CITATION REPORT List of articles citing

Superconducting quantum circuits at the surface code threshold for fault tolerance

DOI: 10.1038/nature13171 Nature, 2014, 508, 500-3.

Source: https://exaly.com/paper-pdf/58901780/citation-report.pdf

Version: 2024-04-28

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

#	Paper	IF	Citations
1145	The Grand Challenge of Quantum Computing: Bridging the Capacity Gap. 2014 , 1,		1
1144	Sunlight-induced rapid and efficient biogenic synthesis of silver nanoparticles using aqueous leaf extract of Linn. with enhanced antibacterial activity. 2014 , 4, 18		34
1143	nSQUID arrays as conveyers of quantum information. 2014 , 119, 1152-1162		8
1142	Low-distance surface codes under realistic quantum noise. 2014 , 90,		94
1141	On readout of vibrational qubits using quantum beats. 2014 , 141, 224306		7
1140	Emulating quantum state transfer through a spin-1 chain on a one-dimensional lattice of superconducting qutrits. 2014 , 90,		6
1139	Multiplexed readout of transmon qubits with Josephson bifurcation amplifiers. 2014, 90,		15
1138	Strong environmental coupling in a Josephson parametric amplifier. 2014 , 104, 263513		93
1137	Physics: Quantum computer quest. <i>Nature</i> , 2014 , 516, 24-6	50.4	20
1136	Rolling quantum dice with a superconducting qubit. 2014 , 90,		20
1135	Catching Time-Reversed Microwave Coherent State Photons with 99.4% Absorption Efficiency. 2014 , 112,		70
1134	Qubit Architecture with High Coherence and Fast Tunable Coupling. 2014 , 113, 220502		279
1133	Characterization and reduction of microfabrication-induced decoherence in superconducting quantum circuits. 2014 , 105, 062601		68
1132	Compressed sensing quantum process tomography for superconducting quantum gates. 2014 , 90,		29
1131	Numerical evaluation of the fidelity error threshold for the surface code. 2014 , 90,		2
1130	Destroying a topological quantum bit by condensing Ising vortices. 2014 , 5, 5781		7
1129	Adaptive hybrid optimal quantum control for imprecisely characterized systems. 2014 , 112, 240503		76

Soft decoding of a qubit readout apparatus. 2014 , 113, 230402	9
1127 Implementing generalized measurements with superconducting qubits. 2014 , 90,	10
1126 Implementing a strand of a scalable fault-tolerant quantum computing fabric. 2014 , 5, 4015	189
1125 Emulating weak localization using a solid-state quantum circuit. 2014 , 5, 5184	27
Quantum phases of a chain of strongly interacting anyons. 2014 , 90,	11
1123 Accurate Qubit Control with Single Flux Quantum Pulses. 2014 , 2,	34
1122 Fast adiabatic qubit gates using only ☑ control. 2014 , 90,	102
Universal quantum gates on microwave photons assisted by circuit quantum electrodynamics. 2014 , 90,	50
1120 Efficient algorithms for maximum likelihood decoding in the surface code. 2014 , 90,	71
1119 Quantum process tomography of unitary and near-unitary maps. 2014 , 90,	34
Fast accurate state measurement with superconducting qubits. 2014 , 112, 190504	200
1117 Quantum computations on a topologically encoded qubit. 2014 , 345, 302-5	220
Optimal quantum control using randomized benchmarking. 2014 , 112, 240504	118
1115 Far Fewer Qubits Required for Quantum Memory Quantum Computers. 2014 , 7,	2
1114 Majorana Fermion Surface Code for Universal Quantum Computation. 2015 , 5,	68
Magic state distillation and gate compilation in quantum algorithms for quantum chemistry. 2015 , 115, 1296-1304	9
Quantum computation with noisy operations. 2015 , 91,	2
Scalable quantum computation architecture using always-on Ising interactions via quantum feedforward. 2015 , 91,	2

Universal two-qubit interactions, measurement, and cooling for quantum simulation and computing. 2015 , 92,	20
1109 Tunable coupler for superconducting Xmon qubits: Perturbative nonlinear model. 2015 , 92,	38
1108 Quantum theory of a bandpass Purcell filter for qubit readout. 2015 , 92,	39
1107 High-fidelity readout scheme for rare-earth solid-state quantum computing. 2015 , 92,	13
1106 Nonexponential fidelity decay in randomized benchmarking with low-frequency noise. 2015 , 92,	36
1105 Trapped-ion quantum error-correcting protocols using only global operations. 2015 , 92,	5
Analytical formulas for the performance scaling of quantum processors with a large number of defective gates. 2015 , 92,	2
1103 Complete randomized benchmarking protocol accounting for leakage errors. 2015 , 92,	23
Qubit measurement error from coupling with a detuned neighbor in circuit QED. 2015 , 92,	7
1101 Quantum interface to charged particles in a vacuum. 2015 , 92,	O
2-Gate Operation on a Superconducting Flux Qubit via its Readout SQUID. 2015 , 3,	2
1099 Qubit Metrology of Ultralow Phase Noise Using Randomized Benchmarking. 2015 , 3,	39
1098 Controlling Quantum Devices with Nonlinear Hardware. 2015 , 4,	22
1097 Two-qubit pulse gate for the three-electron double quantum dot qubit. 2015 , 91,	20
1096 Effects of lasing in a one-dimensional quantum metamaterial. 2015 , 91,	12
1095 Analytical approach to swift nonleaky entangling gates in superconducting qubits. 2015 , 91,	32
1094 Quantum phase transition in a multiconnected superconducting Jaynes-Cummings lattice. 2015 , 91,	13
One-step transfer or exchange of arbitrary multipartite quantum states with a single-qubit coupler. 2015, 92,	7

(2015-2015)

1092	Realizing dipolar spin models with arrays of superconducting qubits. 2015 , 92,	23
1091	Demonstrating non-Abelian statistics of Majorana fermions using twist defects. 2015 , 92,	11
1090	Thermal and Residual Excited-State Population in a 3D Transmon Qubit. 2015 , 114, 240501	77
1089	Time-Delayed Quantum Feedback Control. 2015 , 115, 060402	80
1088	Semiconductor-Nanowire-Based Superconducting Qubit. 2015 , 115, 127001	187
1087	Observation of Floquet States in a Strongly Driven Artificial Atom. 2015 , 115, 133601	67
1086	Universal quantum simulation with prethreshold superconducting qubits: Single-excitation subspace method. 2015 , 91,	17
1085	Quantum state transfer in a disordered one-dimensional lattice. 2015 , 92,	21
1084	Robust quantum state transfer using tunable couplers. 2015 , 91,	18
1083	Microwave multimode memory with an erbium spin ensemble. 2015 , 92,	40
1082	Interacting two-level defects as sources of fluctuating high-frequency noise in superconducting circuits. 2015 , 92,	58
1081	Proposed Robust Entanglement-Based Magnetic Field Sensor Beyond the Standard Quantum Limit. 2015 , 115, 170801	35
1080	Quantum Error-Correction-Enhanced Magnetometer Overcoming the Limit Imposed by Relaxation. 2015 , 115, 200501	25
1079	Non-Abelian SU(2) Lattice Gauge Theories in Superconducting Circuits. 2015 , 115, 240502	55
1078	Qubit metrology for building a fault-tolerant quantum computer. 2015 , 1,	35
1077	Toroidal qubits: naturally-decoupled quiet artificial atoms. 2015 , 5, 16934	15
1076	Broadband filters for abatement of spontaneous emission in circuit quantum electrodynamics. 2015 , 107, 172601	28
1075	Hybrid Toffoli gate on photons and quantum spins. 2015 , 5, 16716	9

1074 Coherent controlization using superconducting qubits. 2015 , 5, 18036	21
One-step resonant controlled-phase gate on distant transmon qutrits in different 1D superconducting resonators. 2015 , 5, 14541	9
Traveling wave parametric amplifier with Josephson junctions using minimal resonator phase matching. 2015 , 106, 242601	84
Five-wave-packet quantum error correction based on continuous-variable cluster entanglement. 2015, 5, 15462	6
1070 Reliable quantum certification of photonic state preparations. 2015 , 6, 8498	59
1069 Cellular-automaton decoders for topological quantum memories. 2015 , 1,	31
1068 Integrated information storage and transfer with a coherent magnetic device. 2015 , 5, 13665	4
1067 Digital quantum simulators in a scalable architecture of hybrid spin-photon qubits. 2015 , 5, 16036	18
1066 Hamiltonian tomography for quantum many-body systems with arbitrary couplings. 2015 , 17, 093017	14
1065 Entangling two distant non-interacting microwave modes. 2015 , 527, 139-146	13
1064 Superconducting qubits: Solving a wonderful problem. 2015 , 14, 561-3	7
$_{1063}$ Towards scalable quantum information processing with cold atoms and Rydberg blockade. 2015 ,	
1062 Fault-tolerant holonomic quantum computation in surface codes. 2015 , 91,	8
1061 Training Schräingerä cat: quantum optimal control. 2015 , 69, 1	352
1060 Parafermions in a Kagome Lattice of Qubits for Topological Quantum Computation. 2015 , 5,	8
1059 Tunable and switchable coupling between two superconducting resonators. 2015 , 91,	42
1058 Observation of directly interacting coherent two-level systems in an amorphous material. 2015 , 6, 6182	77
1057 Hydrogen bonds in Al2O3 as dissipative two-level systems in superconducting qubits. 2014 , 4, 7590	33

1050	Probing the limits of gate-based charge sensing. 2015 , 6, 6084	86
1055	High-contrast qubit interactions using multimode cavity QED. 2015 , 114, 080501	39
1054	State preservation by repetitive error detection in a superconducting quantum circuit. <i>Nature</i> , 2015 , 519, 66-9	542
1053	Scalable quantum memory in the ultrastrong coupling regime. 2015 , 5, 8621	51
1052	Fermion-fermion scattering in quantum field theory with superconducting circuits. 2015 , 114, 070502	54
1051	Encoding a qubit with Majorana modes in superconducting circuits. 2014 , 4, 5535	32
1050	The Memory Problem of Quantum Information Processing. 2015 , 103, 1417-1425	1
1049	High-Fidelity Single-Shot Toffoli Gate via Quantum Control. 2015 , 114, 200502	66
1048	QUANTUM INFORMATION. Coherent coupling between a ferromagnetic magnon and a superconducting qubit. 2015 , 349, 405-8	320
1047	Optimized pulse shapes for a resonator-induced phase gate. 2015 , 91,	35
1047	Optimized pulse shapes for a resonator-induced phase gate. 2015, 91, QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015, 349, 408-11	35 134
1046	QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015 ,	
1046	QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015 , 349, 408-11 Violating the modified Helstrom bound with nonprojective measurements. 2015 , 91,	
1046	QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015, 349, 408-11 Violating the modified Helstrom bound with nonprojective measurements. 2015, 91,	134
1046 1045 1044	QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015, 349, 408-11 Violating the modified Helstrom bound with nonprojective measurements. 2015, 91, Engineering adiabaticity at an avoided crossing with optimal control. 2015, 91,	134 2 8
1046 1045 1044 1043	QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015, 349, 408-11 Violating the modified Helstrom bound with nonprojective measurements. 2015, 91, Engineering adiabaticity at an avoided crossing with optimal control. 2015, 91, Accurate and Robust Unitary Transformations of a High-Dimensional Quantum System. 2015, 114, 240401 Leakage-resilient approach to fault-tolerant quantum computing with superconducting elements.	134 2 8
1046 1045 1044 1043 1042	QUANTUM INFORMATION. Coherent coupling of a single spin to microwave cavity photons. 2015, 349, 408-11 Violating the modified Helstrom bound with nonprojective measurements. 2015, 91, Engineering adiabaticity at an avoided crossing with optimal control. 2015, 91, Accurate and Robust Unitary Transformations of a High-Dimensional Quantum System. 2015, 114, 240401 Leakage-resilient approach to fault-tolerant quantum computing with superconducting elements. 2015, 91, Machine Learning for Discriminating Quantum Measurement Trajectories and Improving Readout.	134 2 8 40 21

1038	Demonstration of a quantum error detection code using a square lattice of four superconducting qubits. 2015 , 6, 6979		287
1037	Exact solvability, non-integrability, and genuine multipartite entanglement dynamics of the Dicke model. 2015 , 17, 043033		9
1036	Fermionic models with superconducting circuits. 2015 , 2,		19
1035	Experimental estimation of average fidelity of a Clifford gate on a 7-qubit quantum processor. 2015 , 114, 140505		40
1034	Quantum error correction for quantum memories. 2015 , 87, 307-346		404
1033	Material witness: Pushing nanotubes to the limit. 2015 , 14, 563		2
1032	Fast universal quantum gates on microwave photons with all-resonance operations in circuit QED. 2015 , 5, 9274		45
1031	Emergent topological excitations in a two-dimensional quantum spin system. 2015 , 91,		10
1030	Quantum revivals and many-body localization. 2015 , 91,		89
1029	Deterministic transfer of multiqubit GHZ entangled states and quantum secret sharing between different cavities. 2015 , 14, 4461-4474		8
1028	Analysis of the spectroscopy of a hybrid system composed of a superconducting flux qubit and diamond NV(-) centers. 2015 , 27, 345702		О
1027	A two-qubit logic gate in silicon. <i>Nature</i> , 2015 , 526, 410-4	50.4	540
1026	A surface code quantum computer in silicon. 2015 , 1, e1500707		137
1025	Digital quantum simulation of fermionic models with a superconducting circuit. 2015 , 6, 7654		191
1024	Sitewise manipulations and Mott insulator-superfluid transition of interacting photons using superconducting circuit simulators. 2015 , 91,		9
1023	Creation of quantum error correcting codes in the ultrastrong coupling regime. 2015, 91,		25
1022	Circuit-QED-based scalable architectures for quantum information processing with superconducting qubits. 2015 , 91,		58
1021	Concise analytic solutions to the quantum Rabi model with two arbitrary qubits. 2015 , 355, 121-129		20

(2016-2015)

1020	2015, 350, 310-3	52
1019	Fractional (Chern and topological) insulators. 2015 , T164, 014005	22
1018	Quantifying the quantum gate fidelity of single-atom spin qubits in silicon by randomized benchmarking. 2015 , 27, 154205	83
1017	A near-quantum-limited Josephson traveling-wave parametric amplifier. 2015 , 350, 307-10	315
1016	Experimental fault-tolerant universal quantum gates with solid-state spins under ambient conditions. 2015 , 6, 8748	129
1015	Solution of the two-mode quantum Rabi model using extended squeezed states. 2015 , 112, 34003	21
1014	Report on Post-Quantum Cryptography. 2016 ,	214
1013	An FPGA-Based Quantum Computing Emulation Framework Based on Serial-Parallel Architecture. 2016 , 2016, 1-18	15
1012	Preparing topologically ordered states by Hamiltonian interpolation. 2016 , 18, 093027	1
1011	Bounding quantum gate error rate based on reported average fidelity. 2016 , 18, 012002	51
1010	Exponentially more precise quantum simulation of fermions in second quantization. 2016 , 18, 033032	71
1009	Entangling superconducting qubits in a multi-cavity system. 2016 , 18, 013025	27
1008	Hyperfine-enhanced gyromagnetic ratio of a nuclear spin in diamond. 2016 , 18, 083016	5
1007	Collective strong coupling with homogeneous Rabi frequencies using a 3D lumped element microwave resonator. 2016 , 109, 033508	18
1006	Fast non-Abelian geometric gates via transitionless quantum driving. 2015 , 5, 18414	69
1005	Error tolerance of topological codes with independent bit-flip and measurement errors. 2016 , 94,	11
1004	Quantum simulation with interacting photons. 2016 , 18, 104005	128
1003	Decoherence spectroscopy with individual two-level tunneling defects. 2016 , 6, 23786	33

