

Tao Xiang

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145
papers

5,632
citations

42
h-index

71
g-index

155
ext. papers

6,505
ext. citations

5
avg, IF

5.75
L-index

#	Paper	IF	Citations
145	Interface-induced superconductivity and strain-dependent spin density waves in FeSe/SrTiO ₃ thin films. <i>Nature Materials</i> , 2013 , 12, 634-40	27	472
144	First-principles calculations of the electronic structure of tetragonal alpha-FeTe and alpha-FeSe crystals: evidence for a bicollinear antiferromagnetic order. <i>Physical Review Letters</i> , 2009 , 102, 177003	7.4	242
143	Topological characterization of quantum phase transitions in a spin-1/2 model. <i>Physical Review Letters</i> , 2007 , 98, 087204	7.4	232
142	Transfer-matrix density-matrix renormalization-group theory for thermodynamics of one-dimensional quantum systems. <i>Physical Review B</i> , 1997 , 56, 5061-5064	3.3	221
141	Arsenic-bridged antiferromagnetic superexchange interactions in LaFeAsO. <i>Physical Review B</i> , 2008 , 78,	3.3	199
140	Second renormalization of tensor-network states. <i>Physical Review Letters</i> , 2009 , 103, 160601	7.4	166
139	Numerical and approximate analytical results for the frustrated spin- 1/2 quantum spin chain. <i>Journal of Physics Condensed Matter</i> , 1995 , 7, 8605-8618	1.8	154
138	Gapless Spin-Liquid Ground State in the S=1/2 Kagome Antiferromagnet. <i>Physical Review Letters</i> , 2017 , 118, 137202	7.4	145
137	Iron-based high transition temperature superconductors. <i>National Science Review</i> , 2014 , 1, 371-395	10.8	128
136	Edge solitons of topological insulators and fractionalized quasiparticles in two dimensions. <i>Physical Review Letters</i> , 2007 , 99, 196805	7.4	124
135	The electron pairing of K x Fe 2□y Se 2. <i>Europhysics Letters</i> , 2011 , 93, 57003	1.6	119
134	Density-matrix renormalization-group method in momentum space. <i>Physical Review B</i> , 1996 , 53, R10445-R10448	3.3	118
133	The density matrix renormalization group for a quantum spin chain at non-zero temperature. <i>Journal of Physics Condensed Matter</i> , 1996 , 8, L583-L590	1.8	117
132	c Axis Superfluid Response of Copper Oxide Superconductors. <i>Physical Review Letters</i> , 1996 , 77, 4632-4635	3.3	110
131	Equivalence of restricted Boltzmann machines and tensor network states. <i>Physical Review B</i> , 2018 , 97,	3.3	109
130	Universal linear-temperature dependence of static magnetic susceptibility in iron pnictides. <i>Europhysics Letters</i> , 2009 , 86, 37006	1.6	88
129	Relationship between the Superconducting Energy Gap and the Critical Temperature in High- Tc Superconductors. <i>Physical Review Letters</i> , 1998 , 81, 2336-2339	7.4	84

