

## ROBERT JOYNT

### PUBLICATIONS

158. A generalized Stoner criterion and versatile spin ordering in 2D spin-orbit coupled systems, W. Liu, S. Chesi, D. Webb, U. Zuelicke, R. Winkler, R. Joynt, and Dimitrie Culcer, arXiv: 1708.0197, submitted to Phys. Rev. B
157. Superconductivity in Empty Bands and Multiple Order Parameter Chirality R. Joynt and Wen-Chin Wu, arXiv: 1705.05051, Nature Scientific Reports **7**, 12968 (2017)
156. Evanescent-wave Johnson noise in small devices, Vickram N. Premakumar, Maxim G. Vavilov, R. Joynt, arXiv:1705.01165, Quantum Science and Technology **3**, 105001 (2017)
155. Topology of quantum discord, Nga Nguyen and R. Joynt, arXiv:1310.5286, Phys. Rev. A **50**, 155301 (2017)
154. Numerical computations of separability probabilities, Jianjia Fei, R. Joynt, arXiv:1409.1993, Rep. Math. Phys. **78**, 177 (2016)
153. Improved error thresholds for measurement-free error correction Daniel Crow, R. Joynt, Mark Saffman, arXiv:1510.08359, Phys. Rev. Lett. **117**, 130503 (2016)
152. Quantum interference in topological insulator Josephson junctions, Juntao Song, Haiwen Liu, Jie Liu, Yuxian Li, R. Joynt, Qing-feng Sun, X. C. Xie, arXiv:1602.00813, Phys. Rev. B **93**, 195302 (2016)
151. Do micromagnets expose spin qubits to charge and Johnson noise? , Allen Kha, R. Joynt, Dimitrie Culcer, arXiv:1511.05247, Appl. Phys. Lett. **107**, 172101 (2015)
150. Compressed sensing for Hamiltonian reconstruction, Kenneth Rudinger, R. Joynt, arXiv:1410.3029, Phys. Rev. A **92**, 052322 (2015)
149. Signatures of the valley Kondo effect in Si/SiGe quantum dots, Mingyun Yuan, R. Joynt, Zhen Yang, Chunyang Tang, D. E. Savage, M. G. Lagally, M. A. Eriksson, and A. J. Rimberg, Phys. Rev. B **90**, 035302 (2014)
148. Electromagnetic fluctuations near thin metallic films, Luke S. Langsjoen, Amrit Poudel, Maxim G. Vavilov, R. Joynt, arXiv:1310.2224 , Phys. Rev. B **89**, 115401 (2014)

147. Sudden Decoherence Transitions for Quantum Discord, arXiv:1309.6355, Hyungjun Lim and R. Joynt, *J. Phys. A: Math. Theor.* **47**, 135305 (2014)
146. Classical Simulation of Quantum Noise, Daniel Crow and R. Joynt, arXiv:1309.6383, *Phys. Rev. A* **89**, 042123 (2014)
145. Comparing Algorithms for Graph Isomorphism Using Discrete- and Continuous-Time Quantum Random Walks, K. Rudinger, J.K. Gamble, E. Bach, M. Friesen, R. Joynt, and S. N. Coppersmith, *Journ. of Comp. and Theor. Nanoscience* **10**, 1653 (2013)
144. Power law scaling for the adiabatic algorithm for search engine ranking A. Frees, J. K. Gamble, K. Rudinger, E. Bach, M. Friesen, R. Joynt, and S. N. Coppersmith, arXiv:1211.2248, *Phys. Rev. A* **88**, 032307 (2013)
143. Relaxation of excited spin, orbital, and valley qubit states in single electron silicon quantum dots, C. Tahan and R. Joynt, arXiv:1301.0260, *Phys. Rev. B* **89**, 075302 (2014)
142. Magnetization-noise-induced collapse and revival of Rabi oscillations in circuit QED, A. De, R. Joynt, *Phys. Rev. A* **87**, 042336 (2013)
141. Relaxation in quantum dots due to evanescent-wave Johnson noise, A. Poudel, L. Langsjoen, M. Vavilov, and R. Joynt, *Phys. Rev. B* **87**, 045301 (2013)
140. Noninteracting multiparticle quantum random walks applied to the graph isomorphism problem for strongly regular graphs, K. Rudinger, J. K. Gamble, M. Wellons, E. Bach, S.N. Coppersmith, and R. Joynt, *Phys. Rev. A* **86**, 022334 (2012)
139. Qubit relaxation from evanescent-wave Johnson noise, L. Langsjoen, A. Poudel, M. G. Vavilov, R. Joynt, arXiv:1203.5024, *Phys. Rev. A* **86**, 010301(R) (2012)
138. Phenomenological noise model for superconducting qubits: two-state fluctuators and 1/f noise, D. Zhou, R. Joynt, *Supercon. Sci. Tech.* **25**, 045003 (2012)
137. Single-shot measurement of triplet-singlet relaxation in a Si/SiGe double quantum dot, J. R. Prance, Zhan Shi, C. B. Simmons, D. E. Savage, M. G. Lagally, L. R. Schreiber, L. M. K. Vandersypen, Mark Friesen, R. Joynt, S. N. Coppersmith, M. A. Eriksson, arXiv:1110.6431, *Phys. Rev. Lett.* **108**, 046808 (2012)

