Alexandre Blais

List of Publications by Year
in descending order

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119 papers	21,669 citations	22153 59 h-index	22166 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. 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	Coupling superconducting qubits via a cavity bus. Nature, 2007, 449, 443-447.	27.8	1,109
5	Demonstration of two-qubit algorithms with a superconducting quantum processor. Nature, 2009, 460, 240-244.	27.8	923
6	Resolving photon number states in a superconducting circuit. Nature, 2007, 445, 515-518.	27.8	685
7	Circuit quantum electrodynamics. Reviews of Modern Physics, 2021, 93, .	45.6	634
8	Quantum-information processing with circuit quantum electrodynamics. Physical Review A, 2007, 75, .	2.5	550
9	Approaching Unit Visibility for Control of a Superconducting Qubit with Dispersive Readout. Physical Review Letters, 2005, 95, 060501.	7.8	456
10	Climbing the Jaynesâ€“Cummings ladder and observing its nonlinearity in a cavity QED system. Nature, 2008, 454, 315-318.	27.8	414
11	Photon-Mediated Interactions Between Distant Artificial Atoms. Science, 2013, 342, 1494-1496.	12.6	409
12	ac Stark Shift and Dephasing of a Superconducting Qubit Strongly Coupled to a Cavity Field. Physical Review Letters, 2005, 94, 123602.	7.8	351
13	Observation of Berry's Phase in a Solid-State Qubit. Science, 2007, 318, 1889-1892.	12.6	321
14	Observation of Resonant Photon Blockade at Microwave Frequencies Using Correlation Function Measurements. Physical Review Letters, 2011, 106, 243601.	7.8	305
15	Dipole Coupling of a Double Quantum Dot to a Microwave Resonator. Physical Review Letters, 2012, 108, 046807.	7.8	287
16	Dressed Collective Qubit States and the Tavis-Cummings Model in Circuit QED. Physical Review Letters, 2009, 103, 083601.	7.8	283
17	Qubit-photon interactions in a cavity: Measurement-induced dephasing and number splitting. Physical Review A, 2006, 74, .	2.5	281
18	Dissipation and ultrastrong coupling in circuit QED. Physical Review A, 2011, 84, .	2.5	279

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19	Strong spin-photon coupling in silicon. Science, 2018, 359, 1123-1127.	12.6	278
20	Ultrastrong coupling regime of cavity QED with phase-biased flux qubits. Physical Review A, 2009, 80, .	2.5	226
21	Quantum information processing and quantum optics with circuit quantum electrodynamics. Nature Physics, 2020, 16, 247-256.	16.7	220
22	Quantum trajectory approach to circuit QED: Quantum jumps and the Zeno effect. Physical Review A, 2008, 77, .	2.5	218
23	Dispersive regime of circuit QED: Photon-dependent qubit dephasing and relaxation rates. Physical Review A, 2009, 79, .	2.5	213
24	Realizing repeated quantum error correction in a distance-three surface code. Nature, 2022, 605, 669-674.	27.8	203
25	Antibunching of microwave-frequency photons observed in correlation measurements using linear detectors. Nature Physics, 2011, 7, 154-158.	16.7	196
26	Input-output theory for waveguide QED with an ensemble of inhomogeneous atoms. Physical Review A, 2013, 88, .	2.5	196
27	Engineering the quantum states of light in a Kerr-nonlinear resonator by two-photon driving. Npj Quantum Information, 2017, 3, .	6.7	188
28	Deterministic quantum state transfer and remote entanglement using microwave photons. Nature, 2018, 558, 264-267.	27.8	175
29	Tunable Coupling of Superconducting Qubits. Physical Review Letters, 2003, 90, 127901.	7.8	171
30	Coherent spinâ€“photon coupling using a resonant exchange qubit. Nature, 2018, 560, 179-184.	27.8	169
31	Measurement of Autler-Townes and Mollow Transitions in a Strongly Driven Superconducting Qubit. Physical Review Letters, 2009, 102, 243602.	7.8	158
32	Two-Qubit State Tomography Using a Joint Dispersive Readout. Physical Review Letters, 2009, 102, 200402.	7.8	145
33	Josephson-junction-embedded transmission-line resonators: From Kerr medium to in-line transmon. Physical Review A, 2012, 86, .	2.5	138
34	First-order sideband transitions with flux-driven asymmetric transmon qubits. Physical Review B, 2013, 87, .	3.2	131
35	Correlations, indistinguishability and entanglement in Hongâ€“Ouâ€“Mandel experiments at microwave frequencies. Nature Physics, 2013, 9, 345-348.	16.7	126
36	Control and Tomography of a Three Level Superconducting Artificial Atom. Physical Review Letters, 2010, 105, 223601.	7.8	119

