

ROBERT JOYNT

PUBLICATIONS

191. Using stochastic resonance of two-level systems to increase qubit decoherence times, Yujun, S. N. Coppersmith, Robert Joynt, arXiv: 2407.18829, submitted to Physical Review A
190. Visualizing triangular-shaped vortex in superconductor hosting chiral multicomponent order parameters, Yuita Fujisawa, Anjana Krishnadas, Tomonori Nakamura, Chia-Hsiu Hsu, Barnaby R. M. Smith, Markel Pardo-Almanza, Yukiko Obata, Dyon van Dinter, Guoqing Chang, Robert Joynt, Yuki Nagai, Tadashi Machida, Yoshinori Okada, submitted to Physical Review Letters
189. Coupling conduction-band valleys in SiGe heterostructures via shear strain and Ge concentration oscillations, Benjamin D. Woods, Hudaiba Soomro, E. S. Joseph, Collin C. D. Frink, Robert Joynt, M. A. Eriksson, and Mark Friesen, arXiv:2310.18879, npj Quantum Information, 10:54 (2024), <https://doi.org/10.1038/s41534-024-00853-6>
188. Exploiting many-body localization for scalable variational quantum simulation, Chenfeng Cao, Yeqing Zhou, Swamit Tannu, Nic Shannon, Robert Joynt, arXiv:2404.17560, under review at Nature Communications
187. Interacting Random-field Dipole Defect Model for Heating in Semiconductor-based Qubit Devices, Yujun Choi and Robert Joynt, arXiv:2308.00711, Phys. Rev. Research **6**, 013168 (2024)
186. Spin-orbit enhancement in Si/SiGe heterostructures with oscillating Ge concentration, Benjamin D. Woods, M. A. Eriksson, Robert Joynt, and Mark Friesen, Phys. Rev. B **107**, 035418 (2023)
185. Fault-tolerant measurement-free quantum error correction with multiqubit gates, Michael A. Perlin, Vickram N. Premakumar, Jiakai Wang, Mark Saffman and Robert Joynt, Phys. Rev. A **108**, 062426 (2023)
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180. SiGe quantum wells with oscillating Ge concentrations for quantum dot qubits, Thomas McJunkin, Benjamin Harpt, Yi Feng, Merritt Losert, Rajib Rahman, J. P. Dodson, M. A. Wolfe, D. E. Savage, M. G. Lagally, S. N. Coppersmith, Mark Friesen, Robert Joynt, and M. A. Eriksson, arXiv:2112.09765, Nature Communications **13**, 7777 (2022)
179. Quantum approximate optimization algorithm with adaptive bias fields, Yunlong Yu, Chenfeng Cao, Carter Dewey, Xiang-Bin Wang, Nic Shannon, and Robert Joynt, Phys. Rev. Research **4**, 023249 (2022)
178. Building a Quantum Engineering Undergraduate Program, A. Asfaw *et al.*, arXiv:2108.01311, IEEE Transactions on Education **65**, 220 (2022)
177. Anisotropy with respect to the applied magnetic field in relaxation and dephasing times of spin qubits, Yujun Choi and Robert Joynt, npj Quant. Info. **8**, 70 (2022); <https://doi.org/10.1038/s41534-022-00576-6>
176. Magnetic Noise from Metal Objects near Qubit Arrays, Jonathan Kenny and R. Joynt, Phys. Rev. A **103**, 062401 (2021)
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164. Error Mitigation in Quantum Computers subject to Spatially Correlated Noise, V. N. Premakumar, R. Joynt, arXiv: 1812:07076

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PATENTS

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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.
3. U.S. Patent Application No. P190129US01: "Silicon-germanium heterostructures with quantum wells having oscillatory germanium concentration profiles for increased valley splitting." Inventors: M. Friesen, D. Savage, S.N. Coppersmith, R. Joynt, and M.A. Eriksson. Patent pending.
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