1002	Quantum state transfer and controlled-phase gate on one-dimensional superconducting resonators assisted by a quantum bus. 2016 , 6, 22037	11
1001	Artificial Life in Quantum Technologies. 2016 , 6, 20956	20
1000	Influence of monitoring efficiency on states protection using partial measurement and quantum reversal. 2016 , 49, 235504	
999	Nearest-Neighbor and Fault-Tolerant Quantum Circuit Implementation. 2016,	9
998	Controllable high-fidelity quantum state transfer and entanglement generation in circuit QED. 2016 , 6, 18695	11
997	Universal Gate for Fixed-Frequency Qubits via a Tunable Bus. 2016 , 6,	121
996	Measurement of many-body chaos using a quantum clock. 2016 , 94,	92
995	Pulse Techniques for Quantum Information Processing. 2016 , 1515-1528	10
994	An architecture for integrating planar and 3D cQED devices. 2016 , 109, 042601	35
993	Flexible superconducting Nb transmission lines on thin film polyimide for quantum computing applications. 2016 , 29, 084007	32
992	Experimental Demonstration of a Resonator-Induced Phase Gate in a Multiqubit Circuit-QED System. 2016 , 117, 250502	67
991	Designing High-Fidelity Single-Shot Three-Qubit Gates: A Machine-Learning Approach. 2016 , 6,	50
990	General purpose multiplexing device for cryogenic microwave systems. 2016 , 108, 222602	15
989	High-speed quantum networking by ship. 2016 , 6, 36163	6
988	Quantum gate learning in qubit networks: Toffoli gate without time-dependent control. 2016 , 2,	42
987	Implementing and Characterizing Precise Multiqubit Measurements. 2016, 6,	22
986	Cryo-CMOS for quantum computing. 2016 ,	75
985	Concentric transmon qubit featuring fast tunability and an anisotropic magnetic dipole moment. 2016 , 108, 032601	24

984	Dynamics of two arbitrary qubits strongly coupled to a quantum oscillator. 2016 , 25, 124202	О
983	Witnessing topological Weyl semimetal phase in a minimal circuit-QED lattice. 2016 , 1, 015006	16
982	Randomized benchmarking of quantum gates implemented by electron spin resonance. 2016 , 267, 68-78	8
981	Emulating Anyonic Fractional Statistical Behavior in a Superconducting Quantum Circuit. 2016 , 117, 110501	38
980	Superharmonic resonances in a strongly coupled cavity-atom system. 2016 , 94,	4
979	Applications of laser wakefield accelerator-based light sources. 2016 , 58, 103001	132
978	Quantum trajectories of superconducting qubits. 2016 , 17, 766-777	6
977	The two-qubit amplitude damping channel: Characterization using quantum stabilizer codes. 2016 , 373, 145-162	2
976	High-Fidelity Trapped-Ion Quantum Logic Using Near-Field Microwaves. 2016 , 117, 140501	61
975	Many-body quantum electrodynamics networks: Non-equilibrium condensed matter physics with light. 2016 , 17, 808-835	68
974	Performing quantum computing experiments in the cloud. 2016 , 94,	66
973	Continuous-Wave Single-Photon Transistor Based on a Superconducting Circuit. 2016 , 117, 140503	33
972	Gate fidelity and coherence of an electron spin in an Si/SiGe quantum dot with micromagnet. 2016 , 113, 11738-11743	94
971	Quantum computing with atomic qubits and Rydberg interactions: progress and challenges. 2016 , 49, 202001	264
970	The Nature and Correction of Diabatic Errors in Anyon Braiding. 2016 , 6,	39
969	Hybrid Quantum-Classical Approach to Correlated Materials. 2016 , 6,	80
968	Proposal for Microwave Boson Sampling. 2016 , 117, 140505	32
967	Hierarchical surface code for network quantum computing with modules of arbitrary size. 2016 , 94,	8

966	Atomic physics: A milestone in quantum computing. <i>Nature</i> , 2016 , 536, 35-6	1
965	Demonstration of a small programmable quantum computer with atomic qubits. <i>Nature</i> , 2016 , 536, 63-6 ₅ 0. ₄	370
964	Holonomic quantum computation in the ultrastrong-coupling regime of circuit QED. 2016, 94,	61
963	High-Fidelity Quantum Logic Gates Using Trapped-Ion Hyperfine Qubits. 2016 , 117, 060504	319
962	Measuring a transmon qubit in circuit QED: Dressed squeezed states. 2016 , 94,	15
961	Integrated Synthesis of Linear Nearest Neighbor Ancilla-Free MCT Circuits. 2016,	12
960	Coherent dynamics and decoherence in a superconducting weak link. 2016 , 94,	16
959	Roadmap to Majorana surface codes. 2016 , 94,	84
958	Noise Threshold and Resource Cost of Fault-Tolerant Quantum Computing with Majorana Fermions in Hybrid Systems. 2016 , 117, 120403	8
957	CryoCMOS hardware technology a classical infrastructure for a scalable quantum computer. 2016 ,	6
956	Simultaneous gates in frequency-crowded multilevel systems using fast, robust, analytic control shapes. 2016 , 93,	19
955	Closing a quantum feedback loop inside a cryostat: Autonomous state preparation and long-time memory of a superconducting qubit. 2016 , 93,	10
954	Rabi oscillations of two-photon states in nonlinear optical resonators. 2016 , 93,	3
953	Robust surface code topology against sparse fabrication defects in a superconducting-qubit array. 2016 , 93,	5
952	Refocusing two-qubit-gate noise for trapped ions by composite pulses. 2016 , 93,	11
951	Generation and efficient measurement of single photons from fixed-frequency superconducting qubits. 2016 , 93,	21
950	Universal set of dynamically protected gates for bipartite qubit networks: Soft pulse implementation of the [[5,1,3]] quantum error-correcting code. 2016 , 93,	2
949	Position-momentum-entangled photon pairs in nonlinear waveguides and transmission lines. 2016 , 93,	

(2016-2016)

948	Procedure for systematically tuning up cross-talk in the cross-resonance gate. 2016 , 93,	172
947	Quantum simulation of pairing Hamiltonians with nearest-neighbor-interacting qubits. 2016 , 93,	1
946	Speckle statistics of entangled photons. 2016 , 94,	1
945	Long-lasting hybrid quantum information processing in a cavity-protection regime. 2016, 93,	3
944	Quantum memory with millisecond coherence in circuit QED. 2016 , 94,	146
943	Measuring and Suppressing Quantum State Leakage in a Superconducting Qubit. 2016 , 116, 020501	93
942	Towards Realistic Implementations of a Majorana Surface Code. 2016 , 116, 050501	95
941	Efficient Measurement of Multiparticle Entanglement with Embedding Quantum Simulator. 2016 , 116, 070502	11
940	Distribution of Quantum Coherence in Multipartite Systems. 2016 , 116, 150504	124
939	Gatemon Benchmarking and Two-Qubit Operations. 2016 , 116, 150505	46
938	High-Fidelity Resonator-Induced Phase Gate with Single-Mode Squeezing. 2016 , 116, 180501	26
937	Stabilizing Entanglement via Symmetry-Selective Bath Engineering in Superconducting Qubits. 2016 , 116, 240503	56
936	Charge-Insensitive Single-Atom Spin-Orbit Qubit in Silicon. 2016 , 116, 246801	30
935	Experimental Quantum Randomness Processing Using Superconducting Qubits. 2016 , 117, 010502	16
934	Comparing and Combining Measurement-Based and Driven-Dissipative Entanglement Stabilization*. 2016 , 6,	40
933	Scalable Quantum Simulation of Molecular Energies. 2016 , 6,	355
932	Exciton-polariton quantum gates based on continuous variables. 2016 , 93,	14
931	Purification and switching protocols for dissipatively stabilized entangled qubit states. 2016 , 93,	7

930	Planar Multilayer Circuit Quantum Electrodynamics. 2016 , 5,	27
929	Circuit design implementing longitudinal coupling: A scalable scheme for superconducting qubits. 2016 , 93,	47
928	Bidirectional conversion between microwave and light via ferromagnetic magnons. 2016 , 93,	188
927	Genetic Algorithms for Digital Quantum Simulations. 2016 , 116, 230504	28
926	A Practical Phase Gate for Producing Bell Violations in Majorana Wires. 2016 , 6,	20
925	Semiconductor-inspired design principles for superconducting quantum computing. 2016 , 7, 11059	17
924	Scalable in situ qubit calibration during repetitive error detection. 2016 , 94,	21
923	Experimental Ten-Photon Entanglement. 2016 , 117, 210502	310
922	Quantum memories at finite temperature. 2016 , 88,	83
921	Topological Pumping of Photons in Nonlinear Resonator Arrays. 2016 , 117, 213603	41
920	Quantum Zeno Effect in an Unstable System with NMR. 2016 , 85, 014001	1
919	Preserving entanglement during weak measurement demonstrated with a violation of the Bell Π eggett Ω arg inequality. 2016 , 2,	30
918	Demonstration of Weight-Four Parity Measurements in the Surface Code Architecture. 2016 , 117, 210505	117
917	Towards a Room-Temperature Spin Quantum Bus in Diamond via Electron Photoionization, Transport, and Capture. 2016 , 6,	17
916	Optimization of parameters of a surface-electrode ion trap and experimental study of influences of surface on ion lifetime. 2016 , 59, 1	6
915	Multilayer microwave integrated quantum circuits for scalable quantum computing. 2016, 2,	92
914	Learning robust pulses for generating universal quantum gates. 2016 , 6, 36090	21
913	Measurement-Induced State Transitions in a Superconducting Qubit: Beyond the Rotating Wave Approximation. 2016 , 117, 190503	59

912	Quantum chemistry and charge transport in biomolecules with superconducting circuits. 2016 , 6, 27836	1	15
911	Comparing Experiments to the Fault-Tolerance Threshold. 2016 , 117, 170502	ţ	51
910	A strict experimental test of macroscopic realism in a superconducting flux qubit. 2016 , 7, 13253	7	73
909	Atomic structure and oxygen deficiency of the ultrathin aluminium oxide barrier in Al/AlOx/Al Josephson junctions. 2016 , 6, 29679	2	21
908	Three-Dimensional Wiring for Extensible Quantum Computing: The Quantum Socket. 2016 , 6,	3	37
907	Experimental Time-Optimal Universal Control of Spin Qubits in Solids. 2016 , 117, 170501	3	30
906	Quantum memristors. 2016 , 6, 29507	4	40
905	Independent, extensible control of same-frequency superconducting qubits by selective broadcasting. 2016 , 2,	3	30
904	Experimental realization of non-adiabatic universal quantum gates using geometric Landau-Zener-StEkelberg interferometry. 2016 , 6, 19048	1	11
903	Optimization of a solid-state electron spin qubit using gate set tomography. 2016 , 18, 103018	3	33
902	Two-way interconversion of millimeter-wave and optical fields in Rydberg gases. 2016 , 18, 093030	2	29
901	Few-qubit quantum-classical simulation of strongly correlated lattice fermions. 2016, 3,	2	21
900	A Genuine Jahn-Teller System with Compressed Geometry and Quantum Effects Originating from Zero-Point Motion. 2016 , 17, 2146-56	1	11
899	Digitized adiabatic quantum computing with a superconducting circuit. <i>Nature</i> , 2016 , 534, 222-6	50.4 2	239
898	Adiabatic passage for one-step generation of n-qubit GreenbergerHorneReilinger states of superconducting qubits via quantum Zeno dynamics. 2016 , 15, 3663-3675	1	12
897	Fabrication artifacts and parallel loss channels in metamorphic epitaxial aluminum superconducting resonators. 2016 , 29, 064003	2	22
896	Single-qubit gates based on targeted phase shifts in a 3D neutral atom array. 2016 , 352, 1562-5	7	72
895	Polyelemental nanoparticle libraries. 2016 , 352, 1565-9	2	244

894 Literature review on: Quantum readout of spin resonance in a silicon transistor. **2016**, 1-23

893	Layered Architectures for Quantum Computers and Quantum Repeaters. 2016 , 387-405	
892	Spintronics with graphene quantum dots. 2016 , 10, 75-90	14
891	Parametric Amplifier and Oscillator Based on Josephson Junction Circuitry. 2016 , 495-513	5
890	Simulation of the many-body dynamical quantum Hall effect in an optical lattice. 2016 , 15, 1909-1920	1
889	Analysis of an Atom-Optical Architecture for Quantum Computation. 2016 , 407-437	1
888	Quantum-limited heat conduction over macroscopic distances. 2016 , 12, 460-464	45
887	Using mechanics to convert between microwave and optical frequencies. 2016,	
886	Decoherence and Decay of Two-Level Systems Due to Nonequilibrium Quasiparticles. 2016, 1-1	4
885	One-step implementation of a Toffoli gate of separated superconducting qubits via quantum Zeno dynamics. 2016 , 15, 1469-1483	8
884	The role of interparticle interaction and environmental coupling in a two-particle open quantum system. 2016 , 18, 436-47	1
883	Principles and Methods of Quantum Information Technologies. 2016,	9
882	Entangling atomic spins with a Rydberg-dressed spin-flip blockade. 2016 , 12, 71-74	210
881	One-way quantum deficit and quantum coherence in the anisotropic XY chain. 2017, 60, 1	12
880	Enhancing the fidelity of two-qubit gates by measurements. 2017 , 95,	1
879	Overhead analysis of universal concatenated quantum codes. 2017 , 95,	18
878	High-Quality Stepped-Impedance Resonators Suitable for Circuit-QED Measurement of Superconducting Artificial Atoms. 2017 , 1-1	1
877	Acousto-optic modulation and opto-acoustic gating in piezo-optomechanical circuits. 2017 , 7,	29

(2017-2017)

876	Nonreciprocal Microwave Signal Processing with a Field-Programmable Josephson Amplifier. 2017 , 7,	103
875	Entanglement by Path Identity. 2017 , 118, 080401	50
874	Enhancement of entanglement in distant micromechanical mirrors using parametric interactions. 2017 , 71, 1	5
873	A reconfigurable cryogenic platform for the classical control of quantum processors. 2017 , 88, 045103	43
872	Quantum-circuit refrigerator. 2017 , 8, 15189	62
871	Fast, high-fidelity readout of multiple qubits. 2017 , 834, 012003	5
870	High-efficiency multiphoton boson sampling. 2017 , 11, 361-365	247
869	Extensible 3D architecture for superconducting quantum computing. 2017 , 110, 232602	15
868	Cryo-CMOS Electronic Control for Scalable Quantum Computing. 2017,	26
867	Experimental quantum compressed sensing for a seven-qubit system. 2017 , 8, 15305	63
866	Design automation for quantum architectures. 2017,	2
865	The engineering challenges in quantum computing. 2017,	29
864	Unitary 2-designs from random X- and Z-diagonal unitaries. 2017 , 58, 052203	16
863	Decoherence and interferometric sensitivity of boson sampling in superconducting resonator networks. 2017 , 95,	5
862	Multiple data access via a common cavity bus in circuit QED. 2017 , 45, 970-988	О
861	Intracity Quantum Communication via Thermal Microwave Networks. 2017 , 7,	38
860	Building logical qubits in a superconducting quantum computing system. 2017 , 3,	195
859	High-fidelity spatial and polarization addressing of Ca+43 qubits using near-field microwave control. 2017 , 95,	12

