Alexandre Blais

List of Publications by Year in Descending Order

110 papers	16,318 citations	52 h-index	120 g-index
120 ext. papers	19,302 ext. citations	9.8 avg, IF	6.47 L-index

#	Paper	IF	Citations
110	Realizing repeated quantum error correction in a distance-three surface code. *Nature*, **2022**, 605, 669-674	50.4	8
109	Quantum Metamaterial for Broadband Detection of Single Microwave Photons. *Physical Review Applied*, **2021**, 15,	4.3	7
108	Experimental Realization of a Protected Superconducting Circuit Derived from the 0 Qubit. *PRX Quantum*, **2021**, 2,	6.1	16
107	Quantum-optimal-control-inspired ansatz for variational quantum algorithms. *Physical Review Research*, **2021**, 3,	3.9	7
106	Circuit quantum electrodynamics. *Reviews of Modern Physics*, **2021**, 93,	40.5	92
105	Efficient modeling of superconducting quantum circuits with tensor networks. *Npj Quantum Information*, **2021**, 7,	8.6	3
104	Moving beyond the Transmon: Noise-Protected Superconducting Quantum Circuits. *PRX Quantum*, **2021**, 2,	6.1	4
103	Quantum Versus Classical Switching Dynamics of Driven Dissipative Kerr Resonators. *Physical Review Applied*, **2020**, 13,	4.3	2
102	Quantum information processing and quantum optics with circuit quantum electrodynamics. *Nature Physics*, **2020**, 16, 247-256	16.2	86
101	Microwave Quantum Link between Superconducting Circuits Housed in Spatially Separated Cryogenic Systems. *Physical Review Letters*, **2020**, 125, 260502	7.4	23
100	Variational quantum simulation of ultrastrong light-matter coupling. *Physical Review Research*, **2020**, 2,	3.9	7
99	Bifluxon: Fluxon-Parity-Protected Superconducting Qubit. *PRX Quantum*, **2020**, 1,	6.1	13
98	Improving the Performance of Deep Quantum Optimization Algorithms with Continuous Gate Sets. *PRX Quantum*, **2020**, 1,	6.1	20
97	Demonstration of an All-Microwave Controlled-Phase Gate between Far-Detuned Qubits. *Physical Review Applied*, **2020**, 14,	4.3	9
96	Bias-preserving gates with stabilized cat qubits. *Science Advances*, **2020**, 6,	14.3	25
95	Quantum Communication with Time-Bin Encoded Microwave Photons. *Physical Review Applied*, **2019**, 12,	4.3	12
94	Nanowire Superinductance Fluxonium Qubit. *Physical Review Letters*, **2019**, 122, 010504	7.4	35

93	Parametric amplification and squeezing with an ac- and dc-voltage biased superconducting junction. *Physical Review Applied*, **2019**, 11,	4.3	5
92	Quantum Canada. *Quantum Science and Technology*, **2019**, 4, 020503	5.5	18
91	Control and coherence time enhancement of the 0□qubit. *New Journal of Physics*, **2019**, 21, 043002	2.9	13
90	Coherent microwave-photon-mediated coupling between a semiconductor and a superconducting qubit. *Nature Communications*, **2019**, 10, 3011	17.4	18
89	Strong spin-photon coupling in silicon. *Science*, **2018**, 359, 1123-1127	33.3	168
88	Coherence properties of the 0-□ubit. *New Journal of Physics*, **2018**, 20, 043053	2.9	37
87	Fast and Unconditional All-Microwave Reset of a Superconducting Qubit. *Physical Review Letters*, **2018**, 121, 060502	7.4	52
86	Coherent spin-photon coupling using a resonant exchange qubit. *Nature*, **2018**, 560, 179-184	50.4	101
85	Deterministic quantum state transfer and remote entanglement using microwave photons. *Nature*, **2018**, 558, 264-267	50.4	104
84	Qubit parity measurement by parametric driving in circuit QED. *Science Advances*, **2018**, 4, eaau1695	14.3	13
83	Itinerant Microwave Photon Detector. *Physical Review Letters*, **2018**, 120, 203602	7.4	18
82	Ultrastrong coupling dynamics with a transmon qubit. *New Journal of Physics*, **2017**, 19, 023022	2.9	21
81	Engineering the quantum states of light in a Kerr-nonlinear resonator by two-photon driving. *Npj Quantum Information*, **2017**, 3,	8.6	98
80	Quantum annealing with all-to-all connected nonlinear oscillators. *Nature Communications*, **2017**, 8, 15785	17.4	72
79	Hamiltonian engineering for robust quantum state transfer and qubit readout in cavity QED. *New Journal of Physics*, **2017**, 19, 023041	2.9	11
78	Resonator reset in circuit QED by optimal control for large open quantum systems. *Physical Review A*, **2017**, 96,	2.6	20
77	Effect of Higher-Order Nonlinearities on Amplification and Squeezing in Josephson Parametric Amplifiers. *Physical Review Applied*, **2017**, 8,	4.3	27
76	Squeezing and quantum state engineering with Josephson travelling wave amplifiers. *Npj Quantum Information*, **2017**, 3,	8.6	28

