

R. McDermott – Publications

1. R. McDermott, M. G. Vavilov, B. L. T. Plourde, F. K. Wilhelm, P. J. Liebermann, O. A. Mukhanov, and T. A. Ohki, Quantum-Classical Interface Based on Single Flux Quantum Digital Logic, arXiv:1710.04645 (invited submission to special focus issue of *Quantum Sci. Technol.*) (2017).
2. T. Thorbeck, S. Zhu, E. Leonard Jr., R. Barends, J. Kelly, J. M. Martinis, and R. McDermott, Reverse Isolation and Backaction of the SLUG Microwave Amplifier, *Phys. Rev. Applied* **8**, 054007 (2017).
3. B. T. Gard, K. Jacobs, R. McDermott, and M. Saffman, Microwave-to-optical Frequency Conversion Using a Cesium Atom Coupled to a Superconducting Resonator, *Phys. Rev. A* **96**, 013833 (2017).
4. U. Patel, I. V. Pechenezhskiy, B. L. T. Plourde, M. G. Vavilov, and R. McDermott, Phonon-Mediated Quasiparticle Poisoning of Superconducting Microwave Resonators, arXiv:1610.09351 (submitted to *Phys. Rev. B*) (2016).
5. M. Schöndorf, L. C. G. Govia, M. G. Vavilov, R. McDermott, and F. K. Wilhelm, Optimizing Single Microwave-photon Detection: Input-Output Theory, arXiv:1609.08887 (submitted to *Quantum Sci. Technol.*) (2016).
6. P. Kumar, S. Sendelbach, M. A. Beck, J. W. Freeland, Z. Wang, H. Wang, C. C. Yu, R. Q. Wu, D. P. Pappas, and R. McDermott, Origin and Reduction of $1/f$ Magnetic Flux Noise in Superconducting Devices, *Phys. Rev. Applied* **6**, 041001 (selected as Editors' Suggestion) (2016).
7. M. A. Beck, J. A. Isaacs, D. Booth, J. D. Pritchard, M. Saffman, and R. McDermott, Optimized Coplanar Waveguide Resonators for a Superconductor-Atom Interface, *Appl. Phys. Lett.* **109**, 092602 (2016).
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9. L. C. G. Govia, E. J. Pritchett, C. Xu, B. L. T. Plourde, M. G. Vavilov, F. K. Wilhelm, and R. McDermott, High-fidelity Qubit Measurement with a Microwave Photon Counter, *Phys. Rev. A* **90**, 062307 (2014).
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11. R. McDermott and M. G. Vavilov, Accurate Qubit Control with Single Flux Quantum Pulses, *Phys. Rev. Applied* **2**, 014007 (2014).

12. D. Hover, S. Zhu, T. Thorbeck, G. J. Ribeill, D. Sank, J. Kelly, R. Barends, J. M. Martinis, and R. McDermott, High Fidelity Qubit Readout with the Superconducting Low-Inductance Undulatory Galvanometer Microwave Amplifier, *Appl. Phys. Lett.* **104**, 152601 (2014).
13. J. D. Pritchard, J. A. Isaacs, M. A. Beck, R. McDermott, and M. Saffman, Hybrid Atom–Photon Quantum Gate in a Superconducting Microwave Resonator, *Phys. Rev. A* **89**, 010301(R) (2014).
14. K.-H. Cho, U. Patel, J. Podkaminer, Y. Gao, C. M. Folkman, C. W. Bark, S. Lee, Y. Zhang, X. Q. Pan, R. McDermott, and C. B. Eom, Epitaxial Al₂O₃ Capacitors for Low Microwave Loss Superconducting Quantum Circuits, *APL Mater.* **1**, 042115 (2013).
15. U. Patel, Y. Gao, D. Hover, G. J. Ribeill, S. Sendelbach, and R. McDermott, Coherent Josephson Phase Qubit with a Single Crystal Silicon Capacitor, *Appl. Phys. Lett.* **102**, 012602 (2013).
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17. D. Hover, Y.-F. Chen, G. J. Ribeill, S. Zhu, S. Sendelbach, and R. McDermott, Superconducting Low-Inductance Undulatory Galvanometer Microwave Amplifier, *Appl. Phys. Lett.* **100**, 063503 (2012).
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21. S. Sendelbach, D. Hover, M. Mück, and R. McDermott, Complex Inductance, Excess Noise, and Surface Magnetism in dc SQUIDS, *Phys. Rev. Lett.* **103**, 117001 (2009).
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23. C. Song, T. W. Heitmann, M. P. DeFeo, K. Yu, R. McDermott, M. Neeley, J. M. Martinis, and B. L. T. Plourde, Microwave Response of Vortices in Superconducting Thin Films of Re and Al, *Phys. Rev. B* **79**, 174512 (2009).

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25. S. Sendelbach, D. Hover, A. Kittel, M. Mück, J. M. Martinis, and R. McDermott, Magnetism in SQUIDS at Millikelvin Temperatures, *Phys. Rev. Lett.* **100**, 227006 (2008). Supplementary notes: arXiv:0802.1511.
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R. McDermott – U.S. Patents

1. System and Method for Characterizing Ions Using a Superconducting Delay Line Detector: application allowed, patent forthcoming (2017).
Inventors: R. McDermott and J. Suttle
2. Systems and Methods for Controlling Magnetically Active Defects in Superconducting Circuits: application allowed, patent forthcoming (2017).
Inventors: R. McDermott and P. Kumar
3. System and Method for Controlling Superconducting Quantum Circuits Using Single Flux Quantum Logic Circuits: application allowed, patent forthcoming (2017).
Inventors: R. McDermott and M. G. Vavilov
4. United States Patent 9,692,423: System and Method for Circuit Quantum Electrodynamics Measurement (2017).
Inventors: R. McDermott, B. L. T. Plourde, M. G. Vavilov, F. K. Wilhelm, L. C. G. Govia, and E. J. Pritchett
5. United States Patent 8,861,619: System and Method for High-frequency Amplifier (2014).
Inventors: R. McDermott, D. Hover, G. J. A. Ribeill, and Y.-F. Chen
6. United States Patent 7,187,169: NMR and MRI Apparatus and Method (2007).
Inventors: J. Clarke, N. Kelso, S-K. Lee, M. Mößle, W. Myers, R. McDermott, B. ten Haken, A. Pines, and A. H. Trabesinger
7. United States Patent 6,885,192: SQUID Detected NMR and MRI at Ultralow Fields (2005).
Inventors: J. Clarke, R. McDermott, A. Pines, and A. H. Trabesinger