858	Optimal length of decomposition sequences composed of imperfect gates. 2017 , 16, 1	0
857	Experimental quantum Hamiltonian learning. 2017 , 13, 551-555	87
856	Demonstration of qubit operations below a rigorous fault tolerance threshold with gate set tomography. 2017 , 8,	99
855	Multipartite entanglement accumulation in quantum states: Localizable generalized geometric measure. 2017 , 95,	9
854	Experimental comparison of two quantum computing architectures. 2017 , 114, 3305-3310	224
853	Homomorphic encryption experiments on IBME cloud quantum computing platform. 2017, 12, 1	19
852	High-Fidelity Quantum Logic in Ca+. 2017 ,	4
851	Microwave photonics with superconducting quantum circuits. 2017 , 718-719, 1-102	523
850	Optoelectronics: Letting photons out of the gate. 2017 , 12, 938-939	2
849	Density-matrix simulation of small surface codes under current and projected experimental noise. 2017 , 3,	42
848	An argon ion beam milling process for native AlOx layers enabling coherent superconducting contacts. 2017 , 111, 072601	13
847	Scalable Quantum Circuit and Control for a Superconducting Surface Code. 2017 , 8,	74
846	Verifiable fault tolerance in measurement-based quantum computation. 2017 , 96,	21
845	What Randomized Benchmarking Actually Measures. 2017 , 119, 130502	55
844	3D integrated superconducting qubits. 2017 , 3,	81
843	Shortcut to adiabaticity in a Stern-Gerlach apparatus. 2017 , 96,	12
842	Tunable Superconducting Qubits with Flux-Independent Coherence. 2017, 8,	60
841	Experimental Study of Optimal Measurements for Quantum State Tomography. 2017 , 119, 150401	14

(2017-2017)

840	Synthesis of Arbitrary Quantum Circuits to Topological Assembly: Systematic, Online and Compact. 2017 , 7, 10414	10
839	High-fidelity spin measurement on the nitrogen-vacancy center. 2017 , 19, 103002	8
838	An experimental microarchitecture for a superconducting quantum processor. 2017,	30
837	Lattice surgery translation for quantum computation. 2017 , 19, 013034	10
836	Continuous-variable geometric phase and its manipulation for quantum computation in a superconducting circuit. 2017 , 8, 1061	34
835	Nucleation and growth of metamorphic epitaxial aluminum on silicon (111) 7 [7] and (sqrt 3 times sqrt 3) surfaces. 2017 , 32, 4067-4075	4
834	Superconducting quantum simulator for topological order and the toric code. 2017, 95,	24
833	Robustness of error-suppressing entangling gates in cavity-coupled transmon qubits. 2017 , 96,	10
832	Split Wire Flying Qubit. 2017 , 69-79	
831	Optimal quantum operations at zero energy cost. 2017 , 96,	13
830	Efficient Z gates for quantum computing. 2017 , 96,	124
829	Harnessing Disordered-Ensemble Quantum Dynamics for Machine Learning. 2017, 8,	79
828	Reconfigurable re-entrant cavity for wireless coupling to an electro-optomechanical device. 2017 , 88, 094701	7
827	Correlated versus uncorrelated noise acting on a quantum refrigerator. 2017 , 96,	12
826	Optimization of lattice surgery is NP-hard. 2017 , 3,	13
825	Work sharing of qubits in topological error corrections. 2017 , 96,	
824	Silicon quantum processor with robust long-distance qubit couplings. 2017 , 8, 450	89
823	Optimal control of two qubits via a single cavity drive in circuit quantum electrodynamics. 2017 , 95,	13

822	Annulled van der Waals interaction and fast Rydberg quantum gates. 2017, 95,	18
821	Circuit QED: cross-Kerr effect induced by a superconducting qutrit without classical pulses. 2017 , 16, 1	7
820	Measuring Out-of-Time-Order Correlators on a Nuclear Magnetic Resonance Quantum Simulator. 2017 , 7,	158
819	Twin-photon correlations in single-photon interference. 2017 , 96,	12
818	Efficient Variational Quantum Simulator Incorporating Active Error Minimization. 2017, 7,	182
817	Quantum Operating Systems. 2017 ,	7
816	Rapid High-Fidelity Single-Shot Dispersive Readout of Superconducting Qubits. 2017, 7,	114
815	Superconducting Grid-Bus Surface Code Architecture for Hole-Spin Qubits. 2017 , 118, 147701	11
814	Suppression of photon shot noise dephasing in a tunable coupling superconducting qubit. 2017 , 3,	51
813	Energy-efficient quantum computing. 2017 , 3,	10
812	Basic protocols in quantum reinforcement learning with superconducting circuits. 2017 , 7, 1609	45
811	Enhancing multi-step quantum state tomography by PhaseLift. 2017 , 384, 198-210	
810	Donor qubits in silicon: Electrical control of nuclear spins. 2017 , 12, 937-938	2
809	Hybrid benchmarking of arbitrary quantum gates. 2017 , 95,	6
808	The upside of noise: engineered dissipation as a resource in superconducting circuits. 2017 , 2, 033002	20
807	Characterization of hidden modes in networks of superconducting qubits. 2017 , 111, 222601	7
806	Statistical Analysis for Collision-free Boson Sampling. 2017 , 7, 15265	3
805	Silicon CMOS architecture for a spin-based quantum computer. 2017 , 8, 1766	154

804	Estimating the Error of an Analog Quantum Simulator by Additional Measurements. 2017, 119, 240502	3
803	Random access quantum information processors using multimode circuit quantum electrodynamics. 2017 , 8, 1904	58
802	Gate-error analysis in simulations of quantum computers with transmon qubits. 2017, 96,	17
801	Inductively shunted transmon qubit with tunable transverse and longitudinal coupling. 2017, 96,	21
800	Anyons are not energy eigenspaces of quantum double Hamiltonians. 2017 , 96,	
799	Digital quantum simulator in the presence of a bath. 2017 , 96,	
798	Blueprint for fault-tolerant quantum computation with Rydberg atoms. 2017, 96,	15
797	Defects between gapped boundaries in two-dimensional topological phases of matter. 2017 , 96,	14
796	Majorana spin liquids, topology, and superconductivity in ladders. 2017 , 96,	11
795	Fault-tolerant interface between quantum memories and quantum processors. 2017 , 8, 1321	12
794	Single qubit operations using microwave hyperbolic secant pulses. 2017 , 96,	10
793	10-Qubit Entanglement and Parallel Logic Operations with a Superconducting Circuit. 2017 , 119, 180511	212
79 ²	Double-sided coaxial circuit QED with out-of-plane wiring. 2017 , 110, 222602	12
791	Noise management to achieve superiority in quantum information systems. 2017 , 375,	2
790	Fast microwave-driven three-qubit gates for cavity-coupled superconducting qubits. 2017, 96,	13
789	Universal blind quantum computation for hybrid system. 2017 , 16, 1	10
788	Restless Tuneup of High-Fidelity Qubit Gates. 2017 , 7,	40

786	Phonon engineering in proximity enhanced superconductor heterostructures. 2017 , 7, 4282	2
785	Theory of Deterministic Entanglement Generation between Remote Superconducting Atoms. 2017 , 7,	7
784	Effect of interactions and disorder on the relaxation of two-level systems in amorphous solids. 2017 , 95,	4
783	Solving Systems of Linear Equations with a Superconducting Quantum Processor. 2017 , 118, 210504	47
782	Nonclassicality in an atomiholecule Bosellinstein condensate: Higher-order squeezing, antibunching and entanglement. 2017 , 466, 140-152	16
781	Robust generation of entangled state via ground-state antiblockade of Rydberg atoms. 2017 , 7, 16489	11
780	Characterization and reduction of capacitive loss induced by sub-micron Josephson junction fabrication in superconducting qubits. 2017 , 111, 022601	52
779	Three-qubit direct dispersive parity measurement with tunable coupling qubits. 2017 , 96,	7
778	Phonon-mediated quasiparticle poisoning of superconducting microwave resonators. 2017, 96,	29
777	Analysis of a parametrically driven exchange-type gate and a two-photon excitation gate between superconducting qubits. 2017 , 96,	32
776	Al transmon qubits on silicon-on-insulator for quantum device integration. 2017 , 111, 042603	14
775	Cryogenic CMOS interfaces for quantum devices. 2017 ,	7
774	Optimized surface code communication in superconducting quantum computers. 2017,	17
773	Experimentally exploring compressed sensing quantum tomography. 2017 , 2, 025005	25
772	Performance characterization of Altera and Xilinx 28 nm FPGAs at cryogenic temperatures. 2017,	4
771	Quantum autoencoders for efficient compression of quantum data. 2017 , 2, 045001	154
770	Proposal of a transmon-based high bandwidth quantum router. 2017,	
769	Estimating the fidelity ofTgates using standard interleaved randomized benchmarking. 2017 , 2, 015008	15

768	Symmetry reduction for tunneling defects due to strong couplings to phonons. 2017 , 19, 063030	3
767	Anharmonicity of a superconducting qubit with a few-mode Josephson junction. 2018 , 97,	27
766	Universal Distributed Quantum Computing on Superconducting Qutrits with Dark Photons. 2018 , 530, 1700402	8
765	Qubit compatible superconducting interconnects. 2018 , 3, 014005	49
764	Implementing universal nonadiabatic holonomic quantum gates with transmons. 2018, 97,	40
763	Chip-to-chip entanglement of transmon qubits using engineered measurement fields. 2018 , 97,	12
762	Holonomic surface codes for fault-tolerant quantum computation. 2018, 97,	22
761	Exploring photonic topological insulator states in a circuit-QED lattice. 2018, 15, 045206	1
760	Scalable on-chip quantum state tomography. 2018 , 4,	27
759	Quantification and characterization of leakage errors. 2018 , 97,	51
758	Evolution of Nanowire Transmon Qubits and Their Coherence in a Magnetic Field. 2018 , 120, 100502	38
757	Fast quantum logic gates with trapped-ion qubits. <i>Nature</i> , 2018 , 555, 75-78	102
756	Characterizing quantum supremacy in near-term devices. 2018 , 14, 595-600	342
755	Reconstructing the ideal results of a perturbed analog quantum simulator. 2018 , 97,	4
754	Mitigating leakage errors due to cavity modes in a superconducting quantum computer. 2018 , 3, 034004	5
753	Data-driven gradient algorithm for high-precision quantum control. 2018 , 97,	24
752	Quantum Metrology beyond the Classical Limit under the Effect of Dephasing. 2018, 120, 140501	15
751	Tunable, Flexible, and Efficient Optimization of Control Pulses for Practical Qubits. 2018 , 120, 150401	52

75°	Architectures for Quantum Simulation Showing a Quantum Speedup. 2018, 8,	35
749	Two-photon exchange interaction from the Dicke Hamiltonian under parametric modulation. 2018 , 97,	
748	Error-Transparent Quantum Gates for Small Logical Qubit Architectures. 2018 , 120, 050503	16
747	Demonstration of universal parametric entangling gates on a multi-qubit lattice. 2018, 4, eaao3603	115
746	A programmable two-qubit quantum processor in silicon. <i>Nature</i> , 2018 , 555, 633-637 50.4	370
745	A CNOT gate between multiphoton qubits encoded in two cavities. 2018 , 9, 652	61
744	Emulating Many-Body Localization with a Superconducting Quantum Processor. 2018, 120, 050507	106
743	QuantumElassical interface based on single flux quantum digital logic. 2018 , 3, 024004	55
742	Emergence of entanglement with temperature and time in factorization-surface states. 2018, 97,	6
741	A quantum-dot spin qubit with coherence limited by charge noise and fidelity higher than 99.9. 2018 , 13, 102-106	340
740	Analysis of imperfections in the coherent optical excitation of single atoms to Rydberg states. 2018 , 97,	60
739	Realization of a 🗓 ystem with Metastable States of a Capacitively Shunted Fluxonium. 2018, 120, 150504	44
738	Anonymous broadcasting of classical information with a continuous-variable topological quantum code. 2018 , 97,	9
737	Hardware-efficient fermionic simulation with a cavityQED system. 2018 , 4,	16
736	Demonstration of essentiality of entanglement in a Deutsch-like quantum algorithm. 2018, 61, 1	6
735	Superconducting quantum bits. 2018 , 27, 027401	12
734	One-way quantum computing in superconducting circuits. 2018 , 97,	9
733	Efficient preparation of large-block-code ancilla states for fault-tolerant quantum computation. 2018 , 97,	4

732	Circuit QED: generation of two-transmon-qutrit entangled states via resonant interaction. 2018 , 17, 1	3
731	Universal Barenco quantum gates via a tunable noncollinear interaction. 2018 , 97,	6
730	Correcting coherent errors with surface codes. 2018, 4,	22
729	Parallel Quantum Computing Emulation. 2018,	1
728	From randomized benchmarking experiments to gate-set circuit fidelity: how to interpret randomized benchmarking decay parameters. 2018 , 20, 092001	14
727	Fabrication Technologies for Superconducting Quantum Circuits for Large-scale Quantum Computing. 2018 , 53, 295-305	
726	An efficient and compact switch for quantum circuits. 2018 , 4,	24
725	Kinetic inductance traveling-wave amplifiers for multiplexed qubit readout. 2018 , 113, 242602	17
724	Qubit parity measurement by parametric driving in circuit QED. 2018 , 4, eaau1695	13
723	Recent Developments in Quantum Computers and Quantum Annealing Machines. 2018, 53, 271-277	
723 722	Recent Developments in Quantum Computers and Quantum Annealing Machines. 2018, 53, 271-277 Adaptive rotating-wave approximation for driven open quantum systems. 2018, 98,	2
		2 8
	Adaptive rotating-wave approximation for driven open quantum systems. 2018 , 98,	
722 721	Adaptive rotating-wave approximation for driven open quantum systems. 2018, 98, Quantum control for high-fidelity multi-qubit gates. 2018, 20, 113009 Substrate surface engineering for high-quality silicon/aluminum superconducting resonators. 2018,	8
722 721 720	Adaptive rotating-wave approximation for driven open quantum systems. 2018, 98, Quantum control for high-fidelity multi-qubit gates. 2018, 20, 113009 Substrate surface engineering for high-quality silicon/aluminum superconducting resonators. 2018, 31, 125013	8 21
722 721 720 719	Adaptive rotating-wave approximation for driven open quantum systems. 2018, 98, Quantum control for high-fidelity multi-qubit gates. 2018, 20, 113009 Substrate surface engineering for high-quality silicon/aluminum superconducting resonators. 2018, 31, 125013 Gradient-based closed-loop quantum optimal control in a solid-state two-qubit system. 2018, 98,	8 21 13
722 721 720 719 718	Adaptive rotating-wave approximation for driven open quantum systems. 2018, 98, Quantum control for high-fidelity multi-qubit gates. 2018, 20, 113009 Substrate surface engineering for high-quality silicon/aluminum superconducting resonators. 2018, 31, 125013 Gradient-based closed-loop quantum optimal control in a solid-state two-qubit system. 2018, 98, Tunable Coupling Scheme for Implementing High-Fidelity Two-Qubit Gates. 2018, 10,	8 21 13 63

