

Xia-Ji Liu

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144
papers

4,355
citations

36
h-index

61
g-index

157
ext. papers

4,948
ext. citations

3.5
avg, IF

5.92
L-index

#	Paper	IF	Citations
144	A one-dimensional liquid of fermions with tunable spin. <i>Nature Physics</i> , 2014 , 10, 198-201	16.2	270
143	Spin-orbit coupled weakly interacting Bose-Einstein condensates in harmonic traps. <i>Physical Review Letters</i> , 2012 , 108, 010402	7.4	243
142	Phase diagram of a strongly interacting polarized Fermi gas in one dimension. <i>Physical Review Letters</i> , 2007 , 98, 070403	7.4	195
141	Probing anisotropic superfluidity in atomic Fermi gases with Rashba spin-orbit coupling. <i>Physical Review Letters</i> , 2011 , 107, 195304	7.4	172
140	Equation of state of a superfluid Fermi gas in the BCS-BEC crossover. <i>Europhysics Letters</i> , 2006 , 74, 574-580	7.4	150
139	Universal behavior of pair correlations in a strongly interacting Fermi gas. <i>Physical Review Letters</i> , 2010 , 105, 070402	7.4	140
138	Virial expansion for a strongly correlated Fermi gas. <i>Physical Review Letters</i> , 2009 , 102, 160401	7.4	125
137	Collective modes and ballistic expansion of a fermi gas in the BCS-BEC crossover. <i>Physical Review Letters</i> , 2004 , 93, 190403	7.4	121
136	Half-quantum vortex state in a spin-orbit-coupled Bose-Einstein condensate. <i>Physical Review A</i> , 2012 , 85,	2.6	116
135	Universal thermodynamics of strongly interacting Fermi gases. <i>Nature Physics</i> , 2007 , 3, 469-472	16.2	114
134	Mean-field phase diagrams of imbalanced Fermi gases near a Feshbach resonance. <i>Physical Review A</i> , 2006 , 73,	2.6	102
133	Fulde-Ferrell-Larkin-Ovchinnikov states in one-dimensional spin-polarized ultracold atomic Fermi gases. <i>Physical Review A</i> , 2007 , 76,	2.6	98
132	Three attractively interacting fermions in a harmonic trap: Exact solution, ferromagnetism, and high-temperature thermodynamics. <i>Physical Review A</i> , 2010 , 82,	2.6	73
131	Virial expansion for a strongly correlated Fermi system and its application to ultracold atomic Fermi gases. <i>Physics Reports</i> , 2013 , 524, 37-83	27.7	71
130	Rashba spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2011 , 84,	2.6	71
129	Probing Majorana fermions in spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2012 , 85,	2.6	71
128	Topological superfluid in one-dimensional spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2012 , 85,	2.6	70

