

Shi-Liang Zhu

List of Publications by Year in descending order

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151
all docs

151
docs citations

151
times ranked

3016
citing authors

#	ARTICLE	IF	CITATIONS
1	Implementation of Universal Quantum Gates Based on Nonadiabatic Geometric Phases. Physical Review Letters, 2002, 89, 097902.	2.9	287
2	Simulation and Detection of Dirac Fermions with Cold Atoms in an Optical Lattice. Physical Review Letters, 2007, 98, 260402.	2.9	266
3	Unconventional Geometric Quantum Computation. Physical Review Letters, 2003, 91, 187902.	2.9	233
4	Scaling of Geometric Phases Close to the Quantum Phase Transition in the XY Spin Chain. Physical Review Letters, 2006, 96, 077206.	2.9	230
5	Spin Hall Effects for Cold Atoms in a Light-Induced Gauge Potential. Physical Review Letters, 2006, 97, 240401.	2.9	214
6	Interplay of non-Hermitian skin effects and Anderson localization in nonreciprocal quasiperiodic lattices. Physical Review B, 2019, 100, .	1.1	204
7	Topological quantum matter with cold atoms. Advances in Physics, 2018, 67, 253-402.	35.9	198
8	Efficient quantum memory for single-photon polarization qubits. Nature Photonics, 2019, 13, 346-351.	15.6	183
9	Experimental realization of stimulated Raman shortcut-to-adiabatic passage with cold atoms. Nature Communications, 2016, 7, 12479.	5.8	168
10	Trapped Ion Quantum Computation with Transverse Phonon Modes. Physical Review Letters, 2006, 97, 050505.	2.9	151
11	Geometric quantum gates that are robust against stochastic control errors. Physical Review A, 2005, 72, .	1.0	146
12	Geometric Quantum Computation and Multiqubit Entanglement with Superconducting Qubits inside a Cavity. Physical Review Letters, 2005, 94, 100502.	2.9	138
13	Realizing and Detecting the Quantum Hall Effect without Landau Levels by Using Ultracold Atoms. Physical Review Letters, 2008, 101, 246810.	2.9	118
14	Probing Non-Abelian Statistics of Majorana Fermions in Ultracold Atomic Superfluid. Physical Review Letters, 2011, 106, 100404.	2.9	118
15	Robust quantum state transfer via topological edge states in superconducting qubit chains. Physical Review A, 2018, 98, .	1.0	99
16	Simulating Z^2 topological insulators with cold atoms in a one-dimensional optical lattice. Physical Review A, 2012, 85, .	1.0	96
17	Arbitrary-speed quantum gates within large ion crystals through minimum control of laser beams. Europhysics Letters, 2006, 73, 485-491.	0.7	90
18	Topological Maxwell Metal Bands in a Superconducting Qutrit. Physical Review Letters, 2018, 120, 130503.	2.9	87

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19	Topological Bose-Mott Insulators in a One-Dimensional Optical Superlattice. <i>Physical Review Letters</i> , 2013, 110, 075303.	2.9	85
20	Universal quantum gates based on a pair of orthogonal cyclic states: Application to NMR systems. <i>Physical Review A</i> , 2003, 67, .	1.0	79
21	Non-Hermitian topological Anderson insulators. <i>Science China: Physics, Mechanics and Astronomy</i> , 2020, 63, 1.	2.0	75
22	Experimental Measurement of the Quantum Metric Tensor and Related Topological Phase Transition with a Superconducting Qubit. <i>Physical Review Letters</i> , 2019, 122, 210401.	2.9	74
23	Direct Observation of Topology from Single-Photon Dynamics. <i>Physical Review Letters</i> , 2019, 122, 193903.	2.9	70
24	Skin superfluid, topological Mott insulators, and asymmetric dynamics in an interacting non-Hermitian Aubry-Andr�-Harper model. <i>Physical Review B</i> , 2020, 101, .	1.1	69
25	Josephson dynamics of a spin-orbit-coupled Bose-Einstein condensate in a double-well potential. <i>Physical Review A</i> , 2012, 85, .	1.0	62
26	Topological insulator and particle pumping in a one-dimensional shaken optical lattice. <i>Physical Review A</i> , 2014, 90, .	1.0	61
27	Relativistic quantum effects of Dirac particles simulated by ultracold atoms. <i>Frontiers of Physics</i> , 2012, 7, 31-53.	2.4	57
28	Proposal for implementing universal superadiabatic geometric quantum gates in nitrogen-vacancy centers. <i>Physical Review A</i> , 2016, 93, .	1.0	57
29	Delocalization of Relativistic Dirac Particles in Disordered One-Dimensional Systems and Its Implementation with Cold Atoms. <i>Physical Review Letters</i> , 2009, 102, 210403.	2.9	54
30	Microwave electrometry via electromagnetically induced absorption in cold Rydberg atoms. <i>Physical Review A</i> , 2020, 101, .	1.0	53
31	Geometric phase shift in quantum computation using superconducting nanocircuits: Nonadiabatic effects. <i>Physical Review A</i> , 2002, 66, .	1.0	50
32	Simulating and exploring Weyl semimetal physics with cold atoms in a two-dimensional optical lattice. <i>Physical Review A</i> , 2015, 92, .	1.0	50
33	Quantum simulation of exotic π -invariant topological nodal loop bands with ultracold atoms in an optical lattice. <i>Physical Review A</i> , 2016, 93, .	1.0	50
34	Demonstration of Geometric Landau-Zener Interferometry in a Superconducting Qubit. <i>Physical Review Letters</i> , 2014, 112, 027001.	2.9	47
35	Simulation and detection of photonic Chern insulators in a one-dimensional circuit-QED lattice. <i>Physical Review A</i> , 2015, 92, .	1.0	47
36	Emergent pseudospin-1 Maxwell fermions with a threefold degeneracy in optical lattices. <i>Physical Review A</i> , 2017, 96, .	1.0	47

