

Kai Sun

List of Publications by Year in descending order

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Version: 2024-02-01

101
papers

6,615
citations

94381

37
h-index

62565

80
g-index

107
all docs

107
docs citations

107
times ranked

5533
citing authors

#	ARTICLE	IF	CITATIONS
1	Topological Kondo Insulators. <i>Physical Review Letters</i> , 2010, 104, 106408.	2.9	692
2	Nearly Flatbands with Nontrivial Topology. <i>Physical Review Letters</i> , 2011, 106, 236803.	2.9	610
3	Fractional quantum Hall effect in the absence of Landau levels. <i>Nature Communications</i> , 2011, 2, 389.	5.8	398
4	Topological Insulators and Nematic Phases from Spontaneous Symmetry Breaking in 2D Fermi Systems with a Quadratic Band Crossing. <i>Physical Review Letters</i> , 2009, 103, 046811.	2.9	356
5	Low-temperature surface conduction in the Kondo insulator SmB_6 . <i>Physical Review B</i> , 2013, 88, .	1.1	315
6	Two-dimensional Fermi surfaces in Kondo insulator SmB_6 . <i>Science</i> , 2014, 346, 1208-1212.	6.0	252
7	Topological Zero-Energy Modes in Gapless Commensurate Aubry-Andr�-Harper Models. <i>Physical Review Letters</i> , 2013, 110, 180403.	2.9	235
8	Evolution of interlayer and intralayer magnetism in three atomically thin chromium trihalides. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 11131-11136.	3.3	223
9	Theory of topological Kondo insulators. <i>Physical Review B</i> , 2012, 85, .	1.1	215
10	Topological semimetal in a fermionic optical lattice. <i>Nature Physics</i> , 2012, 8, 67-70.	6.5	176
11	Phonons and elasticity in critically coordinated lattices. <i>Reports on Progress in Physics</i> , 2015, 78, 073901.	8.1	173
12	Surface phonons, elastic response, and conformal invariance in twisted kagome lattices. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 12369-12374.	3.3	154
13	Composite pulses for robust universal control of singlet-triplet qubits. <i>Nature Communications</i> , 2012, 3, 997.	5.8	140
14	Topological flat band models with arbitrary Chern numbers. <i>Physical Review B</i> , 2012, 86, .	1.1	140
15	Exotic Quantum Spin Models in Spin-Orbit-Coupled Mott Insulators. <i>Physical Review Letters</i> , 2012, 109, 085303.	2.9	138
16	Transformable topological mechanical metamaterials. <i>Nature Communications</i> , 2017, 8, 14201.	5.8	137
17	Interaction effects and quantum phase transitions in topological insulators. <i>Physical Review B</i> , 2010, 82, .	1.1	122
18	Fermi liquid instabilities in the spin channel. <i>Physical Review B</i> , 2007, 75, .	1.1	100

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19	Raman fingerprint of two terahertz spin wave branches in a two-dimensional honeycomb Ising ferromagnet. Nature Communications, 2018, 9, 5122.	5.8	97
20	Topological phase transitions for interacting finite systems. Physical Review B, 2011, 84, .	1.1	70
21	Biaxial nematic phases in ultracold dipolar Fermi gases. New Journal of Physics, 2009, 11, 103003.	1.2	69
22	Robust edge photocurrent response on layered type II Weyl semimetal WTe ₂ . Nature Communications, 2019, 10, 5736.	5.8	69
23	Time-reversal symmetry breaking and spontaneous anomalous Hall effect in Fermi fluids. Physical Review B, 2008, 78, .	1.1	67
24	Spontaneous inhomogeneous phases in ultracold dipolar Fermi gases. Physical Review B, 2010, 82, .	1.1	65
25	Kaleidoscope of Exotic Quantum Phases in a Frustrated $X \times Y$ Model. Physical Review Letters, 2011, 107, 077201.	2.9	63
26	Twist engineering of the two-dimensional magnetism in double bilayer chromium triiodide homostructures. Nature Physics, 2022, 18, 30-36.	6.5	62
27	Observation of a ferro-rotational order coupled with second-order nonlinear optical fields. Nature Physics, 2020, 16, 42-46.	6.5	56
28	Detection of Quantum Phases via Out-of-Time-Order Correlators. Physical Review Letters, 2019, 123, 140602.	2.9	48
29	Stable topological superconductivity in a family of two-dimensional fermion models. Physical Review B, 2010, 81, .	1.1	46
30	Non-Fermi Liquid at $T = 0$ in a Quantum Critical Point. Physical Review X, 2017, 7, .	2.8	42
31	Magnetic-Field-Induced Quantum Phase Transitions in a van der Waals Magnet. Physical Review X, 2020, 10, .	2.8	41
32	Adiabatic continuity between Hofstadter and Chern insulator states. Physical Review B, 2012, 86, .	1.1	40
33	Spontaneous fractional Chern insulators in transition metal dichalcogenide moiré superlattices. Physical Review Research, 2021, 3, .	1.3	40
34	Magnetotransport measurements of the surface states of samarium hexaboride using Corbino structures. Physical Review B, 2015, 92, .	1.1	39
35	Hidden CDW states and insulator-to-metal transition after a pulsed femtosecond laser excitation in layered chalcogenide 1T-TaS ₂ Se. Science Advances, 2018, 4, eaas9660.	4.7	39
36	Fluctuating stripes in strongly correlated electron systems and the nematic-smectic quantum phase transition. Physical Review B, 2008, 78, .	1.1	38

