Salem, T. Benyattou, G. Guillot, C. Bru-Chevallier, G. Bremond, C. Monat, G. Hollinger, and M. Gendry	
Phonon decoherence of quantum entanglement: Robust and fragile states (4 pages)	193306
T. Yu and J. H. Eberly	
Comparison between a sp^3d^5 tight-binding and an effective-mass description of silicon quantum dots (4 pages)	193307
Johann Sée, Philippe Dollfus, and Sylvie Galdin	
Mesoscopic Luttinger liquid theory in an Aharonov-Bohm ring (4 pages)	193308
Mun Dae Kim, Sam Young Cho, Chul Koo Kim, and Kyun Nahm	



Resonant x-ray intensity enhancement in a two-layer crystalline heterostructure (3 pages)	193309
I. R. Prudnikov	
Ellipsometric characterization of random and random-dimer GaAs-Al _x Ga _{1-x} As superlattices (3 pages)	193310
V. Bellani, G. B. Parravicini, E. Diez, F. Domínguez-Adame, and R. Hey	
van Hove singularities in disordered multichannel quantum wires and nanotubes (4 pages)	193311
S. Hügler and R. Egger	
Magnetoplasmons and band nonparabolicity in two-dimensional electron gas (4 pages)	193312
Yu. A. Bychkov and G. Martinez	
Origin of step formation on the GaAs(311) surface (4 pages)	193313
Z. M. Wang, V. R. Yazdanpanah, C. L. Workman, W. Q. Ma, J. L. Shultz, and G. J. Salamo	

Surface physics, low-dimensional systems, and related topics

Infrared absorption enhancement of C ₆₀ on silver islands: Contribution of charge transfer and collective electron resonance (4 pages)	193401
T. Wadayama, M. Takada, K. Sugiyama, and A. Hatta	
Interlayer conduction band states in graphite-sulfur composites (3 pages)	193402
E. Z. Kurmaev, A. V. Galakhov, A. Moewes, S. Moehlecke, and Y. Kopelevich	
Catalysis of nanotube plasticity under tensile strain (4 pages)	193403
Pablo Jensen, Julian Gale, and X. Blase	
Final-state interference effects in valence band photoemission of (C ₅₉ N) ₂ (4 pages)	193404
Michael R. C. Hunt, Thomas Pichler, Lidija Siller, Paul A. Brühwiler, Mark S. Golden, Nikos Tagmatarchis, Kosmas Prassides, and Petra Rudolf	
Luttinger parameter <i>g</i> for metallic carbon nanotubes and related systems (4 pages)	193405
William Que	
Entangled spin states in self-assembled monolayer systems (3 pages)	193406
Gennady P. Berman, Vladimir I. Tsifrinovich, and David L. Allara	
Optical response of one-dimensional ordered mesoporous materials (3 pages)	193407
C. S. Liu and L.-M. Peng	
Electron attachment and dynamics of alkali atoms in Al ₁₃ X (X=Li-Cs) clusters (4 pages)	193408
C. Ashman, S. N. Khanna, and M. R. Pederson	

ARTICLES

Electronic structure: wide-band, narrow-band, and strongly correlated systems

Stabilization of charge-density waves in 1T-TaX ₂ (X=S, Se, Te): First-principles total energy calculations (10 pages)	195101
S. Sharma, L. Nordström, and B. Johansson	
Metal-insulator transition and charge ordering in the extended Hubbard model at one-quarter filling (5 pages)	195102
M. Calandra, J. Merino, and Ross H. McKenzie	
Valency of rare earths in RIn ₃ and RSn ₃ : <i>Ab initio</i> analysis of electric-field gradients (10 pages)	195103
S. Jalali Asadabadi, S. Cottenier, H. Akbarzadeh, R. Saki, and M. Rots	
Band- and <i>k</i> -dependent self-energy effects in the unoccupied and occupied quasiparticle band structure of Cu (8 pages)	195104
V. N. Strocov, R. Claessen, F. Aryasetiawan, P. Blaha, and P. O. Nilsson	
Dynamical diffraction explanation of the anomalous transmission of light through metallic gratings (11 pages)	195105
M. M. J. Treacy	