136. Topology of entanglement evolution of two qubits, D. Zhou, G.-W. Chern, J. Fei, R. Joynt, arXiv:1007.1749, *Internat. Journ. of Mod. Phys. B* **26** 1250054 (2012)
135. Disappearance of entanglement: a topological point of view, D. Zhou, R. Joynt, arXiv:1006.5474, *Quantum Inf. Proc.* **11**, 571 (2012)
134. Cooling of cryogenic electron bilayers via the Coulomb interaction, John King Gamble, Mark Friesen, R. Joynt, S. N. Coppersmith, arXiv:1104.2622, *Phys. Rev. B* **84**, 125321 (2011)
133. Quasi-Hamiltonian Method for Computation of Decoherence Rates, R. Joynt, Dong Zhou, and Qiang-Hua Wang, arXiv: 0906.2843, *Internat. Journ. of Mod. Phys. B* **25**, 2115 (2011)
132. Tunable spin-selective loading of a silicon spin qubit, C. B. Simmons, J. R. Prance, B. J. Van Bael, Teck Seng Koh, Zhan Shi, D. E. Savage, M. G. Lagally, R. Joynt, Mark Friesen, S. N. Coppersmith, M. A. Eriksson, arXiv:1010.5828, *Phys. Rev. Lett.* **106**, 156804 (2011)
131. Spin-orbit splittings in Si/SiGe quantum wells, M. Prada, G. Klimeck, and R. Joynt, arXiv: 0908.2417, *New J. Physics* **13**, 013009 (2011)
130. Suppression of decoherence and disentanglement by the exchange interaction, A. De, A. Lang, D. Zhou, and R. Joynt, arXiv 1006.5943, *Phys. Rev. A* **83**, 042331 (2011)
129. Pauli spin blockade and lifetime-enhanced transport in a Si/SiGe double quantum dot, C. B. Simmons, Teck Seng Koh, Nakul Shaji, Madhu Thalakulam, L. J. Klein, Hua Qin, H. Luo, D. E. Savage, M. G. Lagally, A. J. Rimberg, Robert Joynt, Robert Blick, Mark Friesen, S. N. Coppersmith, M.A. Eriksson, arXiv:1008.5398, *Phys. Rev. B* **82**, 245312 (2010)
128. Prediction of extremely long spin lifetimes in wurtzite semiconductors, N. Harmon, W.O. Putikka, and R. Joynt, *Appl. Phys. Lett.* **98**, 073108 (2011)
127. Theory of decoherence of N-state quantum systems in the Born-Markov approximation, R. Joynt, B. H. Nguyen, and V. H. Nguyen, *Adv. Nat. Sci.: Nanosci. Nanotechnol.* **1**, 039801 (2010)
126. Two-particle quantum walks applied to the graph isomorphism problem, J. K. Gamble, M. Friesen, D. Zhou, R. Joynt, S. N. Coppersmith, arXiv:1002.3003, *Phys. Rev. A* **81**, 052313 (2010)