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37	Nonadiabatic Noncyclic Geometric Phase and Ensemble Average Spectrum of Conductance in Disordered Mesoscopic Rings with Spin-Orbit Coupling. <i>Physical Review Letters</i> , 2000, 85, 1076-1079.	2.9	46
38	Subnatural-Linewidth Polarization-Entangled Photon Pairs with Controllable Temporal Length. <i>Physical Review Letters</i> , 2014, 112, 243602.	2.9	46
39	Simulating and detecting the quantum spin Hall effect in the kagome optical lattice. <i>Physical Review A</i> , 2010, 82, .	1.0	45
40	Nonadiabatic noncyclic geometric phase of a spin-1/2 particle subject to an arbitrary magnetic field. <i>Physical Review B</i> , 2000, 61, 1142-1148.	1.1	42
41	Quantum-information processing using Josephson junctions coupled through cavities. <i>Physical Review A</i> , 2003, 68, .	1.0	42
42	Macroscopic Klein tunneling in spin-orbit-coupled Bose-Einstein condensates. <i>Physical Review A</i> , 2012, 85, .	1.0	42
43	Sudden death of distillability in qutrit-qutrit systems. <i>Physical Review A</i> , 2009, 80, .	1.0	40
44	Nonadiabatic geometric quantum computation using a single-loop scenario. <i>Physical Review A</i> , 2005, 71, .	1.0	38
45	GEOMETRIC PHASES AND QUANTUM PHASE TRANSITIONS. <i>International Journal of Modern Physics B</i> , 2008, 22, 561-581.	1.0	37
46	Simulating the Kibble-Zurek mechanism of the Ising model with a superconducting qubit system. <i>Scientific Reports</i> , 2016, 6, 22667.	1.6	37
47	Charge pumping in a quantum wire driven by a series of local time-periodic potentials. <i>Physical Review B</i> , 2002, 65, .	1.1	36
48	Experimental test of the no-go theorem for continuous \hbar -epistemic models. <i>Scientific Reports</i> , 2016, 6, 26519.	1.6	34
49	Quantum Jumps between Macroscopic Quantum States of a Superconducting Qubit Coupled to a Microscopic Two-Level System. <i>Physical Review Letters</i> , 2008, 101, 157001.	2.9	32
50	Topological superfluid transition induced by a periodically driven optical lattice. <i>Physical Review A</i> , 2012, 86, .	1.0	32
51	Experimental Observation of Tensor Monopoles with a Superconducting Qudit. <i>Physical Review Letters</i> , 2021, 126, 017702.	2.9	32
52	Witnessing topological Weyl semimetal phase in a minimal circuit-QED lattice. <i>Quantum Science and Technology</i> , 2016, 1, 015006.	2.6	31
53	High-efficiency coherent microwave-to-optics conversion via off-resonant scattering. <i>Nature Photonics</i> , 2022, 16, 291-296.	15.6	30
54	Superfluid and magnetic states of an ultracold Bose gas with synthetic three-dimensional spin-orbit coupling in an optical lattice. <i>Physical Review A</i> , 2013, 88, .	1.0	28

