

Alexandre Blais

List of Publications by Year in descending order

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119
papers

21,669
citations

22132

59
h-index

22147

113
g-index

120
all docs

120
docs citations

120
times ranked

7699
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	Coupling superconducting qubits via a cavity bus. <i>Nature</i> , 2007, 449, 443-447.	13.7	1,109
5	Demonstration of two-qubit algorithms with a superconducting quantum processor. <i>Nature</i> , 2009, 460, 240-244.	13.7	923
6	Resolving photon number states in a superconducting circuit. <i>Nature</i> , 2007, 445, 515-518.	13.7	685
7	Circuit quantum electrodynamics. <i>Reviews of Modern Physics</i> , 2021, 93, .	16.4	634
8	Quantum-information processing with circuit quantum electrodynamics. <i>Physical Review A</i> , 2007, 75, .	1.0	550
9	Approaching Unit Visibility for Control of a Superconducting Qubit with Dispersive Readout. <i>Physical Review Letters</i> , 2005, 95, 060501.	2.9	456
10	Climbing the Jaynes-Cummings ladder and observing its nonlinearity in a cavity QED system. <i>Nature</i> , 2008, 454, 315-318.	13.7	414
11	Photon-Mediated Interactions Between Distant Artificial Atoms. <i>Science</i> , 2013, 342, 1494-1496.	6.0	409
12	ac Stark Shift and Dephasing of a Superconducting Qubit Strongly Coupled to a Cavity Field. <i>Physical Review Letters</i> , 2005, 94, 123602.	2.9	351
13	Observation of Berry's Phase in a Solid-State Qubit. <i>Science</i> , 2007, 318, 1889-1892.	6.0	321
14	Observation of Resonant Photon Blockade at Microwave Frequencies Using Correlation Function Measurements. <i>Physical Review Letters</i> , 2011, 106, 243601.	2.9	305
15	Dipole Coupling of a Double Quantum Dot to a Microwave Resonator. <i>Physical Review Letters</i> , 2012, 108, 046807.	2.9	287
16	Dressed Collective Qubit States and the Tavis-Cummings Model in Circuit QED. <i>Physical Review Letters</i> , 2009, 103, 083601.	2.9	283
17	Qubit-photon interactions in a cavity: Measurement-induced dephasing and number splitting. <i>Physical Review A</i> , 2006, 74, .	1.0	281
18	Dissipation and ultrastrong coupling in circuit QED. <i>Physical Review A</i> , 2011, 84, .	1.0	279

#	ARTICLE	IF	CITATIONS
19	Strong spin-photon coupling in silicon. <i>Science</i> , 2018, 359, 1123-1127.	6.0	278
20	Ultrastrong coupling regime of cavity QED with phase-biased flux qubits. <i>Physical Review A</i> , 2009, 80, .	1.0	226
21	Quantum information processing and quantum optics with circuit quantum electrodynamics. <i>Nature Physics</i> , 2020, 16, 247-256.	6.5	220
22	Quantum trajectory approach to circuit QED: Quantum jumps and the Zeno effect. <i>Physical Review A</i> , 2008, 77, .	1.0	218
23	Dispersive regime of circuit QED: Photon-dependent qubit dephasing and relaxation rates. <i>Physical Review A</i> , 2009, 79, .	1.0	213
24	Realizing repeated quantum error correction in a distance-three surface code. <i>Nature</i> , 2022, 605, 669-674.	13.7	203
25	Antibunching of microwave-frequency photons observed in correlation measurements using linear detectors. <i>Nature Physics</i> , 2011, 7, 154-158.	6.5	196
26	Input-output theory for waveguide QED with an ensemble of inhomogeneous atoms. <i>Physical Review A</i> , 2013, 88, .	1.0	196
27	Engineering the quantum states of light in a Kerr-nonlinear resonator by two-photon driving. <i>Npj Quantum Information</i> , 2017, 3, .	2.8	188
28	Deterministic quantum state transfer and remote entanglement using microwave photons. <i>Nature</i> , 2018, 558, 264-267.	13.7	175
29	Tunable Coupling of Superconducting Qubits. <i>Physical Review Letters</i> , 2003, 90, 127901.	2.9	171
30	Coherent spin-photon coupling using a resonant exchange qubit. <i>Nature</i> , 2018, 560, 179-184.	13.7	169
31	Measurement of Autler-Townes and Mollow Transitions in a Strongly Driven Superconducting Qubit. <i>Physical Review Letters</i> , 2009, 102, 243602.	2.9	158
32	Two-Qubit State Tomography Using a Joint Dispersive Readout. <i>Physical Review Letters</i> , 2009, 102, 200402.	2.9	145
33	Josephson-junction-embedded transmission-line resonators: From Kerr medium to in-line transmon. <i>Physical Review A</i> , 2012, 86, .	1.0	138
34	First-order sideband transitions with flux-driven asymmetric transmon qubits. <i>Physical Review B</i> , 2013, 87, .	1.1	131
35	Correlations, indistinguishability and entanglement in Hong-Ou-Mandel experiments at microwave frequencies. <i>Nature Physics</i> , 2013, 9, 345-348.	6.5	126
36	Control and Tomography of a Three Level Superconducting Artificial Atom. <i>Physical Review Letters</i> , 2010, 105, 223601.	2.9	119

