Andreas J Wallraff

List of Publications by Year
in descending order

151	21,168	14655 66	9103 144
papers	citations	h-index	g-index

157	157	157	8712
all docs	docs citations	times ranked	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	Coupling superconducting qubits via a cavity bus. Nature, 2007, 449, 443-447.	27.8	1,109
4	Resolving photon number states in a superconducting circuit. Nature, 2007, 445, 515-518.	27.8	685
5	Circuit quantum electrodynamics. Reviews of Modern Physics, 2021, 93, .	45.6	634
6	Quantum-information processing with circuit quantum electrodynamics. Physical Review A, 2007, 75, .	2.5	550
7	Approaching Unit Visibility for Control of a Superconducting Qubit with Dispersive Readout. Physical Review Letters, 2005, 95, 060501.	7.8	456
8	Climbing the Jaynesâ€“Cummings ladder and observing its nonlinearity in a cavity QED system. Nature, 2008, 454, 315-318.	27.8	414
9	Photon-Mediated Interactions Between Distant Artificial Atoms. Science, 2013, 342, 1494-1496.	12.6	409
10	The quantum technologies roadmap: a European community view. New Journal of Physics, 2018, 20, 080201.	2.9	358
11	ac Stark Shift and Dephasing of a Superconducting Qubit Strongly Coupled to a Cavity Field. Physical Review Letters, 2005, 94, 123602.	7.8	351
12	Observation of Berry's Phase in a Solid-State Qubit. Science, 2007, 318, 1889-1892.	12.6	321
13	Observation of Resonant Photon Blockade at Microwave Frequencies Using Correlation Function Measurements. Physical Review Letters, 2011, 106, 243601.	7.8	305
14	Implementation of a Toffoli gate with superconducting circuits. Nature, 2012, 481, 170-172.	27.8	296
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	Experimental realization of non-Abelian non-adiabatic geometric gates. Nature, 2013, 496, 482-485.	27.8	279

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19	Coplanar waveguide resonators for circuit quantum electrodynamics. Journal of Applied Physics, 2008, 104, .	2.5	246
20	Realizing repeated quantum error correction in a distance-three surface code. Nature, 2022, 605, 669-674.	27.8	203
21	Deterministic quantum teleportation with feed-forward in a solid state system. Nature, 2013, 500, 319-322.	27.8	201
22	Rapid High-Fidelity Single-Shot Dispersive Readout of Superconducting Qubits. Physical Review Applied, 2017, 7, .	3.8	200
23	Antibunching of microwave-frequency photons observed in correlation measurements using linear detectors. Nature Physics, 2011, 7, 154-158.	16.7	196
24	Input-output theory for waveguide QED with an ensemble of inhomogeneous atoms. Physical Review A, 2013, 88, .	2.5	196
25	Observation of Dicke superradiance for two artificial atoms in a cavity with high decay rate. Nature Communications, 2014, 5, 5186.	12.8	194
26	Observation of Two-Mode Squeezing in the Microwave Frequency Domain. Physical Review Letters, 2011, 107, 113601.	7.8	184
27	Deterministic quantum state transfer and remote entanglement using microwave photons. Nature, 2018, 558, 264-267.	27.8	175
28	Using sideband transitions for two-qubit operations in superconducting circuits. Physical Review B, 2009, 79, .	3.2	169
29	Coherent spinâ€“photon coupling using a resonant exchange qubit. Nature, 2018, 560, 179-184.	27.8	169
30	Strong Coupling Cavity QED with Gate-Defined Double Quantum Dots Enabled by a High Impedance Resonator. Physical Review X, 2017, 7, .	8.9	168
31	Repeated quantum error detection in a surface code. Nature Physics, 2020, 16, 875-880.	16.7	159
32	Measurement of Autler-Townes and Mollow Transitions in a Strongly Driven Superconducting Qubit. Physical Review Letters, 2009, 102, 243602.	7.8	158
33	Quantum dynamics of a single vortex. Nature, 2003, 425, 155-158.	27.8	154
34	Experimental State Tomography of Itinerant Single Microwave Photons. Physical Review Letters, 2011, 106, 220503.	7.8	154
35	Digital Quantum Simulation of Spin Models with Circuit Quantum Electrodynamics. Physical Review X, 2015, 5, .	8.9	152
36	Engineering cryogenic setups for 100-qubit scale superconducting circuit systems. EPJ Quantum Technology, 2019, 6, .	6.3	152

