Liang Jiang

List of Publications by Year
in descending order

191 papers	19,526 citations	16451 64 h-index	11308 136 g-index
193 all docs	193 docs citations	193 times ranked	11335 citing authors

#	Article	IF	Citations
1	Engineering fast bias-preserving gates on stabilized cat qubits. Physical Review Research, 2022, 4, .	3.6	21
2	Building a Fault-Tolerant Quantum Computer Using Concatenated Cat Codes. PRX Quantum, 2022, 3, .	9.2	101
3	Quantum advantages for Pauli channel estimation. Physical Review A, 2022, 105, .	2.5	11
4	Stabilizing a Bosonic Qubit Using Colored Dissipation. Physical Review Letters, 2022, 128, 110502.	7.8	14
5	Engineering Kerr-cat qubits for hardware efficient quantum error correction. , 2022, , .		2
6	Deterministic Grover search with a restricted oracle. Physical Review Research, 2022, 4, .	3.6	12
7	Algebraic structure of path-independent quantum control. Physical Review Research, 2022, 4, .	3.6	1
8	Coherent manipulation of graph states composed of finite-energy Gottesman-Kitaev-Preskill-encoded qubits. Physical Review A, 2022, 105, .	2.5	4
9	Classical Simulation of Boson Sampling Based on Graph Structure. Physical Review Letters, 2022, 128, .	7.8	12
10	Quantum Metrological Power of Continuous-Variable Quantum Networks. Physical Review Letters, 2022, 128, 180503.	7.8	7
11	Distributed quantum phase sensing for arbitrary positive and negative weights. Physical Review Research, 2022, 4, .	3.6	6
12	Universal interference-based construction of Gaussian operations in hybrid quantum systems. Npj Quantum Information, 2022, 8, .	6.7	2
13	Multimode photon blockade. Nature Physics, 2022, 18, 879-884.	16.7	14
14	Key Device and Materials Specifications for a Repeater Enabled Quantum Internet. IEEE Transactions on Quantum Engineering, 2021, 2, 1-9.	4.9	6
15	Induced transparency by interference or polarization. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	18
16	Single-shot number-resolved detection of microwave photons with error mitigation. Physical Review A, 2021, 103, .	2.5	9
17	Development of Quantum Interconnects (QuICs) for Next-Generation Information Technologies. PRX Quantum, 2021, 2, .	9.2	172
18	Asymptotic Theory of Quantum Channel Estimation. PRX Quantum, 2021, 2, .	9.2	25

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19	Quantum Limits of Superresolution in a Noisy Environment. Physical Review Letters, 2021, 126, 120502.	7.8	21
20	Photon-Number-Dependent Hamiltonian Engineering for Cavities. Physical Review Applied, 2021, 15, .	3.8	7
21	Resilience of Quantum Random Access Memory to Generic Noise. PRX Quantum, 2021, 2, .	9.2	27
22	Coherent Gate Operations in Hybrid Magnonics. Physical Review Letters, 2021, 126, 207202.	7.8	16
23	Cavity electro-optic circuit for microwave-to-optical conversion in the quantum ground state. Physical Review A, 2021, 103, .	2.5	26
24	Phase-engineered bosonic quantum codes. Physical Review A, 2021, 103, .	2.5	5
25	Quantum repeaters based on concatenated bosonic and discrete-variable quantum codes. Npj Quantum Information, 2021, 7, .	6.7	27
26	Error-Detected State Transfer and Entanglement in a Superconducting Quantum Network. PRX Quantum, 2021, 2, .	9.2	34
27	Coherent Pulse Echo in Hybrid Magnonics with Multimode Phonons. Physical Review Applied, 2021, 16, .	3.8	11
28	Microwave-optical quantum frequency conversion. Optica, 2021, 8, 1050.	9.3	81
29	Classical simulation of lossy boson sampling using matrix product operators. Physical Review A, 2021, 104, .	2.5	20
30	Quantum control of bosonic modes with superconducting circuits. Science Bulletin, 2021, 66, 1789-1805.	9.0	45
31	Quantum Coding with Low-Depth Random Circuits. Physical Review X, 2021, 11, .	8.9	28
32	Adaptive Circuit Learning for Quantum Metrology. , 2021, , .		1
33	High-Fidelity Measurement of Qubits Encoded in Multilevel Superconducting Circuits. Physical Review X, 2020, 10, .	8.9	45
34	Path-Independent Quantum Gates with Noisy Ancilla. Physical Review Letters, 2020, 125, 110503.	7.8	26
35	Encoding an Oscillator into Many Oscillators. Physical Review Letters, 2020, 125, 080503.	7.8	53
36	Bias-preserving gates with stabilized cat qubits. Science Advances, 2020, 6, .	10.3	105

