

# Robert J Schoelkopf

## List of Publications by Year in descending order

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118  
papers

33,168  
citations

8159

76  
h-index

20307

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. <i>Nature</i> , 2004, 431, 162-167.	13.7	3,195
2	Cavity quantum electrodynamics for superconducting electrical circuits: An architecture for quantum computation. <i>Physical Review A</i> , 2004, 69, .	1.0	2,317
3	Charge-insensitive qubit design derived from the Cooper pair box. <i>Physical Review A</i> , 2007, 76, .	1.0	2,184
4	Microwave oscillations of a nanomagnet driven by a spin-polarized current. <i>Nature</i> , 2003, 425, 380-383.	13.7	1,837
5	Superconducting Circuits for Quantum Information: An Outlook. <i>Science</i> , 2013, 339, 1169-1174.	6.0	1,529
6	Introduction to quantum noise, measurement, and amplification. <i>Reviews of Modern Physics</i> , 2010, 82, 1155-1208.	16.4	1,291
7	Coupling superconducting qubits via a cavity bus. <i>Nature</i> , 2007, 449, 443-447.	13.7	1,109
8	Demonstration of two-qubit algorithms with a superconducting quantum processor. <i>Nature</i> , 2009, 460, 240-244.	13.7	923
9	Observation of High Coherence in Josephson Junction Qubits Measured in a Three-Dimensional Circuit QED Architecture. <i>Physical Review Letters</i> , 2011, 107, 240501.	2.9	830
10	Wiring up quantum systems. <i>Nature</i> , 2008, 451, 664-669.	13.7	786
11	Resolving photon number states in a superconducting circuit. <i>Nature</i> , 2007, 445, 515-518.	13.7	685
12	The Radio-Frequency Single-Electron Transistor (RF-SET): A Fast and Ultrasensitive Electrometer. <i>Science</i> , 1998, 280, 1238-1242.	6.0	675
13	Extending the lifetime of a quantum bit with error correction in superconducting circuits. <i>Nature</i> , 2016, 536, 441-445.	13.7	603
14	Quantum-information processing with circuit quantum electrodynamics. <i>Physical Review A</i> , 2007, 75, .	1.0	550
15	Realization of three-qubit quantum error correction with superconducting circuits. <i>Nature</i> , 2012, 482, 382-385.	13.7	481
16	Preparation and measurement of three-qubit entanglement in a superconducting circuit. <i>Nature</i> , 2010, 467, 574-578.	13.7	476
17	Deterministically Encoding Quantum Information Using 100-Photon Schrödinger Cat States. <i>Science</i> , 2013, 342, 607-610.	6.0	455
18	Suppressing charge noise decoherence in superconducting charge qubits. <i>Physical Review B</i> , 2008, 77, .	1.1	415

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19	High-Cooperativity Coupling of Electron-Spin Ensembles to Superconducting Cavities. Physical Review Letters, 2010, 105, 140501.	2.9	398
20	Observation of quantum state collapse and revival due to the single-photon Kerr effect. Nature, 2013, 495, 205-209.	13.7	394
21	Dynamically protected cat-qubits: a new paradigm for universal quantum computation. New Journal of Physics, 2014, 16, 045014.	1.2	394
22	Generating single microwave photons in a circuit. Nature, 2007, 449, 328-331.	13.7	378
23	Amplifying quantum signals with the single-electron transistor. Nature, 2000, 406, 1039-1046.	13.7	374
24	A coherent all-electrical interface between polar molecules and mesoscopic superconducting resonators. Nature Physics, 2006, 2, 636-642.	6.5	372
25	Phase-preserving amplification near the quantum limit with a Josephson ring modulator. Nature, 2010, 465, 64-68.	13.7	357
26	Confining the state of light to a quantum manifold by engineered two-photon loss. Science, 2015, 347, 853-857.	6.0	357
27	ac Stark Shift and Dephasing of a Superconducting Qubit Strongly Coupled to a Cavity Field. Physical Review Letters, 2005, 94, 123602.	2.9	351
28	Observation of Berry's Phase in a Solid-State Qubit. Science, 2007, 318, 1889-1892.	6.0	321
29	Optical antenna: Towards a unity efficiency near-field optical probe. Applied Physics Letters, 1997, 70, 1354-1356.	1.5	309
30	Quantum acoustics with superconducting qubits. Science, 2017, 358, 199-202.	6.0	284
31	Qubit-photon interactions in a cavity: Measurement-induced dephasing and number splitting. Physical Review A, 2006, 74, .	1.0	281
32	A Schrödinger cat living in two boxes. Science, 2016, 352, 1087-1091.	6.0	244
33	Quantum non-demolition detection of single microwave photons in a circuit. Nature Physics, 2010, 6, 663-667.	6.5	233
34	Quantum error correction of a qubit encoded in grid states of an oscillator. Nature, 2020, 584, 368-372.	13.7	232
35	Nonlinear response of the vacuum Rabi resonance. Nature Physics, 2009, 5, 105-109.	6.5	226
36	Black-Box Superconducting Circuit Quantization. Physical Review Letters, 2012, 108, 240502.	2.9	226