125. Disentanglement and decoherence from classical non-Markovian noise: Random telegraph noise, D. Zhou, A. Lang and R. Joynt, *Quant. Inf. Proc.* **9**, 727-747 (2010)
124. Theory of Electron Spin Relaxation in n-doped Quantum Wells, N. Harmon, W.O. Putikka, and R. Joynt, *Phys. Rev. B* **81**, 085320 (2010)
123. Noise-induced looping on the Bloch sphere: Oscillatory effects in dephasing of qubits subject to broad-spectrum noise, Dong Zhou and R. Joynt, arXiv: 0907.0463, *Phys. Rev. A* **81**, 010103 (2010)
122. Spin relaxation in isotopically purified silicon quantum dots, M. Prada, R.H. Blick, R. Joynt, *Physica E* **42**, 639 (2010)
121. Charge sensing and controllable tunnel coupling in a Si/SiGe double quantum dot, C. B. Simmons, Madhu Thalakulam, B. M. Rosemeyer, B. J. Van Bael, E. K. Sackmann, D. E. Savage, M. G. Lagally, R. Joynt, M. Friesen, S. N. Coppersmith, and M. A. Eriksson, *Nano Letters* **9**, 3234 (2009)
120. Theory of electron spin decoherence in ZnO, N. Harmon, W.O. Putikka, and R. Joynt, *Phys. Rev. B* **79**, 115204 (2009)
119. Singlet-triplet relaxation in two-electron Silicon quantum dots, M. Prada, R.H. Blick, and R. Joynt, arXiv:0801.4898, (also selected for *Virtual Journal of Nanoscale Science & Technology*), *Phys. Rev. B* **77**, 115438 (2008)
118. Top-gated few-electron double quantum dot in Si/SiGe, N. Shaji, C. B. Simmons, L. J. Klein, Hua Qin, D. E. Savage, M.G. Lagally, S. N. Coppersmith, R. Joynt, M. Friesen, R. H. Blick, M. A. Eriksson, *Physica* **40**, 520523 (2008)
117. Spin blockade and lifetime-enhanced transport in a few-electron Si/SiGe double quantum dot, Nakul Shaji, C. B. Simmons, Madhu Thalakulam, Levente J. Klein, Hua Qin, H. Luo, D. E. Savage, M. G. Lagally, A. J. Rimberg, R. Joynt, M. Friesen, R. H. Blick, S. N. Coppersmith, M. A. Eriksson, arXiv:0708.0794, *Nature Physics* **4**, 540 (2008)
116. Electron spin coherence in Si/SiGe quantum wells, J. L. Truitt, K. A. Slinker, K. L. M. Lewis, D. E. Savage, C. Tahan, L. J. Klein, R. Joynt, M. G. Lagally, D. W. van der Weide, S. N. Coppersmith, M. Friesen and M. A. Eriksson, cond-mat/0411735, in “*Electron spin resonance and related phenomena in low dimensional structures*” (Topics in Applied Physics Series, Vol. 115), ed. M. Fanciulli (Springer, 2008)

115. Transfer matrix solution of a model of qubit decoherence due to telegraph noise, Qiang-hua Wang, Bin Cheng, and Robert Joynt, quant-physics/0707.3857, Phys. Rev. A **78**, 022313 (2008), also selected for the August 18, 2008 issue of Virtual Journal of Nanoscale Science & Technology
114. Spin-Valley Kondo Effect in Multi-electron Silicon Quantum Dots, Shiue-yuan Shiau and Robert Joynt, arXiv:0708.0408, Phys. Rev. B **76**, 205314 (2007)
113. Controllable Valley Splitting in Si/SiGe Quantum Devices, Srijit Goswami, K. A. Slinker, Mark Friesen, L. M. McGuire, J. L. Truitt, Charles Tahan, L. J. Klein, J. O. Chu, P. M. Mooney, D. W. van der Weide, Robert Joynt, S. N. Coppersmith, and M.A. Eriksson, Nature Physics **3**, 41 (2007).
112. Valley Kondo Effect in Silicon Quantum Dots, by Shiue-yuan Shiau, Sucismita Chutia, and Robert Joynt, cond-mat/0611722, selected for the June 11, 2007 issue of Virtual Journal of Nanoscale Science & Technology, Phys. Rev. B **75**, 195345 (2007)
111. Energy Level Statistics of Quantum Dots, Chien-Yu Tsau, Diu Nghiem, Robert Joynt, and J. Woods Halley, J. Phys.: Cond. Matt. **19**, 186215 (2007)
110. Detection and measurement of the Dzyaloshinskii-Moriya interaction in double quantum dot systems, S. Chutia, M. Friesen, and R. Joynt, cond-mat/0601098, Phys. Rev. B **73**, 241304 (2006)
109. Exact solution of qubit decoherence models by a transfer matrix method, D. Nghiem and R. Joynt, Phys. Rev. A **73**, 032333 (2006), (also selected for the April 3, 2006 issue of Virtual Journal of Nanoscale Science & Technology and the April, 2006 issue of Virtual Journal and Quantum Information Science)
108. Quantum dots in Si/SiGe 2DEGs with Schottky top-gated leads, K.A. Slinker, K.L.M. Lewis, C.C. Haselby, S. Goswami, L.J. Klein, J.O. Chu, S.N. Coppersmith, Robert Joynt, R.H. Blick, Mark Friesen, and M.A. Eriksson, New Journal of Physics **7**, 246 (2005)
107. Rashba spin-orbit coupling and spin relaxation in silicon quantum wells C. Tahan and R. Joynt, Phys. Rev. B **71**, 075315 (2005)
106. Physically-motivated dynamical algorithms for the graph isomorphism problem, Shiue-yuan Shiau, Robert Joynt, and S.N. Coppersmith, Quantum Information and Computation **5**, 492 (2005)
105. Spin relaxation in SiGe two-dimensional electron gases, C. Tahan and R. Joynt, cond-mat/0401615, Phys. Rev. B **71**, 075315 (2005)