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37	Floquet Cavity Electromagnonics. Physical Review Letters, 2020, 125, 237201.	7.8	39
38	Field-gradient measurement using a Stern-Gerlach atomic interferometer with butterfly geometry. Physical Review A, 2020, 102, .	2.5	2
39	Perfect coherent transfer in an on-chip reconfigurable nanoelectromechanical network. Physical Review B, 2020, 101, .	3.2	14
40	Efficient Multiphoton Sampling of Molecular Vibronic Spectra on a Superconducting Bosonic Processor. Physical Review X, 2020, 10, .	8.9	73
41	Error-corrected gates on an encoded qubit. Nature Physics, 2020, 16, 822-826.	16.7	50
42	Entanglement of microwave-optical modes in a strongly coupled electro-optomechanical system. Physical Review A, 2020, 101, .	2.5	21
43	Chipâ€Based Optical Isolator and Nonreciprocal Parityâ€Time Symmetry Induced by Stimulated Brillouin Scattering. Laser and Photonics Reviews, 2020, 14, 1900278.	8.7	31
44	Cavity piezo-mechanics for superconducting-nanophotonic quantum interface. Nature Communications, 2020, 11, 3237.	12.8	76
45	Distributed quantum sensing enhanced by continuous-variable error correction. New Journal of Physics, 2020, 22, 022001.	2.9	44
46	Saturating the quantum CramÃ©râ€“Rao bound using LOCC. Quantum Science and Technology, 2020, 5, 025005.	5.8	8
47	Electromagnetically induced transparency at a chiral exceptional point. Nature Physics, 2020, 16, 334-340.	16.7	156
48	Radiative Cooling of a Superconducting Resonator. Physical Review Letters, 2020, 124, 033602.	7.8	32
49	Enhanced energy-constrained quantum communication over bosonic Gaussian channels. Nature Communications, 2020, 11, 457.	12.8	15
50	Topological phase transitions, Majorana modes, and quantum simulation of the Suâ€“Schriefferâ€“Heeger model with nearest-neighbor interactions. Physical Review B, 2020, 101, .	3.2	13
51	Sub-Hertz resonance by weak measurement. Nature Communications, 2020, 11, 1752.	12.8	14
52	Proposal for Heralded Generation and Detection of Entangled Microwaveâ€“Optical-Photon Pairs. Physical Review Letters, 2020, 124, 010511.	7.8	57
53	Optimal approximate quantum error correction for quantum metrology. Physical Review Research, 2020, 2, .	3.6	21
54	Waveguide cavity optomagnonics for microwave-to-optics conversion. Optica, 2020, 7, 1291.	9.3	84

