

Alexandre Blais

List of Publications by Year in descending order

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Version: 2024-02-01

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	Realizing repeated quantum error correction in a distance-three surface code. <i>Nature</i> , 2022, 605, 669-674.	27.8	203
2	Engineering, Control, and Longitudinal Readout of Floquet Qubits. <i>Physical Review Applied</i> , 2022, 17, .	3.8	10
3	Efficient modeling of superconducting quantum circuits with tensor networks. <i>Npj Quantum Information</i> , 2021, 7, .	6.7	12
4	Quantum Metamaterial for Broadband Detection of Single Microwave Photons. <i>Physical Review Applied</i> , 2021, 15, .	3.8	17
5	Experimental Realization of a Protected Superconducting Circuit Derived from the \hat{C} Qubit. <i>PRX Quantum</i> , 2021, 2, .	9.2	77
6	Quantum-optimal-control-inspired ansatz for variational quantum algorithms. <i>Physical Review Research</i> , 2021, 3, .	3.6	37
7	Circuit quantum electrodynamics. <i>Reviews of Modern Physics</i> , 2021, 93, .	45.6	634
8	Fast and differentiable simulation of driven quantum systems. <i>Physical Review Research</i> , 2021, 3, .	3.6	5
9	Moving beyond the Transmon: Noise-Protected Superconducting Quantum Circuits. <i>PRX Quantum</i> , 2021, 2, .	9.2	43
10	Superconducting Coupler with Exponentially Large On:Off Ratio. <i>Physical Review Applied</i> , 2021, 16, .	3.8	7
11	Quantum-Tailored Machine-Learning Characterization of a Superconducting Qubit. <i>PRX Quantum</i> , 2021, 2, .	9.2	10
12	Demonstration of an All-Microwave Controlled-Phase Gate between Far-Detuned Qubits. <i>Physical Review Applied</i> , 2020, 14, .	3.8	26
13	Bias-preserving gates with stabilized cat qubits. <i>Science Advances</i> , 2020, 6, .	10.3	105
14	Quantum Versus Classical Switching Dynamics of Driven Dissipative Kerr Resonators. <i>Physical Review Applied</i> , 2020, 13, .	3.8	16
15	Quantum information processing and quantum optics with circuit quantum electrodynamics. <i>Nature Physics</i> , 2020, 16, 247-256.	16.7	220
16	Microwave Quantum Link between Superconducting Circuits Housed in Spatially Separated Cryogenic Systems. <i>Physical Review Letters</i> , 2020, 125, 260502.	7.8	91
17	Variational quantum simulation of ultrastrong light-matter coupling. <i>Physical Review Research</i> , 2020, 2, .	3.6	16
18	Bifluxon: Fluxon-Parity-Protected Superconducting Qubit. <i>PRX Quantum</i> , 2020, 1, .	9.2	39

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19	Improving the Performance of Deep Quantum Optimization Algorithms with Continuous Gate Sets. PRX Quantum, 2020, 1, .	9.2	53
20	Control and coherence time enhancement of the 0^{th} qubit. New Journal of Physics, 2019, 21, 043002.	2.9	26
21	Coherent microwave-photon-mediated coupling between a semiconductor and a superconducting qubit. Nature Communications, 2019, 10, 3011.	12.8	40
22	Quantum Communication with Time-Bin Encoded Microwave Photons. Physical Review Applied, 2019, 12, .	3.8	29
23	Nanowire Superinductance Fluxonium Qubit. Physical Review Letters, 2019, 122, 010504.	7.8	66
24	Parametric amplification and squeezing with an ac- and dc-voltage biased superconducting junction. Physical Review Applied, 2019, 11, .	3.8	12
25	Quantum Canada. Quantum Science and Technology, 2019, 4, 020503.	5.8	36
26	Embedding Silicon Spin Qubits in Superconducting Circuits. , 2019, , .		0
27	Strong spin-photon coupling in silicon. Science, 2018, 359, 1123-1127.	12.6	278
28	Coherence properties of the 0^{th} qubit. New Journal of Physics, 2018, 20, 043053.	2.9	64
29	Qubit parity measurement by parametric driving in circuit QED. Science Advances, 2018, 4, eaau1695.	10.3	19
30	Itinerant Microwave Photon Detector. Physical Review Letters, 2018, 120, 203602.	7.8	29
31	Fast and Unconditional All-Microwave Reset of a Superconducting Qubit. Physical Review Letters, 2018, 121, 060502.	7.8	96
32	Coherent spin-photon coupling using a resonant exchange qubit. Nature, 2018, 560, 179-184.	27.8	169
33	Deterministic quantum state transfer and remote entanglement using microwave photons. Nature, 2018, 558, 264-267.	27.8	175
34	Ultrastrong coupling dynamics with a transmon qubit. New Journal of Physics, 2017, 19, 023022.	2.9	29
35	Engineering the quantum states of light in a Kerr-nonlinear resonator by two-photon driving. Npj Quantum Information, 2017, 3, .	6.7	188
36	Quantum annealing with all-to-all connected nonlinear oscillators. Nature Communications, 2017, 8, 15785.	12.8	118