104. Coulomb blockade in a silicon/silicon-germanium two-dimensional electron gas quantum dot, L. J. Klein, K. Slinker, J. L. Truitt, S. Goswami, K. L. M. Lewis, S. N. Coppersmith, D. W. van der Weide, Mark Friesen, R. Blick, D. E. Savage, M. G. Lagally, Charles Tahan, Robert Joynt, M. A. Eriksson, *Appl. Phys. Lett.* **84**, 4047 (2004)
103. Solid State Quantum Computing using Spin Qubits in Silicon Quantum Dots, (Invited Review), M.A. Eriksson, R. Blick, S.N. Coppersmith, M. Friesen, R. Joynt, M.G. Lagally, D. W. van der Weide, A.J. Rimberg, P. Mooney, J. Chu, and S. Koester, *Quantum Information Processing* **3**, 133 (2004)
102. Spin-based Quantum Dot Quantum Computing in Silicon, M. A. Eriksson, M. Friesen, S. N. Coppersmith, R. Joynt, L. Klein, K. Slinker, C. Tahan, P. M. Mooney, J. O. Chu, and S. Koester, *Quantum Information Processing* **3**, 133 (2004)
101. Coulomb Blockade in a Si:SiGe Two-Dimensional Electron Gas Quantum Dot, L.J. Klein, K. Slinker, J.L. Truitt, S Goswami, K.L.M. Lewis, S.N. Coppersmith, D.W. van der Weide, Mark Friesen, R. Blick, D.E. Savage, M.G. Lagally, Charlie Tahan, Robert Joynt, M.A. Eriksson, cond-mat/0404399, *Appl. Phys. Lett.* **84**, 4047 (2004)
100. Spin Readout and Initialization in a Semiconductor Quantum Dot, (with M. Friesen, M.A. Eriksson, and C. Tahan), cond-mat 0304422, *Phys. Rev. Lett.* **92**, 037901 (2004)
99. Theory of Optical Orientation in n-type Semiconductors, (with W.O. Putikka), cond-mat 0309155, *Phys. Rev. B* **70**, 113201 (2004)
98. One-dimensional quantum walks with absorbing boundaries (with E. Bach, M. Goldschen, S. Coppersmith and J. Watrous), *Journal of Computer and System Sciences* **69**, 562 (2004)
97. Electronic Inhomogeneity at Magnetic Domain Walls in Strongly-correlated Systems (with M. Rzchowski), cond-mat/0304287, *Europhys. Lett.* (2004)
96. Pseudo-Digital Qubits: A General Approach, M. Friesen, R. Joynt, and M. A. Eriksson, in *Proc. 6th International Conf. on Quantum Communication, Measurement and Computing (QCMC02)* (Rinton Press, Princeton, NJ, 2003)
95. A Relativistic Mean Field Model for Entrainment in General Relativistic Superfluid Neutron Stars, (with G. Comer), *Phys. Rev. D* **68**, 023002 (2003)
94. Pseudo-digital Qubits (with M. Friesen and M. Eriksson), *Appl. Phys. Lett.* **81**, 4619 (2002)