714	Perfect Quantum State Transfer in a Superconducting Qubit Chain with Parametrically Tunable Couplings. 2018 , 10,	59
713	Majorana Superconducting Qubit. 2018 , 121, 267002	16
712	Interaction of photons with a coupled atom-cavity system through a bidirectional time-delayed feedback. 2018 , 98,	10
711	Low-cost error mitigation by symmetry verification. 2018 , 98,	83
710	Modeling coherent errors in quantum error correction. 2018 , 3, 015007	19
709	Electrodeposition of Superconducting Rhenium with Water-in-Salt Electrolyte. 2018 , 165, D796-D801	11
708	Decoding schemes for foliated sparse quantum error-correcting codes. 2018 , 98,	5
707	Simulating the performance of a distance-3 surface code in a linear ion trap. 2018 , 20, 043038	35
706	High-Fidelity Single-Qubit Gates on Neutral Atoms in a Two-Dimensional Magic-Intensity Optical Dipole Trap Array. 2018 , 121, 240501	24
705	16-qubit IBM universal quantum computer can be fully entangled. 2018 , 4,	57
704	Topology-dependent quantum dynamics and entanglement-dependent topological pumping in superconducting qubit chains. 2018 , 98,	9
703	Digital-analog quantum simulations with superconducting circuits. 2018 , 3, 1457981	30
702	A template-based technique for efficient Clifford+T-based quantum circuit implementation. 2018 , 81, 58-68	14
701	Decoherence of two entangled spin qubits coupled to an interacting sparse nuclear spin bath: Application to nitrogen vacancy centers. 2018 , 98,	10
700	Topological Phases of Non-Hermitian Systems. 2018 , 8,	374
699	Dephasing-Insensitive Quantum Information Storage and Processing with Superconducting Qubits. 2018 , 121, 130501	17
698	Quantum Computing Systems: A Brief Overview. 2018 , 73, 841-845	1
697	Certifying the Building Blocks of Quantum Computers from Bell's Theorem. 2018 , 121, 180505	31

(2018-2018)

696	Trusted Data Storage, and Efficient Applications. 2018 , 7, 8-14	5
695	Superconducting coplanar microwave resonators with operating frequencies up to 50 GHz. 2018 , 51, 465301	7
694	Joint quantum-state and measurement tomography with incomplete measurements. 2018, 98,	11
693	Generation and swapping of multi-qubit entangled state in a coupled superconducting resonator array. 2018 , 17, 1	3
692	Construction of controlled-NOT gate based on microwave-activated phase (MAP) gate in two transmon system. 2018 , 8, 13598	4
691	Rapid High-fidelity Multiplexed Readout of Superconducting Qubits. 2018, 10,	79
690	Single-Loop Realization of Arbitrary Nonadiabatic Holonomic Single-Qubit Quantum Gates in a Superconducting Circuit. 2018 , 121, 110501	76
689	Uncertainty Relations in Implementation of Unitary Operations. 2018, 121, 110403	8
688	Spatially Adiabatic Frequency Conversion in Optoelectromechanical Arrays. 2018, 121, 110506	12
687	A 2월 GHz Silicon Germanium Cryogenic Low Noise Amplifier MMIC. 2018,	2
686	Construction of two-qubit logical gates by transmon qubits in a three-dimensional cavity. 2018 , 27, 084207	Ο
685	Fluctuations of Energy-Relaxation Times in Superconducting Qubits. 2018 , 121, 090502	95
684	Dealing with indistinguishable particles and their entanglement. 2018 , 376,	22
683	Relative resilience to noise of standard and sequential approaches to measurement-based quantum computation. 2018 , 97,	O
682	Deutsch, Toffoli, and cnot Gates via Rydberg Blockade of Neutral Atoms. 2018 , 9,	33
681	Realizing a Circuit Analog of an Optomechanical System with Longitudinally Coupled Superconducting Resonators. 2018 , 120, 227702	25
680	Semiclassical approach to finite-temperature quantum annealing with trapped ions. 2018, 97,	2
679	Error correction for gate operations in systems of exchange-coupled singlet-triplet qubits in double quantum dots. 2018 , 98,	6

678	Local gradient optimization of modular entangling sequences. 2018, 97,	О
677	Ultra-broadband coplanar waveguide for optically detected magnetic resonance of nitrogen-vacancy centers in diamond. 2018 , 89, 064705	13
676	Device-Level Photonic Memories and Logic Applications Using Phase-Change Materials. 2018 , 30, e1802435	69
675	64-qubit quantum circuit simulation. 2018 , 63, 964-971	59
674	Approximate randomized benchmarking for finite groups. 2018 , 51, 395302	17
673	Twins Percolation for Qubit Losses in Topological Color Codes. 2018 , 121, 060501	8
672	Perspectives and Outline. 2018 , 3-19	
671	Dipolar exchange quantum logic gate with polar molecules. 2018 , 9, 6830-6838	86
670	Engineering quantum spin liquids and many-body Majorana states with a driven superconducting box circuit. 2018 , 98,	4
669	Improved circuit synthesis approach for exclusive-sum-of-product-based reversible circuits. 2018 , 12, 167-175	2
668	Hybrid rf SQUID qubit based on high kinetic inductance. 2018 , 8, 10033	14
667	Multiqubit and multilevel quantum reinforcement learning with quantum technologies. 2018 , 13, e0200455	18
666	Bravyi-Kitaev Superfast simulation of electronic structure on a quantum computer. 2018 , 148, 164104	55
665	Automatic Differentiation in Quantum Chemistry with Applications to Fully Variational Hartree-Fock. 2018 , 4, 559-566	35
664	Deterministic quantum dense coding networks. 2018 , 382, 1709-1715	4
663	Self-guaranteed measurement-based quantum computation. 2018 , 97,	20
662	Estimating localizable entanglement from witnesses. 2018 , 20, 063017	4
661	Anomalous spin entanglement in nonequilibrium systems. 2018 , 98,	2

(2018-2018)

660	The experimental realization of high-fidelity Ehortcut-to-adiabaticity Equantum gates in a superconducting Xmon qubit. 2018 , 20, 065003	38
659	Effects of gate errors in digital quantum simulations of fermionic systems. 2018 , 3, 045008	8
658	Quantum optimization using variational algorithms on near-term quantum devices. 2018 , 3, 030503	205
657	Emergence of antiferromagnetic quantum domain walls. 2018 , 98,	6
656	Practical Quantum Error Mitigation for Near-Future Applications. 2018, 8,	135
655	Experimental demonstration of work fluctuations along a shortcut to adiabaticity with a superconducting Xmon qubit. 2018 , 20, 085001	19
654	Logical Qubit in a Linear Array of Semiconductor Quantum Dots. 2018 , 8,	26
653	Analyzing the spectral density of a perturbed analog quantum simulator using the Keldysh formalism. 2018 , 97,	О
652	Transmission Coefficient Matrix Modeling of Spin-Torque-Based \$n\$ -Qubit Architecture. 2018 , 26, 1461-147	0 4
651	Quantum arithmetics via computation with minimized external control: The half-adder. 2018, 97,	2
650	Indistinguishability of Elementary Systems as a Resource for Quantum Information Processing. 2018 , 120, 240403	60
649	Randomized benchmarking with restricted gate sets. 2018 , 97,	19
648	Certifying an Irreducible 1024-Dimensional Photonic State Using Refined Dimension Witnesses. 2018 , 120, 230503	28
647	Spin coherent states phenomena probed by quantum state tomography in Zeeman perturbed nuclear quadrupole resonance. 2018 , 17, 1	1
646	Electromechanical quantum simulators. 2018 , 97,	4
645	Josephson Parametric Reflection Amplifier with Integrated Directionality. 2018, 9,	9
644	One-dimensional quantum computing with a Begmented chainlis feasible with today gate fidelities. 2018 , 4,	7
643	A local and scalable lattice renormalization method for ballistic quantum computation. 2018, 4,	3

642	Scale-invariant freezing of entanglement. 2018 , 97,	8
641	Floquet Quantum Simulation with Superconducting Qubits. 2018, 9,	23
640	Strategies for quantum computing molecular energies using the unitary coupled cluster ansatz. 2019 , 4, 014008	189
639	A general characterization method for nonlinearities in superconducting circuits. 2019 , 21, 053018	1
638	The dynamical-decoupling-based spatiotemporal noise spectroscopy. 2019 , 21, 043034	9
637	Bounding the average gate fidelity of composite channels using the unitarity. 2019 , 21, 053016	13
636	Optically controlled entangling gates in randomly doped silicon. 2019 , 100,	1
635	Randomized Benchmarking for Individual Quantum Gates. 2019 , 123, 060501	11
634	Towards understanding two-level-systems in amorphous solids: insights from quantum circuits. 2019 , 82, 124501	96
633	Realization of arbitrary state-transfer via superadiabatic passages in a superconducting circuit. 2019 , 115, 072603	5
632	Accuracy and Resource Estimations for Quantum Chemistry on a Near-Term Quantum Computer. 2019 , 15, 4764-4780	21
631	Interfacing Superconducting Qubits With Cryogenic Logic: Readout. 2019 , 29, 1-5	7
630	Propagation and Localization of Collective Excitations on a 24-Qubit Superconducting Processor. 2019 , 123, 050502	48
629	Observation of Topological Magnon Insulator States in a Superconducting Circuit. 2019 , 123, 080501	40
628	Superconducting parametric devices. 2019 ,	
627	Fluctuation Theorems for a Quantum Channel. 2019 , 9,	22
626	Calibration of cryogenic amplification chains using normal-metal[hsulator uperconductor junctions. 2019 , 114, 192603	7
625	Finding the ground state of the Hubbard model by variational methods on a quantum computer with gate errors. 2019 , 4, 035005	14

(2019-2019)

624	Quantum circuits of \$ newcommand{cZ}{c-mathtt{Z}} cZ\$ and \$ newcommand{Swap}{mathtt{SWAP}} Swap\$ gates: optimization and entanglement. 2019 , 52, 325302	O
623	Direct Randomized Benchmarking for Multiqubit Devices. 2019 , 123, 030503	32
622	Cold hybrid ion-atom systems. 2019 , 91,	84
621	Microwave-to-optical conversion via four-wave mixing in a cold ytterbium ensemble. 2019 , 100,	16
620	Three-dimensional surface codes: Transversal gates and fault-tolerant architectures. 2019, 100,	15
619	Quantum optical neural networks. 2019 , 5,	57
618	Resonant shortcuts for adiabatic rapid passage with only z-field control. 2019 , 100,	12
617	Superconducting qubits beyond the dispersive regime. 2019 , 100,	6
616	Operation and intrinsic error budget of a two-qubit cross-resonance gate. 2019 , 100,	23
615	A flexible high-performance simulator for verifying and benchmarking quantum circuits implemented on real hardware. 2019 , 5,	42
614	Realisation of high-fidelity nonadiabatic CZ gates with superconducting qubits. 2019, 5,	8
613	Topological dynamical decoupling. 2019 , 62, 1	8
612	Network Community Detection on Small Quantum Computers. 2019 , 2, 1900029	16
611	Tunable coupling between Xmon qubit and coplanar waveguide resonator. 2019 , 28, 080305	2
610	Virtual-photon-mediated spin-qubit-transmon coupling. 2019 , 10, 5037	13
609	Overcoming synthesizer phase noise in quantum sensing. 2019 , 1, e27	13
608	Correlating Decoherence in Transmon Qubits: Low Frequency Noise by Single Fluctuators. 2019 , 123, 190502	51
60 7	Exploiting Determinism in Lattice-based Signatures. 2019 ,	6

606	Design and Characterization of a 28-nm Bulk-CMOS Cryogenic Quantum Controller Dissipating Less Than 2 mW at 3 K. 2019 , 54, 3043-3060	38
605	Probing the many-body localization phase transition with superconducting circuits. 2019, 100,	14
604	Quantum Chemistry in the Age of Quantum Computing. 2019 , 119, 10856-10915	288
603	Entangling two high-Q microwave resonators assisted by a resonator terminated with SQUIDs. 2019 , 21, 073025	1
602	Single-shot realization of nonadiabatic holonomic gates with a superconducting Xmon qutrit. 2019 , 21, 073024	13
601	Superconducting qubit circuit emulation of a vector spin-1/2. 2019 , 21, 073030	5
600	Handling leakage with subsystem codes. 2019 , 21, 073055	13
599	State stabilization for gate-model quantum computers. 2019 , 18, 1	10
598	The role of entropy in topological quantum error correction. 2019 , 2019, 073404	6
597	Quantum computation with universal error mitigation on a superconducting quantum processor. 2019 , 5, eaaw5686	34
596	Training Optimization for Gate-Model Quantum Neural Networks. 2019 , 9, 12679	16
595	Benchmarks of nonclassicality for qubit arrays. 2019 , 5,	6
594	A new class of efficient randomized benchmarking protocols. 2019 , 5,	23
593	Spectral quantum tomography. 2019 , 5,	6
592	Mathematical Modeling and Simulation of 3-Qubits Quantum Annealing Processor. 2019,	1
591	Fast, High-Fidelity Conditional-Phase Gate Exploiting Leakage Interference in Weakly Anharmonic Superconducting Qubits. 2019 , 123, 120502	57
590	Microwave Quantum Acoustic Processor. 2019,	2
589	Microwave Packaging for Superconducting Qubits. 2019,	4

Non-Gaussian noise spectroscopy with a superconducting qubit sensor. 2019 , 10, 3715	23
Realization of efficient quantum gates with a superconducting qubit-qutrit circuit. 2019 , 9, 13389	22
Exceptional points in tunable superconducting resonators. 2019 , 100,	17
A Survey on quantum computing technology. 2019 , 31, 51-71	121
Experimental time-reversed adaptive Bell measurement towards all-photonic quantum repeaters. 2019 , 10, 378	30
Feasibility of single-shot realizations of conditional three-qubit gates in exchange-coupled qubit arrays with local control. 2019 , 99,	5
Geometric Quantum Computation with Shortcuts to Adiabaticity. 2019 , 2, 1900013	8
Quantum Memory in the USC Regime. 2019 , 65-78	
A quantum engineer's guide to superconducting qubits. 2019 , 6, 021318	358
Majorana qubit readout using longitudinal qubit-resonator interaction. 2019 , 99,	7
Two-stroke optimization scheme for mesoscopic refrigerators. 2019 , 99,	12
Asymptotic improvements to quantum circuits via qutrits. 2019 ,	15
Decoherence benchmarking of superconducting qubits. 2019 , 5,	85
Engineering cryogenic setups for 100-qubit scale superconducting circuit systems. 2019 , 6,	67
Subradiant states of quantum bits coupled to a one-dimensional waveguide. 2019 , 21, 025003	49
Trapped-ion quantum computing: Progress and challenges. 2019 , 6, 021314	265
Design of an experimental platform for hybridization of atomic and superconducting quantum systems. 2019 , 99,	1
Benchmarking high fidelity single-shot readout of semiconductor qubits. 2019 , 21, 063011	7
	Realization of efficient quantum gates with a superconducting qubit-qutrit circuit. 2019, 9, 13389 Exceptional points in tunable superconducting resonators. 2019, 100, A Survey on quantum computing technology. 2019, 31, 51-71 Experimental time-reversed adaptive Bell measurement towards all-photonic quantum repeaters. 2019, 10, 378 Feasibility of single-shot realizations of conditional three-qubit gates in exchange-coupled qubit arrays with local control. 2019, 99, Geometric Quantum Computation with Shortcuts to Adiabaticity, 2019, 2, 1900013 Quantum Memory in the USC Regime. 2019, 65-78 A quantum engineer's guide to superconducting qubits. 2019, 6, 021318 Majorana qubit readout using longitudinal qubit-resonator interaction. 2019, 99, Two-stroke optimization scheme for mesoscopic refrigerators. 2019, 99, Asymptotic improvements to quantum circuits via qutrits. 2019, Decoherence benchmarking of superconducting qubits. 2019, 5, Engineering cryogenic setups for 100-qubit scale superconducting circuit systems. 2019, 6, Subradiant states of quantum bits coupled to a one-dimensional waveguide. 2019, 21, 025003 Trapped-ion quantum computing: Progress and challenges. 2019, 6, 021314 Design of an experimental platform for hybridization of atomic and superconducting quantum systems. 2019, 99,