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37	Hamiltonian engineering for robust quantum state transfer and qubit readout in cavity QED. <i>New Journal of Physics</i> , 2017, 19, 023041.	2.9	12
38	Resonator reset in circuit QED by optimal control for large open quantum systems. <i>Physical Review A</i> , 2017, 96, .	2.5	28
39	Effect of Higher-Order Nonlinearities on Amplification and Squeezing in Josephson Parametric Amplifiers. <i>Physical Review Applied</i> , 2017, 8, .	3.8	49
40	Squeezing and quantum state engineering with Josephson travelling wave amplifiers. <i>Npj Quantum Information</i> , 2017, 3, .	6.7	53
41	Widely Tunable On-Chip Microwave Circulator for Superconducting Quantum Circuits. <i>Physical Review X</i> , 2017, 7, .	8.9	87
42	Quantum Zeno effect in the strong measurement regime of circuit quantum electrodynamics. <i>New Journal of Physics</i> , 2016, 18, 053031.	2.9	40
43	Resonance Fluorescence from an Artificial Atom in Squeezed Vacuum. <i>Physical Review X</i> , 2016, 6, .	8.9	60
44	Quantum Optics Theory of Electronic Noise in Coherent Conductors. <i>Physical Review Letters</i> , 2016, 116, 043602.	7.8	32
45	High-Fidelity Resonator-Induced Phase Gate with Single-Mode Squeezing. <i>Physical Review Letters</i> , 2016, 116, 180501.	7.8	33
46	On-Chip Superconducting Microwave Circulator from Synthetic Rotation. <i>Physical Review Applied</i> , 2015, 4, .	3.8	101
47	Fast Quantum Nondemolition Readout by Parametric Modulation of Longitudinal Qubit-Oscillator Interaction. <i>Physical Review Letters</i> , 2015, 115, 203601.	7.8	118
48	Heisenberg-Limited Qubit Read-Out with Two-Mode Squeezed Light. <i>Physical Review Letters</i> , 2015, 115, 093604.	7.8	39
49	Multiplexed readout of transmon qubits with Josephson bifurcation amplifiers. <i>Physical Review A</i> , 2014, 90, .	2.5	23
50	Perfect squeezing by damping modulation in circuit quantum electrodynamics. <i>Physical Review A</i> , 2014, 89, .	2.5	35
51	Superconducting qubit as a probe of squeezing in a nonlinear resonator. <i>Physical Review A</i> , 2014, 89, .	2.5	9
52	Remote Controlled Entanglement. <i>Physics Magazine</i> , 2014, 7, .	0.1	1
53	Input-output theory for waveguide QED with an ensemble of inhomogeneous atoms. <i>Physical Review A</i> , 2013, 88, .	2.5	196
54	Correlations, indistinguishability and entanglement in Hongâ€“Ouâ€“Mandel experiments at microwave frequencies. <i>Nature Physics</i> , 2013, 9, 345-348.	16.7	126

