Robert J Schoelkopf

List of Publications by Year
in descending order

118 papers	33,168 citations	8181 76 h-index	20358 116 g-index
118 all docs	118 docs citations	118 times ranked	12288 citing authors

#	Article	IF	Citations
1	Strong coupling of a single photon to a superconducting qubit using circuit quantum electrodynamics. Nature, 2004, 431, 162-167.	27.8	3,195
2	Cavity quantum electrodynamics for superconducting electrical circuits: An architecture for quantum computation. Physical Review A, 2004, 69, .	2.5	2,317
3	Charge-insensitive qubit design derived from the Cooper pair box. Physical Review A, 2007, 76, .	2.5	2,184
4	Microwave oscillations of a nanomagnet driven by a spin-polarized current. Nature, 2003, 425, 380-383.	27.8	1,837
5	Superconducting Circuits for Quantum Information: An Outlook. Science, 2013, 339, 1169-1174.	12.6	1,529
6	Introduction to quantum noise, measurement, and amplification. Reviews of Modern Physics, 2010, 82, 1155-1208.	45.6	1,291
7	Coupling superconducting qubits via a cavity bus. Nature, 2007, 449, 443-447.	27.8	1,109
8	Demonstration of two-qubit algorithms with a superconducting quantum processor. Nature, 2009, 460, 240-244.	27.8	923
9	Observation of High Coherence in Josephson Junction Qubits Measured in a Three-Dimensional Circuit QED Architecture. Physical Review Letters, 2011, 107, 240501.	7.8	830
10	Wiring up quantum systems. Nature, 2008, 451, 664-669.	27.8	786
11	Resolving photon number states in a superconducting circuit. Nature, 2007, 445, 515-518.	27.8	685
12	The Radio-Frequency Single-Electron Transistor (RF-SET): A Fast and Ultrasensitive Electrometer. Science, 1998, 280, 1238-1242.	12.6	675
13	Extending the lifetime of a quantum bit with error correction in superconducting circuits. Nature, 2016, 536, 441-445.	27.8	603
14	Quantum-information processing with circuit quantum electrodynamics. Physical Review A, 2007, 75, .	2.5	550
15	Realization of three-qubit quantum error correction with superconducting circuits. Nature, 2012, 482, 382-385.	27.8	481
16	Preparation and measurement of three-qubit entanglement in a superconducting circuit. Nature, 2010, 467, 574-578.	27.8	476
17	Deterministically Encoding Quantum Information Using 100-Photon SchrÃ¶dinger Cat States. Science, 2013, 342, 607-610.	12.6	455
18	Suppressing charge noise decoherence in superconducting charge qubits. Physical Review B, 2008, 77, .	3.2	415

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19	High-Cooperativity Coupling of Electron-Spin Ensembles to Superconducting Cavities. Physical Review Letters, 2010, 105, 140501.	7.8	398
20	Observation of quantum state collapse and revival due to the single-photon Kerr effect. Nature, 2013, 495, 205-209.	27.8	394
21	Dynamically protected cat-qubits: a new paradigm for universal quantum computation. New Journal of Physics, 2014, 16, 045014.	2.9	394
22	Generating single microwave photons in a circuit. Nature, 2007, 449, 328-331.	27.8	378
23	Amplifying quantum signals with the single-electron transistor. Nature, 2000, 406, 1039-1046.	27.8	374
24	A coherent all-electrical interface between polar molecules and mesoscopic superconducting resonators. Nature Physics, 2006, 2, 636-642.	16.7	372
25	Phase-preserving amplification near the quantum limit with a Josephson ring modulator. Nature, 2010, 465, 64-68.	27.8	357
26	Confining the state of light to a quantum manifold by engineered two-photon loss. Science, 2015, 347, 853-857.	12.6	357
27	ac Stark Shift and Dephasing of a Superconducting Qubit Strongly Coupled to a Cavity Field. Physical Review Letters, 2005, 94, 123602.	7.8	351
28	Observation of Berry's Phase in a Solid-State Qubit. Science, 2007, 318, 1889-1892.	12.6	321
29	Optical antenna: Towards a unity efficiency near-field optical probe. Applied Physics Letters, 1997, 70, 1354-1356.	3.3	309
30	Quantum acoustics with superconducting qubits. Science, 2017, 358, 199-202.	12.6	284
31	Qubit-photon interactions in a cavity: Measurement-induced dephasing and number splitting. Physical Review A, 2006, 74, .	2.5	281
32	A SchrÃ¶dinger cat living in two boxes. Science, 2016, 352, 1087-1091.	12.6	244
33	Quantum non-demolition detection of single microwave photons in a circuit. Nature Physics, 2010, 6, 663-667.	16.7	233
34	Quantum error correction of a qubit encoded in grid states of an oscillator. Nature, 2020, 584, 368-372.	27.8	232
35	Nonlinear response of the vacuum Rabi resonance. Nature Physics, 2009, 5, 105-109.	16.7	226
36	Black-Box Superconducting Circuit Quantization. Physical Review Letters, 2012, 108, 240502.	7.8	226

