

Hui Zhai

List of Publications by Year in descending order

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130
papers

7,746
citations

66343

42
h-index

51608

86
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131
all docs

131
docs citations

131
times ranked

3999
citing authors

#	ARTICLE	IF	CITATIONS
1	Topological micromotion of Floquet quantum systems. <i>Physical Review B</i> , 2022, 105, .	3.2	3
2	Quantum many-body scars and quantum criticality. <i>Physical Review B</i> , 2022, 105, .	3.2	23
3	Space-time duality between quantum chaos and non-Hermitian boundary effect. <i>Physical Review Research</i> , 2022, 4, .	3.6	5
4	Maximum Energy Growth Rate in Dilute Quantum Gases. <i>Physical Review Letters</i> , 2021, 126, 240401.	7.8	5
5	Disconnecting a traversable wormhole: Universal quench dynamics in random spin models. <i>Physical Review Research</i> , 2021, 3, .	3.6	7
6	Density-dependent spin-orbit coupling in degenerate quantum gases. <i>Physical Review A</i> , 2021, 103, .	2.5	5
7	Page curve from non-Markovianity. <i>Journal of High Energy Physics</i> , 2021, 2021, 1.	4.7	11
8	Expressivity of quantum neural networks. <i>Physical Review Research</i> , 2021, 3, .	3.6	11
9	Stability of Time-Reversal Symmetry Protected Topological Phases. <i>Physical Review Letters</i> , 2021, 127, 086801.	7.8	12
10	Scrambling ability of quantum neural network architectures. <i>Physical Review Research</i> , 2021, 3, .	3.6	15
11	Rényi entropy dynamics and Lindblad spectrum for open quantum systems. <i>Physical Review Research</i> , 2021, 3, .	3.6	10
12	Ideal-Gas Approach to Hydrodynamics. <i>Physical Review X</i> , 2021, 11, .	8.9	5
13	Dynamic Kosterlitz-Thouless theory for two-dimensional ultracold atomic gases. <i>Physical Review A</i> , 2020, 102, .	2.5	5
14	Many-body localization from dynamical gauge fields. <i>Physical Review B</i> , 2020, 102, .	3.2	4
15	High Temperature Virial Expansion to Universal Quench Dynamics. <i>Physical Review Letters</i> , 2020, 125, 110404.	7.8	9
16	Active Learning Approach to Optimization of Experimental Control. <i>Chinese Physics Letters</i> , 2020, 37, 103201.	3.3	10
17	Non-Hermitian linear response theory. <i>Nature Physics</i> , 2020, 16, 767-771.	16.7	62
18	Information Scrambling in Quantum Neural Networks. <i>Physical Review Letters</i> , 2020, 124, 200504.	7.8	31