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55	Detection and manipulation of Majorana fermions in circuit QED. Physical Review B, 2013, 88, .	3.2	28
56	Photon-Mediated Interactions Between Distant Artificial Atoms. Science, 2013, 342, 1494-1496.	12.6	409
57	Comment on "Vacuum Rabi Splitting in a Semiconductor Circuit QED System": Physical Review Letters, 2013, 111, 249701.	7.8	22
58	First-order sideband transitions with flux-driven asymmetric transmon qubits. Physical Review B, 2013, 87, .	3.2	131
59	Quantum Heating of a Nonlinear Resonator Probed by a Superconducting Qubit. Physical Review Letters, 2013, 110, 047001.	7.8	31
60	Signatures of Hong-Ou-Mandel interference at microwave frequencies. New Journal of Physics, 2013, 15, 105025.	2.9	19
61	Measurement-Induced Qubit State Mixing in Circuit QED from Up-Converted Dephasing Noise. Physical Review Letters, 2012, 109, 153601.	7.8	88
62	Quantum-error-correction benchmarks for continuous weak-parity measurements. Physical Review A, 2012, 86, .	2.5	5
63	Back-action of a driven nonlinear resonator on a superconducting qubit. Physical Review A, 2012, 85, .	2.5	36
64	Josephson-junction-embedded transmission-line resonators: From Kerr medium to in-line transmon. Physical Review A, 2012, 86, .	2.5	138
65	Improved qubit bifurcation readout in the straddling regime of circuit QED. Physical Review A, 2012, 86, .	2.5	12
66	First-order sidebands in circuit QED using qubit frequency modulation. Physical Review A, 2012, 86, .	2.5	57
67	Dipole Coupling of a Double Quantum Dot to a Microwave Resonator. Physical Review Letters, 2012, 108, 046807.	7.8	287
68	Circuit quantum electrodynamics with a nonlinear resonator. , 2012, , 1-32.		5
69	Dissipation and ultrastrong coupling in circuit QED. Physical Review A, 2011, 84, .	2.5	279
70	Circuit QED with a Nonlinear Resonator: ac-Stark Shift and Dephasing. Physical Review Letters, 2011, 106, 167002.	7.8	75
71	Correlation measurements of individual microwave photons emitted from a symmetric cavity. Journal of Physics: Conference Series, 2011, 264, 012024.	0.4	5
72	Observation of Resonant Photon Blockade at Microwave Frequencies Using Correlation Function Measurements. Physical Review Letters, 2011, 106, 243601.	7.8	305

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73	Antibunching of microwave-frequency photons observed in correlation measurements using linear detectors. <i>Nature Physics</i> , 2011, 7, 154-158.	16.7	196
74	Superconducting Qubit with Purcell Protection and Tunable Coupling. <i>Physical Review Letters</i> , 2011, 106, 030502.	7.8	107
75	Control and Tomography of a Three Level Superconducting Artificial Atom. <i>Physical Review Letters</i> , 2010, 105, 223601.	7.8	119
76	Tunable joint measurements in the dispersive regime of cavity QED. <i>Physical Review A</i> , 2010, 81, .	2.5	57
77	Schemes for the observation of photon correlation functions in circuit QED with linear detectors. <i>Physical Review A</i> , 2010, 82, .	2.5	107
78	Improved Superconducting Qubit Readout by Qubit-Induced Nonlinearities. <i>Physical Review Letters</i> , 2010, 105, 100504.	7.8	94
79	Electromagnetically Induced Transparency with Amplification in Superconducting Circuits. <i>Physical Review Letters</i> , 2010, 105, 073601.	7.8	76
80	Dispersive regime of circuit QED: Photon-dependent qubit dephasing and relaxation rates. <i>Physical Review A</i> , 2009, 79, .	2.5	213
81	Dynamics of dispersive single-qubit readout in circuit quantum electrodynamics. <i>Physical Review A</i> , 2009, 80, .	2.5	62
82	Measurement of Autler-Townes and Mollow Transitions in a Strongly Driven Superconducting Qubit. <i>Physical Review Letters</i> , 2009, 102, 243602.	7.8	158
83	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.	1.1	34
84	Demonstration of two-qubit algorithms with a superconducting quantum processor. <i>Nature</i> , 2009, 460, 240-244.	27.8	923
85	Ultrastrong coupling regime of cavity QED with phase-biased flux qubits. <i>Physical Review A</i> , 2009, 80, .	2.5	226
86	Thermal excitation of multi-photon dressed states in circuit quantum electrodynamics. <i>Physica Scripta</i> , 2009, T137, 014013.	2.5	16
87	Two-Qubit State Tomography Using a Joint Dispersive Readout. <i>Physical Review Letters</i> , 2009, 102, 200402.	7.8	145
88	Dressed Collective Qubit States and the Tavis-Cummings Model in Circuit QED. <i>Physical Review Letters</i> , 2009, 103, 083601.	7.8	283
89	Demonstration of Two-Qubit Quantum Algorithms with a Solid-State Electronic Processor. , 2009, , .		0
90	Climbing the Jaynes-Cummings ladder and observing its nonlinearity in a cavity QED system. <i>Nature</i> , 2008, 454, 315-318.	27.8	414