75	Widely Tunable On-Chip Microwave Circulator for Superconducting Quantum Circuits. *Physical Review X*, **2017**, 7,	9.1	45
74	Resonance Fluorescence from an Artificial Atom in Squeezed Vacuum. *Physical Review X*, **2016**, 6,	9.1	48
73	Quantum Optics Theory of Electronic Noise in Coherent Conductors. *Physical Review Letters*, **2016**, 116, 043602	7.4	24
72	High-Fidelity Resonator-Induced Phase Gate with Single-Mode Squeezing. *Physical Review Letters*, **2016**, 116, 180501	7.4	26
71	Quantum Zeno effect in the strong measurement regime of circuit quantum electrodynamics. *New Journal of Physics*, **2016**, 18, 053031	2.9	37
70	On-Chip Superconducting Microwave Circulator from Synthetic Rotation. *Physical Review Applied*, **2015**, 4,	4.3	70
69	Fast Quantum Nondemolition Readout by Parametric Modulation of Longitudinal Qubit-Oscillator Interaction. *Physical Review Letters*, **2015**, 115, 203601	7.4	80
68	Heisenberg-Limited Qubit Read-Out with Two-Mode Squeezed Light. *Physical Review Letters*, **2015**, 115, 093604	7.4	31
67	Perfect squeezing by damping modulation in circuit quantum electrodynamics. *Physical Review A*, **2014**, 89,	2.6	26
66	Superconducting qubit as a probe of squeezing in a nonlinear resonator. *Physical Review A*, **2014**, 89,	2.6	9
65	Multiplexed readout of transmon qubits with Josephson bifurcation amplifiers. *Physical Review A*, **2014**, 90,	2.6	15
64	Input-output theory for waveguide QED with an ensemble of inhomogeneous atoms. *Physical Review A*, **2013**, 88,	2.6	143
63	Correlations, indistinguishability and entanglement in Hong□Ou□Mandel experiments at microwave frequencies. *Nature Physics*, **2013**, 9, 345-348	16.2	103
62	Detection and manipulation of Majorana fermions in circuit QED. *Physical Review B*, **2013**, 88,	3.3	28
61	Photon-mediated interactions between distant artificial atoms. *Science*, **2013**, 342, 1494-6	33.3	304
60	Comment on "Vacuum Rabi splitting in a semiconductor circuit QED system". *Physical Review Letters*, **2013**, 111, 249701	7.4	22
59	First-order sideband transitions with flux-driven asymmetric transmon qubits. *Physical Review B*, **2013**, 87,	3.3	103
58	Quantum heating of a nonlinear resonator probed by a superconducting qubit. *Physical Review Letters*, **2013**, 110, 047001	7.4	28