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19	Many-body echo. <i>Physical Review A</i> , 2020, 102, .	2.5	15
20	The quantum cocktail party problem. <i>Science China: Physics, Mechanics and Astronomy</i> , 2020, 63, 1.	5.1	3
21	Universal Dynamics of a Degenerate Bose Gas Quenched to Unitariness. <i>Physical Review Letters</i> , 2020, 124, 040403.	7.8	14
22	Controlling the interaction of ultracold alkaline-earth atoms. <i>Nature Reviews Physics</i> , 2020, 2, 213-220.	26.6	23
23	Machine learning identification of impurities in the STM images. <i>Chinese Physics B</i> , 2020, 29, 116805.	1.4	4
24	Active learning algorithm for computational physics. <i>Physical Review Research</i> , 2020, 2, .	3.6	14
25	Realizing the Hayden-Preskill protocol with coupled Dicke models. <i>Physical Review Research</i> , 2020, 2, .	3.6	4
26	Emergent Schrödinger equation in an introspective machine learning architecture. <i>Science Bulletin</i> , 2019, 64, 1228-1233.	9.0	21
27	Efimov-enhanced Kondo effect in alkali-metal and alkaline-earth-metal atomic gas mixtures. <i>Physical Review A</i> , 2019, 99, .	2.5	8
28	Dynamical Fractal in Quantum Gases with Discrete Scaling Symmetry. <i>Physical Review Letters</i> , 2019, 122, 230402.	7.8	8
29	Dynamics and density correlations in matter-wave jet emission of a driven condensate. <i>Physical Review A</i> , 2019, 99, .	2.5	15
30	Scaling symmetry meets topology. <i>Science Bulletin</i> , 2019, 64, 289-290.	9.0	0
31	Resonant-driving-induced ferromagnetism in the Fermi-Hubbard model. <i>Physical Review A</i> , 2019, 99, .	2.5	3
32	Degenerate Bose gases near a d-wave shape resonance. <i>Nature Physics</i> , 2019, 15, 570-576.	16.7	21
33	New relations between spin and charge dynamics of the Fermi Hubbard model. <i>New Journal of Physics</i> , 2019, 21, 015003.	2.9	2
34	Three-body problem of bosons near a d -wave resonance. <i>Physical Review A</i> , 2019, 99, .	2.5	3
35	Machine Learning Topological Invariants with Neural Networks. <i>Physical Review Letters</i> , 2018, 120, 066401.	7.8	185
36	Universal feature in optical control of a p -wave Feshbach resonance. <i>Physical Review A</i> , 2018, 97, .	2.5	10

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37	Hall conductance of a non-Hermitian Chern insulator. <i>Physical Review B</i> , 2018, 98, .	3.2	92
38	Controlled transport between Fermi superfluids through a quantum point contact. <i>Physical Review A</i> , 2018, 98, .	2.5	13
39	Topological Sachdev-Ye-Kitaev model. <i>Physical Review B</i> , 2018, 97, .	3.2	25
40	Emergent symmetry at superradiance transition of a Bose condensate in two crossed beam cavities. <i>Science Bulletin</i> , 2018, 63, 542-547.	9.0	5
41	Efimov effect in Dirac semi-metals. <i>Frontiers of Physics</i> , 2018, 13, 1.	5.0	10
42	Visualizing a neural network that develops quantum perturbation theory. <i>Physical Review A</i> , 2018, 98, .	2.5	9
43	Deep learning topological invariants of band insulators. <i>Physical Review B</i> , 2018, 98, .	3.2	57
44	Machine learning of frustrated classical spin models (II): Kernel principal component analysis. <i>Frontiers of Physics</i> , 2018, 13, 1.	5.0	32
45	Vortex Lattices in the Bose-Fermi Superfluid Mixture. <i>Physical Review Letters</i> , 2017, 118, 080403.	7.8	9
46	Out-of-time-order correlation for many-body localization. <i>Science Bulletin</i> , 2017, 62, 707-711.	9.0	201
47	Tunable quantum chaos in the Sachdev-Ye-Kitaev model coupled to a thermal bath. <i>Journal of High Energy Physics</i> , 2017, 2017, 1.	4.7	48
48	Anomalous conductance of a strongly interacting Fermi gas through a quantum point contact. <i>Physical Review A</i> , 2017, 95, .	2.5	19
49	Measuring Out-of-Time-Order Correlators on a Nuclear Magnetic Resonance Quantum Simulator. <i>Physical Review X</i> , 2017, 7, .	8.9	262
50	Out-of-time-order correlation at a quantum phase transition. <i>Physical Review B</i> , 2017, 96, .	3.2	93
51	Enhancing Kondo coupling in alkaline-earth-metal atomic gases with confinement-induced resonances in mixed dimensions. <i>Physical Review A</i> , 2017, 96, .	2.5	24
52	Symmetry Protected Dynamical Symmetry in the Generalized Hubbard Models. <i>Physical Review Letters</i> , 2017, 119, 225302.	7.8	11
53	Dynamic super Efimov effect. <i>Physical Review A</i> , 2017, 96, .	2.5	11
54	Competition between Chaotic and Nonchaotic Phases in a Quadratically Coupled Sachdev-Ye-Kitaev Model. <i>Physical Review Letters</i> , 2017, 119, 207603.	7.8	63