Nonlocal electrodynamic modeling of fluorescence characteristics for molecules in a spherical cavity (7 pages)	195106
M. H. Hider and P. T. Leung	
X-ray absorption near-edge structure calculations with the pseudopotentials: Application to the <i>K</i> edge in diamond and α -quartz (8 pages)	195107
Mathieu Taillefumier, Delphine Cabaret, Anne-Marie Flank, and Francesco Mauri	
Tunable photonic band gap in self-assembled clusters of floating magnetic particles (7 pages)	195108
Y. Saado, M. Golosovsky, D. Davidov, and A. Frenkel	
Influence of spin-wave excitations on the ferromagnetic phase diagram in the Hubbard model (7 pages)	195109
W. Rumsch and W. Nolting	
Distinguishing disorder-induced bands from allowed Raman bands in graphite (11 pages)	195110
Tsachi Livneh, Tom L. Haslett, and Martin Moskovits	
Magnetic quantum oscillations of the longitudinal conductivity σ_{zz} in quasi-two-dimensional metals (12 pages)	195111
T. Champel and V. P. Mineev	
Spectral sharpening of the Pt <i>L</i> edges by high-resolution x-ray emission (7 pages)	195112
F. M. F. de Groot, M. H. Krisch, and J. Vogel	
Failure of single-parameter scaling of wave functions in Anderson localization (5 pages)	195113
S. L. A. de Queiroz	

Semiconductors I: bulk

Tight-binding molecular-dynamics simulations of amorphous silicon carbides (6 pages)	195201
V. I. Ivashchenko, P. E. A. Turchi, V. I. Shevchenko, L. A. Ivashchenko, and G. V. Rusakov	
Photonic crystals versus diffraction gratings in Smith-Purcell radiation (12 pages)	195202
Syuichi Yamaguti, Jun-ichi Inoue, Olivier Haeberlé, and Kazuo Ohtaka	
Elementary energy bands in <i>ab initio</i> calculations of the YAlO_3 and SbSI crystal band structure (9 pages)	195203
D. M. Bercha, K. Z. Rushchanskii, M. Sznajder, A. Matkovskii, and P. Potera	
Far-Infrared dielectric anisotropy and phonon modes in spontaneously CuPt-ordered $\text{Ga}_{0.52}\text{In}_{0.48}\text{P}$ (10 pages)	195204
T. Hofmann, V. Gottschalch, and M. Schubert	
Density of states and group velocity of electrons in SiO_2 calculated from a full band structure (10 pages)	195205
Elena Gnani, Susanna Reggiani, and Massimo Rudan	
Fano-type interference in the Raman spectrum of photoexcited Si (6 pages)	195206
Valentin Magidson and Robert Beserman	
Characterization of hydrogen and silicon-related defects in CVD diamond by electron spin resonance (7 pages)	195207
K. Iakoubovskii and A. Stesmans	
Magnetic moments and interactions near the metal-insulator transition in amorphous magnetic semiconductors (8 pages)	195208
B. L. Zink, V. Preisler, D. R. Queen, and F. Hellman	
Theory of bond-length variations in relaxed, strained, and amorphous silicon-germanium alloys (11 pages) ...	195209
C. Tzoumanekas and P. C. Kelires	
Meyer-Neldel rule in charge-trapping metastability in <i>p</i> -type hydrogenated amorphous silicon (8 pages)	195210
Richard S. Crandall	
Correlation between the results of charge deep-level transient spectroscopy and ESR techniques for undoped hydrogenated amorphous silicon (8 pages)	195211
V. Nádaždy, R. Durný, I. Thurzo, E. Pinčík, A. Nishida, J. Shimizu, M. Kumeda, and T. Shimizu	
Long-range disorder and the Staebler-Wronski effect in <i>N</i> -type amorphous silicon (5 pages)	195212
T. J. Belich and J. Kakalios	