93. Ultrafast carrier relaxation dynamics in single-layer cuprates (with M.L. Schneider, et al.), *Europhysics Lett.* **60**, 460 (2002)
92. Decoherence of Spin Qubits in Si-based Quantum Computers (with C. Tahan and M. Friesen), *Phys. Rev. B* **66**, 035314 (2002)
91. Practical design and simulation of silicon-based quantum dot qubits, (with M. Friesen, M. Eriksson, D. van der Weide, D. Savage, P. Rugheimer, and M. Lagally), *Phys. Rev. B* **67**, 121301(R) (2003)
90. The Superconducting Phases of  $UPT_3$  (with L. Taillefer), *Rev. Mod. Phys.* **74**, 235 (2002)
89. Thermodynamics of Superconducting  $UPT_3$  (with W.C. Wu), *Phys. Rev. B* **65**, 104502 (2002)
88. Comment on "Final-state interactions in photoemission: Energy loss by the exiting electron", *Phys. Rev. B* **65**, 077403 (2002)
87. Transport and the Order Parameter of  $Sr_2RuO_4$  (with W.C. Wu), *Phys. Rev. B* **64**, 100507 (2001)
86. Ohmic Losses in Valence-band Photoemission Experiments (with R. Haslinger) *J. Elec. Spectr. Rel. Phen.* **117-118**, 31 (2001)
85. Theory of the Transition at 0.2 K in Ni-Doped  $Bi_2Sr_2CaCu_2O_{8+x}$  *Phys. Rev. Lett.* **84**, 3954 (2000)
84. Can Inelastic Processes Mimic a Pseudogap in Photoemission Experiments ? *Chinese Journal of Physics* **38**, 295 (2000)
83. Theory of Josephson Tunneling along the c-axis in YBCO, (with R. Haslinger) *J. Phys.: Cond. Mat.* **12**, 8179 (2000)
82. The Spectral, Structural and Transport Properties of the Pseudogap System  $(TaSe_4)_2I$ , (with N. Shannon), *Solid State Comm.* **115**, 411 (2000)
81. Theory of Percolative Conduction in Polycrystalline High- temperature Superconductors (with R. Haslinger), *Phys. Rev. B* **61**, 4206 (2000)
80. Pseudogaps and Extrinsic Losses in Photoemission Experiments on Poorly Conducting Materials, *Science* **284** 777 (1999)
79. Density of States in Impure Unconventional Superconductors, *Physica B: Condensed Matter* **259-261**, 479 (1999)

78. Analysis and Experimental Evidence of s+d Ordering in High- $T_c$  Superconductors (with J. Betouras), *Physica C: Superconductivity* **317-318**, 669 (1999)
77. c-axis Tunneling in YBCO (with R. Haslinger and J. Betouras), *J. Phys. Chem. Solids* **59**, 2026 (1998)
76. Nonlinear Magnetization in Superconductors with s+d Ordering, (with J. Betouras), *Phys. Rev. B* **57**, 11752 (1998)
75. The Anderson model in a superconductor:  $\Phi$ -derivable theory, (with A. Alastalo and M.M. Salomaa), *J. Phys.: Condens. Matter* **10**, L63 (1998)
74. Bound States and Impurity Averaging in Unconventional Superconductors, *J. Low Temp. Physics* **109**, 811 (1997)
73. Theory of Neutron Diffraction from the Flux Lattice of  $UPt_3$ , *Phys. Rev. Lett.* **78**, 3191 (1997)
72. Material-Specific Calculations of Gap Symmetry in High- $T_c$  Superconductors (with B. Koltenbah), *Repts. Prog. in Phys.* **60**, 23 (1997)
71. Superfluid densities in Neutron Star Matter, (with M. Borumand and W. Kluzniak), *Phys. Rev. C* **54**, 2745 (1996)
70. Interpretation of Photoemission Spectra of  $(TaSe_4)_2I$  as Evidence for Charge Density Fluctuations, *J. Phys: Cond. Matt.* **8**, 10493 (1996)
69. Ginzburg-Landau Theory of Josephson Field Effect Transistors (with J. Betouras, Z. Dong, T. Venkatesan, and P. Hadley), *Appl. Phys. Lett.* **69**, 2432 (1996)
68. Phase Diagram of Superconducting  $UPt_3$  in the  $E_{1g}$  model (with K. Park), *Phys. Rev. B* **53**, 12346 (1996)
67. Broken Rotation Symmetry in the Fractional Quantum Hall System, (with K. Musaelian), *Journal of Physics: Cond. Matter* **8**, L105 (1996)
66. Mixed Symmetry Superconductivity in Two-dimensional Fermi liquids (with K.A. Musaelian, J. Betouras, A.V. Chubukov), *Phys. Rev. B* **53**, 3598 (1996)
65. Theoretical Study of the Critical Current of  $YBa_2Cu_3O_{7-\delta}$  Bicrystals with Oxygen-deficient Grain Boundaries (with J. Betouras), *Physica C* **250**, 256 (1995)
64. Phase Diagram of  $UPt_3$  in the  $E_{1g}$  model (with K. Park), *Phys. Rev. Lett.* **74**, 4734 (1995)