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55	High fidelity quantum state transfer in electromechanical systems with intermediate coupling. Scientific Reports, 2015, 4, 6237.	1.6	25
56	Experimental observation of double coherent stimulated Raman adiabatic passages in three-level systems in a cold atomic ensemble. Physical Review A, 2014, 90, .	1.0	24
57	Conductance of a quantum point contact in the presence of a scanning probe microscope tip. Physical Review B, 2002, 65, .	1.1	22
58	Physical implementation of topologically decoherence-protected superconducting qubits. Physical Review A, 2008, 77, .	1.0	22
59	Dynamics of Weyl quasiparticles in an optical lattice. Physical Review A, 2016, 94, .	1.0	22
60	Tunable interfaces for realizing universal quantum computation with topological qubits. Physical Review A, 2013, 88, .	1.0	21
61	Exploring topological double-Weyl semimetals with cold atoms in optical lattices. Physical Review A, 2017, 95, .	1.0	21
62	Implementing topological quantum manipulation with superconducting circuits. Physical Review A, 2009, 79, .	1.0	20
63	Robust interface between flying and topological qubits. Scientific Reports, 2015, 5, 12233.	1.6	20
64	Digital Simulation of Topological Matter on Programmable Quantum Processors. Physical Review Letters, 2020, 125, 160503.	2.9	20
65	Partonic collinear structure by quantum computing. Physical Review D, 2022, 105, .	1.6	20
66	Simulation and measurement of the fractional particle number in one-dimensional optical lattices. Physical Review A, 2015, 92, .	1.0	19
67	Observation of coherent oscillation in single-passage Landau-Zener transitions. Scientific Reports, 2015, 5, 8463.	1.6	18
68	Bichromatic electromagnetically induced transparency in hot atomic vapors. Physical Review A, 2013, 87, .	1.0	17
69	Topology-dependent quantum dynamics and entanglement-dependent topological pumping in superconducting qubit chains. Physical Review A, 2018, 98, .	1.0	17
70	Double exceptional links in a three-dimensional dissipative cold atomic gas. Physical Review A, 2020, 102, .	1.0	17
71	Einstein-Podolsky-Rosen Energy-Time Entanglement of Narrow-Band Biphotons. Physical Review Letters, 2020, 124, 010509.	2.9	17
72	Testing Bell's inequality and measuring the entanglement using superconducting nanocircuits. Physical Review A, 2003, 68, .	1.0	15

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73	Circuit QED with qutrits: Coupling three or more atoms via virtual-photon exchange. Physical Review A, 2017, 96, .	1.0	15
74	Measurement of Spin Chern Numbers in Quantum Simulated Topological Insulators. Physical Review Letters, 2021, 127, 136802.	2.9	15
75	Detecting unambiguously non-Abelian geometric phases with trapped ions. New Journal of Physics, 2008, 10, 043031.	1.2	14
76	Complex quantum network model of energy transfer in photosynthetic complexes. Physical Review E, 2012, 86, 061917.	0.8	14
77	Experimental observation of simultaneous wave and particle behavior in a narrowband single-photon wave packet. Physical Review A, 2015, 91, .	1.0	14
78	Optimal conventional measurements for quantum-enhanced interferometry. Physical Review A, 2017, 95, .	1.0	14
79	Anti-Kibble-Zurek behavior of a noisy transverse-field XY chain and its quantum simulation with two-level systems. Physical Review B, 2017, 95, .	1.1	13
80	\hat{I} -Quench Measurement of a Pure Quantum-State Wave Function. Physical Review Letters, 2019, 123, 190402.	2.9	13
81	Realizing quantum linear regression with auxiliary qumodes. Physical Review A, 2019, 99, .	1.0	13
82	Quantum computation in a decoherence-free subspace with superconducting devices. European Physical Journal D, 2009, 55, 223-228.	0.6	12
83	Particle-number fractionalization of a one-dimensional atomic Fermi gas with synthetic spin-orbit coupling. Physical Review A, 2012, 86, .	1.0	12
84	Protocol for Implementing Quantum Nonparametric Learning with Trapped Ions. Physical Review Letters, 2020, 124, 010506.	2.9	12
85	Recognition of orbital-angular-momentum modes with different topological charges and their unknown superpositions via machine learning. Physical Review A, 2021, 104, .	1.0	12
86	Three-dimensional Dirac-like fermions in an optical lattice. Physical Review A, 2010, 82, .	1.0	11
87	Degenerate eigensubspace in a triangle-level system and its geometric quantum control. Physical Review A, 2017, 96, .	1.0	11
88	Generalized Hofstadter model on a cubic optical lattice: From nodal bands to the three-dimensional quantum Hall effect. Physical Review A, 2017, 95, .	1.0	11
89	Non-Hermitian topological end breathers. Physical Review B, 2021, 104, .	1.1	11
90	Chiral magnetic effect in three-dimensional optical lattices. Physical Review Research, 2019, 1, .	1.3	11