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37	High-Fidelity Readout in Circuit Quantum Electrodynamics Using the Jaynes-Cummings Nonlinearity. Physical Review Letters, 2010, 105, 173601.	7.8	218
38	Quantum Back-Action of an Individual Variable-Strength Measurement. Science, 2013, 339, 178-181.	12.6	215
39	Circuit-QED: How strong can the coupling between a Josephson junction atom and a transmission line resonator be?. Annalen Der Physik, 2007, 16, 767-779.	2.4	211
40	Coherent suppression of electromagnetic dissipation due to superconducting quasiparticles. Nature, 2014, 508, 369-372.	27.8	201
41	Fast reset and suppressing spontaneous emission of a superconducting qubit. Applied Physics Letters, 2010, 96, .	3.3	200
42	Tracking photon jumps with repeated quantum non-demolition parity measurements. Nature, 2014, 511, 444-448.	27.8	195
43	Hardware-Efficient Autonomous Quantum Memory Protection. Physical Review Letters, 2013, 111, 120501.	7.8	189
44	Frequency Dependence of Shot Noise in a Diffusive Mesoscopic Conductor. Physical Review Letters, 1997, 78, 3370-3373.	7.8	187
45	Radio-Frequency Single-Electron Transistor as Readout Device for Qubits: Charge Sensitivity and Backaction. Physical Review Letters, 2001, 86, 3376-3379.	7.8	187
46	To catch and reverse a quantum jump mid-flight. Nature, 2019, 570, 200-204.	27.8	185
47	Implementing a universal gate set on a logical qubit encoded in an oscillator. Nature Communications, 2017, 8, 94.	12.8	183
48	Creation and control of multi-phonon Fock states in a bulk acoustic-wave resonator. Nature, 2018, 563, 666-670.	27.8	176
49	Analog information processing at the quantum limit with a Josephson ring modulator. Nature Physics, 2010, 6, 296-302.	16.7	174
50	Surface participation and dielectric loss in superconducting qubits. Applied Physics Letters, 2015, 107, .	3.3	170
51	Reaching 10â€‰ms single photon lifetimes for superconducting aluminum cavities. Applied Physics Letters, 2013, 102, .	3.3	168
52	Storage of Multiple Coherent Microwave Excitations in an Electron Spin Ensemble. Physical Review Letters, 2010, 105, 140503.	7.8	156
53	Deterministic teleportation of a quantum gate between two logical qubits. Nature, 2018, 561, 368-373.	27.8	154
54	Primary Electronic Thermometry Using the Shot Noise of a Tunnel Junction. Science, 2003, 300, 1929-1932.	12.6	147