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55	Machine learning of frustrated classical spin models. I. Principal component analysis. Physical Review B, 2017, 96, .	3.2	89
56	Striking stripes. Science China: Physics, Mechanics and Astronomy, 2017, 60, 1.	5.1	0
57	Scheme to Measure the Topological Number of a Chern Insulator from Quench Dynamics. Physical Review Letters, 2017, 118, 185701.	7.8	122
58	Visualizing the Efimov Correlation in Bose Polarons. Physical Review Letters, 2017, 119, 013401.	7.8	64
59	Emergent gauge field for a chiral bound state on curved surface. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 184006.	1.5	7
60	Focus on topological physics: from condensed matter to cold atoms and optics. New Journal of Physics, 2016, 18, 080201.	2.9	12
61	Reaching a Fermi-superfluid state near an orbital Feshbach resonance. Physical Review A, 2016, 94, .	2.5	32
62	Evolution of the Higgs mode in a fermion superfluid with tunable interactions. Physical Review A, 2016, 93, .	2.5	16
63	Quantum phase transitions of the Bose-Hubbard model inside a cavity. Physical Review A, 2016, 93, .	2.5	54
64	Kondo effect in alkaline-earth-metal atomic gases with confinement-induced resonances. Physical Review A, 2016, 93, .	2.5	44
65	Observation of the Efimovian expansion in scale-invariant Fermi gases. Science, 2016, 353, 371-374.	12.6	65
66	Charge Pumping of Interacting Fermion Atoms in the Synthetic Dimension. Physical Review Letters, 2015, 115, 095302.	7.8	72
67	Orbital Feshbach Resonance in Alkali-Earth Atoms. Physical Review Letters, 2015, 115, 135301.	7.8	102
68	Degenerate quantum gases with spin-orbit coupling: a review. Reports on Progress in Physics, 2015, 78, 026001.	20.1	500
69	Superradiant phase transition of Fermi gases in a cavity across a Feshbach resonance. Physical Review A, 2015, 91, .	2.5	20
70	Efimov physics and universal trimers in spin-orbit-coupled ultracold atomic mixtures. Physical Review A, 2015, 91, .	2.5	11
71	Magnetic-order-driven topological transition in the Haldane-Hubbard model. Physical Review B, 2015, 91, .	3.2	36
72	Quasiparticle Lifetime in a Mixture of Bose and Fermi Superfluids. Physical Review Letters, 2014, 113, 265304.	7.8	25