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55	Photon Pair Condensation by Engineered Dissipation. Physical Review Letters, 2019, 123, 063602.	7.8	9
56	Stabilized Cat in a Driven Nonlinear Cavity: A Fault-Tolerant Error Syndrome Detector. Physical Review X, 2019, 9, .	8.9	64
57	Universal quantum computing with parafermions assisted by a half-fluxon. Physical Review B, 2019, 100, .	3.2	8
58	Quantum Noise Theory of Exceptional Point Amplifying Sensors. Physical Review Letters, 2019, 123, 180501.	7.8	140
59	Ancilla-Free Quantum Error Correction Codes for Quantum Metrology. Physical Review Letters, 2019, 122, 040502.	7.8	49
60	Quantum repeaters based on two species trapped ions. New Journal of Physics, 2019, 21, 073002.	2.9	14
61	Pair-cat codes: autonomous error-correction with low-order nonlinearity. Quantum Science and Technology, 2019, 4, 035007.	5.8	46
62	Stochastic estimation of dynamical variables. Quantum Science and Technology, 2019, 4, 035003.	5.8	18
63	Routing entanglement in the quantum internet. Npj Quantum Information, 2019, 5, .	6.7	169
64	Quantum repeater architecture with hierarchically optimized memory buffer times. Quantum Science and Technology, 2019, 4, 025010.	5.8	23
65	Entanglement of bosonic modes through an engineered exchange interaction. Nature, 2019, 566, 509-512.	27.8	88
66	Hardware-Efficient Quantum Random Access Memory with Hybrid Quantum Acoustic Systems. Physical Review Letters, 2019, 123, 250501.	7.8	86
67	Modern description of Rayleigh's criterion. Physical Review A, 2019, 99, .	2.5	73
68	Engineering bilinear mode coupling in circuit QED: Theory and experiment. Physical Review A, 2019, 99, .	2.5	34
69	Quantum Capacity Bounds of Gaussian Thermal Loss Channels and Achievable Rates With Gottesman-Kitaev-Preskill Codes. IEEE Transactions on Information Theory, 2019, 65, 2563-2582.	2.4	100
70	Error-corrected quantum sensing. , 2019, , .		1
71	Sub-Hertz Resonance by Weak Measurement. , 2019, , .		0
72	Quantum repeaters based on two species trapped ions. , 2019, , .		0

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73	Quantum memory decoherence-mitigating architecture for quantum repeaters. , 2019, , .		0
74	Entanglement as a resource for quantum networking. , 2019, , .		0
75	On-demand quantum state transfer and entanglement between remote microwave cavity memories. Nature Physics, 2018, 14, 705-710.	16.7	143
76	A CNOT gate between multiphoton qubits encoded in two cavities. Nature Communications, 2018, 9, 652.	12.8	95
77	Achieving the Heisenberg limit in quantum metrology using quantum error correction. Nature Communications, 2018, 9, 78.	12.8	139
78	Quantum Transduction with Adaptive Control. Physical Review Letters, 2018, 120, 020502.	7.8	18
79	Performance and structure of single-mode bosonic codes. Physical Review A, 2018, 97, .	2.5	172
80	Optimized Access-Time Scheduling in Quantum Networks Using Realistic Quantum Memories. , 2018, , .		0
81	Parity-time symmetry in optical microcavity systems. Journal of Physics B: Atomic, Molecular and Optical Physics, 2018, 51, 222001.	1.5	45
82	Deterministic teleportation of a quantum gate between two logical qubits. Nature, 2018, 561, 368-373.	27.8	154
83	Quantum Repeaters Based on Two-Species Trapped Ions. , 2018, , .		2
84	All-Optical Control of Linear and Nonlinear Energy Transfer via the Zeno Effect. Physical Review Letters, 2018, 120, 203902.	7.8	19
85	One-way quantum repeaters with quantum Reed-Solomon codes. Physical Review A, 2018, 97, .	2.5	22
86	Programmable Interference between Two Microwave Quantum Memories. Physical Review X, 2018, 8, .	8.9	56
87	Robust readout of bosonic qubits in the dispersive coupling regime. Physical Review A, 2018, 98, .	2.5	15
88	Fault-tolerant detection of a quantum error. Science, 2018, 361, 266-270.	12.6	113
89	Efficient Generation of a Near-visible Frequency Comb via Cherenkov-like Radiation from a Kerr Microcomb. Physical Review Applied, 2018, 10, .	3.8	54
90	Intracity Quantum Communication via Thermal Microwave Networks. Physical Review X, 2017, 7, .	8.9	58