57	Signatures of Hong□Du□Mandel interference at microwave frequencies. *New Journal of Physics*, **2013**, 15, 105025	2.9	14
56	Josephson-junction-embedded transmission-line resonators: From Kerr medium to in-line transmon. *Physical Review A*, **2012**, 86,	2.6	112
55	Improved qubit bifurcation readout in the straddling regime of circuit QED. *Physical Review A*, **2012**, 86,	2.6	10
54	First-order sidebands in circuit QED using qubit frequency modulation. *Physical Review A*, **2012**, 86,	2.6	39
53	Dipole coupling of a double quantum dot to a microwave resonator. *Physical Review Letters*, **2012**, 108, 046807	7.4	241
52	Measurement-induced qubit state mixing in circuit QED from up-converted dephasing noise. *Physical Review Letters*, **2012**, 109, 153601	7.4	68
51	Quantum-error-correction benchmarks for continuous weak-parity measurements. *Physical Review A*, **2012**, 86,	2.6	5
50	Back-action of a driven nonlinear resonator on a superconducting qubit. *Physical Review A*, **2012**, 85,	2.6	27
49	Circuit quantum electrodynamics with a nonlinear resonator **2012**, 1-32		3
48	Circuit QED with a nonlinear resonator: ac-Stark shift and dephasing. *Physical Review Letters*, **2011**, 106, 167002	7.4	66
47	Correlation measurements of individual microwave photons emitted from a symmetric cavity. *Journal of Physics: Conference Series*, **2011**, 264, 012024	0.3	5
46	Observation of resonant photon blockade at microwave frequencies using correlation function measurements. *Physical Review Letters*, **2011**, 106, 243601	7.4	243
45	Antibunching of microwave-frequency photons observed in correlation measurements using linear detectors. *Nature Physics*, **2011**, 7, 154-158	16.2	173
44	Dissipation and ultrastrong coupling in circuit QED. *Physical Review A*, **2011**, 84,	2.6	216
43	Superconducting qubit with Purcell protection and tunable coupling. *Physical Review Letters*, **2011**, 106, 030502	7.4	94
42	Control and tomography of a three level superconducting artificial atom. *Physical Review Letters*, **2010**, 105, 223601	7.4	88
41	Tunable joint measurements in the dispersive regime of cavity QED. *Physical Review A*, **2010**, 81,	2.6	53
40	Schemes for the observation of photon correlation functions in circuit QED with linear detectors. *Physical Review A*, **2010**, 82,	2.6	88

39	Improved superconducting qubit readout by qubit-induced nonlinearities. *Physical Review Letters*, **2010**, 105, 100504	7.4	72
38	Electromagnetically induced transparency with amplification in superconducting circuits. *Physical Review Letters*, **2010**, 105, 073601	7.4	64
37	Dispersive regime of circuit QED: Photon-dependent qubit dephasing and relaxation rates. *Physical Review A*, **2009**, 79,	2.6	165
36	Dynamics of dispersive single-qubit readout in circuit quantum electrodynamics. *Physical Review A*, **2009**, 80,	2.6	52
35	Measurement of Autler-Townes and Mollow transitions in a strongly driven superconducting qubit. *Physical Review Letters*, **2009**, 102, 243602	7.4	136
34	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 mathematiques, Montreal, Quebec, Canada on 4-7 June 2008.. *Canadian Journal of Physics*, **2009**, 87, 225-231	1.1	30
33	Demonstration of two-qubit algorithms with a superconducting quantum processor. *Nature*, **2009**, 460, 240-4	50.4	773
32	Ultrastrong coupling regime of cavity QED with phase-biased flux qubits. *Physical Review A*, **2009**, 80,	2.6	205
31	Thermal excitation of multi-photon dressed states in circuit quantum electrodynamics. *Physica Scripta*, **2009**, T137, 014013	2.6	15
30	Two-qubit state tomography using a joint dispersive readout. *Physical Review Letters*, **2009**, 102, 200402	7.4	124
29	Dressed collective qubit states and the Tavis-Cummings model in circuit QED. *Physical Review Letters*, **2009**, 103, 083601	7.4	232
28	Climbing the Jaynes-Cummings ladder and observing its nonlinearity in a cavity QED system. *Nature* , **2008**, 454, 315-8	50.4	340
27	Quantum walks on circles in phase space via superconducting circuit quantum electrodynamics. *Physical Review A*, **2008**, 78,	2.6	34
26	Quantum trajectory approach to circuit QED: Quantum jumps and the Zeno effect. *Physical Review A*, **2008**, 77,	2.6	186
25	Nonlinear dispersive regime of cavity QED: The dressed dephasing model. *Physical Review A*, **2008**, 77,	2.6	60
24	Resolving vacuum fluctuations in an electrical circuit by measuring the Lamb shift. *Science*, **2008**, 322, 1357-60	33.3	82
23	Observation of Berry's phase in a solid-state qubit. *Science*, **2007**, 318, 1889-92	33.3	278
22	Charge-insensitive qubit design derived from the Cooper pair box. *Physical Review A*, **2007**, 76,	2.6	1530