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37	Fast Quantum Nondemolition Readout by Parametric Modulation of Longitudinal Qubit-Oscillator Interaction. Physical Review Letters, 2015, 115, 203601.	7.8	118
38	Quantum annealing with all-to-all connected nonlinear oscillators. Nature Communications, 2017, 8, 15785.	12.8	118
39	Schemes for the observation of photon correlation functions in circuit QED with linear detectors. Physical Review A, 2010, 82, .	2.5	107
40	Superconducting Qubit with Purcell Protection and Tunable Coupling. Physical Review Letters, 2011, 106, 030502.	7.8	107
41	Bias-preserving gates with stabilized cat qubits. Science Advances, 2020, 6, .	10.3	105
42	On-Chip Superconducting Microwave Circulator from Synthetic Rotation. Physical Review Applied, 2015, 4, .	3.8	101
43	Protocol for Universal Gates in Optimally Biased Superconducting Qubits. Physical Review Letters, 2005, 94, .	7.8	98
44	Resolving Vacuum Fluctuations in an Electrical Circuit by Measuring the Lamb Shift. Science, 2008, 322, 1357-1360.	12.6	96
45	Fast and Unconditional All-Microwave Reset of a Superconducting Qubit. Physical Review Letters, 2018, 121, 060502.	7.8	96
46	Improved Superconducting Qubit Readout by Qubit-Induced Nonlinearities. Physical Review Letters, 2010, 105, 100504.	7.8	94
47	Microwave Quantum Link between Superconducting Circuits Housed in Spatially Separated Cryogenic Systems. Physical Review Letters, 2020, 125, 260502.	7.8	91
48	Measurement-Induced Qubit State Mixing in Circuit QED from Up-Converted Dephasing Noise. Physical Review Letters, 2012, 109, 153601.	7.8	88
49	Widely Tunable On-Chip Microwave Circulator for Superconducting Quantum Circuits. Physical Review X, 2017, 7, .	8.9	87
50	Operation of universal gates in a solid-state quantum computer based on clean Josephson junctions betweend-wave superconductors. Physical Review A, 2000, 61, .	2.5	86
51	Sideband Transitions and Two-Tone Spectroscopy of a Superconducting Qubit Strongly Coupled to an On-Chip Cavity. Physical Review Letters, 2007, 99, 050501.	7.8	86
52	Experimental Realization of a Protected Superconducting Circuit Derived from the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mn>0</mml:mn></mml:math> â€“ <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Ï€</mml:mi></mml:math> Qubit. PRX Quantum, 2021, 2, .	9.2	77
53	Electromagnetically Induced Transparency with Amplification in Superconducting Circuits. Physical Review Letters, 2010, 105, 073601.	7.8	76
54	Circuit QED with a Nonlinear Resonator: ac-Stark Shift and Dephasing. Physical Review Letters, 2011, 106, 167002.	7.8	75