570	Advantages of versatile neural-network decoding for topological codes. 2019 , 99,	27
569	Quantum Error-Correcting Codes in the USC Regime. 2019 , 47-63	
568	Quantum circuit design for objective function maximization in gate-model quantum computers. 2019 , 18, 1	14
567	Ultrastrong coupling regimes of light-matter interaction. 2019 , 91,	282
566	Interacting Majorana fermions. 2019 , 82, 084501	16
565	Single-step multipartite entangled states generation from coupled circuit cavities. 2019 , 14, 1	9
564	Three-Qubit Randomized Benchmarking. 2019 , 122, 200502	56
563	Geometric formalism for constructing arbitrary single-qubit dynamically corrected gates. 2019 , 99,	13
562	Scalable fermionic error correction in Majorana surface codes. 2019 , 99,	2
561	QAOA for Max-Cut requires hundreds of qubits for quantum speed-up. 2019 , 9, 6903	56
560	Fidelity benchmarks for two-qubit gates in silicon. <i>Nature</i> , 2019 , 569, 532-536	4 167
559	High speed flux sampling for tunable superconducting qubits with an embedded cryogenic transducer. 2019 , 32, 015012	10
558	Universal quantum control through deep reinforcement learning. 2019 , 5,	75
557	Approximate exchange-only entangling gates for the three-spin-1/2 decoherence-free subsystem. 2019 , 99,	O
556	Observation of a Dynamical Quantum Phase Transition by a Superconducting Qubit Simulation. 2019 , 11,	48
555	Controllable two-qubit swapping gate using superconducting circuits. 2019 , 99,	4
554	Fast two-quadrature adiabatic quantum gates for weakly nonlinear qubits: a tight-binding approach. 2019 , 18, 1	0
553	Decoherence of up to 8-qubit entangled states in a 16-qubit superconducting quantum processor. 2019 , 4, 025015	6

552	Strongly correlated quantum walks with a 12-qubit superconducting processor. 2019 , 364, 753-756	89
551	Stabilizing Bell states of two separated superconducting qubits via quantum reservoir engineering. 2019 , 99,	6
550	Dense Quantum Measurement Theory. 2019 , 9, 6755	25
549	Silicon qubit fidelities approaching incoherent noise limits via pulse engineering. 2019 , 2, 151-158	76
548	Designer pulses for better qubit gate operations. 2019 , 2, 140-141	3
547	Entanglement spectroscopy of non-Abelian anyons: Reading off quantum dimensions of individual anyons. 2019 , 99,	22
546	. 2019,	24
545	Reconfigurable quantum logic gates using Rashba controlled spin polarized currents. 2019 , 111, 13-19	3
544	Quantum leakage detection using a model-independent dimension witness. 2019 , 99,	6
543	Randomized benchmarking under different gate sets. 2019 , 99,	4
542	Genuine 12-Qubit Entanglement on a Superconducting Quantum Processor. 2019 , 122, 110501	72
541	Development of transmon qubits solely from optical lithography on 300 mm wafers. 2019 , 4, 025012	6
540	Fast preparation of entangled states of two qutrits in cavity or circuit QED. 2019 , 66, 891-897	1
539	. 2019 , 67, 928-948	11
538	Accounting for errors in quantum algorithms via individual error reduction. 2019, 5,	19
537	Quantum Computation Based on Quantum Adiabatic Bifurcations of Kerr-Nonlinear Parametric Oscillators. 2019 , 88, 061015	30
536	Experimental Realization of a Fast Controlled-Z Gate via a Shortcut to Adiabaticity. 2019, 11,	22
535	Accelerating adiabatic protocols for entangling two qubits in circuit QED. 2019 , 99,	10

534	Superconducting Digital Electronics for Controlling Quantum Computing Systems. 2019, E102.C, 217-223	6
533	Controlling phonons and photons at the wavelength scale: integrated photonics meets integrated phononics. 2019 , 6, 213	74
532	Rent rule and extensibility in quantum computing. 2019 , 67, 1-7	27
531	Error corrected spin-state readout in a nanodiamond. 2019 , 5,	10
530	Quantum error correction and universal gate set operation on a binomial bosonic logical qubit. 2019 , 15, 503-508	91
529	Qubit Measurement by Multichannel Driving. 2019 , 122, 080503	11
528	Fault-Tolerant Logical Gates in the IBM Quantum Experience. 2019 , 122, 080504	47
527	The electronic interface for quantum processors. 2019 , 66, 90-101	20
526	Phase boundaries in an alternating-field quantum XY model with Dzyaloshinskii-Moriya interaction: Sustainable entanglement in dynamics. 2019 , 99,	5
525	Factoring larger integers with fewer qubits via quantum annealing with optimized parameters. 2019 , 62, 1	24
524	Scalable Quantum Computing Infrastructure Based on Superconducting Electronics. 2019,	5
523	Landau¤enerBt©kelberg Interference in Nonlinear Regime*. 2019 , 36, 124204	2
522	Efficient Fault-Tolerant Syndrome Measurement of Quantum Error-Correcting Codes Based on "Flag". 2019 ,	
521	Multistart Methods for Quantum Approximate optimization. 2019,	22
520	Comparing the randomized benchmarking figure with the average infidelity of a quantum gate-set. 2019 , 17, 1950031	1
519	Accrediting outputs of noisy intermediate-scale quantum computing devices. 2019 , 21, 113038	8
518	Multiqubit randomized benchmarking using few samples. 2019 , 100,	11
517	Simulating quantum many-body dynamics on a current digital quantum computer. 2019 , 5,	62

(2019-2019)

516	Approaching the chaotic regime with a fully connected superconducting quantum processor. 2019 , 100,	0
515	Nonclassicality of induced coherence without induced emission. 2019 , 100,	9
514	Diabatic Gates for Frequency-Tunable Superconducting Qubits. 2019 , 123, 210501	38
513	High-Coherence Fluxonium Qubit. 2019 , 9,	44
512	Benchmarking an 11-qubit quantum computer. 2019 , 10, 5464	124
511	Analog errors in quantum annealing: doom and hope. 2019 , 5,	24
510	Majorana Loop Stabilizer Codes for Error Mitigation in Fermionic Quantum Simulations. 2019 , 12,	18
509	Robust scalable architecture for a hybrid spin-mechanical quantum entanglement system. 2019 , 100,	9
508	Optimal dispersive readout of a spin qubit with a microwave resonator. 2019 , 100,	4
507	Hardware-Efficient Quantum Random Access Memory with Hybrid Quantum Acoustic Systems. 2019 , 123, 250501	39
506	Ideal Quantum Nondemolition Readout of a Flux Qubit without Purcell Limitations. 2019 , 12,	14
505		1760
504	Rydberg-Mediated Entanglement in a Two-Dimensional Neutral Atom Qubit Array. 2019 , 123, 230501 Scalable nonadiabatic holonomic quantum computation on a superconducting qubit lattice. 2019 ,	98
503	Mapping of lattice surgery-based quantum circuits on surface code architectures. 2019 , 4, 015005	16
502	Securing quantum networking tasks with multipartite Einstein-Podolsky-Rosen steering. 2019 , 99,	16
500	Tunable Nb Superconducting Resonator Based on a Constriction Nano-SQUID Fabricated with a Ne	15
499	Focused Ion Beam. 2019 , 11, Implementation of a generalized controlled-NOT gate between fixed-frequency transmons. 2019 , 99,	6

498	Experimental Realization of Robust Geometric Quantum Gates with Solid-State Spins. 2019 , 122, 010503	27
497	Efficient unitarity randomized benchmarking of few-qubit Clifford gates. 2019 , 99,	8
496	Digital Coherent Control of a Superconducting Qubit. 2019 , 11,	44
495	Robust multipartite entanglement generation via a collision model. 2019 , 99,	22
494	Floquet engineering in superconducting circuits: From arbitrary spin-spin interactions to the Kitaev honeycomb model. 2019 , 99,	11
493	Superconducting circuit quantum computing with nanomechanical resonators as storage. 2019 , 4, 015006	29
492	Improving the Designs of ESOP-Based Reversible Circuits. 2020 , 49-64	
491	Quantum Codes From Classical Graphical Models. 2020 , 66, 130-146	2
490	Variational quantum unsampling on a quantum photonic processor. 2020 , 16, 322-327	29
489	Quantum Computers as Universal Quantum Simulators: State-of-the-Art and Perspectives. 2020 , 3, 1900052	22
488	Demonstration of a parametrically activated entangling gate protected from flux noise. 2020, 101,	32
487	Continuous-variable quantum computing in the quantum optical frequency comb. 2020 , 53, 012001	35
486	Superconducting Qubits: Current State of Play. 2020 , 11, 369-395	257
485	Authentication Protocol for Secure Automotive Systems: Benchmarking Post-Quantum Cryptography. 2020 ,	1
484	Quantum Control of Frequency-Tunable Transmon Superconducting Qubits. 2020, 14,	3
483	High-Fidelity Software-Defined Quantum Logic on a Superconducting Qudit. 2020 , 125, 170502	9
482	Demonstration of an All-Microwave Controlled-Phase Gate between Far-Detuned Qubits. 2020, 14,	9
481	Determination of the semion code threshold using neural decoders. 2020 , 102,	3

(2020-2020)

480	Ergodic-Localized Junctions in a Periodically Driven Spin Chain. 2020 , 125, 170503	10
479	Generating spatially entangled itinerant photons with waveguide quantum electrodynamics. 2020 , 6,	9
478	Probing quantum processor performance with pyGSTi. 2020 , 5, 044002	16
477	Circuit Depth Reduction for Gate-Model Quantum Computers. 2020 , 10, 11229	16
476	RADIATION GAUGE POTENTIAL-BASED TIME DOMAIN INTEGRAL EQUATIONS FOR PENETRABLE REGIONS. 2020 , 168, 73-86	4
475	Quantum Conference Key Agreement: A Review. 2020 , 3, 2000025	20
474	High-Contrast ZZ Interaction Using Superconducting Qubits with Opposite-Sign Anharmonicity. 2020 , 125, 200503	14
473	Qudits and High-Dimensional Quantum Computing. 2020 , 8,	18
472	Efficient learning of quantum noise. 2020 , 16, 1184-1188	37
471	Superconducting quantum computing: a review. 2020 , 63, 1	46
470	Zero-noise extrapolation for quantum-gate error mitigation with identity insertions. 2020, 102,	24
47° 469	Zero-noise extrapolation for quantum-gate error mitigation with identity insertions. 2020 , 102, Simultaneous Feedback and Feedforward Control and Its Application to Realize a Random Walk on the Bloch Sphere in an Xmon-Superconducting-Qubit System. 2020 , 14,	24
	Simultaneous Feedback and Feedforward Control and Its Application to Realize a Random Walk on	24
469	Simultaneous Feedback and Feedforward Control and Its Application to Realize a Random Walk on the Bloch Sphere in an Xmon-Superconducting-Qubit System. 2020 , 14, SQUARE: Strategic Quantum Ancilla Reuse for Modular Quantum Programs via Cost-Effective	2
469 468	Simultaneous Feedback and Feedforward Control and Its Application to Realize a Random Walk on the Bloch Sphere in an Xmon-Superconducting-Qubit System. 2020 , 14, SQUARE: Strategic Quantum Ancilla Reuse for Modular Quantum Programs via Cost-Effective Uncomputation. 2020 ,	5
469 468 467	Simultaneous Feedback and Feedforward Control and Its Application to Realize a Random Walk on the Bloch Sphere in an Xmon-Superconducting-Qubit System. 2020, 14, SQUARE: Strategic Quantum Ancilla Reuse for Modular Quantum Programs via Cost-Effective Uncomputation. 2020, Benchmarking Coherent Errors in Controlled-Phase Gates due to Spectator Qubits. 2020, 14,	2 5 19
469 468 467 466	Simultaneous Feedback and Feedforward Control and Its Application to Realize a Random Walk on the Bloch Sphere in an Xmon-Superconducting-Qubit System. 2020, 14, SQUARE: Strategic Quantum Ancilla Reuse for Modular Quantum Programs via Cost-Effective Uncomputation. 2020, Benchmarking Coherent Errors in Controlled-Phase Gates due to Spectator Qubits. 2020, 14, NISQ+: Boosting quantum computing power by approximating quantum error correction. 2020,	2 5 19

462	Manipulating Complex Hybrid Entanglement and Testing Multipartite Bell Inequalities in a Superconducting Circuit. 2020 , 125, 180503	7
461	Leakage Suppression for Holonomic Quantum Gates. 2020 , 14,	5
460	Noise-resistant phase gates with amplitude modulation. 2020 , 102,	1
459	Error detection on quantum computers improving the accuracy of chemical calculations. 2020, 102,	3
458	Unfolding quantum computer readout noise. 2020 , 6,	22
457	A Fully Integrated DAC for CMOS Position-Based Charge Qubits with Single-Electron Detector Loopback Testing. 2020 , 3, 354-357	6
456	Designing a DDS-Based SoC for High-Fidelity Multi-Qubit Control. 2020 , 67, 5380-5393	8
455	Scalable quantum computer with superconducting circuits in the ultrastrong coupling regime. 2020 , 6,	15
454	Simultaneous Excitation of Two Noninteracting Atoms with Time-Frequency Correlated Photon Pairs in a Superconducting Circuit. 2020 , 125, 133601	8
453	Tunable Coupler for Realizing a Controlled-Phase Gate with Dynamically Decoupled Regime in a Superconducting Circuit. 2020 , 14,	24
452	Robust and Fast Holonomic Quantum Gates with Encoding on Superconducting Circuits. 2020, 14,	13
451	Demonstrating a Continuous Set of Two-Qubit Gates for Near-Term Quantum Algorithms. 2020 , 125, 120504	59
450	Synthetic gauge field and chiral physics on two-leg superconducting circuits. 2020, 102,	4
449	Objective function estimation for solving optimization problems in gate-model quantum computers. 2020 , 10, 14220	5
448	Verification of a resetting protocol for an uncontrolled superconducting qubit. 2020, 6,	О
447	Vortex-Meissner phase transition induced by a two-tone-drive-engineered artificial gauge potential in the fermionic ladder constructed by superconducting qubit circuits. 2020 , 102,	O
446	Transition Slow-Down by Rydberg Interaction of Neutral Atoms and a Fast Controlled-not Quantum Gate. 2020 , 14,	5
445	Switchable Next-Nearest-Neighbor Coupling for Controlled Two-Qubit Operations. 2020 , 14,	2

(2020-2020)