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37	Edge Modes and Asymmetric Wave Transport in Topological Lattices: Experimental Characterization at Finite Frequencies. <i>Physical Review Letters</i> , 2018, 121, 094301.	2.9	38
38	Emergent mystery in the Kondo insulator samarium hexaboride. <i>Nature Reviews Physics</i> , 2020, 2, 463-479.	11.9	38
39	Chern-Simons theory of magnetization plateaus of the spin- $\frac{1}{2}$ XXZ Heisenberg model on the kagome lattice. <i>Physical Review B</i> , 2014, 90, .		
40	Chiral spin liquids on the kagome lattice. <i>Physical Review B</i> , 2015, 92, .	1.1	36
41	Bulk Fermi Surface of Charge-Neutral Excitations in SmB ₆ or Not: A Heat-Transport Study. <i>Physical Review Letters</i> , 2016, 116, 246403.	2.9	34
42	Valley Hall In-Plane Edge States as Building Blocks for Elastodynamic Logic Circuits. <i>Physical Review Applied</i> , 2019, 12, .	1.5	34
43	Observation of the polaronic character of excitons in a two-dimensional semiconducting magnet CrI ₃ . <i>Nature Communications</i> , 2020, 11, 4780.	5.8	34
44	Itinerant quantum critical point with frustration and a non-Fermi liquid. <i>Physical Review B</i> , 2018, 98, .	1.1	33
45	Enhanced spin-triplet superconductivity near dislocations in Sr ₂ RuO ₄ . <i>Nature Communications</i> , 2013, 4, 2596.	5.8	31
46	Dynamical generation of topological masses in Dirac fermions. <i>Physical Review B</i> , 2018, 97, .	1.1	31
47	Designer Monte Carlo simulation for the Gross-Neveu-Yukawa transition. <i>Physical Review B</i> , 2020, 101, .	1.1	31
48	Revealing fermionic quantum criticality from new Monte Carlo techniques. <i>Journal of Physics Condensed Matter</i> , 2019, 31, 463001.	0.7	30
49	Itinerant quantum critical point with fermion pockets and hotspots. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 16760-16767.	3.3	29
50	SmB ₆ Photoemission: Past and Present. , 2014, , .		27
51	Pfaffian Formalism for Higher-Order Topological Insulators. <i>Physical Review Letters</i> , 2020, 124, 036401.	2.9	27
52	Switchable phonon diodes using nonlinear topological Maxwell lattices. <i>Physical Review B</i> , 2020, 101, .	1.1	25
53	Dynamical properties of collective excitations in twisted bilayer graphene. <i>Physical Review B</i> , 2022, 105, .	1.1	25
54	Probe Knots and Hopf Insulators with Ultracold Atoms. <i>Chinese Physics Letters</i> , 2018, 35, 013701.	1.3	24