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55	Demonstrating a Driven Reset Protocol for a Superconducting Qubit. Physical Review Letters, 2013, 110, 120501.	7.8	147
56	Optimized driving of superconducting artificial atoms for improved single-qubit gates. Physical Review A, 2010, 82, .	2.5	144
57	On-demand quantum state transfer and entanglement between remote microwave cavity memories. Nature Physics, 2018, 14, 705-710.	16.7	143
58	Measurement and control of quasiparticle dynamics in a superconducting qubit. Nature Communications, 2014, 5, 5836.	12.8	130
59	Observation of Photon-Assisted Noise in a Diffusive Normal Metalâ€“Superconductor Junction. Physical Review Letters, 2000, 84, 3398-3401.	7.8	129
60	Cavity State Manipulation Using Photon-Number Selective Phase Gates. Physical Review Letters, 2015, 115, 137002.	7.8	121
61	Multilayer microwave integrated quantum circuits for scalable quantum computing. Npj Quantum Information, 2016, 2, .	6.7	121
62	Fault-tolerant detection of a quantum error. Science, 2018, 361, 266-270.	12.6	113
63	Protocols for optimal readout of qubits using a continuous quantum nondemolition measurement. Physical Review A, 2007, 76, .	2.5	106
64	Deterministic Remote Entanglement of Superconducting Circuits through Microwave Two-Photon Transitions. Physical Review Letters, 2018, 120, 200501.	7.8	105
65	Controlled release of multiphoton quantum states from a microwave cavity memory. Nature Physics, 2017, 13, 882-887.	16.7	101
66	Universal control of an oscillator with dispersive coupling to a qubit. Physical Review A, 2015, 92, .	2.5	99
67	Non-Poissonian Quantum Jumps of a Fluxonium Qubit due to Quasiparticle Excitations. Physical Review Letters, 2014, 113, 247001.	7.8	98
68	Observation of â€œPhoton-Assistedâ€•Shot Noise in a Phase-Coherent Conductor. Physical Review Letters, 1998, 80, 2437-2440.	7.8	97
69	A CNOT gate between multiphoton qubits encoded in two cavities. Nature Communications, 2018, 9, 652.	12.8	95
70	Faithful conversion of propagating quantum information to mechanical motion. Nature Physics, 2017, 13, 1163-1167.	16.7	92
71	Entanglement of bosonic modes through an engineered exchange interaction. Nature, 2019, 566, 509-512.	27.8	88
72	Hardware-Efficient Quantum Random Access Memory with Hybrid Quantum Acoustic Systems. Physical Review Letters, 2019, 123, 250501.	7.8	86

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73	Detecting highly entangled states with a joint qubit readout. Physical Review A, 2010, 81, .	2.5	82
74	Life after charge noise: recent results with transmon qubits. Quantum Information Processing, 2009, 8, 105-115.	2.2	81
75	Measurements of Quasiparticle Tunneling Dynamics in a Band-Gap-Engineered Transmon Qubit. Physical Review Letters, 2012, 108, 230509.	7.8	78
76	Improving the quality factor of microwave compact resonators by optimizing their geometrical parameters. Applied Physics Letters, 2012, 100, .	3.3	78
77	Josephson Directional Amplifier for Quantum Measurement of Superconducting Circuits. Physical Review Letters, 2014, 112, 167701.	7.8	78
78	Holonomic Quantum Control with Continuous Variable Systems. Physical Review Letters, 2016, 116, 140502.	7.8	77
79	Deterministic protocol for mapping a qubit to coherent state superpositions in a cavity. Physical Review A, 2013, 87, .	2.5	74
80	Efficient Multiphoton Sampling of Molecular Vibronic Spectra on a Superconducting Bosonic Processor. Physical Review X, 2020, 10, .	8.9	73
81	Length scaling of bandwidth and noise in hotâ€electron superconducting mixers. Applied Physics Letters, 1996, 68, 3344-3346.	3.3	65
82	Single-Photon-Resolved Cross-Kerr Interaction for Autonomous Stabilization of Photon-Number States. Physical Review Letters, 2015, 115, 180501.	7.8	63
83	Large bandwidth and low noise in a diffusionâ€cooled hotâ€electron bolometer mixer. Applied Physics Letters, 1996, 68, 1558-1560.	3.3	61
84	Programmable Interference between Two Microwave Quantum Memories. Physical Review X, 2018, 8, .	8.9	56
85	An architecture for integrating planar and 3D cQED devices. Applied Physics Letters, 2016, 109, .	3.3	55
86	Noise performance of the radio-frequency single-electron transistor. Journal of Applied Physics, 2004, 95, 1274-1286.	2.5	50
87	Error-corrected gates on an encoded qubit. Nature Physics, 2020, 16, 822-826.	16.7	50
88	Normal-metal quasiparticle traps for superconducting qubits. Physical Review B, 2016, 94, .	3.2	47
89	Characterizing entanglement of an artificial atom and a cavity cat state with Bellâ€™s inequality. Nature Communications, 2015, 6, 8970.	12.8	46
90	High-Fidelity Measurement of Qubits Encoded in Multilevel Superconducting Circuits. Physical Review X, 2020, 10, .	8.9	45