444	High-Fidelity, High-Scalability Two-Qubit Gate Scheme for Superconducting Qubits. 2020 , 125, 240503	30
443	Quantum Optimization for the Graph Coloring Problem with Space-Efficient Embedding. 2020,	6
442	Low-Cost Fredkin Gate with Auxiliary Space. 2020 , 14,	11
441	Cavity control over heavy-hole spin qubits in inversion-symmetric crystals. 2020 , 102,	4
440	Implementation of Conditional Phase Gates Based on Tunable ZZ Interactions. 2020, 125, 240502	25
439	Implementation of XY entangling gates with a single calibrated pulse. 2020 , 3, 744-750	11
438	Fast parametric two-qubit gates with suppressed residual interaction using the second-order nonlinearity of a cubic transmon. 2020 , 102,	6
437	Strategies for solving the Fermi-Hubbard model on near-term quantum computers. 2020 , 102,	22
436	Analysis on the Mechanism of Superconducting Quantum Computer. 2020 , 1634, 012040	
435	Towards the quantum-enabled technologies for development of drugs or delivery systems. 2020 , 324, 260-279	12
434	Uniform decoherence effect on localizable entanglement in random multiqubit pure states. 2020 , 101,	O
433	Quantum interference device for controlled two-qubit operations. 2020 , 6,	4
432	Fabrication of the Impedance-Matched Josephson Parametric Amplifier and the Study of the Gain Profile. 2020 , 30, 1-6	6
431	Robust entangling gate for polar molecules using magnetic and microwave fields. 2020 , 101,	23
430	Variational-state quantum metrology. 2020 , 22, 083038	23
429	Symmetry-adapted variational quantum eigensolver. 2020 , 101,	15
428	Certification of spin-based quantum simulators. 2020 , 101,	
427	Protecting quantum entanglement from leakage and qubit errors via repetitive parity measurements. 2020 , 6, eaay3050	23

426	Experimental Implementation of Universal Nonadiabatic Geometric Quantum Gates in a Superconducting Circuit. 2020 , 124, 230503	42
425	Scalable characterization of localizable entanglement in noisy topological quantum codes. 2020 , 22, 053038	1
424	Realization of Superadiabatic Two-Qubit Gates Using Parametric Modulation in Superconducting Circuits. 2020 , 13,	27
423	A Quantum Computer Architecture Based on Silicon Donor Qubits Coupled by Photons. 2020 , 3, 2000011	2
422	Clifford-group-restricted eavesdroppers in quantum key distribution. 2020 , 101,	1
421	Repeated quantum error detection in a surface code. 2020 , 16, 875-880	63
420	Fast Gates and Mixed-Species Entanglement with Trapped Ions. 2020,	О
419	Quantum State Optimization and Computational Pathway Evaluation for Gate-Model Quantum Computers. 2020 , 10, 4543	15
418	Quantum Computing with Rotation-Symmetric Bosonic Codes. 2020 , 10,	36
417	Inter-qubit interaction mediated by collective modes in a linear array of three-dimensional cavities. 2020 , 5, 035002	O
416	Fault-tolerant quantum error correction on near-term quantum processors using flag and bridge qubits. 2020 , 101,	1
415	Demonstration of Controlled-Phase Gates between Two Error-Correctable Photonic Qubits. 2020 , 124, 120501	22
414	Quantum computational chemistry. 2020 , 92,	256
413	Establishing the quantum supremacy frontier with a 281 Pflop/s simulation. 2020 , 5, 034003	46
412	Fault-Tolerant Thresholds for the Surface Code in Excess of 5% under Biased Noise. 2020 , 124, 130501	26
411	Micromotion-enhanced fast entangling gates for trapped-ion quantum computing. 2020, 101,	2
410	Unsupervised Quantum Gate Control for Gate-Model Quantum Computers. 2020, 10, 10701	7
409	Machine-learning-based three-qubit gate design for the Toffoli gate and parity check in transmon systems. 2020 , 102,	1

408	Solid-State Qubits: 3D Integration and Packaging. 2020 , 21, 72-85	15
407	Quantum Computing: An Introduction for Microwave Engineers. 2020 , 21, 24-44	10
406	Topological and Subsystem Codes on Low-Degree Graphs with Flag Qubits. 2020 , 10,	32
405	Quantum information processing and quantum optics with circuit quantum electrodynamics. 2020 , 16, 247-256	86
404	Relations between single and repeated qubit gates: coherent error amplification for high-fidelity quantum-gate tomography. 2020 , 22, 023015	1
403	Speeding up adiabatic passage with an optimal modified Roland Cerf protocol. 2020 , 53, 115304	7
402	Density matrix simulation of quantum error correction codes for near-term quantum devices. 2020 , 5, 015002	2
401	Impact of qubit connectivity on quantum algorithm performance. 2020 , 5, 025009	9
400	Quantum-Teleportation-Inspired Algorithm for Sampling Large Random Quantum Circuits. 2020 , 124, 080502	10
399	Fast High-Fidelity Quantum Nondemolition Qubit Readout via a Nonperturbative Cross-Kerr Coupling. 2020 , 10,	14
398	Feedback ansatz for adaptive-feedback quantum metrology training with machine learning. 2020 , 101,	10
397	Microwave-based arbitrary cphase gates for transmon qubits. 2020 , 101,	2
396	Decoding quantum errors with subspace expansions. 2020 , 11, 636	39
395	Bootstrapping quantum process tomography via a perturbative ansatz. 2020 , 11, 1084	12
394	Single-step implementation of high-fidelity n-bit Toffoli gates. 2020 , 101,	16
393	Fast Holonomic Quantum Computation on Superconducting Circuits With Optimal Control. 2020 , 3, 2000001	28
392	Validating and controlling quantum enhancement against noise by the motion of a qubit. 2020 , 101,	11
391	Experimental demonstration of elastic analogues of nonseparable qutrits. 2020 , 116, 164104	5

390	High-fidelity gate set for exchange-coupled singlet-triplet qubits. 2020 , 101,		9
389	Multiparametric amplification and qubit measurement with a Kerr-free Josephson ring modulator. 2020 , 101,		1
388	System-Aufstellungen und ihre naturwissenschaftliche Begr		3
387	Enhancement in the performance of a quantum battery by ordered and disordered interactions. 2020 , 101,		21
386	Depth optimization of quantum search algorithms beyond Grover's algorithm. 2020, 101,		8
385	Implementation of universal quantum gates by periodic two-step modulation in a weakly nonlinear qubit. 2020 , 101,		3
384	Pseudo-2D superconducting quantum computing circuit for the surface code: proposal and preliminary tests. 2020 , 22, 043013		7
383	Flexible Coaxial Ribbon Cable for High-Density Superconducting Microwave Device Arrays. 2021 , 31, 1-5		4
382	Intelligent Methods in Computing, Communications and Control. 2021,		1
381	Probing Vibrational Symmetry Effects and Nuclear Spin Economy Principles in Molecular Spin Qubits. 2021 , 60, 140-151		11
380	Reinforcement learning decoders for fault-tolerant quantum computation. 2021 , 2, 025005		8
379	Potential-Based Time Domain Integral Equations Free From Interior Resonances. 2021 , 6, 81-91		2
378	Experimentally Estimating Physical Parameters of the Fabricated Superconducting Josephson Junctions. 2021 , 0-0		
377	Efficient quantum measurement of Pauli operators in the presence of finite sampling error. 5, 385		19
376	Entangling logical qubits with lattice surgery. <i>Nature</i> , 2021 , 589, 220-224	50.4	19
375	A random-walk benchmark for single-electron circuits. 2021 , 12, 285		1
374	Coherent control with user-defined passage. 2021 , 6, 025002		2
373	Optimal readout of superconducting qubits exploiting high-level states. 2021 , 1, 16-21		2

(2021-2021)

372	Faithful simulation and detection of quantum spin Hall effect on superconducting circuits. 2021, 3,	2
371	Quantum Reservoir Computing: A Reservoir Approach Toward Quantum Machine Learning on Near-Term Quantum Devices. 2021 , 423-450	2
370	Microwaves in Quantum Computing. 2021 , 1,	18
369	Gate-based superconducting quantum computing. 2021 , 129, 041102	6
368	Coherent-driving-assisted quantum speedup in Markovian channels*. 2021 , 30, 020301	2
367	Pinned quantum Merlin-Arthur: The power of fixing a few qubits in proofs. 2021 , 103,	
366	Engineering fast high-fidelity quantum operations with constrained interactions. 2021, 7,	1
365	Low-temperature environments for quantum computation and quantum simulation*. 2021, 30, 020702	О
364	Solution of two-qubit Rabi model with extended generalized rotating-wave approximation. 2021 , 35, 2150213	1
363	Constructing a virtual two-qubit gate by sampling single-qubit operations. 2021 , 23, 023021	4
362	Quantum Power Method by a Superposition of Time-Evolved States. 2021 , 2,	11
361	Quantum chaos, equilibration, and control in extremely short spin chains. 2021 , 103, L020201	4
360	State control in superconducting quantum processors.	1
359	Experimental realization of nonadiabatic geometric gates with a superconducting Xmon qubit. 2021 , 64, 1	7
358	Readout rebalancing for near-term quantum computers. 2021 , 103,	5
357	Characterizing decoherence rates of a superconducting qubit by direct microwave scattering. 2021 , 7,	2
356	Integrated Tool Set for Control, Calibration, and Characterization of Quantum Devices Applied to Superconducting Qubits. 2021 , 15,	12
355	Variational quantum compiling with double Q-learning. 2021 , 23, 033002	5

354	New material platform for superconducting transmon qubits with coherence times exceeding 0.3 milliseconds. 2021 , 12, 1779	48
353	Quantum computer based on color centers in diamond. 2021 , 8, 011308	30
352	Observation of Bloch oscillations and Wannier-Stark localization on a superconducting quantum processor. 2021 , 7,	3
351	Hybrid Quantum Interferometer in Bifurcation Mode as a Latching Quantum Readout. 2021, 15,	O
350	Nonadiabatic geometric quantum gates that are insensitive to qubit-frequency drifts. 2021, 103,	3
349	Dissipative preparation of qutrit entanglement via periodically modulated Rydberg double antiblockade. 2021 , 29, 10117-10133	2
348	Quantum computing and simulation with trapped ions: On the path to the future. 2021 , 1, 213-216	1
347	Perturbative tomography of small errors in quantum gates. 2021 , 103,	
346	Variational Circuit Compiler for Quantum Error Correction. 2021, 15,	5
345	Programmable quantum processor implemented with superconducting circuit. 2021, 73, 055102	
344	Quantum speedup dynamics process without non-Markovianity. 2021 , 20, 1	1
343	Removing leakage-induced correlated errors in superconducting quantum error correction. 2021 , 1761	13
342	Realization of adiabatic and diabatic CZ gates in superconducting qubits coupled with a tunable coupler*. 2021 , 30, 044212	4
341	Quantum algorithms with local particle-number conservation: Noise effects and error correction. 2021 , 103,	2
340	Quantum Topological Photonics. 2021 , 9, 2001739	4
339	Noncyclic Geometric Quantum Gates with Smooth Paths via Invariant-Based Shortcuts. 2021 , 4, 2100019	4
338	Quantum Information Scrambling on a Superconducting Qutrit Processor. 2021 , 11,	25
337	Atom-Mediated Phonon Blockade and Controlled-Z Gate in Superconducting Circuit System. 2021 , 533, 2100039	2

336	Taking tomographic measurements for photonic qubits 88 ns before they are created*. 2021 , 30, 040304	О
335	Self-consistent tomography of temporally correlated errors.	O
334	Quantum storage in quantum ferromagnets. 2021 , 103,	7
333	How to factor 2048 bit RSA integers in 8 hours using 20 million noisy qubits. 5, 433	38
332	Topological Two-Dimensional Floquet Lattice on a Single Superconducting Qubit. 2021 , 126, 163602	2
331	Fast qubit initialization in a superconducting circuit.	
330	Epitaxial superconductor-semiconductor two-dimensional systems for superconducting quantum circuits. 2021 , 39, 033407	2
329	Hardware for multi-superconducting qubit control and readout.	Ο
328	Quantum Logic Gates Based on DNAtronics, RNAtronics, and Proteintronics. 2021, 3, 2000273	1
327	Circuit quantum electrodynamics. 2021 , 93,	92
327 326	Circuit quantum electrodynamics. 2021 , 93, Benchmark calculations of the 2D Rydberg spectrum of lithium. 2021 , 119, e1925765	92
		92 1
326	Benchmark calculations of the 2D Rydberg spectrum of lithium. 2021 , 119, e1925765	
326 325	Benchmark calculations of the 2D Rydberg spectrum of lithium. 2021 , 119, e1925765 Parallel entangling gate operations and two-way quantum communication in spin chains. 5, 460 Quantum gates for Majoranas zero modes in topological superconductors in one-dimensional	1
326 325 324	Benchmark calculations of the 2D Rydberg spectrum of lithium. 2021, 119, e1925765 Parallel entangling gate operations and two-way quantum communication in spin chains. 5, 460 Quantum gates for Majoranas zero modes in topological superconductors in one-dimensional geometry. 2021, 103,	1
326 325 324 323	Benchmark calculations of the 2D Rydberg spectrum of lithium. 2021, 119, e1925765 Parallel entangling gate operations and two-way quantum communication in spin chains. 5, 460 Quantum gates for Majoranas zero modes in topological superconductors in one-dimensional geometry. 2021, 103, Variationally scheduled quantum simulation. 2021, 103,	1
326 325 324 323 322	Benchmark calculations of the 2D Rydberg spectrum of lithium. 2021, 119, e1925765 Parallel entangling gate operations and two-way quantum communication in spin chains. 5, 460 Quantum gates for Majoranas zero modes in topological superconductors in one-dimensional geometry. 2021, 103, Variationally scheduled quantum simulation. 2021, 103, Vibrational effects on the formation of quantum W states. 2021, 134, 40001 Optical two-dimensional coherent spectroscopy of many-body dipole-dipole interactions and	1 1

318	Quantum tomography of an entangled three-qubit state in silicon. 2021 , 16, 965-969	17
317	Self-consistent quantum tomography with regularization. 2021 , 103,	1
316	Interaction induced non-reciprocal three-level quantum transport*. 2021 , 30, 060314	0
315	Entanglement-enhanced sensing using a chain of qubits with always-on nearest-neighbor interactions. 2021 , 103,	2
314	Cost of Universality: A Comparative Study of the Overhead of State Distillation and Code Switching with Color Codes. 2021 , 2,	6
313	Realization of High-Fidelity CZ and ZZ-Free iSWAP Gates with a Tunable Coupler. 2021 , 11,	19
312	Superconducting qubits in a flip-chip architecture. 2021 , 118, 232602	2
311	Correlated charge noise and relaxation errors in superconducting qubits. <i>Nature</i> , 2021 , 594, 369-373 50.4	31
310	Quantum Memory. 1-17	
309	Experimental test of sequential weak measurements for certified quantum randomness extraction. 2021 , 103,	3
308	Experimental realization of noncyclic geometric gates with shortcut to adiabaticity in a superconducting circuit. 2021 , 118, 254002	3
307	Quantum analysis of second-order effects in superconducting travelling-wave parametric amplifiers. 2021 , 54, 365303	2
306	Quantum sensing of weak electric and magnetic fields by coherent amplification of energy-level-shift effects. 2021 , 103,	О
305	Optimization of a Controlled-Z Gate with Data-Driven Gradient-Ascent Pulse Engineering in a Superconducting-Qubit System. 2021 , 15,	1
304	High-Fidelity Controlled-Z Gate with Maximal Intermediate Leakage Operating at the Speed Limit in a Superconducting Quantum Processor. 2021 , 126, 220502	9
303	Quantum logic and entanglement by neutral Rydberg atoms: methods and fidelity.	1
302	Implementation of efficient quantum search algorithms on NISQ computers. 2021 , 20, 1	3
301	Heralded quantum gates for hybrid systems via waveguide-mediated photon scattering. 2021 , 104,	2