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55	Nonlinear dispersive regime of cavity QED: The dressed dephasing model. Physical Review A, 2008, 77, .	2.5	68
56	Nanowire Superinductance Fluxonium Qubit. Physical Review Letters, 2019, 122, 010504.	7.8	66
57	Coherence properties of the 0-Ï€qubit. New Journal of Physics, 2018, 20, 043053.	2.9	64
58	Dynamics of dispersive single-qubit readout in circuit quantum electrodynamics. Physical Review A, 2009, 80, .	2.5	62
59	Resonance Fluorescence from an Artificial Atom in Squeezed Vacuum. Physical Review X, 2016, 6, .	8.9	60
60	Tunable joint measurements in the dispersive regime of cavity QED. Physical Review A, 2010, 81, .	2.5	57
61	First-order sidebands in circuit QED using qubit frequency modulation. Physical Review A, 2012, 86, .	2.5	57
62	Effect of noise on geometric logic gates for quantum computation. Physical Review A, 2003, 67, .	2.5	53
63	Squeezing and quantum state engineering with Josephson travelling wave amplifiers. Npj Quantum Information, 2017, 3, .	6.7	53
64	Improving the Performance of Deep Quantum Optimization Algorithms with Continuous Gate Sets. PRX Quantum, 2020, 1, .	9.2	53
65	Effect of Higher-Order Nonlinearities on Amplification and Squeezing in Josephson Parametric Amplifiers. Physical Review Applied, 2017, 8, .	3.8	49
66	Moving beyond the Transmon: Noise-Protected Superconducting Quantum Circuits. PRX Quantum, 2021, 2, .	9.2	43
67	Quantum Zeno effect in the strong measurement regime of circuit quantum electrodynamics. New Journal of Physics, 2016, 18, 053031.	2.9	40
68	Coherent microwave-photon-mediated coupling between a semiconductor and a superconducting qubit. Nature Communications, 2019, 10, 3011.	12.8	40
69	Heisenberg-Limited Qubit Read-Out with Two-Mode Squeezed Light. Physical Review Letters, 2015, 115, 093604.	7.8	39
70	Bifluxon: Fluxon-Parity-Protected Superconducting Qubit. PRX Quantum, 2020, 1, .	9.2	39
71	Fast and high-fidelity entangling gate through parametrically modulated longitudinal coupling. Quantum - the Open Journal for Quantum Science, 0, 1, 11.	0.0	38
72	Quantum-optimal-control-inspired ansatz for variational quantum algorithms. Physical Review Research, 2021, 3, .	3.6	37

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73	Quantum walks on circles in phase space via superconducting circuit quantum electrodynamics. Physical Review A, 2008, 78, .	2.5	36
74	Back-action of a driven nonlinear resonator on a superconducting qubit. Physical Review A, 2012, 85, .	2.5	36
75	Quantum Canada. Quantum Science and Technology, 2019, 4, 020503.	5.8	36
76	Perfect squeezing by damping modulation in circuit quantum electrodynamics. Physical Review A, 2014, 89, .	2.5	35
77	Quantum trajectory equation for multiple qubits in circuit QED: Generating entanglement by measurementThis paper was presented at the Theory CANADA 4 conference, held at Centre de recherches mathÃ©matiques, MontrÃ©al, QuÃ©bec, Canada on 4â€“7 June 2008.. Canadian Journal of Physics, 2009, 87, 225-231.	1.1	34
78	High-Fidelity Resonator-Induced Phase Gate with Single-Mode Squeezing. Physical Review Letters, 2016, 116, 180501.	7.8	33
79	Quantum Optics Theory of Electronic Noise in Coherent Conductors. Physical Review Letters, 2016, 116, 043602.	7.8	32
80	Quantum Heating of a Nonlinear Resonator Probed by a Superconducting Qubit. Physical Review Letters, 2013, 110, 047001.	7.8	31
81	Ultrastrong coupling dynamics with a transmon qubit. New Journal of Physics, 2017, 19, 023022.	2.9	29
82	Itinerant Microwave Photon Detector. Physical Review Letters, 2018, 120, 203602.	7.8	29
83	Quantum Communication with Time-Bin Encoded Microwave Photons. Physical Review Applied, 2019, 12, .	3.8	29
84	Detection and manipulation of Majorana fermions in circuit QED. Physical Review B, 2013, 88, .	3.2	28
85	Resonator reset in circuit QED by optimal control for large open quantum systems. Physical Review A, 2017, 96, .	2.5	28
86	Control and coherence time enhancement of the 0â€“‹i›Ï€‹/i› qubit. New Journal of Physics, 2019, 21, 043002.	2.9	26
87	Demonstration of an All-Microwave Controlled-Phase Gate between Far-Detuned Qubits. Physical Review Applied, 2020, 14, .	3.8	26
88	Multiplexed readout of transmon qubits with Josephson bifurcation amplifiers. Physical Review A, 2014, 90, .	2.5	23
89	Comment on â€œVacuum Rabi Splitting in a Semiconductor Circuit QED Systemâ€• Physical Review Letters, 2013, 111, 249701.	7.8	22
90	Signatures of Hongâ€“Ouâ€“Mandel interference at microwave frequencies. New Journal of Physics, 2013, 15, 105025.	2.9	19