63. Temperature-dependent Gap Anisotropy in  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$  as Evidence for a Mixed-symmetry Ground State (with J. Betouras), *Europhys. Lett.* **31**, 119 (1995)
62. Metal-Insulator Transition and Magnetic Ordering near the Nagaoka Limit (with Q. P. Li), *Phys. Rev.* **B49**, 1632 (1994)
61. Josephson Coupling and Magnetism in d-wave Superconductors (with H. Bark), *Jour. Korean Phys. Soc.* **27**, 76 (1994)
60. The Effect of Geometry on the Critical Currents of Thin Films (with G. Stejic, A. Gurevich, E. Kadyrov, D. K. Christen, and D. C. Larbalestier), *Phys. Rev.* **B49**, 1274 (1994)
59. Photoemission and Tunneling as Tests of Fluctuating Superconductivity in High- $T_c$  Superconductors (with K. Park), *Phys. Rev.* **B48**, 16833 (1993)
58. Superconducting  $\text{UPt}_3$  under Pressure, *Phys. Rev. Lett.* **71**, 3015 (1993)
57. Mixed s-wave and d-wave Superconductivity in High- $T_c$  systems, (with B. Koltenbah and Q. P. Li) *Phys. Rev.* **B48**, 437(1993)
56. Nuclear Relaxation in the Superconducting State of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ : Evidence for the s+id State, *Phys. Rev* **B47**, 530 (1993)
55. Mott-Hubbard Metal-Insulator Transition in Hubbard Models at High Spin, (with Q. P. Li) *Phys. Rev.* **B47**, 3974 (1993)
54. Nuclear Relaxation Rates, Penetration Depth, and Energy-dependent Gap Functions in High- $T_c$  Superconductors (with Q. P. Li), *Mod. Phys. Lett.* **B6**, 1145 (1992)
53. The Phase Diagram of  $\text{UPt}_3$ : A Status Report, *J. Mag. Mag. Mat.* **108**, 31 (1992)
52. Elementary Excitations in One-Dimensional Quantum Wires: Exact Equivalence Between RPA and Tomonaga-Luttinger Model (with Q. P. Li and S. Das Sarma), *Phys. Rev.* **B54**, 13713 (1992)
51. Nature of the Lower Superconducting Transition in  $\text{UPt}_3$ , *Europhys. Lett.* **16**, 289 (1991)
50. Domain Walls in S+id Superconductors, (with H. Bark), *Supercon. Sci. Tech.* **4**, 216 (1991)

49. Staggered Flux Phase and d-wave Phase of the t-J Model, (with G. J. Chen and F. C. Zhang), *J. Phys. Cond. Matt. Lett.* **3**, 5213 (1991)
48. Theory of Dichroism in High-temperature Superconductors (with Q. P. Li) *Phys. Rev.* **B44**, 4720 (1991)
47. Nature of the Lower Transition in  $U\text{Pt}_3$ , *Physica B* **171**, 305 (1991)
46. Exact Solution of the Ginzburg-Landau Equations for the Upper Critical Field of a d-wave Superconductor (with S. K. Sundaram), *Phys. Rev. Lett.* **66**, 512 (1991)
45. Calculations of the Effect of Point Defects on Hubbard Models of High Temperature Superconductivity (with J.W. Halley, S. Davis, and P. Samsel), *Bull. Mater. Sci.* **14**, 1069 (1991)
44. Phase Diagram of the t-J Model from Variational Monte Carlo Studies: Occurrence of Time-reversal Symmetry Breaking, (with G. J. Chen, F. C. Zhang, and C. Gros), *Phys. Rev.* **B42**, 2662 (1990)
43. Numerical Evaluation of Candidate Wavefunctions for High- $T_c$  Superconductors, in *Computer Simulation Studies of Condensed Matter Systems III* ed. D. P. Landau, B. Schuetzler, and K. K. Mon (Springer, Berlin, 1990)
42. Superconductivity and Antiferromagnetism in  $U\text{Pt}_3$ , *J. Phys. Cond. Matt. Lett.* **2**, 3415 (1990)
41. Effects of Disorder on Superconductivity in the Two-dimensional Hubbard Model (with W. Halley, S. Davis, and P. Samsel), *Proc. of the Int. Conf. on Valence Fluctuations*, (New World Scientific, Singapore, 1990)
40. Phase Diagram of a Multiple Quantum Well in a Strong Perpendicular Field (with X. Qiu and A. H. MacDonald), *Phys. Rev. B.* **42**, 1339 (1990)
39. Strongly Correlated Electronic Systems with One Hole: Dynamical Properties (with E. Dagotto, A. Moreo, S. Bacci, and E. Gagliano), *Phys. Rev.* **B41**, 9049 (1990)
38. Possible Phase Diagrams of  $U\text{Pt}_3$  (with V. P. Mineev, G. E. Volovik, and M. E. Zhitomirskii), *Phys. Rev. B.* **42**, 2014 (1990)
37. Dynamics of One Hole in the t-J Model (with E. Dagotto, A. Moreo, S. Bacci, and E. Gagliano), *Phys. Rev. B.* **41**, 2585 (1990)