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37	Fast Quantum Nondemolition Readout by Parametric Modulation of Longitudinal Qubit-Oscillator Interaction. <i>Physical Review Letters</i> , 2015, 115, 203601.	2.9	118
38	Quantum annealing with all-to-all connected nonlinear oscillators. <i>Nature Communications</i> , 2017, 8, 15785.	5.8	118
39	Schemes for the observation of photon correlation functions in circuit QED with linear detectors. <i>Physical Review A</i> , 2010, 82, .	1.0	107
40	Superconducting Qubit with Purcell Protection and Tunable Coupling. <i>Physical Review Letters</i> , 2011, 106, 030502.	2.9	107
41	Bias-preserving gates with stabilized cat qubits. <i>Science Advances</i> , 2020, 6, .	4.7	105
42	On-Chip Superconducting Microwave Circulator from Synthetic Rotation. <i>Physical Review Applied</i> , 2015, 4, .	1.5	101
43	Protocol for Universal Gates in Optimally Biased Superconducting Qubits. <i>Physical Review Letters</i> , 2005, 94, .	2.9	98
44	Resolving Vacuum Fluctuations in an Electrical Circuit by Measuring the Lamb Shift. <i>Science</i> , 2008, 322, 1357-1360.	6.0	96
45	Fast and Unconditional All-Microwave Reset of a Superconducting Qubit. <i>Physical Review Letters</i> , 2018, 121, 060502.	2.9	96
46	Improved Superconducting Qubit Readout by Qubit-Induced Nonlinearities. <i>Physical Review Letters</i> , 2010, 105, 100504.	2.9	94
47	Microwave Quantum Link between Superconducting Circuits Housed in Spatially Separated Cryogenic Systems. <i>Physical Review Letters</i> , 2020, 125, 260502.	2.9	91
48	Measurement-Induced Qubit State Mixing in Circuit QED from Up-Converted Dephasing Noise. <i>Physical Review Letters</i> , 2012, 109, 153601.	2.9	88
49	Widely Tunable On-Chip Microwave Circulator for Superconducting Quantum Circuits. <i>Physical Review X</i> , 2017, 7, .	2.8	87
50	Operation of universal gates in a solid-state quantum computer based on clean Josephson junctions between d-wave superconductors. <i>Physical Review A</i> , 2000, 61, .	1.0	86
51	Sideband Transitions and Two-Tone Spectroscopy of a Superconducting Qubit Strongly Coupled to an On-Chip Cavity. <i>Physical Review Letters</i> , 2007, 99, 050501.	2.9	86
52	Experimental Realization of a Protected Superconducting Circuit Derived from the $\langle \text{mml:math display="inline" overflow="scroll"} \rangle \langle \text{mml:mn} \rangle 0 \langle \text{mml:mn} \rangle \langle \text{mml:math} \rangle \hat{\epsilon} \langle \text{mml:math display="inline" overflow="scroll"} \rangle \langle \text{mml:mi} \rangle \tilde{\epsilon} \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ Qubit. <i>PRX Quantum</i> , 2021, 2, .	3.5	77
53	Electromagnetically Induced Transparency with Amplification in Superconducting Circuits. <i>Physical Review Letters</i> , 2010, 105, 073601.	2.9	76
54	Circuit QED with a Nonlinear Resonator: ac-Stark Shift and Dephasing. <i>Physical Review Letters</i> , 2011, 106, 167002.	2.9	75