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37	High-Fidelity Readout in Circuit Quantum Electrodynamics Using the Jaynes-Cummings Nonlinearity. <i>Physical Review Letters</i> , 2010, 105, 173601.	2.9	218
38	Quantum Back-Action of an Individual Variable-Strength Measurement. <i>Science</i> , 2013, 339, 178-181.	6.0	215
39	Circuit-QED: How strong can the coupling between a Josephson junction atom and a transmission line resonator be?. <i>Annalen Der Physik</i> , 2007, 16, 767-779.	0.9	211
40	Coherent suppression of electromagnetic dissipation due to superconducting quasiparticles. <i>Nature</i> , 2014, 508, 369-372.	13.7	201
41	Fast reset and suppressing spontaneous emission of a superconducting qubit. <i>Applied Physics Letters</i> , 2010, 96, .	1.5	200
42	Tracking photon jumps with repeated quantum non-demolition parity measurements. <i>Nature</i> , 2014, 511, 444-448.	13.7	195
43	Hardware-Efficient Autonomous Quantum Memory Protection. <i>Physical Review Letters</i> , 2013, 111, 120501.	2.9	189
44	Frequency Dependence of Shot Noise in a Diffusive Mesoscopic Conductor. <i>Physical Review Letters</i> , 1997, 78, 3370-3373.	2.9	187
45	Radio-Frequency Single-Electron Transistor as Readout Device for Qubits: Charge Sensitivity and Backaction. <i>Physical Review Letters</i> , 2001, 86, 3376-3379.	2.9	187
46	To catch and reverse a quantum jump mid-flight. <i>Nature</i> , 2019, 570, 200-204.	13.7	185
47	Implementing a universal gate set on a logical qubit encoded in an oscillator. <i>Nature Communications</i> , 2017, 8, 94.	5.8	183
48	Creation and control of multi-phonon Fock states in a bulk acoustic-wave resonator. <i>Nature</i> , 2018, 563, 666-670.	13.7	176
49	Analog information processing at the quantum limit with a Josephson ring modulator. <i>Nature Physics</i> , 2010, 6, 296-302.	6.5	174
50	Surface participation and dielectric loss in superconducting qubits. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	170
51	Reaching 10â€‰%ms single photon lifetimes for superconducting aluminum cavities. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	168
52	Storage of Multiple Coherent Microwave Excitations in an Electron Spin Ensemble. <i>Physical Review Letters</i> , 2010, 105, 140503.	2.9	156
53	Deterministic teleportation of a quantum gate between two logical qubits. <i>Nature</i> , 2018, 561, 368-373.	13.7	154
54	Primary Electronic Thermometry Using the Shot Noise of a Tunnel Junction. <i>Science</i> , 2003, 300, 1929-1932.	6.0	147