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55	Quantum phases of hard-core bosons in a frustrated honeycomb lattice. <i>New Journal of Physics</i> , 2012, 14, 115028.	1.2	22
56	Continuum Theory for Topological Edge Soft Modes. <i>Physical Review Letters</i> , 2020, 124, 207601.	2.9	21
57	Amplitude Mode in Quantum Magnets via Dimensional Crossover. <i>Physical Review Letters</i> , 2021, 126, 227201.	2.9	21
58	Spin-Charge Interplay in Electronic Liquid Crystals: Fluctuating Spin Stripe Driven by Charge Nematic Ordering. <i>Physical Review Letters</i> , 2010, 104, 106405.	2.9	20
59	Tunable layered-magnetism-assisted magneto-Raman effect in a two-dimensional magnet CrI ₃ . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 24664-24669.	3.3	20
60	Quantum phases of disordered flatband lattice fractional quantum Hall systems. <i>Physical Review B</i> , 2012, 85, .	1.1	18
61	Discretized Abelian Chern-Simons gauge theory on arbitrary graphs. <i>Physical Review B</i> , 2015, 92, .	1.1	18
62	Fractional topological phases in generalized Hofstadter bands with arbitrary Chern numbers. <i>Physical Review B</i> , 2015, 91, .	1.1	18
63	Topological phase transitions with SO(4) symmetry in (2+1)D interacting Dirac fermions. <i>Physical Review B</i> , 2017, 95, .	1.1	18
64	Topologically induced prescrambling and dynamical detection of topological phase transitions at infinite temperature. <i>Physical Review B</i> , 2020, 101, .	1.1	18
65	Inverted Resistance Measurements as a Method for Characterizing the Bulk and Surface Conductivities of Three-Dimensional Topological Insulators. <i>Physical Review Applied</i> , 2018, 9, .	1.5	17
66	Identification of non-Fermi liquid fermionic self-energy from quantum Monte Carlo data. <i>Npj Quantum Materials</i> , 2020, 5, .	1.8	17
67	Elective-momentum ultrasize quantum Monte Carlo method. <i>Physical Review B</i> , 2019, 99, .	1.1	16
68	Structural Monoclinicity and Its Coupling to Layered Magnetism in Few-Layer CrI ₃ . <i>ACS Nano</i> , 2021, 15, 10444-10450.	7.3	14
69	Two-dimensional charge order stabilized in clean polytype heterostructures. <i>Nature Communications</i> , 2022, 13, 413.	5.8	14
70	Monte Carlo study of the pseudogap and superconductivity emerging from quantum magnetic fluctuations. <i>Nature Communications</i> , 2022, 13, 2655.	5.8	13
71	Frustrated self-assembly of non-Euclidean crystals of nanoparticles. <i>Nature Communications</i> , 2021, 12, 4925.	5.8	12
72	Proposal for observing non-Abelian statistics of Majorana-Shockley fermions in an optical lattice. <i>Physical Review B</i> , 2015, 91, .	1.1	11

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91	Topology and structural distortions. Nature Materials, 2015, 14, 262-263.	13.3	5
92	Quantized electromagnetic response of three-dimensional chiral topological insulators. Physical Review B, 2015, 91, .	1.1	5
93	Polarized Raman spectroscopy study of metallic $(\text{Sr}_{1-x}\text{La}_x)_3\text{Ir}_2\text{O}_7$: A consistent picture of disorder-interrupted unidirectional charge order. Physical Review B, 2019, 99, .	1.1	5
94	Topological insulators and higher-order topological insulators from gauge-invariant one-dimensional lines. Physical Review B, 2020, 102, .	1.1	5
95	Fractional Excitations in Non-Euclidean Elastic Plates. Physical Review Letters, 2021, 127, 098001.	2.9	5
96	Influence of helical spin structure on the magnetoresistance of an ideal topological insulator. Journal of Physics Communications, 2017, 1, 035005.	0.5	4
97	Topological mechanical metamaterial with nonrectilinear constraints. Physical Review B, 2018, 98, .	1.1	4
98	Persistent photoinduced modifications in the phase-separated states of $L\text{a}_{1-x}\text{Sr}_x\text{MnO}_3$. Physical Review B, 2019, 99, .	1.1	1
99	Two-dimensional charge order stabilized in clean polytype heterostructures. Microscopy and Microanalysis, 2021, 27, 896-898.	0.2	1
100	Influence of hinge stiffness on the asymmetric wave transport in topological lattices: a parametric study. , 2019, , .		1
101	Smectic and nematic phase modulations and transitions under electron beam in $\text{Tb}_2\text{Cu}_0.83\text{Pd}_0.17\text{O}_4$. Physical Review Materials, 2019, 3, .	0.9	0