127	Pseudogap pairing in ultracold Fermi atoms. <i>Physical Review Letters</i> , 2010 , 104, 240407	7.4	69
126	Exact few-body results for strongly correlated quantum gases in two dimensions. <i>Physical Review B</i> , 2010 , 82,	3.3	61
125	BCS-BEC crossover in an asymmetric two-component Fermi gas. <i>Europhysics Letters</i> , 2006 , 75, 364-370	1.6	58
124	Finite-temperature phase diagram of a spin-polarized ultracold Fermi gas in a highly elongated harmonic trap. <i>Physical Review A</i> , 2008 , 78,	2.6	57
123	Universal thermodynamics of a strongly interacting Fermi gas: theory versus experiment. <i>New Journal of Physics</i> , 2010 , 12, 063038	2.9	54
122	Universal contact of strongly interacting fermions at finite temperatures. <i>New Journal of Physics</i> , 2011 , 13, 035007	2.9	53
121	Quantum fluctuations in the BCS-BEC crossover of two-dimensional Fermi gases. <i>Physical Review A</i> , 2015 , 92,	2.6	52
120	Temperature of a trapped unitary Fermi gas at finite entropy. <i>Physical Review A</i> , 2006 , 73,	2.6	49
119	Signature of Mott-insulator transition with ultracold fermions in a one-dimensional optical lattice. <i>Physical Review Letters</i> , 2005 , 94, 136406	7.4	48
118	Radio-frequency spectroscopy of a strongly interacting spin-orbit-coupled Fermi gas. <i>Physical Review A</i> , 2013 , 87,	2.6	47
117	Mean-field thermodynamics of a spin-polarized spherically trapped Fermi gas at unitarity. <i>Physical Review A</i> , 2007 , 75,	2.6	47
116	Comparative study of strong-coupling theories of a trapped Fermi gas at unitarity. <i>Physical Review A</i> , 2008 , 77,	2.6	46
115	FERMI GASES WITH SYNTHETIC SPINORBIT COUPLING. <i>Annual Review of Cold Atoms and Molecules</i> , 2014 , 81-143		45
114	Universal impurity-induced bound state in topological superfluids. <i>Physical Review Letters</i> , 2013 , 110, 020401	7.4	45
113	Topological Fulde-Ferrell superfluid in spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2013 , 88,	2.6	44
112	Self-consistent theory of atomic Fermi gases with a Feshbach resonance at the superfluid transition. <i>Physical Review A</i> , 2005 , 72,	2.6	44
111	Collisionless and hydrodynamic excitations of trapped boson-fermion mixtures. <i>Physical Review A</i> , 2003 , 67,	2.6	43
110	First and second sound in a strongly interacting Fermi gas. <i>Physical Review A</i> , 2009 , 80,	2.6	41

109	Quantum Dynamical Approach of Wavefunction Collapse in Measurement Process and Its Application to Quantum Zeno Effect 1995 , 43, 585-612		38
108	Inhomogeneous Fulde-Ferrell superfluidity in spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2013 , 87,	2.6	36
107	Gapless topological Fulde-Ferrell superfluidity in spin-orbit coupled Fermi gases. <i>Physical Review Letters</i> , 2014 , 113, 115302	7.4	35
106	Confinement-induced resonances in anharmonic waveguides. <i>Physical Review A</i> , 2011 , 84,	2.6	33
105	Phase diagram of a non-Abelian Aubry-Andr�Harper model with p-wave superfluidity. <i>Physical Review B</i> , 2016 , 93,	3.3	31
104	Confinement-induced resonance in quasi-one-dimensional systems under transversely anisotropic confinement. <i>Physical Review A</i> , 2010 , 82,	2.6	29
103	Strongly correlated Fermi superfluid near an orbital Feshbach resonance: Stability, equation of state, and Leggett mode. <i>Physical Review A</i> , 2016 , 94,	2.6	28
102	Static structure factor of a strongly correlated Fermi gas at large momenta. <i>Europhysics Letters</i> , 2010 , 91, 20005	1.6	28
101	Multicomponent strongly attractive Fermi gas: A color superconductor in a one-dimensional harmonic trap. <i>Physical Review A</i> , 2008 , 77,	2.6	28
100	Critical temperature of a Rashba spin-orbit-coupled Bose gas in a harmonic trap. <i>Physical Review A</i> , 2012 , 85,	2.6	27
99	Finite-temperature effects on the collapse of trapped Bose-Fermi mixtures. <i>Physical Review A</i> , 2003 , 68,	2.6	26
98	Attractive Fermi polarons at nonzero temperatures with a finite impurity concentration. <i>Physical Review A</i> , 2018 , 98,	2.6	25
97	Criteria for two-dimensional kinematics in an interacting Fermi gas. <i>Physical Review A</i> , 2016 , 93,	2.6	24
96	Second sound and the density response function in uniform superfluid atomic gases. <i>New Journal of Physics</i> , 2010 , 12, 043040	2.9	24
95	Comparison of strong-coupling theories for a two-dimensional Fermi gas. <i>Physical Review A</i> , 2015 , 92,	2.6	23
94	Variational theory of two-fluid hydrodynamic modes at unitarity. <i>Physical Review A</i> , 2008 , 77,	2.6	22
93	Superfluid density and critical velocity near the Berezinskii-Kosterlitz-Thouless transition in a two-dimensional strongly interacting Fermi gas. <i>Physical Review A</i> , 2017 , 96,	2.6	21
92	Virial expansion for a strongly correlated Fermi gas with imbalanced spin populations. <i>Physical Review A</i> , 2010 , 82,	2.6	21