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73	Calibration of the interaction energy between Bose and Fermi superfluids. <i>Physical Review A</i> , 2014, 90, .	2.5	29
74	Fluctuation effects on the transport properties of unitary Fermi gases. <i>Physical Review A</i> , 2014, 90, .	2.5	8
75	Superradiance of Degenerate Fermi Gases in a Cavity. <i>Physical Review Letters</i> , 2014, 112, 143004.	7.8	74
76	Quasi-one-dimensional dipolar quantum gases. <i>Physical Review A</i> , 2014, 89, .	2.5	11
77	Strong Interaction Effects and Criticality of Bosons in Shaken Optical Lattices. <i>Physical Review Letters</i> , 2014, 113, 155303.	7.8	29
78	Universal Trimers Induced by Spin-Orbit Coupling in Ultracold Fermi Gases. <i>Physical Review Letters</i> , 2014, 112, 013201.	7.8	33
79	Production of Feshbach molecules induced by spin-orbit coupling in Fermi gases. <i>Nature Physics</i> , 2014, 10, 110-115.	16.7	109
80	Experimental determination of the finite-temperature phase diagram of a spin-orbit coupled Bose gas. <i>Nature Physics</i> , 2014, 10, 314-320.	16.7	150
81	Floquet topological states in shaking optical lattices. <i>Physical Review A</i> , 2014, 89, .	2.5	118
82	Synthetic gauge field with highly magnetic lanthanide atoms. <i>Physical Review A</i> , 2013, 88, .	2.5	83
83	Stability of excited dressed states with spin-orbit coupling. <i>Physical Review A</i> , 2013, 87, .	2.5	27
84	Properties of Bose gases with the Raman-induced spin-orbit coupling. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2013, 46, 134007.	1.5	76
85	Fermion Pairing Across a Dipolar Interaction Induced Resonance. <i>Physical Review Letters</i> , 2013, 110, 045302.	7.8	14
86	Collective Dipole Oscillations of a Spin-Orbit Coupled Bose-Einstein Condensate. <i>Physical Review Letters</i> , 2012, 109, 115301.	7.8	471
87	Collective-mode dynamics in a spin-orbit-coupled Bose-Einstein condensate. <i>Physical Review A</i> , 2012, 86, .	2.5	44
88	Superfluidity of Bosons in Kagome Lattices with Frustration. <i>Physical Review Letters</i> , 2012, 109, 265302.	7.8	37
89	Spin-Orbit Coupled Degenerate Fermi Gases. <i>Physical Review Letters</i> , 2012, 109, 095301.	7.8	796
90	SPIN-ORBIT COUPLED QUANTUM GASES. <i>International Journal of Modern Physics B</i> , 2012, 26, 1230001.	2.0	229

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91	s -wave scattering resonances induced by dipolar interactions of polar molecules. Physical Review A, 2012, 85, .	2.5	14
92	Highly polarized Fermi gases across a narrow Feshbach resonance. Physical Review A, 2012, 85, .	2.5	18
93	Searching for non-Abelian phases in the Bose-Einstein condensate of dysprosium. Physical Review A, 2012, 85, .	2.5	39
94	Electronic instabilities in iron-based superconductors: A variational Monte Carlo study. Physical Review B, 2011, 83, .	3.2	16
95	Stability condition of a strongly interacting boson-fermion mixture across an interspecies Feshbach resonance. Physical Review A, 2011, 83, .	2.5	32
96	Paired superfluidity and fractionalized vortices in systems of spin-orbit coupled bosons. Physical Review B, 2011, 84, .	3.2	71
97	Spin-Orbit Coupled Fermi Gases across a Feshbach Resonance. Physical Review Letters, 2011, 107, 195305.	7.8	181
98	Bound States and Scattering Resonances Induced by Spatially Modulated Interactions. Physical Review Letters, 2011, 106, 163201.	7.8	20
99	Stability of a fully magnetized ferromagnetic state in repulsively interacting ultracold Fermi gases. Physical Review A, 2010, 81, .	2.5	107
100	Degeneracy of Many-Body Quantum States in an Optical Lattice under a Uniform Magnetic Field. Physical Review Letters, 2010, 105, 155302.	7.8	8
101	Nodes in the gap function of LaFePO, the gap function of the Fe(Se,Te) systems, and the STM signature of the \hat{A}_{\pm} pairing. Physical Review B, 2010, 81, .	3.2	75
102	Pairing and Vortex Lattices for Interacting Fermions in Optical Lattices with a Large Magnetic Field. Physical Review Letters, 2010, 104, 145301.	7.8	25
103	Spin-Orbit Coupled Spinor Bose-Einstein Condensates. Physical Review Letters, 2010, 105, 160403.	7.8	527
104	Spin helix of magnetic impurities in two-dimensional helical metal. Europhysics Letters, 2010, 90, 47001.	2.0	34
105	Antiferromagnetically driven electronic correlations in iron pnictides and cuprates. Physical Review B, 2009, 80, .	3.2	119
106	Correlated versus ferromagnetic state in repulsively interacting two-component Fermi gases. Physical Review A, 2009, 80, .	2.5	46
107	Antiferromagnetic correlation and the pairing mechanism of the cuprates and iron pnictides: A view from the functional renormalization group studies. Europhysics Letters, 2009, 85, 37005.	2.0	68
108	Strongly interacting ultracold quantum gases. Frontiers of Physics in China, 2009, 4, 1-20.	1.0	5