Electronic structure of dangling bonds in amorphous silicon studied via a density-matrix functional method (6 pages)	195213
R. G. Hennig, P. A. Fedders, and A. E. Carlsson	
Self-interstitial trapping by carbon complexes in crystalline silicon (6 pages)	195214
A. Mattoni, F. Bernardini, and L. Colombo	
Quasiparticle band structure of ZnS and ZnSe (6 pages)	195215
Weidong Luo, Sohrab Ismail-Beigi, Marvin L. Cohen, and Steven G. Louie	
Semiconductors II: surfaces, interfaces, microstructures, and related topics	
Dynamics of hot-electron scattering in GaN heterostructures (10 pages)	195301
P. Tripathi and B. K. Ridley	
First-principles study of As interstitials in GaAs: Convergence, relaxation, and formation energy (10 pages)	195302
J. T. Schick, C. G. Morgan, and P. Papoulias	
Electronic states of ultrathin InAs/InP (001) quantum wells: A tight-binding study of the effects of band offset, strain, and intermixing (8 pages)	195303
N. Shtinkov, P. Desjardins, and R. A. Masut	
Estimation of the isotope effect on the lattice thermal conductivity of group IV and group III-V semiconductors (9 pages)	195304
D. T. Morelli, J. P. Heremans, and G. A. Slack	
Structural, electronic, and dynamical properties of Si(110) capped with a monolayer of GaAs (7 pages)	195305
H. M. Tütüncü, G. P. Srivastava, and J. S. Tse	
Interplay between tip-induced band bending and voltage-dependent surface corrugation on GaAs(110) surfaces (14 pages)	195306
G. J. de Raad, D. M. Bruls, P. M. Koenraad, and J. H. Wolter	
Excitation-induced coherence in a semiconductor microcavity (5 pages)	195307
L. A. Dunbar, R. P. Stanley, M. Lynch, J. Hegarty, U. Oesterle, R. Houdré, and M. Ilegems	
Diffusion of hydrogen in different charge states in realistic models of <i>a</i> -Si:H (6 pages)	195308
P. A. Fedders	
Effect of projectile parameters on charge state formation of sputtered atoms (10 pages)	195309
S. F. Belykh, V. V. Palitsin, A. Adriaens, and F. Adams	
Renormalization approach to quantum-dot structures under strong alternating fields (9 pages)	195310
P. A. Schulz, P. H. Rivera, and Nelson Studart	
Tunneling characteristics of an electron-hole trilayer in a parallel magnetic field (4 pages)	195311
Y. Lin, E. E. Mendez, and A. G. Abanov	
Optical reflectance study of the wetting layers in (In, Ga)As self-assembled quantum dot growth on GaAs (001) (6 pages)	195312
Takashi Kita, Osamu Wada, T. Nakayama, and M. Murayama	
Persistent currents in the Heisenberg chain with a weak link (7 pages)	195313
T. M. R. Byrnes, R. J. Bursill, H.-P. Eckle, C. J. Hamer, and A. W. Sandvik	
Stability of spin states in quantum dots (11 pages)	195314
S. Lindemann, T. Ihn, T. Heinzel, W. Zwerger, K. Ensslin, K. Maranowski, and A. C. Gossard	
Evidence and evaluation of the Bychkov-Rashba effect in SiGe/Si/SiGe quantum wells (6 pages)	195315
Z. Wilamowski, W. Jantsch, H. Malissa, and U. Rössler	
Signs of quantum dot-lead matrix elements: The effect on transport versus spectral properties (10 pages) ...	195316
Alessandro Silva, Yuval Oreg, and Yuval Gefen	
Magnetophotoluminescence study of the Ga _{0.5} In _{0.5} P/GaAs heterointerface with a ordering-induced two-dimensional electron gas (7 pages)	195317
K. Yamashita, T. Kita, Y. Matsuura, O. Wada, C. Geng, F. Scholz, H. Schweizer, and K. Oe	