91	Collective oscillations of a confined Bose gas at finite temperature in the random-phase approximation. <i>Physical Review A</i> , 2004 , 69,	2.6	20
90	Gapless topological Fulde-Ferrell superfluidity induced by an in-plane Zeeman field. <i>Physical Review A</i> , 2014 , 90,	2.6	19
89	Universal dynamic structure factor of a strongly correlated Fermi gas. <i>Physical Review A</i> , 2012 , 85,	2.6	19
88	Fragmented condensate ground state of trapped weakly interacting bosons in two dimensions. <i>Physical Review Letters</i> , 2001 , 87, 030404	7.4	19
87	Large-momentum distribution of a polarized Fermi gas and p-wave contacts. <i>Physical Review A</i> , 2016 , 94,	2.6	18
86	Impurity probe of topological superfluids in one-dimensional spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2013 , 87,	2.6	17
85	Dynamic response of strongly correlated Fermi gases in the quantum virial expansion. <i>Physical Review A</i> , 2010 , 81,	2.6	17
84	Thermodynamics of a trapped Bose-Fermi mixture. <i>Physical Review A</i> , 2003 , 68,	2.6	17
83	BCS-BEC crossover at finite temperature in spin-orbit-coupled Fermi gases. <i>Physical Review A</i> , 2013 , 87,	2.6	16
82	High-temperature thermodynamics of strongly interacting s-wave and p-wave Fermi gases in a harmonic trap. <i>Physical Review A</i> , 2011 , 83,	2.6	16
81	Expansion of a quantum degenerate boson-fermion mixture. <i>Physical Review A</i> , 2003 , 67,	2.6	16
80	Reduced Quantum Anomaly in a Quasi-Two-Dimensional Fermi Superfluid: Significance of the Confinement-Induced Effective Range of Interactions. <i>Physical Review Letters</i> , 2019 , 122, 070401	7.4	16
79	Manipulating Majorana fermions in one-dimensional spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2012 , 86,	2.6	15
78	Visualization of vortex bound states in polarized fermi gases at unitarity. <i>Physical Review Letters</i> , 2007 , 98, 060406	7.4	15
77	Breakdown of the Fermi polaron description near Fermi degeneracy at unitarity. <i>Annals of Physics</i> , 2019 , 407, 29-45	2.5	14
76	Collective modes of a one-dimensional trapped atomic Bose gas at finite temperatures. <i>Physical Review A</i> , 2014 , 90,	2.6	14
75	Consistent Theory of Self-Bound Quantum Droplets with Bosonic Pairing. <i>Physical Review Letters</i> , 2020 , 125, 195302	7.4	14
74	Low-momentum dynamic structure factor of a strongly interacting Fermi gas at finite temperature: A two-fluid hydrodynamic description. <i>Physical Review A</i> , 2018 , 97,	2.6	13