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55	Demonstrating a Driven Reset Protocol for a Superconducting Qubit. <i>Physical Review Letters</i> , 2013, 110, 120501.	2.9	147
56	Optimized driving of superconducting artificial atoms for improved single-qubit gates. <i>Physical Review A</i> , 2010, 82, .	1.0	144
57	On-demand quantum state transfer and entanglement between remote microwave cavity memories. <i>Nature Physics</i> , 2018, 14, 705-710.	6.5	143
58	Measurement and control of quasiparticle dynamics in a superconducting qubit. <i>Nature Communications</i> , 2014, 5, 5836.	5.8	130
59	Observation of Photon-Assisted Noise in a Diffusive Normal Metal-Superconductor Junction. <i>Physical Review Letters</i> , 2000, 84, 3398-3401.	2.9	129
60	Cavity State Manipulation Using Photon-Number Selective Phase Gates. <i>Physical Review Letters</i> , 2015, 115, 137002.	2.9	121
61	Multilayer microwave integrated quantum circuits for scalable quantum computing. <i>Npj Quantum Information</i> , 2016, 2, .	2.8	121
62	Fault-tolerant detection of a quantum error. <i>Science</i> , 2018, 361, 266-270.	6.0	113
63	Protocols for optimal readout of qubits using a continuous quantum nondemolition measurement. <i>Physical Review A</i> , 2007, 76, .	1.0	106
64	Deterministic Remote Entanglement of Superconducting Circuits through Microwave Two-Photon Transitions. <i>Physical Review Letters</i> , 2018, 120, 200501.	2.9	105
65	Controlled release of multiphoton quantum states from a microwave cavity memory. <i>Nature Physics</i> , 2017, 13, 882-887.	6.5	101
66	Universal control of an oscillator with dispersive coupling to a qubit. <i>Physical Review A</i> , 2015, 92, .	1.0	99
67	Non-Poissonian Quantum Jumps of a Fluxonium Qubit due to Quasiparticle Excitations. <i>Physical Review Letters</i> , 2014, 113, 247001.	2.9	98
68	Observation of "Photon-Assisted" Shot Noise in a Phase-Coherent Conductor. <i>Physical Review Letters</i> , 1998, 80, 2437-2440.	2.9	97
69	A CNOT gate between multiphoton qubits encoded in two cavities. <i>Nature Communications</i> , 2018, 9, 652.	5.8	95
70	Faithful conversion of propagating quantum information to mechanical motion. <i>Nature Physics</i> , 2017, 13, 1163-1167.	6.5	92
71	Entanglement of bosonic modes through an engineered exchange interaction. <i>Nature</i> , 2019, 566, 509-512.	13.7	88
72	Hardware-Efficient Quantum Random Access Memory with Hybrid Quantum Acoustic Systems. <i>Physical Review Letters</i> , 2019, 123, 250501.	2.9	86

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73	Detecting highly entangled states with a joint qubit readout. <i>Physical Review A</i> , 2010, 81, .	1.0	82
74	Life after charge noise: recent results with transmon qubits. <i>Quantum Information Processing</i> , 2009, 8, 105-115.	1.0	81
75	Measurements of Quasiparticle Tunneling Dynamics in a Band-Gap-Engineered Transmon Qubit. <i>Physical Review Letters</i> , 2012, 108, 230509.	2.9	78
76	Improving the quality factor of microwave compact resonators by optimizing their geometrical parameters. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	78
77	Josephson Directional Amplifier for Quantum Measurement of Superconducting Circuits. <i>Physical Review Letters</i> , 2014, 112, 167701.	2.9	78
78	Holonomic Quantum Control with Continuous Variable Systems. <i>Physical Review Letters</i> , 2016, 116, 140502.	2.9	77
79	Deterministic protocol for mapping a qubit to coherent state superpositions in a cavity. <i>Physical Review A</i> , 2013, 87, .	1.0	74
80	Efficient Multiphoton Sampling of Molecular Vibronic Spectra on a Superconducting Bosonic Processor. <i>Physical Review X</i> , 2020, 10, .	2.8	73
81	Length scaling of bandwidth and noise in hot-electron superconducting mixers. <i>Applied Physics Letters</i> , 1996, 68, 3344-3346.	1.5	65
82	Single-Photon-Resolved Cross-Kerr Interaction for Autonomous Stabilization of Photon-Number States. <i>Physical Review Letters</i> , 2015, 115, 180501.	2.9	63
83	Large bandwidth and low noise in a diffusion-cooled hot-electron bolometer mixer. <i>Applied Physics Letters</i> , 1996, 68, 1558-1560.	1.5	61
84	Programmable Interference between Two Microwave Quantum Memories. <i>Physical Review X</i> , 2018, 8, .	2.8	56
85	An architecture for integrating planar and 3D cQED devices. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	55
86	Noise performance of the radio-frequency single-electron transistor. <i>Journal of Applied Physics</i> , 2004, 95, 1274-1286.	1.1	50
87	Error-corrected gates on an encoded qubit. <i>Nature Physics</i> , 2020, 16, 822-826.	6.5	50
88	Normal-metal quasiparticle traps for superconducting qubits. <i>Physical Review B</i> , 2016, 94, .	1.1	47
89	Characterizing entanglement of an artificial atom and a cavity cat state with Bell's inequality. <i>Nature Communications</i> , 2015, 6, 8970.	5.8	46
90	High-Fidelity Measurement of Qubits Encoded in Multilevel Superconducting Circuits. <i>Physical Review X</i> , 2020, 10, .	2.8	45