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55	Nonlinear dispersive regime of cavity QED: The dressed dephasing model. <i>Physical Review A</i> , 2008, 77, .	1.0	68
56	Nanowire Superinductance Fluxonium Qubit. <i>Physical Review Letters</i> , 2019, 122, 010504.	2.9	66
57	Coherence properties of the 0- π qubit. <i>New Journal of Physics</i> , 2018, 20, 043053.	1.2	64
58	Dynamics of dispersive single-qubit readout in circuit quantum electrodynamics. <i>Physical Review A</i> , 2009, 80, .	1.0	62
59	Resonance Fluorescence from an Artificial Atom in Squeezed Vacuum. <i>Physical Review X</i> , 2016, 6, .	2.8	60
60	Tunable joint measurements in the dispersive regime of cavity QED. <i>Physical Review A</i> , 2010, 81, .	1.0	57
61	First-order sidebands in circuit QED using qubit frequency modulation. <i>Physical Review A</i> , 2012, 86, .	1.0	57
62	Effect of noise on geometric logic gates for quantum computation. <i>Physical Review A</i> , 2003, 67, .	1.0	53
63	Squeezing and quantum state engineering with Josephson travelling wave amplifiers. <i>Npj Quantum Information</i> , 2017, 3, .	2.8	53
64	Improving the Performance of Deep Quantum Optimization Algorithms with Continuous Gate Sets. <i>PRX Quantum</i> , 2020, 1, .	3.5	53
65	Effect of Higher-Order Nonlinearities on Amplification and Squeezing in Josephson Parametric Amplifiers. <i>Physical Review Applied</i> , 2017, 8, .	1.5	49
66	Moving beyond the Transmon: Noise-Protected Superconducting Quantum Circuits. <i>PRX Quantum</i> , 2021, 2, .	3.5	43
67	Quantum Zeno effect in the strong measurement regime of circuit quantum electrodynamics. <i>New Journal of Physics</i> , 2016, 18, 053031.	1.2	40
68	Coherent microwave-photon-mediated coupling between a semiconductor and a superconducting qubit. <i>Nature Communications</i> , 2019, 10, 3011.	5.8	40
69	Heisenberg-Limited Qubit Read-Out with Two-Mode Squeezed Light. <i>Physical Review Letters</i> , 2015, 115, 093604.	2.9	39
70	Bifluxon: Fluxon-Parity-Protected Superconducting Qubit. <i>PRX Quantum</i> , 2020, 1, .	3.5	39
71	Fast and high-fidelity entangling gate through parametrically modulated longitudinal coupling. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 1, 11.	0.0	38
72	Quantum-optimal-control-inspired ansatz for variational quantum algorithms. <i>Physical Review Research</i> , 2021, 3, .	1.3	37

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73	Quantum walks on circles in phase space via superconducting circuit quantum electrodynamics. <i>Physical Review A</i> , 2008, 78, .	1.0	36
74	Back-action of a driven nonlinear resonator on a superconducting qubit. <i>Physical Review A</i> , 2012, 85, .	1.0	36
75	Quantum Canada. <i>Quantum Science and Technology</i> , 2019, 4, 020503.	2.6	36
76	Perfect squeezing by damping modulation in circuit quantum electrodynamics. <i>Physical Review A</i> , 2014, 89, .	1.0	35
77	Quantum trajectory equation for multiple qubits in circuit QED: Generating entanglement by measurement This paper was presented at the Theory CANADA 4 conference, held at Centre de recherches mathématiques, Montréal, Québec, Canada on 4-7 June 2008.. <i>Canadian Journal of Physics</i> , 2009, 87, 225-231.	0.4	34
78	High-Fidelity Resonator-Induced Phase Gate with Single-Mode Squeezing. <i>Physical Review Letters</i> , 2016, 116, 180501.	2.9	33
79	Quantum Optics Theory of Electronic Noise in Coherent Conductors. <i>Physical Review Letters</i> , 2016, 116, 043602.	2.9	32
80	Quantum Heating of a Nonlinear Resonator Probed by a Superconducting Qubit. <i>Physical Review Letters</i> , 2013, 110, 047001.	2.9	31
81	Ultrastrong coupling dynamics with a transmon qubit. <i>New Journal of Physics</i> , 2017, 19, 023022.	1.2	29
82	Itinerant Microwave Photon Detector. <i>Physical Review Letters</i> , 2018, 120, 203602.	2.9	29
83	Quantum Communication with Time-Bin Encoded Microwave Photons. <i>Physical Review Applied</i> , 2019, 12, .	1.5	29
84	Detection and manipulation of Majorana fermions in circuit QED. <i>Physical Review B</i> , 2013, 88, .	1.1	28
85	Resonator reset in circuit QED by optimal control for large open quantum systems. <i>Physical Review A</i> , 2017, 96, .	1.0	28
86	Control and coherence time enhancement of the $\text{O}^{\text{X}}\text{qubit}$ qubit. <i>New Journal of Physics</i> , 2019, 21, 043002.	1.2	26
87	Demonstration of an All-Microwave Controlled-Phase Gate between Far-Detuned Qubits. <i>Physical Review Applied</i> , 2020, 14, .	1.5	26
88	Multiplexed readout of transmon qubits with Josephson bifurcation amplifiers. <i>Physical Review A</i> , 2014, 90, .	1.0	23
89	Comment on "Vacuum Rabi Splitting in a Semiconductor Circuit QED System", <i>Physical Review Letters</i> , 2013, 111, 249701.	2.9	22
90	Signatures of Hong-Ou-Mandel interference at microwave frequencies. <i>New Journal of Physics</i> , 2013, 15, 105025.	1.2	19