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91	Optimized architectures for long distance quantum communication. , 2017, , .		0
92	Deep Neural Network Probabilistic Decoder for Stabilizer Codes. Scientific Reports, 2017, 7, 11003.	3.3	58
93	Cat Codes with Optimal Decoherence Suppression for a Lossy Bosonic Channel. Physical Review Letters, 2017, 119, 030502.	7.8	69
94	Implementing a universal gate set on a logical qubit encoded in an oscillator. Nature Communications, 2017, 8, 94.	12.8	183
95	Quantum channel construction with circuit quantum electrodynamics. Physical Review B, 2017, 95, .	3.2	40
96	Controlled release of multiphoton quantum states from a microwave cavity memory. Nature Physics, 2017, 13, 882-887.	16.7	101
97	Overcoming erasure errors with multilevel systems. New Journal of Physics, 2017, 19, 013026.	2.9	40
98	Efficient visible frequency microcomb generation with 22% conversion efficiency. , 2017, , .		0
99	Measurement-only topological quantum computation without forced measurements. New Journal of Physics, 2016, 18, 123027.	2.9	11
100	Demonstration of a chip-based optical isolator with parametric amplification. Nature Communications, 2016, 7, 13657.	12.8	89
101	Subwavelength-width optical tunnel junctions for ultracold atoms. Physical Review A, 2016, 94, .	2.5	35
102	Implementing and Characterizing Precise Multiqubit Measurements. Physical Review X, 2016, 6, .	8.9	27
103	Superstrong coupling of thin film magnetostatic waves with microwave cavity. Journal of Applied Physics, 2016, 119, .	2.5	62
104	A SchrÃ¶dinger cat living in two boxes. Science, 2016, 352, 1087-1091.	12.6	244
105	Overcoming lossy channel bounds using a single quantum repeater node. Applied Physics B: Lasers and Optics, 2016, 122, 1.	2.2	37
106	Cavity piezomechanical strong coupling and frequency conversion on an aluminum nitride chip. Physical Review A, 2016, 94, .	2.5	40
107	Concurrent remote entanglement with quantum error correction against photon losses. Physical Review A, 2016, 94, .	2.5	6
108	Direct Measurement of Topological Numbers with Spins in Diamond. Physical Review Letters, 2016, 117, 060503.	7.8	32

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109	Anti-parityâ€“time symmetry with flying atoms. Nature Physics, 2016, 12, 1139-1145.	16.7	298
110	Extending the lifetime of a quantum bit with error correction in superconducting circuits. Nature, 2016, 536, 441-445.	27.8	603
111	Quantum memory with millisecond coherence in circuit QED. Physical Review B, 2016, 94, .	3.2	237
112	Holonomic Quantum Control with Continuous Variable Systems. Physical Review Letters, 2016, 116, 140502.	7.8	77
113	Geometry and Response of Lindbladians. Physical Review X, 2016, 6, .	8.9	94
114	Role of syndrome information on a one-way quantum repeater using teleportation-based error correction. Physical Review A, 2016, 94, .	2.5	19
115	Optimal architectures for long distance quantum communication. Scientific Reports, 2016, 6, 20463.	3.3	262
116	New Class of Quantum Error-Correcting Codes for a Bosonic Mode. Physical Review X, 2016, 6, .	8.9	198
117	Cavity magnomechanics. Science Advances, 2016, 2, e1501286.	10.3	395
118	Spin correlations and entanglement in partially magnetised ensembles of fermions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 214002.	1.5	3
119	Filtration and extraction of quantum states from classical inputs. Physical Review A, 2016, 94, .	2.5	3
120	Optimized tomography of continuous variable systems using excitation counting. Physical Review A, 2016, 94, .	2.5	9
121	Phonon-induced spin squeezing based on geometric phase. Physical Review A, 2015, 92, .	2.5	8
122	Universal control of an oscillator with dispersive coupling to a qubit. Physical Review A, 2015, 92, .	2.5	99
123	Demonstrating non-Abelian statistics of Majorana fermions using twist defects. Physical Review B, 2015, 92, .	3.2	19
124	Experimental Realization of High-Efficiency Counterfactual Computation. Physical Review Letters, 2015, 115, 080501.	7.8	16
125	Cavity State Manipulation Using Photon-Number Selective Phase Gates. Physical Review Letters, 2015, 115, 137002.	7.8	121
126	Remote Entanglement by Coherent Multiplication of Concurrent Quantum Signals. Physical Review Letters, 2015, 115, 150503.	7.8	10