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37	Two-Qubit State Tomography Using a Joint Dispersive Readout. Physical Review Letters, 2009, 102, 200402.	7.8	145
38	Rapid High-fidelity Multiplexed Readout of Superconducting Qubits. Physical Review Applied, 2018, 10, .	3.8	145
39	Fabrication and Characterization of Superconducting Circuit QED Devices for Quantum Computation. IEEE Transactions on Applied Superconductivity, 2005, 15, 860-863.	1.7	142
40	Quantum-Limited Amplification and Entanglement in Coupled Nonlinear Resonators. Physical Review Letters, 2014, 113, 110502.	7.8	142
41	Energy-dependent path of dissipation in nanomechanical resonators. Nature Nanotechnology, 2017, 12, 631-636.	31.5	127
42	Correlations, indistinguishability and entanglement in Hongâ€“Ouâ€“Mandel experiments at microwave frequencies. Nature Physics, 2013, 9, 345-348.	16.7	126
43	Cavity Quantum Electrodynamics with Separate Photon Storage and Qubit Readout Modes. Physical Review Letters, 2010, 104, 100504.	7.8	121
44	Control and Tomography of a Three Level Superconducting Artificial Atom. Physical Review Letters, 2010, 105, 223601.	7.8	119
45	Observation of the Photon-Blockade Breakdown Phase Transition. Physical Review X, 2017, 7, .	8.9	109
46	Schemes for the observation of photon correlation functions in circuit QED with linear detectors. Physical Review A, 2010, 82, .	2.5	107
47	Protocols for optimal readout of qubits using a continuous quantum nondemolition measurement. Physical Review A, 2007, 76, .	2.5	106
48	Multiphoton Transitions between Energy Levels in a Current-Biased Josephson Tunnel Junction. Physical Review Letters, 2003, 90, 037003.	7.8	96
49	Resolving Vacuum Fluctuations in an Electrical Circuit by Measuring the Lamb Shift. Science, 2008, 322, 1357-1360.	12.6	96
50	Characterizing quantum microwave radiation and its entanglement with superconducting qubits using linear detectors. Physical Review A, 2012, 86, .	2.5	96
51	Fast and Unconditional All-Microwave Reset of a Superconducting Qubit. Physical Review Letters, 2018, 121, 060502.	7.8	96
52	Controlling the dynamic range of a Josephson parametric amplifier. EPJ Quantum Technology, 2014, 1, .	6.3	95
53	Microwave Quantum Link between Superconducting Circuits Housed in Spatially Separated Cryogenic Systems. Physical Review Letters, 2020, 125, 260502.	7.8	91
54	Driving Rydberg-Rydberg Transitions from a Coplanar Microwave Waveguide. Physical Review Letters, 2012, 108, 063004.	7.8	90

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55	Microwave-Controlled Generation of Shaped Single Photons in Circuit Quantum Electrodynamics. Physical Review X, 2014, 4, .	8.9	89
56	Observation of Entanglement between Itinerant Microwave Photons and a Superconducting Qubit. Physical Review Letters, 2012, 109, 240501.	7.8	88
57	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
58	Digital Quantum Simulation of Spin Systems in Superconducting Circuits. Physical Review Letters, 2014, 112, .	7.8	85
59	Exploring the effect of noise on the Berry phase. Physical Review A, 2013, 87, .	2.5	81
60	Fabrication and heating rate study of microscopic surface electrode ion traps. New Journal of Physics, 2011, 13, 013032.	2.9	80
61	Implementation of Conditional Phase Gates Based on Tunable <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Z</mml:mi><mml:mi>Z</mml:mi></mml:mrow></mml:math> Interactions. Physical Review Letters, 2020, 125, 240502.	7.8	76
62	Studying light-harvesting models with superconducting circuits. Nature Communications, 2018, 9, 904.	12.8	74
63	Reversing Quantum Trajectories with Analog Feedback. Physical Review Letters, 2014, 112, .	7.8	72
64	Single-Shot Quantum Nondemolition Detection of Individual Itinerant Microwave Photons. Physical Review X, 2018, 8, .	8.9	69
65	Cherenkov radiation in coupled long Josephson junctions. Physical Review B, 1998, 57, 130-133.	3.2	67
66	Multimode mediated qubit-qubit coupling and dark-state symmetries in circuit quantum electrodynamics. Physical Review A, 2011, 83, .	2.5	67
67	Microwave-induced amplitude- and phase-tunable qubit-resonator coupling in circuit quantum electrodynamics. Physical Review A, 2015, 91, .	2.5	67
68	Quantum-To-Classical Transition in Cavity Quantum Electrodynamics. Physical Review Letters, 2010, 105, 163601.	7.8	65
69	Benchmarking a Quantum Teleportation Protocol in Superconducting Circuits Using Tomography and an Entanglement Witness. Physical Review Letters, 2012, 108, 040502.	7.8	65
70	Dynamics of dispersive single-qubit readout in circuit quantum electrodynamics. Physical Review A, 2009, 80, .	2.5	62
71	Microwave Emission from Hybridized States in a Semiconductor Charge Qubit. Physical Review Letters, 2015, 115, 046802.	7.8	61
72	Entanglement stabilization using ancilla-based parity detection and real-time feedback in superconducting circuits. Npj Quantum Information, 2019, 5, .	6.7	60