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91	Quantum control of bosonic modes with superconducting circuits. <i>Science Bulletin</i> , 2021, 66, 1789-1805.	4.3	45
92	Shot noise thermometry down to 10mK. <i>Applied Physics Letters</i> , 2006, 89, 183123.	1.5	41
93	Mixing and noise in diffusion and phonon cooled superconducting hot-electron bolometers. <i>Journal of Applied Physics</i> , 1999, 85, 1644-1653.	1.1	40
94	Demonstration of superconducting micromachined cavities. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	39
95	Multiplexing of radio-frequency single-electron transistors. <i>Applied Physics Letters</i> , 2002, 80, 3012-3014.	1.5	38
96	Continuous Quantum Nondemolition Measurement of the Transverse Component of a Qubit. <i>Physical Review Letters</i> , 2016, 117, 133601.	2.9	35
97	Suspending superconducting qubits by silicon micromachining. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	34
98	Engineering bilinear mode coupling in circuit QED: Theory and experiment. <i>Physical Review A</i> , 2019, 99, .	1.0	34
99	Ultra-high-Q phononic resonators on-chip at cryogenic temperatures. <i>APL Photonics</i> , 2018, 3, 066101.	3.0	32
100	Quantization of inductively shunted superconducting circuits. <i>Physical Review B</i> , 2016, 94, .	1.1	30
101	Quantum Charge Fluctuations and the Polarizability of the Single-Electron Box. <i>Physical Review Letters</i> , 2003, 91, 106801.	2.9	27
102	High coherence superconducting microwave cavities with indium bump bonding. <i>Applied Physics Letters</i> , 2020, 116, .	1.5	27
103	Path-Independent Quantum Gates with Noisy Ancilla. <i>Physical Review Letters</i> , 2020, 125, 110503.	2.9	26
104	Cryogenics on a Chip. <i>Physics Today</i> , 2004, 57, 41-47.	0.3	20
105	Single-electron transistor backaction on the single-electron box. <i>Physical Review B</i> , 2005, 71, .	1.1	20
106	A high-performance cryogenic amplifier based on a radio-frequency single electron transistor. <i>Applied Physics Letters</i> , 2002, 81, 4859-4861.	1.5	19
107	Robust readout of bosonic qubits in the dispersive coupling regime. <i>Physical Review A</i> , 2018, 98, .	1.0	15
108	Detection of coherent 7.6 HZ oscillations during a burst from Aquila X-1. <i>Astrophysical Journal</i> , 1991, 375, 696.	1.6	15

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109	Free-standing silicon shadow masks for transmon qubit fabrication. AIP Advances, 2020, 10, .	0.6	14
110	Wireless Josephson amplifier. Applied Physics Letters, 2014, 104, .	1.5	11
111	Optimized tomography of continuous variable systems using excitation counting. Physical Review A, 2016, 94, .	1.0	9
112	Single-shot number-resolved detection of microwave photons with error mitigation. Physical Review A, 2021, 103, .	1.0	9
113	Ultrasensitive Quantum-Limited Far-Infrared STJ Detectors. IEEE Transactions on Applied Superconductivity, 2007, 17, 241-245.	1.1	8
114	Shot Noise Measurements in Diffusive Normal Metal-Superconductor (N-S) Junctions. Journal of Low Temperature Physics, 2000, 118, 671-678.	0.6	7
115	Spectrum of thermal fluctuation noise in diffusion and phonon cooled hot-electron mixers. Applied Physics Letters, 1998, 72, 1516-1518.	1.5	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