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127	Characterizing entanglement of an artificial atom and a cavity cat state with Bellâ€™s inequality. Nature Communications, 2015, 6, 8970.	12.8	46
128	Modeling of On-Chip Optical Nonreciprocity with an Active Microcavity. Photonics, 2015, 2, 498-508.	2.0	11
129	Topological Properties of Linear Circuit Lattices. Physical Review Letters, 2015, 114, 173902.	7.8	210
130	Magnon dark modes and gradient memory. Nature Communications, 2015, 6, 8914.	12.8	293
131	Detuning-enhanced cavity spin squeezing. Physical Review A, 2015, 91, .	2.5	26
132	Parity-time symmetry and nonreciprocal light transmission in high-Q microcavity systems. , 2015, , .		0
133	Dynamically protected cat-qubits: a new paradigm for universal quantum computation. New Journal of Physics, 2014, 16, 045014.	2.9	394
134	Microwave-assisted coherent and nonlinear control in cavity piezo-optomechanical systems. Physical Review A, 2014, 90, .	2.5	32
135	Strongly Coupled Magnons and Cavity Microwave Photons. Physical Review Letters, 2014, 113, 156401.	7.8	693
136	On-chip interaction-free measurements via the quantum Zeno effect. Physical Review A, 2014, 90, .	2.5	14
137	Parityâ€“time symmetry and variable optical isolation in activeâ€“passive-coupled microresonators. Nature Photonics, 2014, 8, 524-529.	31.4	910
138	Symmetries and conserved quantities in Lindblad master equations. Physical Review A, 2014, 89, .	2.5	231
139	Ultrafast and Fault-Tolerant Quantum Communication across Long Distances. Physical Review Letters, 2014, 112, 250501.	7.8	204
140	Heisenberg-Limited Atom Clocks Based on Entangled Qubits. Physical Review Letters, 2014, 112, 190403.	7.8	92
141	A quantum network of clocks. Nature Physics, 2014, 10, 582-587.	16.7	435
142	PT-Symmetry and on-Chip Optical Nonreciprocity in Active-Passive-Coupled Microtoroids. , 2014, , .		1
143	Trapped Ion Implementation of Memory-Assisted Extended Quantum Key Distribution. , 2014, , .		0
144	Observation of parity-time symmetry in an optical system formed by moving atoms. , 2014, , .		0

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145	Magneto-Josephson effects and Majorana bound states in quantum wires. New Journal of Physics, 2013, 15, 115001.	2.9	19
146	Magneto-Josephson effects in junctions with Majorana bound states. Physical Review B, 2013, 87, .	3.2	43
147	Topologically protected quantum state transfer in a chiral spin liquid. Nature Communications, 2013, 4, 1585.	12.8	67
148	Quantum logic between remote quantum registers. Physical Review A, 2013, 87, .	2.5	35
149	Coherence-Assisted Resonance with Sub-Transit-Limited Linewidth. Physical Review Letters, 2012, 109, 233006.	7.8	10
150	Environment-assisted metrology with spin qubits. Physical Review A, 2012, 85, .	2.5	19
151	Unforgeable noise-tolerant quantum tokens. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 16079-16082.	7.1	42
152	Cavity QED with atomic mirrors. New Journal of Physics, 2012, 14, 063003.	2.9	205
153	Scalable architecture for a room temperature solid-state quantum information processor. Nature Communications, 2012, 3, 800.	12.8	190
154	Room-Temperature Quantum Bit Memory Exceeding One Second. Science, 2012, 336, 1283-1286.	12.6	707
155	Majorana Fermions in Equilibrium and in Driven Cold-Atom Quantum Wires. Physical Review Letters, 2011, 106, 220402.	7.8	606
156	Unconventional Josephson Signatures of Majorana Bound States. Physical Review Letters, 2011, 107, 236401.	7.8	143
157	Robust Quantum State Transfer in Random Unpolarized Spin Chains. Physical Review Letters, 2011, 106, 040505.	7.8	194
158	Universal dynamical decoupling of multiqubit states from environment. Physical Review A, 2011, 84, .	2.5	23
159	Interface between Topological and Superconducting Qubits. Physical Review Letters, 2011, 106, 130504.	7.8	88
160	Environment-Assisted Precision Measurement. Physical Review Letters, 2011, 106, 140502.	7.8	75
161	Complex Kinetics of Fluctuating Enzymes: Phase Diagram Characterization of a Minimal Kinetic Scheme. Chemistry - an Asian Journal, 2010, 5, 1129-1138.	3.3	9
162	Quantum entanglement between an optical photon and a solid-state spin qubit. Nature, 2010, 466, 730-734.	27.8	968