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91	Quantum control of bosonic modes with superconducting circuits. Science Bulletin, 2021, 66, 1789-1805.	9.0	45
92	Shot noise thermometry down to 10mK. Applied Physics Letters, 2006, 89, 183123.	3.3	41
93	Mixing and noise in diffusion and phonon cooled superconducting hot-electron bolometers. Journal of Applied Physics, 1999, 85, 1644-1653.	2.5	40
94	Demonstration of superconducting micromachined cavities. Applied Physics Letters, 2015, 107, .	3.3	39
95	Multiplexing of radio-frequency single-electron transistors. Applied Physics Letters, 2002, 80, 3012-3014.	3.3	38
96	Continuous Quantum Nondemolition Measurement of the Transverse Component of a Qubit. Physical Review Letters, 2016, 117, 133601.	7.8	35
97	Suspending superconducting qubits by silicon micromachining. Applied Physics Letters, 2016, 109, .	3.3	34
98	Engineering bilinear mode coupling in circuit QED: Theory and experiment. Physical Review A, 2019, 99, .	2.5	34
99	Ultra-high-Qphononic resonators on-chip at cryogenic temperatures. APL Photonics, 2018, 3, 066101.	5.7	32
100	Quantization of inductively shunted superconducting circuits. Physical Review B, 2016, 94, .	3.2	30
101	Quantum Charge Fluctuations and the Polarizability of the Single-Electron Box. Physical Review Letters, 2003, 91, 106801.	7.8	27
102	High coherence superconducting microwave cavities with indium bump bonding. Applied Physics Letters, 2020, 116, .	3.3	27
103	Path-Independent Quantum Gates with Noisy Ancilla. Physical Review Letters, 2020, 125, 110503.	7.8	26
104	Cryogenics on a Chip. Physics Today, 2004, 57, 41-47.	0.3	20
105	Single-electron transistor backaction on the single-electron box. Physical Review B, 2005, 71, .	3.2	20
106	A high-performance cryogenic amplifier based on a radio-frequency single electron transistor. Applied Physics Letters, 2002, 81, 4859-4861.	3.3	19
107	Robust readout of bosonic qubits in the dispersive coupling regime. Physical Review A, 2018, 98, .	2.5	15
108	Detection of coherent 7.6 HZ oscillations during a burst from Aquila X-1. Astrophysical Journal, 1991, 375, 696.	4.5	15

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109	Free-standing silicon shadow masks for transmon qubit fabrication. AIP Advances, 2020, 10, .	1.3	14
110	Wireless Josephson amplifier. Applied Physics Letters, 2014, 104, .	3.3	11
111	Optimized tomography of continuous variable systems using excitation counting. Physical Review A, 2016, 94, .	2.5	9
112	Single-shot number-resolved detection of microwave photons with error mitigation. Physical Review A, 2021, 103, .	2.5	9
113	Ultrasensitive Quantum-Limited Far-Infrared STJ Detectors. IEEE Transactions on Applied Superconductivity, 2007, 17, 241-245.	1.7	8
114	Shot Noise Measurements in Diffusive Normal Metal-Superconductor (N-S) Junctions. Journal of Low Temperature Physics, 2000, 118, 671-678.	1.4	7
115	Spectrum of thermal fluctuation noise in diffusion and phonon cooled hot-electron mixers. Applied Physics Letters, 1998, 72, 1516-1518.	3.3	6
116	Title is missing!. Journal of Superconductivity and Novel Magnetism, 1999, 12, 741-746.	0.5	3
117	Quantum Information Processing with Superconducting Qubits and Cavities. , 2007, , .		2
118	Systematic errors in shot noise thermometer measurements. , 2008, , .		0