36. Shape of the Upper Critical Field Curves in  $\text{Uru}_2\text{Si}_2$ : Evidence for Anisotropic Pairing, (with W. Kwok, L. DeLong, G. Crabtree, and D. Hinks), Phys. Rev. **B41**, 11649 (1990)
35. Upward Curvature of  $H_{c2}$  in High- $T_c$  Superconductors: Evidence for Anisotropic Pairing, Phys. Rev. **B41**, 4271 (1990)
34. Ground State of a Multiple Quantum Well: Possibility of Irrational Charge, (with X. Qiu, and A. H. MacDonald), Phys. Rev. **B40**, 11943 (1989)
33. Superconducting Phases of Heavy Fermion Superconductors, Physica C **162-164**, 1673 (1989)
32. Superconducting Phases of  $\text{UPt}_3$  in a Magnetic Field, (with S. K. Sundaram) Phys. Rev. **B40**, 8780 (1989)
31. Cleaved Single Crystals of High- $T_c$  Superconductors: Electron Spectroscopy and Electron Diffraction Studies, (with N. G. Stoffel et al.) Surf. Sci. **211/212**, 1123 (1989)
30. Theoretical and Experimental Analysis of the Superconducting Transition Effects on the Fermi-edge Photoemission Spectra, (with Y. Chang et al. Phys. Rev. B **39**, 4740 (1989)
29. Theoretical Determination of the Superconducting Phase of  $\text{UPt}_3$ , (with W. O. Putikka) Phys. Rev. **B39**, 701 (1989)
28. Mean Field RVB Theory: Degeneracy, Gauge Symmetry, and the Comparison to Exact Results (with F. C. Zhang, C. Gros, T. M. Rice and H. Shiba) Physica **C153**, 1251 (1988)
27. Phase Diagram of d-wave Superconductors in a Magnetic Field, Superconductor Science and Technology **1**, 210 (1988)
26. Numerical Studies of Superconductivity in the Two-dimensional Hubbard Model, in Proceedings of the Minnesota Workshop on Mechanisms of High-temperature Superconductivity ed. J. W. Halley (Addison- Wesley, New York, 1988)
25. Hole Propagation in Correlated Spin Systems, Phys. Rev. **B37**, 7979 (1988)
24. Relative Stability of Anisotropic Superconducting Phases in  $\text{UPt}_3$ , (with W. O. Putikka) Phys. Rev. **B37**, 2372 (1988)
23. Magnetic Properties of Anisotropic Superconductors, (with T. M. Rice) Phys. Rev. **B38**, 2345 (1988)