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91	Rydberg-atom-based electrometry. Wuli Xuebao/Acta Physica Sinica, 2015, 64, 160702.	0.2	11
92	Conductance of a quantum point contact in the presence of spin-orbit interaction. Journal of Applied Physics, 2002, 91, 6545.	1.1	10
93	Graphene-like physics in optical lattices. Chinese Physics B, 2013, 22, 116106.	0.7	10
94	Topological metal bands with double-triple-point fermions in optical lattices. Physical Review A, 2018, 98, .	1.0	10
95	Selected topics of quantum computing for nuclear physics*. Chinese Physics B, 2021, 30, 020306.	0.7	10
96	Damping transition in an open generalized Aubry-Andr�-Harper model. Physical Review A, 2022, 105, .	1.0	10
97	Persistent currents induced by spin-orbit coupling in one-dimensional mesoscopic rings. Physical Review B, 1995, 52, 7814-7817.	1.1	9
98	Probing a half-odd topological number sequence with cold atoms in a non-Abelian optical lattice. Physical Review A, 2011, 84, .	1.0	9
99	Efficient Phase-Encoding Quantum Key Generation with Narrow-Band Single Photons. Chinese Physics Letters, 2011, 28, 070307.	1.3	9
100	Simulation of the spin-boson model with superconducting phase qubit coupled to a transmission line. Science China: Physics, Mechanics and Astronomy, 2012, 55, 1557-1561.	2.0	9
101	Simultaneously exciting two atoms with photon-mediated Raman interactions. Physical Review A, 2017, 95, .	1.0	9
102	Simulating bosonic Chern insulators in one-dimensional optical superlattices. Physical Review A, 2020, 101, .	1.0	9
103	Continuous-Variable Assisted Thermal Quantum Simulation. Physical Review Letters, 2021, 127, 020502.	2.9	9
104	Connecting topological Anderson and Mott insulators in disordered interacting fermionic systems. Physical Review B, 2021, 104, .	1.1	9
105	Band topology of pseudo-Hermitian phases through tensor Berry connections and quantum metric. Physical Review B, 2021, 104, .	1.1	9
106	Implementation of local and high-fidelity quantum conditional phase gates in a scalable two-dimensional ion trap. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 1425-1430.	0.9	8
107	Geometry and superfluidity of the flat band in a non-Hermitian optical lattice. Physical Review A, 2021, 103, .	1.0	8
108	Inelastic transport detection of spin quantum tunneling and spin relaxation in single-molecule magnets in the absence of a magnetic field. Physical Review B, 2012, 85, .	1.1	7

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109	Realization of dark state in a three-dimensional transmon superconducting qubit. Applied Physics Letters, 2015, 107, .	1.5	7
110	Simulating the dynamical quantum Hall effect with superconducting qubits. Physical Review A, 2015, 91, .	1.0	7
111	Measurement of the topological Chern number by continuous probing of a qubit subject to a slowly varying Hamiltonian. Physical Review A, 2017, 96, .	1.0	7
112	Statistically related many-body localization in the one-dimensional anyon Hubbard model. Physical Review B, 2020, 102, .	1.1	7
113	Gain/loss effects on spin-orbit coupled ultracold atoms in two-dimensional optical lattices. Science China: Physics, Mechanics and Astronomy, 2022, 65, .	2.0	7
114	Nonadiabatic noncyclic geometric phase and persistent current in one-dimensional rings. Physical Review B, 1999, 60, 10668-10671.	1.1	6
115	Proposal for a rotation-sensing interferometer with spin-orbit-coupled atoms. Physical Review A, 2012, 85, .	1.0	6
116	Topological quantum memory interfacing atomic and superconducting qubits. Science China: Physics, Mechanics and Astronomy, 2016, 59, 1.	2.0	6
117	Geometric atom interferometry with shortcuts to adiabaticity. Physical Review A, 2017, 95, .	1.0	6
118	Topological phases of the kicked Harper-Kitaev model with ultracold atoms. Journal of Physics Condensed Matter, 2017, 29, 035601.	0.7	6
119	Synchronization and Phase Shaping of Single Photons with High-Efficiency Quantum Memory. Chinese Physics Letters, 2021, 38, 094202.	1.3	6
120	Extracting non-Abelian quantum metric tensor and its related Chern numbers. Physical Review A, 2022, 105, .	1.0	6
121	Persistent currents in a mesoscopic ring in an inhomogeneous magnetic field. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 187, 74-78.	0.9	5
122	Implementing multi-qubit entanglement of two-level systems inside a superconducting phase qubit. European Physical Journal D, 2011, 61, 499-505.	0.6	5
123	Valley-dependent gauge fields for ultracold atoms in square optical superlattices. Physical Review A, 2014, 89, .	1.0	5
124	Generation of Gaussian-Shape Single Photons for High Efficiency Quantum Storage*. Chinese Physics Letters, 2019, 36, 074202.	1.3	5
125	Emulating topological currents arising from a dipolar parity anomaly in two-dimensional optical lattices. Physical Review A, 2019, 99, .	1.0	5
126	Terahertz measurement based on Rydberg atomic antenna. Wuli Xuebao/Acta Physica Sinica, 2021, 70, 060702.	0.2	5