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91	Qubit parity measurement by parametric driving in circuit QED. <i>Science Advances</i> , 2018, 4, eaau1695.	4.7	19
92	Quantum network optimization. <i>Physical Review A</i> , 2001, 64, .	1.0	17
93	Quantum Metamaterial for Broadband Detection of Single Microwave Photons. <i>Physical Review Applied</i> , 2021, 15, .	1.5	17
94	Thermal excitation of multi-photon dressed states in circuit quantum electrodynamics. <i>Physica Scripta</i> , 2009, T137, 014013.	1.2	16
95	Quantum Versus Classical Switching Dynamics of Driven Dissipative Kerr Resonators. <i>Physical Review Applied</i> , 2020, 13, .	1.5	16
96	Variational quantum simulation of ultrastrong light-matter coupling. <i>Physical Review Research</i> , 2020, 2, .	1.3	16
97	Multi-terminal superconducting phase qubit. <i>Physica C: Superconductivity and Its Applications</i> , 2002, 368, 310-314.	0.6	15
98	Quantum Codes for Simplifying Design and Suppressing Decoherence in Superconducting Phase-Qubits. <i>Quantum Information Processing</i> , 2002, 1, 155-182.	1.0	12
99	Improved qubit bifurcation readout in the straddling regime of circuit QED. <i>Physical Review A</i> , 2012, 86, .	1.0	12
100	Hamiltonian engineering for robust quantum state transfer and qubit readout in cavity QED. <i>New Journal of Physics</i> , 2017, 19, 023041.	1.2	12
101	Parametric amplification and squeezing with an ac- and dc-voltage biased superconducting junction. <i>Physical Review Applied</i> , 2019, 11, .	1.5	12
102	Efficient modeling of superconducting quantum circuits with tensor networks. <i>Npj Quantum Information</i> , 2021, 7, .	2.8	12
103	Electron field emission from diamond-like carbon, a correlation with surface modifications. <i>Journal of Applied Physics</i> , 2000, 87, 1356-1360.	1.1	11
104	Quantum-Tailored Machine-Learning Characterization of a Superconducting Qubit. <i>PRX Quantum</i> , 2021, 2, .	3.5	10
105	Engineering, Control, and Longitudinal Readout of Floquet Qubits. <i>Physical Review Applied</i> , 2022, 17, .	1.5	10
106	Superconducting qubit as a probe of squeezing in a nonlinear resonator. <i>Physical Review A</i> , 2014, 89, .	1.0	9
107	Superconducting Coupler with Exponentially Large On:Off Ratio. <i>Physical Review Applied</i> , 2021, 16, .	1.5	7
108	Correlation measurements of individual microwave photons emitted from a symmetric cavity. <i>Journal of Physics: Conference Series</i> , 2011, 264, 012024.	0.3	5

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109	Quantum-error-correction benchmarks for continuous weak-parity measurements. Physical Review A, 2012, 86, .	1.0	5
110	Fast and differentiable simulation of driven quantum systems. Physical Review Research, 2021, 3, .	1.3	5
111	Circuit quantum electrodynamics with a nonlinear resonator. , 2012, , 1-32.		5
112	Publisher's Note: Cavity quantum electrodynamics for superconducting electrical circuits: An architecture for quantum computation [Phys. Rev. A69, 062320 (2004)]. Physical Review A, 2004, 70, .	1.0	3
113	Algorithmes et architectures pour ordinateurs quantiques supraconducteurs. Annales De Physique, 2003, 28, 1-148.	0.2	3
114	Quantum Information Processing with Superconducting Qubits and Cavities. , 2007, , .		2
115	Remote Controlled Entanglement. Physics Magazine, 2014, 7, .	0.1	1
116	Course 16 Prospects for strong cavity quantum electrodynamics with superconducting circuits. Les Houches Summer School Proceedings, 2004, 79, 591-608.	0.2	0
117	Filling a cavity with photons, and watching them leave. Physics Magazine, 2008, 1, .	0.1	0
118	Demonstration of Two-Qubit Quantum Algorithms with a Solid-State Electronic Processor. , 2009, , .		0
119	Embedding Silicon Spin Qubits in Superconducting Circuits. , 2019, , .		0