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91	Qubit parity measurement by parametric driving in circuit QED. Science Advances, 2018, 4, eaau1695.	10.3	19
92	Quantum network optimization. Physical Review A, 2001, 64, .	2.5	17
93	Quantum Metamaterial for Broadband Detection of Single Microwave Photons. Physical Review Applied, 2021, 15, .	3.8	17
94	Thermal excitation of multi-photon dressed states in circuit quantum electrodynamics. Physica Scripta, 2009, T137, 014013.	2.5	16
95	Quantum Versus Classical Switching Dynamics of Driven Dissipative Kerr Resonators. Physical Review Applied, 2020, 13, .	3.8	16
96	Variational quantum simulation of ultrastrong light-matter coupling. Physical Review Research, 2020, 2, .	3.6	16
97	Multi-terminal superconducting phase qubit. Physica C: Superconductivity and Its Applications, 2002, 368, 310-314.	1.2	15
98	Quantum Codes for Simplifying Design and Suppressing Decoherence in Superconducting Phase-Qubits. Quantum Information Processing, 2002, 1, 155-182.	2.2	12
99	Improved qubit bifurcation readout in the straddling regime of circuit QED. Physical Review A, 2012, 86, .	2.5	12
100	Hamiltonian engineering for robust quantum state transfer and qubit readout in cavity QED. New Journal of Physics, 2017, 19, 023041.	2.9	12
101	Parametric amplification and squeezing with an ac- and dc-voltage biased superconducting junction. Physical Review Applied, 2019, 11, .	3.8	12
102	Efficient modeling of superconducting quantum circuits with tensor networks. Npj Quantum Information, 2021, 7, .	6.7	12
103	Electron field emission from diamond-like carbon, a correlation with surface modifications. Journal of Applied Physics, 2000, 87, 1356-1360.	2.5	11
104	Quantum-Tailored Machine-Learning Characterization of a Superconducting Qubit. PRX Quantum, 2021, 2, .	9.2	10
105	Engineering, Control, and Longitudinal Readout of Floquet Qubits. Physical Review Applied, 2022, 17, .	3.8	10
106	Superconducting qubit as a probe of squeezing in a nonlinear resonator. Physical Review A, 2014, 89, .	2.5	9
107	Superconducting Coupler with Exponentially Large On:Off Ratio. Physical Review Applied, 2021, 16, .	3.8	7
108	Correlation measurements of individual microwave photons emitted from a symmetric cavity. Journal of Physics: Conference Series, 2011, 264, 012024.	0.4	5

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109	Quantum-error-correction benchmarks for continuous weak-parity measurements. Physical Review A, 2012, 86, .	2.5	5
110	Fast and differentiable simulation of driven quantum systems. Physical Review Research, 2021, 3, .	3.6	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, .	2.5	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