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73	Switching current measurements of large area Josephson tunnel junctions. Review of Scientific Instruments, 2003, 74, 3740-3748.	1.3	59
74	Observation of topological Uhlmann phases with superconducting qubits. Npj Quantum Information, 2018, 4, .	6.7	59
75	Quantum dot admittance probed at microwave frequencies with an on-chip resonator. Physical Review B, 2012, 86, .	3.2	56
76	Single-electron double quantum dot dipole-coupled to a single photonic mode. Physical Review B, 2013, 88, .	3.2	54
77	Superconducting Switch for Fast On-Chip Routing of Quantum Microwave Fields. Physical Review Applied, 2016, 6, .	3.8	53
78	Improving the Performance of Deep Quantum Optimization Algorithms with Continuous Gate Sets. PRX Quantum, 2020, 1, .	9.2	53
79	The engineering challenges in quantum computing. , 2017, , .		51
80	Title is missing!. Journal of Low Temperature Physics, 2000, 118, 543-553.	1.4	49
81	Geometric Phase and Nonadiabatic Effects in an Electronic Harmonic Oscillator. Physical Review Letters, 2012, 108, 170401.	7.8	48
82	Quantum-control approach to realizing a Toffoli gate in circuit QED. Physical Review B, 2012, 85, .	3.2	48
83	Low-Latency Digital Signal Processing for Feedback and Feedforward in Quantum Computing and Communication. Physical Review Applied, 2018, 9, .	3.8	46
84	All-Microwave Control and Dispersive Readout of Gate-Defined Quantum Dot Qubits in Circuit Quantum Electrodynamics. Physical Review Letters, 2019, 122, 206802.	7.8	44
85	Realizing a deterministic source of multipartite-entangled photonic qubits. Nature Communications, 2020, 11, 4877.	12.8	43
86	Microwave Photon-Mediated Interactions between Semiconductor Qubits. Physical Review X, 2018, 8, .	8.9	42
87	Josephson Vortex Qubit: Design, Preparation and Read-Out. Physica Status Solidi (B): Basic Research, 2002, 233, 472-481.	1.5	41
88	Benchmarking Coherent Errors in Controlled-Phase Gates due to Spectator Qubits. Physical Review Applied, 2020, 14, .	3.8	41
89	Coherent microwave-photon-mediated coupling between a semiconductor and a superconducting qubit. Nature Communications, 2019, 10, 3011.	12.8	40
90	Virtual-photon-mediated spin-qubitâ€“transmon coupling. Nature Communications, 2019, 10, 5037.	12.8	39