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91	Quantum walks on circles in phase space via superconducting circuit quantum electrodynamics. Physical Review A, 2008, 78, .	2.5	36
92	Quantum trajectory approach to circuit QED: Quantum jumps and the Zeno effect. Physical Review A, 2008, 77, .	2.5	218
93	Nonlinear dispersive regime of cavity QED: The dressed dephasing model. Physical Review A, 2008, 77, .	2.5	68
94	Resolving Vacuum Fluctuations in an Electrical Circuit by Measuring the Lamb Shift. Science, 2008, 322, 1357-1360.	12.6	96
95	Filling a cavity with photons, and watching them leave. Physics Magazine, 2008, 1, .	0.1	0
96	Quantum Information Processing with Superconducting Qubits and Cavities. , 2007, , .		2
97	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
98	Observation of Berry's Phase in a Solid-State Qubit. Science, 2007, 318, 1889-1892.	12.6	321
99	Charge-insensitive qubit design derived from the Cooper pair box. Physical Review A, 2007, 76, .	2.5	2,184
100	Quantum-information processing with circuit quantum electrodynamics. Physical Review A, 2007, 75, .	2.5	550
101	Resolving photon number states in a superconducting circuit. Nature, 2007, 445, 515-518.	27.8	685
102	Coupling superconducting qubits via a cavity bus. Nature, 2007, 449, 443-447.	27.8	1,109
103	Qubit-photon interactions in a cavity: Measurement-induced dephasing and number splitting. Physical Review A, 2006, 74, .	2.5	281
104	ac Stark Shift and Dephasing of a Superconducting Qubit Strongly Coupled to a Cavity Field. Physical Review Letters, 2005, 94, 123602.	7.8	351
105	Protocol for Universal Gates in Optimally Biased Superconducting Qubits. Physical Review Letters, 2005, 94, .	7.8	98
106	Approaching Unit Visibility for Control of a Superconducting Qubit with Dispersive Readout. Physical Review Letters, 2005, 95, 060501.	7.8	456
107	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
108	Course 16 Prospects for strong cavity quantum electrodynamics with superconducting circuits. Les Houches Summer School Proceedings, 2004, 79, 591-608.	0.2	0

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109	Cavity quantum electrodynamics for superconducting electrical circuits: An architecture for quantum computation. <i>Physical Review A</i> , 2004, 69, .	2.5	2,317
110	Strong coupling of a single photon to a superconducting qubit using circuit quantum electrodynamics. <i>Nature</i> , 2004, 431, 162-167.	27.8	3,195
111	Tunable Coupling of Superconducting Qubits. <i>Physical Review Letters</i> , 2003, 90, 127901.	7.8	171
112	Effect of noise on geometric logic gates for quantum computation. <i>Physical Review A</i> , 2003, 67, .	2.5	53
113	Algorithmes et architectures pour ordinateurs quantiques supraconducteurs. <i>Annales De Physique</i> , 2003, 28, 1-148.	0.2	3
114	Multi-terminal superconducting phase qubit. <i>Physica C: Superconductivity and Its Applications</i> , 2002, 368, 310-314.	1.2	15
115	Quantum Codes for Simplifying Design and Suppressing Decoherence in Superconducting Phase-Qubits. <i>Quantum Information Processing</i> , 2002, 1, 155-182.	2.2	12
116	Quantum network optimization. <i>Physical Review A</i> , 2001, 64, .	2.5	17
117	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, .	2.5	86
118	Electron field emission from diamond-like carbon, a correlation with surface modifications. <i>Journal of Applied Physics</i> , 2000, 87, 1356-1360.	2.5	11
119	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