73	Stoner ferromagnetism of a strongly interacting Fermi gas in the quasirepulsive regime. <i>Physical Review A</i> , 2016 , 93,	2.6	13
72	Soliton-induced Majorana fermions in a one-dimensional atomic topological superfluid. <i>Physical Review A</i> , 2015 , 91,	2.6	13
71	Fulde-Ferrell superfluidity in ultracold Fermi gases with Rashba spin-orbit coupling. <i>New Journal of Physics</i> , 2013 , 15, 093037	2.9	13
70	Radio-frequency spectroscopy of weakly bound molecules in spin-orbit-coupled atomic Fermi gases. <i>Physical Review A</i> , 2012 , 86,	2.6	13
69	Larkin-Ovchinnikov superfluidity in a two-dimensional imbalanced atomic Fermi gas. <i>Physical Review A</i> , 2017 , 95,	2.6	12
68	Superfluid density and Berezinskii-Kosterlitz-Thouless transition of a spin-orbit-coupled Fulde-Ferrell superfluid. <i>Physical Review A</i> , 2015 , 91,	2.6	12
67	Realizing Fulde-Ferrell Superfluids via a Dark-State Control of Feshbach Resonances. <i>Physical Review Letters</i> , 2018 , 120, 045302	7.4	12
66	Microscopic pairing theory of a binary Bose mixture with interspecies attractions: Bosonic BEC-BCS crossover and ultradilute low-dimensional quantum droplets. <i>Physical Review A</i> , 2020 , 102,	2.6	12
65	Three-dimensional spin-orbit coupled Fermi gases: Fulde-Ferrell pairing, Majorana fermions, Weyl fermions, and gapless topological superfluidity. <i>Chinese Physics B</i> , 2015 , 24, 050502	1.2	11
64	Two-band description of resonant superfluidity in atomic Fermi gases. <i>Physical Review A</i> , 2015 , 91,	2.6	11
63	Spin-orbit-coupled topological Fulde-Ferrell states of fermions in a harmonic trap. <i>Physical Review A</i> , 2014 , 90,	2.6	11
62	Mean-field study of itinerant ferromagnetism in trapped ultracold Fermi gases: Beyond the local-density approximation. <i>Physical Review A</i> , 2010 , 82,	2.6	11
61	Momentum-resolved radio-frequency spectroscopy of a spin-orbit-coupled atomic Fermi gas near a Feshbach resonance in harmonic traps. <i>Physical Review A</i> , 2012 , 86,	2.6	11
60	Finite-temperature excitations of a trapped Bose-Fermi mixture. <i>Physical Review A</i> , 2003 , 68,	2.6	11
59	Ground-state properties of a trapped few-boson system under rotation: Beyond the lowest-Landau-level approximation. <i>Physical Review A</i> , 2001 , 64,	2.6	11
58	Generalization of Cini's model for quantum measurement and dynamical realization of wavefunction collapse. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995 , 198, 371-377	2.3	11
57	Quantum depletion and superfluid density of a supersolid in Raman spin-orbit-coupled Bose gases. <i>Physical Review A</i> , 2018 , 98,	2.6	10
56	Many-body localization in Ising models with random long-range interactions. <i>Physical Review A</i> , 2016 , 94,	2.6	10