300	Hardware-Efficient Leakage-Reduction Scheme for Quantum Error Correction with Superconducting Transmon Qubits. 2021 , 2,	1
299	One-Photon Solutions to the Multiqubit Multimode Quantum Rabi Model for Fast W-State Generation. 2021 , 127, 043604	1
298	Universal quantum control based on parametric modulation in superconducting circuits*. 2021, 30, 070308	О
297	Optimal teleportation via a non-maximally entangled channel in qutrits system. 2021 , 60, 3197-3208	О
296	Quantum computation and simulation with superconducting qubits*. 2021, 30, 080304	1
295	Exploiting Dynamic Quantum Circuits in a Quantum Algorithm with Superconducting Qubits. 2021 , 127, 100501	11
294	Suppression of Static ZZ Interaction in an All-Transmon Quantum Processor. 2021, 16,	5
293	Sequencing Universal Quantum Gates for Arbitrary 2-Qubit Computations. 2021,	
292	Ring-Resonator-Based Coupling Architecture for Enhanced Connectivity in a Superconducting Multiqubit Network. 2021 , 16,	0
291	Nearest centroid classification on a trapped ion quantum computer. 2021 , 7,	8
290	Designing arbitrary single-axis rotations robust against perpendicular time-dependent noise. 2021 , 23, 093032	2
289	Quantum control of bosonic modes with superconducting circuits. 2021 , 66, 1789-1805	7
288	Demonstration of a High-Fidelity cnot Gate for Fixed-Frequency Transmons with Engineered ZZ Suppression. 2021 , 127, 130501	13
287	Simulating quantum materials with digital quantum computers. 2021 , 6, 043002	2
286	Practical Quantum Error Correction with the XZZX Code and Kerr-Cat Qubits. 2021, 2,	4
285	Coupling-modulation-mediated generation of stable entanglement ofsuperconducting qubits via dissipation.	О
284	Whole-Device Entanglement in a 65-Qubit Superconducting Quantum Computer. 2021 , 4, 2100061	5
283	Fast unconditional initialization for superconducting qubit and resonator using quantum-circuit refrigerator. 2021 , 119, 124003	2

282	Independent state and measurement characterization for quantum computers. 2021, 3,	1
281	Generation and verification of 27-qubit Greenberger-Horne-Zeilinger states in a superconducting quantum computer. 2021 , 5, 095004	5
280	Blind quantum computation where a user only performs single-qubit gates. 2021 , 142, 107190	1
279	Distribution of entanglement with variable range interactions. 2021 , 418, 127703	
278	Implementation of the Rydberg double anti-blockade regime and the quantum logic gate based on resonant dipole-dipole interactions. 2021 , 70, 1-9	
277	Performance Optimization for Drift-Robust Fidelity Improvement of Two-Qubit Gates. 2021 , 15,	4
276	Macroscopic Circuit Quantum Electrodynamics: A New Look Toward Developing Full-Wave Numerical Models. 2021 , 1-1	2
275	Quantum Bits with Josephson Junctions. 2019 , 703-741	16
274	Proposal: A Spin Ensemble Quantum Memory for Superconducting Qubits. 2016 , 79-91	1
273	Coherent Control of Dark Excitons in Semiconductor Quantum Dots. 2017, 123-164	2
272	Leakage detection for a transmon-based surface code. 2020 , 6,	8
271	Autonomous growth of NbN nanostructures on atomically flat AlN surfaces. 2020 , 117, 231601	3
270	Theory of chemical bonds in metalloenzymes XXIV electronic and spin structures of FeMoco and Fe-S clusters by classical and quantum computing. 2020 , 118, e1760388	3
269	A quantum interior-point predictordorrector algorithm for linear programming. 2020 , 53, 445305	3
268	Using models to improve optimizers for variational quantum algorithms. 2020 , 5, 044008	19
267	Fault-tolerant quantum error correction for Steanell seven-qubit color code with few or no extra qubits. 2021 , 6, 015007	5
266	Improved quantum state tomography for systems with XX+YY couplings and Z readouts. 2020, 102,	3
265	Protection of a Qubit via Subradiance: A Josephson Quantum Filter. 2020 , 13,	3

264	High-Fidelity and Robust Geometric Quantum Gates that Outperform Dynamical Ones. 2020, 14,	9
263	Nonadiabatic Holonomic Quantum Computation with Dressed-State Qubits. 2017, 7,	61
262	Digital Quantum Simulation of Minimal AdS/CFT. 2017 , 119, 040501	71
261	Superfast encodings for fermionic quantum simulation. 2019 , 1,	28
260	Quantum origami: Transversal gates for quantum computation and measurement of topological order. 2020 , 2,	10
259	Pairwise tomography networks for many-body quantum systems. 2020 , 2,	3
258	Universal fault-tolerant measurement-based quantum computation. 2020 , 2,	3
257	Nonadiabatic noncyclic geometric quantum computation in Rydberg atoms. 2020 , 2,	16
256	Preparation of an exciton condensate of photons on a 53-qubit quantum computer. 2020 , 2,	9
255	Experimental realization of multipartite entanglement via quantum Fisher information in a uniform antiferromagnetic quantum spin chain. 2020 , 2,	5
254	Universal Nonadiabatic Control of Small-Gap Superconducting Qubits. 2020 , 10,	4
253	Efficient Quantum Pseudorandomness with Nearly Time-Independent Hamiltonian Dynamics. 2017 , 7,	37
252	Improving the Performance of Deep Quantum Optimization Algorithms with Continuous Gate Sets. 2020 , 1,	20
251	Creating and Manipulating a Laughlin-Type 월1/3 Fractional Quantum Hall State on a Quantum Computer with Linear Depth Circuits. 2020 , 1,	4
250	Reducing Unitary and Spectator Errors in Cross Resonance with Optimized Rotary Echoes. 2020, 1,	28
249	Optimal Quantum Control with Poor Statistics. 2020 , 1,	5
248	Tomography of Qubit States and Implementation of Quantum Algorithms by Unipolar Pulses. 2020 , 131, 507-519	3
247	Full-state quantum circuit simulation by using data compression. 2019,	14

246	Extracting Success from IBME 20-Qubit Machines Using Error-Aware Compilation. 2020 , 16, 1-25	17
245	Observation of scalable and deterministic multi-atom Dicke states in an atomic vapor. 2019 , 44, 2795	19
244	Demonstration of topologically path-independent anyonic braiding in a nine-qubit planar code. 2019 , 6, 264	9
243	Strictly local one-dimensional topological quantum error correction with symmetry-constrained cellular automata. 2018 , 4,	4
242	Fault-tolerant quantum computing in the Pauli or Clifford frame with slow error diagnostics. 2, 43	26
241	Randomized benchmarking with gate-dependent noise. 2, 47	45
240	Halving the cost of quantum addition. 2, 74	58
239	Quantum Computing in the NISQ era and beyond. 2, 79	1594
238	Real Randomized Benchmarking. 2, 85	19
237	The boundaries and twist defects of the color code and their applications to topological quantum computation. 2, 101	22
236	Fault-tolerant gates via homological product codes. 3, 120	8
235	Optimized Entanglement Purification. 3, 123	23
234	Analysing correlated noise on the surface code using adaptive decoding algorithms. 3, 131	19
233	Hamiltonian Simulation by Qubitization. 3, 163	137
232	Applying quantum algorithms to constraint satisfaction problems. 3, 167	25
231	Optimizing Quantum Error Correction Codes with Reinforcement Learning. 3, 215	37
230	Mapping graph state orbits under local complementation. 4, 305	1
229	Always-On Quantum Error Tracking with Continuous Parity Measurements. 4, 358	5

228	A volumetric framework for quantum computer benchmarks. 4, 362	13
227	Operational, gauge-free quantum tomography. 4, 364	4
226	Topological invariant in quench dynamics. 2019 , 68, 220304	4
225	Gate Set Tomography. 5, 557	8
224	Rapid and unconditional parametric reset protocol for tunable superconducting qubits. 2021 , 12, 5924	6
223	Mapping Quantum Chemical Dynamics Problems to Spin-Lattice Simulators. 2021 , 17, 6713-6732	1
222	Filter-function formalism and software package to compute quantum processes of gate sequences for classical non-Markovian noise. 2021 , 3,	1
221	A brief review on recent developments of superconducting microwave resonators for quantum device application. 2014 , 16, 40-43	
220	Quantum Simulation of Spin Chains Coupled to Bosonic Modes with Superconducting Circuits. 2016 , 93-103	
219	Conclusion. 2017 , 121-127	
218	Quantum error rejection and fault tolerant quantum communication. 2018, 67, 130301	5
217	Introduction. 2019, 1-6	
216	On the analogy between quantum circuit design automation and virtual network embedding. 2019,	1
215	Shortcuts to adiabaticity for a qubit using detuning control. 2019 , 1391, 012019	
214	Conclusion. 2020 , 133-139	
213	Making Quantum Computing Open. 2020 ,	1
212	Investigating Hammock Networks on IBM Q. 2021 , 57-69	
211	Constructing clock-transition-based two-qubit gates from dimers of molecular nanomagnets. 2020 , 2,	5

Entangled State Evolution and Entanglement Transfer in Quantum Mesoscopic Coupled Circuits. **2020**, 89, 094005

209	Material matters in superconducting qubits. 2021 , 146, 100646	8
208	Generation of Multipartite Entangled States Using Switchable Coupling of Cooper-Pair-Boxes. 2020 , 11, 1514-1527	0
207	Perfect state transfer on hypercubes and its implementation using superconducting qubits. 2020 , 102,	o
206	Improved Quantum Circuits via Intermediate Qutrits. 2020 , 1, 1-25	1
205	Linear Paul Trap for Quantum Logic Experiments. 2020 , 47, 385-389	o
204	Single-photon switch controlled by a qubit embedded in an engineered electromagnetic environment. 2020 , 102,	1
203	Error-correction and noise-decoherence thresholds for coherent errors in planar-graph surface codes. 2020 , 2,	
202	Growth of genuine multipartite entanglement in random unitary circuits. 2020, 102,	2
201	Quantum Computing. 2020 , 9-20	1
200	Improving Speed of Dilithium Signing Procedure. 2020 , 57-73	2
199	Introduction. 2020 , 3-7	
198	Introduction. 2020 , 1-7	
197	Quantum Dimension Reduction for Pattern Recognition in High-Resolution Spatio-Spectral Data. 2020 , 1-1	2
196	Superconducting Parametric Oscillators for Quantum Annealing. 2020, 63, 112-116	
195	Proposal of disruptive computing (A computing-domain-oriented approach). 2020 , 59, 050503	1
194	Quantum Computer-Aided Design: Digital Quantum Simulation of Quantum Processors. 2021 , 16,	2
193	Path-optimized nonadiabatic geometric quantum computation on superconducting qubits. 2022,	1

(2021-2021)

192	Nano-photoluminescence of natural anyon molecules and topological quantum computation. 2021 , 11, 21440	O
191	Experimental entanglement-assisted weak measurement of phase shift. 2020 , 28, 34639-34655	2
190	Propagation and ramification of a solitary pulse through an environmentally coupled qubit. 2020 , 22, 103041	
189	Introduction to Quantum Computing.	2
188	Sampling Strategy Optimization for Randomized Benchmarking. 2021,	
187	Characterization of Multilevel Dynamics and Decoherence in a High-Anharmonicity Capacitively Shunted Flux Circuit. 2021 , 16,	3
186	Resonant Coupling Parameter Estimation with Superconducting Qubits. 2021, 2,	
185	Making high-quality quantum microwave devices with van der Waals superconductors. 2021,	O
184	Randomized Benchmarking as Convolution: Fourier Analysis of Gate Dependent Errors. 5, 581	1
183	Practical Guide for Building Superconducting Quantum Devices. 2021 , 2,	5
182	Cross-Cross Resonance Gate. 2021 , 2,	O
181	Experimental Characterization of Crosstalk Errors with Simultaneous Gate Set Tomography. 2021 , 2,	1
180	Coupler-Assisted Controlled-Phase Gate with Enhanced Adiabaticity. 2021 , 16,	1
179	Fault-Tolerant Qubit from a Constant Number of Components. 2021 , 2,	3
178	Monogamy of nonconvex entanglement measures. 2021 , 31, 104983	
177	Electron Spin Resonance Detected by Superconducting Circuits. 2021, 91-117	O
176	Toward realization of scalable packaging and wiring for large-scale superconducting quantum computers. 2021 ,	1
175	Hybrid Quantum Systems with Spins in Diamond Crystals and Superconducting Circuits. 2021 , 119-142	

174	Development of Quantum Annealer using Josephson Parametric Oscillators. 2021,	О
173	Hybrid Rydberg quantum gate for quantum network. 2022 , 4,	1
172	The EPR Paradox Resolution. The Bell Inequalities Revisited.	
171	Robust Cache-Aware Quantum Processor Layout. 2020 ,	
170	Systematic Crosstalk Mitigation for Superconducting Qubits via Frequency-Aware Compilation. 2020 ,	2
169	Analog/Mixed-Signal Integrated Circuits for Quantum Computing. 2020,	1
168	Fast universal quantum gate above the fault-tolerance threshold in silicon <i>Nature</i> , 2022 , 601, 338-342 50.4	14
167	Realization of a Universal Quantum Gate Set for Itinerant Microwave Photons. 2022, 12,	O
166	Quantum Computing and Simulations for Energy Applications: Review and Perspective.	4
165	Active readout-error mitigation. 2022 , 105,	O
164	Robust quantum compilation and circuit optimisation via energy minimisation. 6, 628	3
163	Ruling Out Real-Valued Standard Formalism of Quantum Theory 2022 , 128, 040403	4
162	Towards practical quantum computers: transmon qubit with a lifetime approaching 0.5 milliseconds. 2022 , 8,	9
161	Recent progresses of quantum control in solid-state single-spin system. 2022 ,	
160	Deep-Neural-Network Discrimination of Multiplexed Superconducting-Qubit States. 2022, 17,	1
159	Recovery of a generic local Hamiltonian from a steady state. 2022 , 105,	
158	Demonstration of Density Matrix Exponentiation Using a Superconducting Quantum Processor. 2022 , 12,	0
157	Strong coupling and active cooling in a finite-temperature hybrid atom-cavity system. 2022 , 105,	

156	Control System of Superconducting Quantum Computers. 2022 , 35, 11-31	3
155	Quantum metrology based on symmetry-protected adiabatic transformation: imperfection, finite time duration, and dephasing.	1
154	Topological-Graph Dependencies and Scaling Properties of a Heuristic Qubit-Assignment Algorithm. 2022 , 1-1	
153	Entanglement Purification and Protection in a Superconducting Quantum Network 2022, 128, 080504	1
152	Realization of Fast All-Microwave Controlled-Z Gates with a Tunable Coupler. 2022, 39, 030302	O
151	Analytical and experimental study of center-line miscalibrations in MImer-SEensen gates. 2022 , 105,	O
150	Graph-theoretic approach to quantum error correction. 2022 , 105,	1
149	Spatial, spin, and charge symmetry projections for a Fermi-Hubbard model on a quantum computer. 2022 , 105,	O
148	Customizable Quantum Control via Stimulated Raman User-Defined Passage. 2022, 17,	О
147	Quantum Crosstalk Analysis for Simultaneous Gate Operations on Superconducting Qubits. 2022 , 3,	4
146	Fast, high precision dynamics in quantum optimal control theory.	1
145	Robustness of a universal gate set implementation in transmon systems via Chopped Random Basis optimal control. 2022 , 128119	
144	Two-qubit silicon quantum processor with operation fidelity exceeding 99 2022, 8, eabn5130	1
143	Nonlocal operation enhanced entanglement detection and classification. 2022 , 596, 127137	O
142	Quantum computing challenges in the software industry. A fuzzy AHP-based approach. 2022, 147, 106896	4
141	Accurate Parity Meter Based on Coherent State Measurement. 2022 , 534, 2100461	2
140	Microwave response of NbSe2 van der Waals Josephson junctions. 2021 , 104,	
139	Yu-Shiba-Rusinov Qubit. 2021 , 2,	2