21	Quantum-information processing with circuit quantum electrodynamics. *Physical Review A*, **2007**, 75,	2.6	461
20	Resolving photon number states in a superconducting circuit. *Nature*, **2007**, 445, 515-8	50.4	571
19	Coupling superconducting qubits via a cavity bus. *Nature*, **2007**, 449, 443-7	50.4	940
18	Sideband transitions and two-tone spectroscopy of a superconducting qubit strongly coupled to an on-chip cavity. *Physical Review Letters*, **2007**, 99, 050501	7.4	75
17	Qubit-photon interactions in a cavity: Measurement-induced dephasing and number splitting. *Physical Review A*, **2006**, 74,	2.6	207
16	Approaching unit visibility for control of a superconducting qubit with dispersive readout. *Physical Review Letters*, **2005**, 95, 060501	7.4	386
15	ac Stark shift and dephasing of a superconducting qubit strongly coupled to a cavity field. *Physical Review Letters*, **2005**, 94, 123602	7.4	287
14	Protocol for Universal Gates in Optimally Biased Superconducting Qubits. *Physical Review Letters*, **2005**, 94,	7.4	89
13	PublisherЋs Note: Cavity quantum electrodynamics for superconducting electrical circuits: An architecture for quantum computation [Phys. Rev. A 69, 062320 (2004)]. *Physical Review A*, **2004**, 70,	2.6	2
12	Prospects for Strong Cavity Quantum Electrodynamics with Superconducting Circuits. *Les Houches Summer School Proceedings*, **2004**, 79, 591-608		
11	Cavity quantum electrodynamics for superconducting electrical circuits: An architecture for quantum computation. *Physical Review A*, **2004**, 69,	2.6	1927
10	Strong coupling of a single photon to a superconducting qubit using circuit quantum electrodynamics. *Nature*, **2004**, 431, 162-7	50.4	2755
9	Tunable coupling of superconducting qubits. *Physical Review Letters*, **2003**, 90, 127901	7.4	155
8	Effect of noise on geometric logic gates for quantum computation. *Physical Review A*, **2003**, 67,	2.6	49
7	Algorithmes et architectures pour ordinateurs quantiques supraconducteurs. *Annales De Physique*, **2003**, 28, 1-148		2
6	Multi-terminal superconducting phase qubit. *Physica C: Superconductivity and Its Applications*, **2002**, 368, 310-314	1.3	10
5	Quantum Codes for Simplifying Design and Suppressing Decoherence in Superconducting Phase-Qubits. *Quantum Information Processing*, **2002**, 1, 155-182	1.6	10
4	Quantum network optimization. *Physical Review A*, **2001**, 64,	2.6	11

3	Operation of universal gates in a solid-state quantum computer based on clean Josephson junctions between d-wave superconductors. *Physical Review A*, **2000**, 61,	2.6	78
2	Electron field emission from diamond-like carbon, a correlation with surface modifications. *Journal of Applied Physics*, **2000**, 87, 1356-1360	2.5	9
1	Fast and high-fidelity entangling gate through parametrically modulated longitudinal coupling. *Quantum - the Open Journal for Quantum Science*,1, 11		27