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163	Far-field optical imaging and manipulation of individual spins with nanoscale resolution. Nature Physics, 2010, 6, 912-918.	16.7	142
164	Fast entanglement distribution with atomic ensembles and fluorescent detection. Physical Review A, 2010, 81, .	2.5	16
165	SCALABLE QUANTUM NETWORKS BASED ON FEW-QUBIT REGISTERS. International Journal of Quantum Information, 2010, 08, 93-104.	1.1	3
166	Imaging mesoscopic nuclear spin noise with a diamond magnetometer. Journal of Chemical Physics, 2010, 133, 124105.	3.0	82
167	Strong magnetic coupling between an electronic spin qubit and a mechanical resonator. Physical Review B, 2009, 79, .	3.2	329
168	High-fidelity fast quantum transport with imperfect controls. Physical Review A, 2009, 79, .	2.5	42
169	Repetitive Readout of a Single Electronic Spin via Quantum Logic with Nuclear Spin Ancillae. Science, 2009, 326, 267-272.	12.6	277
170	Preparation of decoherence-free cluster states with optical superlattices. Physical Review A, 2009, 79, .	2.5	21
171	Coherence and Control of Quantum Registers Based on Electronic Spin in a Nuclear Spin Bath. Physical Review Letters, 2009, 102, 210502.	7.8	92
172	Quantum repeater with encoding. Physical Review A, 2009, 79, .	2.5	224
173	Nanoscale magnetic sensing using spin qubits in diamond. , 2009, , .		2
174	Electromagnetically induced transparency with noisy lasers. Physical Review A, 2009, 80, .	2.5	31
175	High-sensitivity diamond magnetometer with nanoscale resolution. Nature Physics, 2008, 4, 810-816.	16.7	1,409
176	Anyonic interferometry and protected memories in atomic spin lattices. Nature Physics, 2008, 4, 482-488.	16.7	97
177	Diffusion-induced decoherence of stored optical vortices. Physical Review A, 2008, 77, .	2.5	32
178	Coherent Quantum Optical Control with Subwavelength Resolution. Physical Review Letters, 2008, 100, 093005.	7.8	135
179	Nanoscale magnetic sensing with an individual electronic spin in diamond. Nature, 2008, 455, 644-647.	27.8	1,554
180	Many-body protected entanglement generation in interacting spin systems. Physical Review A, 2008, 77, .	2.5	46

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181	One-shot entanglement generation over long distances in noisy quantum networks. Physical Review A, 2008, 78, .	2.5	25
182	Coherence of an Optically Illuminated Single Nuclear Spin Qubit. Physical Review Letters, 2008, 100, 073001.	7.8	51
183	Slow Light Beam Splitter. Physical Review Letters, 2008, 101, 043601.	7.8	57
184	Optimal approach to quantum communication using dynamic programming. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 17291-17296.	7.1	53
185	Quantum-limited measurements of atomic scattering properties. Physical Review A, 2007, 76, .	2.5	48
186	Distributed quantum computation based on small quantum registers. Physical Review A, 2007, 76, .	2.5	188
187	Nonequilibrium Steady State of a Nanometric Biochemical System:Â Determining the Thermodynamic Driving Force from Single Enzyme Turnover Time Traces. Nano Letters, 2005, 5, 2373-2378.	9.1	50
188	New perspectives on covariant quantum error correction. Quantum - the Open Journal for Quantum Science, 0, 5, 521.	0.0	20
189	Optimized Entanglement Purification. Quantum - the Open Journal for Quantum Science, 0, 3, 123.	0.0	43
190	Optimal probes and error-correction schemes in multi-parameter quantum metrology. Quantum - the Open Journal for Quantum Science, 0, 4, 288.	0.0	23
191	Efficient classical simulation of noisy random quantum circuits in one dimension. Quantum - the Open Journal for Quantum Science, 0, 4, 318.	0.0	47