55	Strongly interacting Sarma superfluid near orbital Feshbach resonances. <i>Physical Review A</i> , 2018 , 97,	2.6	9
54	Fermi polaron in a one-dimensional quasiperiodic optical lattice: The simplest many-body localization challenge. <i>Physical Review A</i> , 2016 , 93,	2.6	9
53	Comparison between theory and experiment for universal thermodynamics of a homogeneous, strongly correlated Fermi gas. <i>Physical Review A</i> , 2011 , 83,	2.6	9
52	Collective modes of a two-dimensional Fermi gas at finite temperature. <i>Physical Review A</i> , 2018 , 97,	2.6	9
51	Microscopic derivation of the extended Gross-Pitaevskii equation for quantum droplets in binary Bose mixtures. <i>Physical Review A</i> , 2020 , 102,	2.6	8
50	Anderson localization of Cooper pairs and Majorana fermions in an ultracold atomic Fermi gas with synthetic spin-orbit coupling. <i>Physical Review A</i> , 2016 , 93,	2.6	8
49	First and second sound of a unitary Fermi gas in highly oblate harmonic traps. <i>New Journal of Physics</i> , 2014 , 16, 083023	2.9	8
48	Validity of a single-channel model for a spin-orbit-coupled atomic Fermi gas near Feshbach resonances. <i>Physical Review A</i> , 2012 , 86,	2.6	8
47	Non-universal thermodynamics of a strongly interacting inhomogeneous Fermi gas using the quantum virial expansion. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2011 , 375, 2979-2984	2.3	8
46	Josephson effect in an atomic Fulde-Ferrell-Larkin-Ovchinnikov superfluid. <i>Physical Review A</i> , 2011 , 83,	2.6	8
45	Dimensional crossover in a strongly interacting ultracold atomic Fermi gas. <i>Physical Review A</i> , 2017 , 96,	2.6	7
44	Traveling Majorana Solitons in a Low-Dimensional Spin-Orbit-Coupled Fermi Superfluid. <i>Physical Review Letters</i> , 2016 , 117, 225302	7.4	7
43	Two-channel-model description of confinement-induced Feshbach molecules. <i>Physical Review A</i> , 2012 , 86,	2.6	7
42	Fulde-Ferrell pairing instability of a Rashba spin-orbit-coupled Fermi gas. <i>Physical Review A</i> , 2013 , 88,	2.6	7
41	Momentum-resolved radio-frequency spectroscopy of ultracold atomic Fermi gases in a spin-orbit-coupled lattice. <i>Physical Review A</i> , 2012 , 86,	2.6	7
40	Density fingerprint of giant vortices in Fermi gases near a Feshbach resonance. <i>Physical Review A</i> , 2007 , 75,	2.6	7
39	Roton-Induced Bose Polaron in the Presence of Synthetic Spin-Orbit Coupling. <i>Physical Review Letters</i> , 2019 , 123, 213401	7.4	7
38	Radio-frequency spectroscopy of a linear array of Bose-Einstein condensates in a magnetic lattice. <i>Physical Review A</i> , 2015 , 91,	2.6	6

37	Low-momentum dynamic structure factor of a strongly interacting Fermi gas at finite temperature: The Goldstone phonon and its Landau damping. <i>Physical Review A</i> , 2018 , 98,	2.6	6
36	Quantum and thermal fluctuations in a Raman spin-orbit-coupled Bose gas. <i>Physical Review A</i> , 2017 , 96,	2.6	6
35	Thermal destabilization of self-bound ultradilute quantum droplets. <i>New Journal of Physics</i> , 2020 , 22, 103044	2.9	6
34	Many-body localization in XY spin chains with long-range interactions: An exact-diagonalization study. <i>Physical Review A</i> , 2019 , 100,	2.6	6
33	Anderson localization transition in a robust PT-symmetric phase of a generalized Aubry-Andr� model. <i>Physical Review A</i> , 2021 , 103,	2.6	6
32	Breathing-mode frequency of a strongly interacting Fermi gas across the two- to three-dimensional crossover. <i>Physical Review A</i> , 2018 , 97,	2.6	6
31	Equation of state and contact of a strongly interacting Bose gas in the normal state. <i>Physical Review A</i> , 2015 , 91,	2.6	5
30	Dynamic structure factor of a strongly correlated Fermi superfluid within a density functional theory approach. <i>New Journal of Physics</i> , 2016 , 18, 113044	2.9	5
29	Collective excitations of a spherical ultradilute quantum droplet. <i>Physical Review A</i> , 2020 , 102,	2.6	5
28	Spin-exchange-induced exotic superfluids in a Bose-Fermi spinor mixture. <i>Physical Review A</i> , 2019 , 100,	2.6	4
27	Beyond Gaussian pair fluctuation theory for strongly interacting Fermi gases. <i>Physical Review A</i> , 2016 , 94,	2.6	4
26	Angular stripe phase in spin-orbital-angular-momentum coupled Bose condensates. <i>Physical Review Research</i> , 2020 , 2,	3.9	4
25	Effective theory for ultracold strongly interacting fermionic atoms in two dimensions. <i>Physical Review A</i> , 2020 , 101,	2.6	3
24	Quantum fluctuations in a strongly interacting Bardeen-Cooper-Schrieffer polariton condensate at thermal equilibrium. <i>Physical Review A</i> , 2020 , 101,	2.6	3
23	Pseudogap regime of a strongly interacting two-dimensional Fermi gas with and without confinement-induced effective range of interactions. <i>Physical Review A</i> , 2020 , 102,	2.6	3
22	Polaron in a non-Abelian Aubry-Andr�Harper model with p-wave superfluidity. <i>Physical Review A</i> , 2018 , 98,	2.6	3
21	Time evolution of quantum entanglement of an EPR pair in a localized environment. <i>New Journal of Physics</i> , 2018 , 20, 053015	2.9	3
20	Crossover polarons in a strongly interacting Fermi superfluid. <i>Physical Review A</i> , 2022 , 105,	2.6	3