22. Coarse-grained Disorder above  $T_c$  in Iron, (with V. Heine) *Europhysics Lett.* **5**, 81 (1988)
21. Heavy Fermions and Heavy Fermion Superconductivity (with T. M. Rice, M. Sigrist, and C. Gros) in *Proceedings of the Fifth International Conference on Valence Fluctuations* (Plenum, New York, 1987)
20. Superconducting Instability in the Large-U limit of the Two-dimensional Hubbard Model, (with C. Gros, and T. M. Rice) *Z. Phys.* **B68**, 425 (1987), reprinted in *The Hubbard Model*, ed. M. Rasetti and A. Montorsi: (World Scientific, Singapore, 1991)
19. Behavior of Anisotropic Superconductors Under Uniaxial Stress, (with M. Sigrist, and T. M. Rice) *Phys. Rev.* **B36**, 5186 (1987)
18. Experiments Concerning the Connective Nature of Superconductivity in  $\text{YBa}_2\text{Cu}_2\text{O}_{7-x}$ , (with D. C. Larbalestier, et al.) *J. Appl. Phys.* **62**, 3308 (1987)
17. High-temperature Superconductor  $\text{Ba}_2\text{YCu}_2\text{O}_{7-x}$  : Plasmon and Ultraviolet Optical Transition Studies, (with Y. Chang, et al.) *Sol. St. Comm.* **63**, 717 (1987)
16. Experimental Evidence for Granular Superconductivity in Y-Ba-Cu-O at 100 to 160 K, (with X. Cai, and D. C. Larbalestier) *Phys. Rev. Lett.* **58**, 2798 (1987)
15. Photoemission Resonances of the High-Temperature Superconductor  $\text{Ba}_2\text{YCu}_2\text{O}_{7-x}$ , (with M. Onellion, et al.) *Phys. Rev.* **B36**, 819 (1987)
14. Antiferromagnetic Correlation in Almost-localized Fermi Liquids, (with C. Gros, and T. M. Rice) *Phys. Rev.* **B36**, 381 (1987).
13. Experimental Identification of Unconventional Superconducting Phases, *Physica Scripta* **36**, 175 (1987)
12. Possibility of Additional Phases of Anisotropic Superconductors under Uniaxial Stress, (M. Sigrist, and T. M. Rice) *Europhysics Lett.* **3**, 629 (1987)
11. Frequency and Temperature-dependent Conductivity in the Quantum Hall System, in *Application of High Magnetic Fields in Semiconductor Physics*, ed. G. Landwehr, p. 75 (Springer, Berlin, 1987)
10. Sound Attenuation due to Domain Walls in Anisotropic Superconductors with Applications to  $\text{U}_{1-x}\text{Th}_x\text{Be}_{13}$ , (with T. M. Rice and K. Ueda) *Phys. Rev. Lett.* **56**, 1412 (1986)

9. Strain Distortion in Anisotropic Superconductors, (with T. M. Rice) Phys. Rev. **B32**, 6074 (1985)
8. Semiclassical States in the Quantum Hall Effect, in Festkörperprobleme (Advances in Solid State Physics) vol. XXV, p. 413, P. Grosse (ed.), Vieweg, Braunschweig, 1985
7. Effect of Single-Particle Lifetimes in High Temperature Magnetic Neutron Scattering, J. Phys. **F15**, 2203 (1985)
6. Theory of the AC Breakdown of the Quantum Hall Effect, J. Phys. **C18**, L331 (1985)
5. Ground State Magnetovolume Effect in Alloys (with V. Heine) Jour. Magn. Magn. Mat. **45**, 74 (1984)
4. Scattering Wavefunctions in the Quantum Hall Effect, J. Phys. **C17**, 4807 (1984)
3. Electrical Resistance of Itinerant Ferromagnets, J. Phys. **F14**, 2363 (1984)
2. Conditions for the Quantum Hall Effect, (with R. E. Prange) Phys. Rev. **B29**, 3303 (1984)
1. Conduction in a Strong Field in Two Dimensions: The Quantum Hall Effect, (with R. E. Prange) Phys. Rev. **B25**, 2943 (1982).

### **BOOKS EDITED**

High- $T_c$  Superconducting Thin Films, Devices, and Applications (Am. Inst. of Physics, Conf. Proc. American Vacuum Society Meeting, Atlanta, GA 1988) (with G. Margaritondo and M. Onellion).

### **PATENTS**

1. U.S. Patent No. 6,597,010: "Solid-state quantum dot devices and quantum computing using nanostructured logic gates", awarded 7/22/2003. Inventors: M.A. Eriksson, M. Friesen, R. Joynt, M. Lagally, D. van der Weide, P. Rugheimer, and D. Savage.
2. U.S. Patent No. 7,137,697: "A self-contained, patterned quantum dot device for spin to charge transduction, readout and initialization, for use in quantum

computing and quantum information processing”, awarded 11/14/2007. Inventors:  
M. Friesen, C. Tahan, R. Joynt, and M.A. Eriksson.