138	Hybrid ExchangeMeasurement-Based Qubit Operations in Semiconductor Double-Quantum-Dot Qubits. 2021 , 16,	1
137	Pulse engineering of a global field for robust and universal quantum computation. 2021 , 104,	3
136	Materials for Silicon Quantum Dots and their Impact on Electron Spin Qubits. 2022 , 32, 2105488	2
135	Improved Superconducting Qubit State Readout by Path Interference. 2021 , 38, 110303	1
134	Gap resonance in the classical dynamics of the current-biased Josephson tunnel junctions. 2021, 3,	O
133	Superconducting Circuit Companion Introduction with Worked Examples. 2021, 2,	O
132	Superrobust Geometric Control of a Superconducting Circuit. 2021 , 16,	O
131	Almost-linear time decoding algorithm for topological codes. 5, 595	6
130	Coherent coupling in a driven qubit-magnon hybrid quantum system. 2022,	
129	Collective Spin-Light and Light-Mediated Spin-Spin Interactions in an Optical Cavity. 2022 , 3,	1
128	Graph- >< , a Graph-Based Quantum/Classical Algorithm for Efficient Electronic Structure on Hybrid Quantum/Classical Hardware Systems: Improved Quantum Circuit Depth Performance 2022 ,	O
127	Improving qubit coherence using closed-loop feedback 2022 , 13, 1932	O
126	Hierarchies of localizable entanglement due to spatial distribution of local noise. 2022, 4,	O
125	Gutzwiller wave function on a quantum computer using a discrete Hubbard-Stratonovich transformation. 2022 , 105,	O
124	High coherence and low cross-talk in a tileable 3D integrated superconducting circuit architecture 2022 , 8, eabl6698	2
123	Full-Wave Methodology to Compute the Spontaneous Emission Rate of a Transmon Qubit. 2022 , 7, 92-101	
122	Dynamically producing asymmetric interferometric power under dephasing. 2022, 105,	O
121	Low-latency readout electronics for dynamic superconducting quantum computing. 2022, 12, 045024	

120	Hybrid controlled-sum gate with one superconducting qutrit and one cat-state qutrit and application in hybrid entangled state preparation. 2022 , 105,	
119	Quantum error correction of spin quantum memories in diamond under a zero magnetic field. 2022 , 5,	О
118	Magic state injection on the rotated surface code. 2022,	
117	Complete Bell state measurement of diamond nuclear spins under a complete spatial symmetry at zero magnetic field. 2022 , 120, 194002	1
116	An introduction to the surface code.	О
115	Approaching the theoretical limit in quantum gate decomposition. 6, 710	O
114	Circuit-level protocol and analysis for twist-based lattice surgery. 2022, 4,	O
113	A Taxonomy of Small Markovian Errors. 2022 , 3,	1
112	High-performance superconducting quantum processors via laser annealing of transmon qubits 2022 , 8, eabi6690	2
111	Ground-state chiral currents in the synthetic Hall tube. 2022 ,	
111	Ground-state chiral currents in the synthetic Hall tube. 2022, A three-dimensional Josephson parametric amplifier.	
		O
110	A three-dimensional Josephson parametric amplifier. Numerical Implementation of Just-In-Time Decoding in Novel Lattice Slices Through the	0
110	A three-dimensional Josephson parametric amplifier. Numerical Implementation of Just-In-Time Decoding in Novel Lattice Slices Through the Three-Dimensional Surface Code. 6, 721	
110	A three-dimensional Josephson parametric amplifier. Numerical Implementation of Just-In-Time Decoding in Novel Lattice Slices Through the Three-Dimensional Surface Code. 6, 721 Kinetically Constrained Quantum Dynamics in Superconducting Circuits. 2022, 3,	0
110 109 108	A three-dimensional Josephson parametric amplifier. Numerical Implementation of Just-In-Time Decoding in Novel Lattice Slices Through the Three-Dimensional Surface Code. 6, 721 Kinetically Constrained Quantum Dynamics in Superconducting Circuits. 2022, 3, The Transmon Qubit for Electromagnetics Engineers: An Introduction 2022, 2-14	0
110 109 108 107	A three-dimensional Josephson parametric amplifier. Numerical Implementation of Just-In-Time Decoding in Novel Lattice Slices Through the Three-Dimensional Surface Code. 6, 721 Kinetically Constrained Quantum Dynamics in Superconducting Circuits. 2022, 3, The Transmon Qubit for Electromagnetics Engineers: An Introduction 2022, 2-14 Demonstration of dynamical control of three-level open systems with a superconducting qutrit. Closing the Locality and Detection Loopholes in Multiparticle Entanglement Self-Testing. 2022,	0 0 2

102	Single-step implementation of a hybrid controlled-not gate with one superconducting qubit simultaneously controlling multiple target cat-state qubits. 2022 , 105,	1
101	Experimental Bayesian Calibration of Trapped-Ion Entangling Operations. 2022, 3,	O
100	Fluxonium: An Alternative Qubit Platform for High-Fidelity Operations. 2022, 129,	2
99	Optical demonstration of quantum fault-tolerant threshold. 2022 , 11,	
98	Performance of superconducting quantum computing chips under different architecture designs. 2022 , 21,	
97	Realization of an Error-Correcting Surface Code with Superconducting Qubits. 2022 , 129,	4
96	Scalable Method for Eliminating Residual ZZ Interaction between Superconducting Qubits. 2022 , 129,	1
95	Tunable coupling of widely separated superconducting qubits: A possible application toward a modular quantum device. 2022 , 121, 032601	2
94	Error-Tolerant Geometric Quantum Control for Logical Qubits with Minimal Resources. 2022, 18,	
93	Nonperturbative Analytical Diagonalization of Hamiltonians with Application to Circuit QED. 2022 , 3,	1
92	Quantifying information scrambling via classical shadow tomography on programmable quantum simulators. 2022 , 106,	O
91	Quantum circuit for the direct measurement of the three-tangle of three-qubit states. 2022 , 2022,	1
90	Enhanced Cavity Optomechanics with Quantum-Well Exciton Polaritons. 2022, 129,	0
89	High-fidelity universal quantum gates for hybrid systems via the practical photon scattering.	
88	Path toward manufacturable superconducting qubits with relaxation times exceeding 0.1 ms. 2022 , 8,	0
87	Quantum error correction with silicon spin qubits. 2022 , 608, 682-686	1
86	Control of population and entanglement of two qubits under the action of different types of dissipative noise. 2022 , 106,	
85	Hybrid quantum genetic algorithm with adaptive rotation angle for the 0-1 Knapsack problem in the IBM Qiskit simulator.	O

84	The Variational Quantum Eigensolver: A review of methods and best practices. 2022, 986, 1-128	6
83	Empirical Analysis of Security Enabled Quantum Computing for Cloud Environment. 2022 , 103-125	1
82	Fast topological pumping for the generation of large-scale Greenberger-Horne-Zeilinger states in a superconducting circuit. 2022 , 17,	О
81	ScQ cloud quantum computation for generating Greenberger-Horne-Zeilinger states of up to 10 qubits. 2022 , 65,	O
80	Policy Gradient Approach to Compilation of Variational Quantum Circuits. 6, 797	О
79	Integrating quantum processor device and control optimization in a gradient-based framework. 2022 , 8,	1
78	Efficient scheme for preparing hybrid GHZ entangled states with multiple types of photonic qubits in circuit QED. 2022 , 137,	0
77	Double-Transmon Coupler: Fast Two-Qubit Gate with No Residual Coupling for Highly Detuned Superconducting Qubits. 2022 , 18,	1
76	A shuttling-based two-qubit logic gate for linking distant silicon quantum processors. 2022 , 13,	1
75	Universal Fidelity Reduction of Quantum Operations from Weak Dissipation. 2022, 129,	2
74	Realization of the Hadamard gate based on superposition of the composite solitons. 2022, 452, 128451	O
73	Wavelength Division Multiplexed Programmable Quantum Simulator. 2020 , 48, 472	O
72	Single-shot quantum error correction with the three-dimensional subsystem toric code. 2022 , 13,	1
71	A Parallel Quantum Circuit Implementations of LSH Hash Function for Use with Grover® Algorithm. 2022 , 12, 10891	1
70	Optimal quantum reservoir computing for the noisy intermediate-scale quantum era. 2022, 106,	O
69	Beating the Thermal Limit of Qubit Initialization with a Bayesian Maxwell Demon. 2022, 12,	O
68	Control and mitigation of microwave crosstalk effect with superconducting qubits. 2022, 121, 152602	0
67	A Review of Developments in Superconducting Quantum Processors.	O

66	Single Temporal-Pulse-Modulated Parameterized Controlled-Phase Gate for Rydberg Atoms. 2022 , 18,	O
65	Generation of cat states by a weak parametric drive and a transitionless tracking algorithm. 2022 , 106,	2
64	Scalable fast benchmarking for individual quantum gates with local twirling.	O
63	Unimon qubit. 2022 , 13,	Ο
62	High fidelity two-qubit gates on fluxoniums using a tunable coupler. 2022, 8,	3
61	Benchmarking quantum error-correcting codes on quasi-linear and central-spin processors.	O
60	Nanoelectronic Systems for Quantum Computing. 2023 , 1201-1230	О
59	Generation of microwave photon perfect W states of three coupled superconducting resonators.	O
58	Generation of time-frequency entangled photon pairs propagating in separate waveguides in circuit QED setup. 2022 , 106,	О
57	Quantum bionic advantage on near-term cloud ecosystem. 2023 , 272, 170295	0
56	A Comprehensive Survey on Quantum Machine Learning and Possible Applications. 2022, 13, 1-17	О
55	Deterministic Bell state measurement with a single quantum memory.	O
54	Demonstration of Tunable Three-Body Interactions between Superconducting Qubits. 2022, 129,	1
53	Robust Dynamical Decoupling for the Manipulation of a Spin Network Via a Single Spin. 2022, 18,	O
52	Microwave-activated gates between a fluxonium and a transmon qubit. 2022, 4,	О
51	Is quantum computing green? An estimate for an energy-effliency quantum advantage.	O
50	Demonstrate chiral spin currents with nontrivial interactions in superconducting quantum circuit.	О
49	Giant spin ensembles in waveguide magnonics. 2022 , 13,	O

48	Generation of Greenberger-Horne-Zeilinger States on Two-Dimensional Superconducting-Qubit Lattices via Parallel Multiqubit-Gate Operations. 2022 , 18,	О
47	Hole-type superconducting gatemon qubit based on Ge/Si core/shell nanowires.	O
46	Cryogenic Multiplexing Control Chip for a Superconducting Quantum Processor. 2022, 18,	О
45	Multi-mode architectures for noise-resilient superconducting qubits. 2023 , 36, 023001	1
44	Quasi-Shor Algorithms for Global Benchmarking of Universal Quantum Processors. 2023 , 13, 139	О
43	High-Fidelity State Preparation, Quantum Control, and Readout of an Isotopically Enriched Silicon Spin Qubit. 2022 , 18,	2
42	Long-distance coupling of spin qubits via topological magnons. 2022 , 106,	0
41	Phase Calibration of the Parametric Gate in the Superconducting Circuits. 2200474	O
40	Measurement-based interleaved randomised benchmarking using IBM processors.	О
39	Optimal quantum control via genetic algorithms for quantum state engineering in driven-resonator mediated networks.	O
38	Two-qubit gate in neutral atoms using transitionless quantum driving. 2023 , 107,	О
37	Readout of a quantum processor with high dynamic range Josephson parametric amplifiers. 2023 , 122, 014001	O
36	Blind Quantum Computation Using Single Qubit Gates. 2022 ,	О
35	Quantum Features and Quantum Neural Network. 2022 , 29, 202-210	О
34	Quantum entanglement between a hole spin confined to a semiconductor quantum dot and a photon. 2023 , 138,	О
33	99.92%-Fidelity cnot Gates in Solids by Noise Filtering. 2023 , 130,	О
32	Low loss, broadband, and non-volatile directed logic operations using phase change materials in silicon photonics. 2023 , 1-1	О
31	Experimental Realization of Two Qutrits Gate with Tunable Coupling in Superconducting Circuits. 2023 , 130,	O

30	Single-photon-added coherent state-based measurement transition and its advantages in precision measurement. 2023 , 138,	Ο
29	Optimization of CNOT circuits on limited-connectivity architecture. 2023 , 5,	O
28	Fabrication Process for Monolithic Integration of a Nitride Superconductor-Based Superconducting Qubit with a Single Flux Quantum Control Circuit. 2023 , 33, 1-4	0
27	Quantum gates between mesoscopic spin ensembles. 2023 , 107,	O
26	Long-Distance Transmon Coupler with cz-Gate Fidelity above 99.8%. 2023 , 4,	0
25	Recent progress on coherent computation based on quantum squeezing. 2023, 33,	0
24	Boundaries of quantum supremacy via random circuit sampling. 2023 , 9,	0
23	Spin-wave-based tunable coupler between superconducting flux qubits. 2023, 107,	Ο
22	Generation of Maximally Entangled Long-Lived States with Giant Atoms in a Waveguide. 2023, 130,	0
21	Generation of a Schrdinger cat state in a hybrid ferromagnet-superconductor system. 2023, 107,	O
20	Error-Divisible Two-Qubit Gates. 2023 , 19,	0
19	Low-loss interconnects for modular superconducting quantum processors. 2023 , 6, 235-241	O
18	Optimization of the memory reset rate of a quantum echo-state network for time sequential tasks. 2023 , 465, 128713	0
17	Quantum control of tunable-coupling transmons using dynamical invariants of motion. 2023 , 8, 025017	O
16	Precise Nondestructive Parity Measurement of Artificial Atoms Using a Superconducting Resonator and Homodyne Measurement. 2200192	0
15	Large-Scale Cardiac Muscle Cell-Based Coupled Oscillator Network for Vertex Coloring Problem. 2200356	O
14	Effect of decoherence for gate operations on a superconducting bosonic qubit. 2023 , 25, 033007	0
13	Realizing a class of stabilizer quantum error correction codes using a single ancilla and circular connectivity. 2023 , 107,	Ο

CITATION REPORT

12	Noisy intermediate-scale quantum computers. 2023 , 18,	Ο
11	Experimental Simulation of Larger Quantum Circuits with Fewer Superconducting Qubits. 2023 , 130,	O
10	Robust Quantum Control for the Manipulation of Solid-State Spins. 2023, 19,	О
9	Optimized Unconventional Geometric Gates in Superconducting Circuits. 2023 , 13, 4041	O
8	Quantum k -medoids algorithm using parallel amplitude estimation. 2023, 107,	O
7	Co-Designed Architectures for Modular Superconducting Quantum Computers. 2023,	O
6	Quantum state transport in square lattice superconducting qubit circuits under gauge potential. 2023 , 0	O
5	Evolution of Quantum Machine Learning and an Attempt of Its Application for SDN Intrusion Detection. 2023 , 437-456	O
4	Controlling gain with loss: Bounds on localizable entanglement in multiqubit systems. 2023, 107,	O
3	Multi-Mode Bus Coupling Architecture of Superconducting Quantum Processor. 2023 , 40, 010301	O
2	Matrix concentration inequalities and efficiency of random universal sets of quantum gates. 7, 983	O
1	Noise-Tolerant Superconducting Gates with High Fidelity.	O