Cascade approach to current fluctuations in a chaotic cavity (7 pages)	195318
K. E. Nagaev, P. Samuelsson, and S. Pilgram	
Effects of non-orthogonality and electron correlations on the time-dependent current through quantum dots (12 pages)	195319
J. Fransson, O. Eriksson, and I. Sandalov	
Resonant Raman scattering by acoustic phonons in self-assembled quantum-dot multilayers: From a few layers to superlattices (7 pages)	195320
M. Cazayous, J. Groenen, A. Zwick, A. Mlayah, R. Carles, J. L. Bischoff, and D. Dentel	
Interface-related in-plane optical anisotropy in GaAs/Al _x Ga _{1-x} As single-quantum-well structures studied by reflectance difference spectroscopy (5 pages)	195321
Y. H. Chen, X. L. Ye, J. Z. Wang, Z. G. Wang, and Z. Yang	
Quantitative determination of the adsorption site of the OH radicals in the H ₂ O/Si(100) system (8 pages)	195322
S. Bengió, H. Ascolani, N. Franco, J. Avila, M. C. Asensio, E. Dudzik, I. T. McGovern, T. Giessel, R. Lindsay, A. M. Bradshaw, and D. P. Woodruff	
Green's function of the half-filled Landau level Chern-Simons theory in the temporal gauge (16 pages)	195323
J. Dietel	
Donor centers and absorption spectra in quantum dots (5 pages)	195324
Jaime Zaratiegui García, Pekka Pietiläinen, and Petteri Hyvönen	
Nonlinear dynamics in far-infrared driven quantum-well intersubband transitions (12 pages)	195325
Adriano A. Batista, P. I. Tamborenea, Bjorn Birnir, Mark S. Sherwin, and D. S. Citrin	
Dipolar vibrational modes in spherical semiconductor quantum dots (9 pages)	195326
M. I. Vasilevskiy	
Geometric blockade in a quantum dot: Transport properties by exact diagonalization (9 pages)	195327
A. D. Güçlü, Qing Feng Sun, Hong Guo, and R. Harris	
Magnetic-field effects in energy relaxation mediated by Kondo impurities in mesoscopic wires (13 pages)	195328
G. Göppert, Y. M. Galperin, B. L. Altshuler, and H. Grabert	
Surface second-harmonic generation from Si(111)(1×1)H: Theory versus experiment (5 pages)	195329
J. E. Mejía, Bernardo S. Mendoza, M. Palummo, G. Onida, R. Del Sole, S. Bergfeld, and W. Daum	
Time-resolved spectroscopy of (Al,Ga,In)N based quantum wells: Localization effects and effective reduction of internal electric fields (7 pages)	195330
P. Lefebvre, S. Anceau, P. Valvin, T. Taliercio, L. Konczewicz, T. Suski, S. P. Łepkowski, H. Teisseyre, H. Hirayama, and Y. Aoyagi	
Characterization of the SiO ₂ /Si interface by positron annihilation spectroscopy (10 pages)	195331
G. Brauer, W. Anwand, W. Skorupa, A. G. Revesz, and J. Kuriplach	
Acceptor-induced threshold energy for the optical charging of InAs single quantum dots (11 pages)	195332
E. S. Moskalenko, K. F. Karlsson, P. O. Holtz, B. Monemar, W. V. Schoenfeld, J. M. Garcia, and P. M. Petroff	
Formation of three-particle clusters in heterojunctions and MOSFET structures (5 pages)	195333
E. P. Nakhmedov and K. Morawetz	
Magnetoplasmon excitations and spin density instabilities in an integer quantum Hall system with a tilted magnetic field (27 pages)	195334
Daw-Wei Wang, S. Das Sarma, Eugene Demler, and Bertrand I. Halperin	
First principles investigation of the C-terminated β -SiC(001)-c(2×2) surface (8 pages)	195335
Fu-He Wang, Peter Krüger, and Johannes Pollmann	
Carrier transport and density of state distributions in pentacene transistors (8 pages)	195336
A. R. Völkel, R. A. Street, and D. Knipp	
Hole emission processes in InAs/GaAs self-assembled quantum dots (8 pages)	195337
W. -H. Chang, W. Y. Chen, T. M. Hsu, N. -T. Yeh, and J. -I. Chyi	