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91	Demonstrating<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>W</mml:mi></mml:math>-type entanglement of Dicke states in resonant cavity quantum electrodynamics. Physical Review A, 2012, 86, .	2.5	38
92	Contextuality without nonlocality in a superconducting quantum system. Nature Communications, 2016, 7, 12930.	12.8	38
93	Preparation of subradiant states using local qubit control in circuit QED. Physical Review A, 2011, 84, .	2.5	37
94	Clean carbon nanotubes coupled to superconducting impedance-matching circuits. Nature Communications, 2015, 6, 7165.	12.8	37
95	Floquet Spectroscopy of a Strongly Driven Quantum Dot Charge Qubit with a Microwave Resonator. Physical Review Letters, 2018, 121, 043603.	7.8	35
96	Observation of the Crossover from Photon Ordering to Delocalization in Tunably Coupled Resonators. Physical Review Letters, 2019, 122, 183601.	7.8	35
97	Superconducting quantum simulator for topological order and the toric code. Physical Review A, 2017, 95, .	2.5	33
98	Manipulating Rydberg atoms close to surfaces at cryogenic temperatures. Physical Review A, 2014, 90, .	2.5	32
99	Exploring Interacting Quantum Many-Body Systems by Experimentally Creating Continuous Matrix Product States in Superconducting Circuits. Physical Review X, 2015, 5, .	8.9	32
100	Quantum Dissociation of a Vortex-Antivortex Pair in a Long Josephson Junction. Physical Review Letters, 2003, 91, 257004.	7.8	31
101	Imaging electric fields in the vicinity of cryogenic surfaces using Rydberg atoms. Physical Review A, 2015, 92, .	2.5	30
102	Quantum Communication with Time-Bin Encoded Microwave Photons. Physical Review Applied, 2019, 12, .	3.8	29
103	Quantum escape of the phase in a strongly driven Josephson junction. Physical Review B, 2003, 68, .	3.2	28
104	Correlations and Entanglement of Microwave Photons Emitted in a Cascade Decay. Physical Review Letters, 2017, 119, 140504.	7.8	28
105	Geometric phases in superconducting qubits beyond the two-level approximation. Physical Review B, 2012, 85, .	3.2	27
106	Evaluating charge noise acting on semiconductor quantum dots in the circuit quantum electrodynamics architecture. Applied Physics Letters, 2014, 105, .	3.3	27
107	Demonstration of an All-Microwave Controlled-Phase Gate between Far-Detuned Qubits. Physical Review Applied, 2020, 14, .	3.8	26
108	Realizing quantum convolutional neural networks on a superconducting quantum processor to recognize quantum phases. Nature Communications, 2022, 13, .	12.8	25

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109	Cherenkov Radiation from Fluxon in a Stack of Coupled Long Josephson Junctions. Journal of Low Temperature Physics, 2000, 119, 589-614.	1.4	24
110	Whispering Vortices. Physical Review Letters, 2000, 84, 151-154.	7.8	24
111	Characterization of a microwave frequency resonator via a nearby quantum dot. Applied Physics Letters, 2011, 98, .	3.3	23
112	Characterizing the attenuation of coaxial and rectangular microwave-frequency waveguides at cryogenic temperatures. EPJ Quantum Technology, 2017, 4, 8.	6.3	23
113	Strong photon coupling to the quadrupole moment of an electron in a solid-state qubit. Nature Physics, 2020, 16, 642-646.	16.7	23
114	Comment on â€œVacuum Rabi Splitting in a Semiconductor Circuit QED Systemâ€• Physical Review Letters, 2013, 111, 249701.	7.8	22
115	Magnetic field penetration in a long Josephson junction imbedded in a wide stripline. Journal of Applied Physics, 2001, 89, 471-476.	2.5	20
116	Measurement of a vacuum-induced geometric phase. Science Advances, 2016, 2, e1501732.	10.3	20
117	Parity Detection of Propagating Microwave Fields. Physical Review X, 2020, 10, .	8.9	20
118	In situ Tuning of the Electric-Dipole Strength of a Double-Dot Charge Qubit: Charge-Noise Protection and Ultrastrong Coupling. Physical Review X, 2022, 12, .	8.9	20
119	Signatures of Hongâ€“Ouâ€“Mandel interference at microwave frequencies. New Journal of Physics, 2013, 15, 105025.	2.9	19
120	Numerical analysis of the coherent radiation emission by two stacked Josephson fluxâ€flow oscillators. Journal of Applied Physics, 1996, 80, 6523-6535.	2.5	18
121	Narrow long Josephson junctions. IEEE Transactions on Applied Superconductivity, 1999, 9, 3957-3961.	1.7	18
122	Electrolyte gate dependent high-frequency measurement of graphene field-effect transistor for sensing applications. Applied Physics Letters, 2014, 104, 013102.	3.3	18
123	Microwave-Cavity-Detected Spin Blockade in a Few-Electron Double Quantum Dot. Physical Review Letters, 2019, 122, 213601.	7.8	18
124	Primary Thermometry of Propagating Microwaves in the Quantum Regime. Physical Review X, 2020, 10, .	8.9	18
125	Testing a state preparation and read-out protocol for the vortex qubit. Physica C: Superconductivity and Its Applications, 2002, 368, 324-327.	1.2	17
126	Thermal excitation of multi-photon dressed states in circuit quantum electrodynamics. Physica Scripta, 2009, T137, 014013.	2.5	16