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127	Efficient microwave-to-optical single-photon conversion with a single flying circular Rydberg atom. <i>Optics Express</i> , 2021, 29, 9942.	1.7	5
128	Topological Transition Enabled by Surface Modification of Photonic Crystals. <i>ACS Photonics</i> , 2021, 8, 1385-1392.	3.2	5
129	Dark periods in Rabi oscillations of a superconducting phase qubit coupled to a microscopic two-level system. <i>Physical Review B</i> , 2009, 80, .	1.1	4
130	Some topological states in one-dimensional cold atomic systems. <i>Annals of Physics</i> , 2015, 358, 58-82.	1.0	4
131	Simulating the Majorana dynamics with ultracold atomic gases in a bilayer honeycomb lattice. <i>Physical Review Research</i> , 2020, 2, .	1.3	4
132	The periodic orbit magnetic ordering transition on mesoscopic tubes. <i>Solid State Communications</i> , 1995, 95, 765-769.	0.9	3
133	Experimental Generation of Narrow-Band Paired Photons: from Damped Rabi Oscillation to Group Delay. <i>Chinese Physics Letters</i> , 2014, 31, 034205.	1.3	3
134	Directly probing the Chern number of the Haldane model in optical lattices. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2015, 32, 2500.	0.9	3
135	Energy levels of a spin-orbit-coupled Bose-Einstein condensate in a double-well potential. <i>Laser Physics</i> , 2015, 25, 025501.	0.6	3
136	Localization and mesoscopic persistent current in a disordered metal ring. <i>Physical Review B</i> , 1996, 53, 12597-12600.	1.1	2
137	Berry phase and Aharonov-Bohm effect in one-dimensional mesoscopic ring with an adiabatic rotating potential. <i>Solid State Communications</i> , 1999, 113, 233-237.	0.9	2
138	Geometric quantum computation using superconducting nanocircuits. <i>Physica C: Superconductivity and Its Applications</i> , 2001, 364-365, 213-215.	0.6	2
139	An experimental proposal to test dynamic quantum non-locality with single-atom interferometry. <i>Europhysics Letters</i> , 2011, 94, 50006.	0.7	2
140	Anomalous Temperature Effects of the Entanglement of Two Coupled Qubits in Independent Environments. <i>Chinese Physics Letters</i> , 2012, 29, 040301.	1.3	2
141	Efficient generation of hyperentangled photon pairs with controllable waveforms from cold atoms. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2013, 30, 362.	0.9	2
142	Coherent Coupling between Microwave and Optical Fields via Cold Atoms*. <i>Chinese Physics Letters</i> , 2019, 36, 080301.	1.3	2
143	Production of ⁸⁷ Rb Bose-Einstein Condensate with a Simple Evaporative Cooling Method. <i>Chinese Physics Letters</i> , 2020, 37, 036701.	1.3	2
144	Increasing the efficiency of post-selection in direct measurement of the quantum wave function. <i>Chinese Physics B</i> , 0, .	0.7	2

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145	Remote interfacing between superconducting qubits and Rydberg-atom qubits via thermal coupled cavities. <i>Science China: Physics, Mechanics and Astronomy</i> , 2022, 65, 1.	2.0	2
146	Simulating the Klein tunneling of pseudospin-one Maxwell particles with trapped ions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2019, 383, 2462-2466.	0.9	1
147	Integration of the Berry curvature on a qubit state manifold by coupling to a quantum meter system. <i>Physical Review A</i> , 2020, 102, .	1.0	1
148	Simulating Dirac, Weyl and Maxwell equations with cold atoms in optical lattices. <i>Wuli Xuebao/Acta Physica Sinica</i> , 2019, 68, 046701.	0.2	1
149	Quantum scattering model of energy transfer in photosynthetic complexes. <i>Laser Physics Letters</i> , 2015, 12, 125201.	0.6	0