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109	Functional Renormalization-Group Study of the Pairing Symmetry and Pairing Mechanism of the FeAs-Based High-Temperature Superconductor. <i>Physical Review Letters</i> , 2009, 102, 047005.	7.8	428
110	Nodal spin density wave and band topology of the FeAs-based materials. <i>Physical Review B</i> , 2009, 79, .	3.2	223
111	Quantum Hall Transition near a Fermion Feshbach Resonance in a Rotating Trap. <i>Physical Review Letters</i> , 2008, 100, 030404.	7.8	18
112	Theory of quantum antiferromagnetism of fermions in an optical lattice with a half-filled $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline">\langle \text{mml:mi}>p\langle /mml:mi>\langle /mml:math>$ band. <i>Physical Review B</i> , 2008, 77, .	3.2	31
113	Trapped Fermi Gases in Rotating Optical Lattices: Realization and Detection of the Topological Hofstadter Insulator. <i>Physical Review Letters</i> , 2008, 100, 070402.	7.8	85
114	Criterion for Bosonic Superfluidity in an Optical Lattice. <i>Physical Review Letters</i> , 2007, 98, 180404.	7.8	60
115	Superfluid-Insulator Transition of Strongly Interacting Fermi Gases in Optical Lattices. <i>Physical Review Letters</i> , 2007, 99, 100402.	7.8	49
116	Superfluidity in three-species mixtures of Fermi gases across Feshbach resonances. <i>Physical Review A</i> , 2007, 75, .	2.5	34
117	Homogeneous Fermion Superfluid with Unequal Spin Populations. <i>Journal of Low Temperature Physics</i> , 2007, 148, 33-41.	1.4	6
118	Critical Rotational Frequency for Superfluid Fermionic Gases across a Feshbach Resonance. <i>Physical Review Letters</i> , 2006, 97, 180414.	7.8	23
119	A wavefunction describing superfluidity in a perfect crystal. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2005, 2005, P07003-P07003.	2.3	7
120	Understanding of the vortex lattice behaviour induced by selective removal of atoms from a Bose-Einstein condensate. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2005, 38, 377-385.	1.5	0
121	Pairing between atoms and molecules in a boson-fermion resonant mixture. <i>Physical Review A</i> , 2005, 72, .	2.5	6
122	Two generalizations of pairing in extended Hubbard models. <i>Physical Review B</i> , 2005, 71, .	3.2	7
123	Vortex Lattices in Planar Bose-Einstein Condensates with Dipolar Interactions. <i>Physical Review Letters</i> , 2005, 95, 200403.	7.8	72
124	Magnetically stabilized nematic order. II. Critical states and algebraically ordered nematic spin liquids in one-dimensional optical lattices. <i>Physical Review B</i> , 2005, 72, .	3.2	5
125	Vortex dipole in a trapped atomic Bose-Einstein condensate. <i>Physical Review A</i> , 2004, 70, .	2.5	30
126	Double-layer Bose-Einstein condensates with a large number of vortices. <i>Physical Review A</i> , 2004, 69, .	2.5	11

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127	Skyrmion excitation in a two-dimensional spinor Bose-Einstein condensate. Physical Review A, 2003, 68, .	2.5	28
128	Quantum coherence of double-well Bose-Einstein condensates: An SU(2) coherent-state path-integral approach. Physical Review A, 2003, 67, .	2.5	14
129	Macroscopic quantum tunnelling in rotating Bose-Einstein condensates. Journal of Physics B: Atomic, Molecular and Optical Physics, 2003, 36, 1761-1769.	1.5	1
130	Entanglement properties of some fractional quantum Hall liquids. Physical Review A, 2002, 66, .	2.5	23