<i>Ab initio</i> study of linear and nonlinear optical responses of Si(111) surfaces (6 pages)	195338
H. Sano, G. Mizutani, W. Wolf, and R. Podlucky	
Surface physics, low-dimensional systems, and related topics	
ESR linewidth of graphitelike pyrocarbon: A time-resolved investigation of the chemical vapor deposition process (9 pages)	195401
C. Buschhaus and E. Dormann	
Density-functional investigations of the spin ordering in Fe ₁₃ clusters (10 pages)	195402
P. Bobadova-Parvanova, K. A. Jackson, S. Srinivas, and M. Horoi	
Resonant electron injection as an atomic-scale tool for surface studies (6 pages)	195403
K. Bobrov, L. Soukiassian, A. J. Mayne, G. Dujardin, and A. Hoffman	
Capture numbers in the presence of repulsive adsorbate interactions (16 pages)	195404
J. A. Venables and H. Brune	
Selective nanomanipulation using optical forces (11 pages)	195405
Patrick C. Chaumet, Adel Rahmani, and Manuel Nieto-Vesperinas	
Gapless plasmons in carbon nanotubes and their interactions with phonons (5 pages)	195406
K. Kempa	
Effect of growth rate on the spatial distributions of dome-shaped Ge islands on Si(001) (5 pages)	195407
Benjamin Cho, Thomas Schwarz-Selinger, Kenji Ohmori, David G. Cahill, and J. E. Greene	
Atomic-scale modeling of cluster-assembled Ni _x Al _{1-x} thin films (14 pages)	195408
M. Hou, V. S. Kharlamov, and E. E. Zhurkin	
Coalescence of fullerene cages: Topology, energetics, and molecular dynamics simulation (9 pages)	195409
Yufeng Zhao, Richard E. Smalley, and Boris I. Yakobson	
Quantum electronic stability and spectroscopy of ultrathin Pb films on Si(111)7×7 (7 pages)	195410
A. Mans, J. H. Dil, A. R. H. F. Ettema, and H. H. Weitering	
Dynamical LEED study of Pd(111)-(√3×√3)R30°-Xe (6 pages)	195411
M. Caragiu, Th. Seyller, and R. D. Diehl	
Magnetic-field dependence of energy levels in ultrasmall metal grains (8 pages)	195412
S. Adam, M. L. Polianski, X. Waintal, and P. W. Brouwer	
Temperature-dependent vacancy formation during the growth of Cu on Cu(001) (6 pages)	195413
C. E. Botez, P. F. Miceli, and P. W. Stephens	
Passive sliders on growing surfaces and advection in Burger's flows (4 pages)	195414
Barbara Drossel and Mehran Kardar	
Role of lone-pair interactions and local disorder in determining the interdependency of optical constants of <i>a</i> -CN:H thin films (9 pages)	195415
G. Fanchini, A. Tagliaferro, N. M. J. Conway, and C. Godet	
ESR-STM of a single precessing spin: Detection of exchange-based spin noise (5 pages)	195416
A. V. Balatsky, Yishay Manassen, and Ran Salem	
Morphology and strain-induced defect structure of ultrathin epitaxial Fe films on Mo(110) (10 pages)	195417
S. Murphy, D. Mac Mathúna, G. Mariotto, and I. V. Shvets	
Crystal structures and electronic properties of haloform-intercalated C ₆₀ (11 pages)	195418
René Windiks, Andreas Bill, Bernard Delley, and Vladimir Z. Kresin	
Carbon-nanotube-based quantum pump in the presence of a superconducting lead (8 pages)	195419
Yadong Wei and Jian Wang	

ERRATA

Publisher's Note: EPR study of shallow and deep phosphorous centers in 6H-SiC [Phys. Rev. B 66 , 165206 (2002)] (1 page)	199901(E)
P. G. Baranov, I. V. Ilyin, E. N. Mokhov, H. J. von Bardeleben, and J. L. Cantin	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 66, NUMBER 19

15 NOVEMBER 2002-I

Erratum: Electronic structure, bonding nature, and charge transfer in Ba@Si ₂₀ and Si ₂₀ clusters: An <i>ab initio</i> study [Phys. Rev. B 64 , 155403 (2001)] (1 page)	199902(E)
Takatoshi Nagano, Kazuo Tsumurya, Haruki Eguchi, and D. J. Singh	
Erratum: Electric- and magnetic-field-induced evolution of transport windows in a vertical quantum dot [Phys. Rev. B 65 , 035316 (2002)] (1 page)	199903(E)
B. Szafran, S. Bednarek, and J. Adamowski	
Cumulative Author Index	i