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127	Realization of gigahertz-frequency impedance matching circuits for nano-scale devices. Applied Physics Letters, 2012, 101, 053108.	3.3	16
128	Measurement of geometric dephasing using a superconducting qubit. Nature Communications, 2015, 6, 8757.	12.8	16
129	Measuring the dispersive frequency shift of a rectangular microwave cavity induced by an ensemble of Rydberg atoms. Physical Review A, 2017, 95, .	2.5	16
130	Realization of a Quantum Random Generator Certified with the Kochen-Specker Theorem. Physical Review Letters, 2017, 119, 240501.	7.8	16
131	Applying electric and magnetic field bias in a 3D superconducting waveguide cavity with high quality factor. Quantum Science and Technology, 2018, 3, 045007.	5.8	16
132	Collective Suppression of Linewidths in Circuit QED. Physical Review Letters, 2013, 110, 203602.	7.8	15
133	Radiative cooling of a spin ensemble. Nature Physics, 2020, 16, 751-755.	16.7	15
134	Shot Noise of a Quantum Dot Measured with Gigahertz Impedance Matching. Physical Review Applied, 2015, 4, .	3.8	14
135	Experimental MonteÂCarlo Quantum Process Certification. Physical Review Letters, 2012, 108, 260506.	7.8	13
136	Optimization of sample-chip design for stub-matched radio-frequency reflectometry measurements. Applied Physics Letters, 2012, 101, 042112.	3.3	12
137	Measuring the polarization of electromagnetic fields using Rabi-rate measurements with spatial resolution: Experiment and theory. Physical Review A, 2017, 95, .	2.5	11
138	Single-Shot Nondestructive Detection of Rydberg-Atom Ensembles by Transmission Measurement of a Microwave Cavity. Physical Review Letters, 2019, 123, 193201.	7.8	11
139	Two-photon resonance fluorescence of a ladder-type atomic system. Physical Review A, 2019, 100, .	2.5	10
140	Realization of a Universal Quantum Gate Set for Itinerant Microwave Photons. Physical Review X, 2022, 12, .	8.9	10
141	Charge qubit in a triple quantum dot with tunable coherence. Physical Review Research, 2021, 3, .	3.6	9
142	Quantum leaps in small steps. Nature Physics, 2008, 4, 2-3.	16.7	7
143	Measurements of critical-current diffraction patterns in annular Josephson junctions. Physical Review B, 2000, 62, 119-122.	3.2	6
144	The role of titanium in electromigrated tunnel junctions. Applied Physics Letters, 2014, 105, .	3.3	6

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145	Correlation measurements of individual microwave photons emitted from a symmetric cavity. Journal of Physics: Conference Series, 2011, 264, 012024.	0.4	5
146	Observation of whispering gallery resonances in annular Josephson junctions. Physica B: Condensed Matter, 2000, 284-288, 575-576.	2.7	2
147	Quantum Information Processing with Superconducting Qubits and Cavities. , 2007, , .		2
148	Delocking of flux-flow states in dc-driven magnetically coupled Josephson junctions. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 224, 191-195.	2.1	1
149	Backaction Effects of a SSET Measuring a Qubit Spectroscopy and Ground State Measurement. IEEE Transactions on Applied Superconductivity, 2005, 15, 880-883.	1.7	1
150	Cherenkov radiation from Josephson fluxons. , 1999, , 521-531.		0
151	Course 16 Prospects for strong cavity quantum electrodynamics with superconducting circuits. Les Houches Summer School Proceedings, 2004, 79, 591-608.	0.2	0