19	Leggett mode in a two-component Fermi gas with dipolar interactions. <i>Physical Review A</i> , 2019 , 99,	2.6	2
18	Few-Body Perspective of a Quantum Anomaly in Two-Dimensional Fermi Gases. <i>Physical Review Letters</i> , 2020 , 124, 013401	7.4	2
17	Cluster Formation in Two-Component Fermi Gases. <i>Physical Review Letters</i> , 2019 , 123, 073401	7.4	2
16	First and second sound in a two-dimensional harmonically trapped Bose gas across the Berezinskii-Kosterlitz-Thouless transition. <i>Annals of Physics</i> , 2014 , 351, 531-539	2.5	2
15	Theory of strongly interacting Fermi gases. <i>Journal of Modern Optics</i> , 2009 , 56, 2076-2081	1.1	2
14	Ultra-cold fermions in optical lattices. <i>Journal of Modern Optics</i> , 2005 , 52, 2261-2268	1.1	2
13	Probing an effective-range-induced super fermionic Tonks-Girardeau gas with ultracold atoms in one-dimensional harmonic traps. <i>Physical Review A</i> , 2016 , 94,	2.6	2
12	Quantum fluctuations of a resonantly interacting p-wave Fermi superfluid in two dimensions. <i>Physical Review A</i> , 2018 , 98,	2.6	2
11	Heavy polarons in ultracold atomic Fermi superfluids at the BEC-BCS crossover: Formalism and applications. <i>Physical Review A</i> , 2022 , 105,	2.6	2
10	Theory of strongly paired fermions with arbitrary short-range interactions. <i>Physical Review A</i> , 2020 , 101,	2.6	1
9	Role of the confinement-induced effective range in the thermodynamics of a strongly correlated Fermi gas in two dimensions. <i>Physical Review A</i> , 2020 , 101,	2.6	1
8	Collective mode evidence of high-spin bosonization in a trapped one-dimensional atomic Fermi gas with tunable spin. <i>Annals of Physics</i> , 2014 , 350, 84-94	2.5	1
7	Universal structure of a strongly interacting Fermi gas. <i>Journal of Physics: Conference Series</i> , 2011 , 264, 012013	0.3	1
6	Atom coherence propagation in a magnetic atomic waveguide. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2001 , 3, 171-177		1
5	First-order Bose-Einstein condensation with three-body interacting bosons. <i>Physical Review A</i> , 2021 , 104,	2.6	1
4	Dynamic structure factors of a strongly interacting Fermi superfluid near an orbital Feshbach resonance across the phase transition from BCS to Sarma superfluid. <i>Physical Review A</i> , 2021 , 103,	2.6	1
3	Ultradilute self-bound quantum droplets in Bose-Bose mixtures at finite temperature*. <i>Chinese Physics B</i> , 2021 , 30, 010306	1.2	1
2	Fermi polarons at finite temperature: Spectral function and rf spectroscopy. <i>Physical Review A</i> , 2022 , 105,	2.6	1

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