128	Electronic structures and magnetic order of ordered-Fe-vacancy ternary iron selenides $\text{TlFe}_{1.5}\text{Se}_2$ and $\text{AFe}_{1.5}\text{Se}_2$ (A=K, Rb, or Cs). <i>Physical Review Letters</i> , 2011 , 106, 087005	7.4	82
127	Ternary iron selenide $\text{K}_{0.8}\text{Fe}_{1.6}\text{Se}_2$ is an antiferromagnetic semiconductor. <i>Physical Review B</i> , 2011 , 83,	3.3	81
126	Strong-coupling superconductivity in the nickel-based oxypnictide $\text{LaNiAsO}_{1-x}\text{Fx}$. <i>Physical Review B</i> , 2008 , 78,	3.3	80
125	Nonmagnetic impurities in two-dimensional superconductors. <i>Physical Review B</i> , 1995 , 51, 11721-11727	3.3	77
124	Probing the Order Parameter and the c-Axis Coupling of High- T_c Cuprates by Penetration Depth Measurements. <i>Physical Review Letters</i> , 1997 , 79, 2320-2323	7.4	74
123	Atomic and electronic structures of FeSe monolayer and bilayer thin films on SrTiO_3 (001): First-principles study. <i>Physical Review B</i> , 2012 , 85,	3.3	73
122	Thermodynamics of quantum Heisenberg spin chains. <i>Physical Review B</i> , 1998 , 58, 9142-9149	3.3	69
121	Effects of the Dzyaloshinskii-Moriya interaction on low-energy magnetic excitations in copper benzoate. <i>Physical Review Letters</i> , 2003 , 90, 207204	7.4	66
120	Neutron scattering studies of spin excitations in hole-doped $\text{Ba}_{0.67}\text{K}_{0.33}\text{Fe}_2\text{As}_2$ superconductor. <i>Scientific Reports</i> , 2011 , 1, 115	4.9	65
119	Class of exactly solvable $\text{SO}(n)$ symmetric spin chains with matrix product ground states. <i>Physical Review B</i> , 2008 , 78,	3.3	64
118	Metamagnetic transition in $\text{Na}_{0.85}\text{CoO}_2$ single crystals. <i>Physical Review Letters</i> , 2004 , 93, 187203	7.4	64
117	Systematic behavior of the in-plane penetration depth in d-wave cuprates. <i>Physical Review B</i> , 1998 , 57, 13422-13425	3.3	61
116	Electronic structures of ternary iron arsenides AFe_2As_2 (A = Ba, Ca, or Sr). <i>Frontiers of Physics in China</i> , 2010 , 5, 150-160		60
115	Quasiparticle energy dispersion in doped two-dimensional quantum antiferromagnets. <i>Physical Review B</i> , 1996 , 54, R12653-R12656	3.3	59
114	Superfluid anisotropy in YBCO: Evidence for pair tunneling superconductivity. <i>Physical Review Letters</i> , 1996 , 76, 134-137	7.4	58
113	Proximity effect at superconducting Sn-Bi $_2$ Se $_3$ interface. <i>Physical Review B</i> , 2012 , 85,	3.3	53
112	Electronic and magnetic structures of the ternary iron selenides AFe_2Se_2 (A=Cs, Rb, K, or Tl). <i>Physical Review B</i> , 2011 , 84,	3.3	51
111	Anisotropic neutron spin resonance in superconducting $\text{BaFe}_{1.9}\text{Ni}_{0.1}\text{As}_2$. <i>Physical Review B</i> , 2010 , 82,	3.3	51

110	Electronic specific heat and low-energy quasiparticle excitations in the superconducting state of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ single crystals. <i>Physical Review B</i> , 2004 , 70,	3-3	51
109	Fano resonance for Anderson impurity systems. <i>Physical Review Letters</i> , 2004 , 92, 256602	7-4	51
108	Majorana Positivity and the Fermion Sign Problem of Quantum Monte Carlo Simulations. <i>Physical Review Letters</i> , 2016 , 116, 250601	7-4	49
107	Plaquette order and deconfined quantum critical point in the spin-1 bilinear-biquadratic Heisenberg model on the honeycomb lattice. <i>Physical Review B</i> , 2012 , 85,	3-3	48
106	Differentiable Programming Tensor Networks. <i>Physical Review X</i> , 2019 , 9,	9-1	47
105	Two-dimensional algorithm of the density-matrix renormalization group. <i>Physical Review B</i> , 2001 , 64,	3-3	45
104	Low Temperature Superfluid Response of High-Tc Superconductors. <i>International Journal of Modern Physics B</i> , 1998 , 12, 1007-1032	1-1	42
103	Infrared probe of the electronic structure and charge dynamics of $\text{Na}_{0.7}\text{CoO}_2$. <i>Physical Review Letters</i> , 2004 , 93, 237007	7-4	40
102	Efficient simulation of infinite tree tensor network states on the Bethe lattice. <i>Physical Review B</i> , 2012 , 86,	3-3	38
101	Orbital Origin of Extremely Anisotropic Superconducting Gap in Nematic Phase of FeSe Superconductor. <i>Physical Review X</i> , 2018 , 8,	9-1	36
100	Thermodynamics of the bilinear-biquadratic spin-One heisenberg chain. <i>Physical Review Letters</i> , 2000 , 85, 2380-3	7-4	35
99	In-plane spin excitation anisotropy in the paramagnetic state of NaFeAs . <i>Physical Review B</i> , 2013 , 88,	3-3	32
98	Topologically distinct classes of valence-bond solid states with their parent Hamiltonians. <i>Physical Review B</i> , 2009 , 80,	3-3	31
97	High energy pseudogap and its evolution with doping in Fe-based superconductors as revealed by optical spectroscopy. <i>Journal of Physics Condensed Matter</i> , 2012 , 24, 294202	1-8	30
96	Rigorous solution of the spin-1 quantum Ising model with single-ion anisotropy. <i>Physical Review Letters</i> , 2008 , 100, 067203	7-4	30
95	Numerical solution of $S=1$ antiferromagnetic spin chains using a truncated basis expansion. <i>Physical Review B</i> , 1993 , 48, 303-310	3-3	30
94	Normal-state hourglass dispersion of the spin excitations in $\text{FeSexTe}(1-x)$. <i>Physical Review Letters</i> , 2010 , 105, 157002	7-4	29
93	Surface structures of ternary iron arsenides AFe_2As_2 ($A=\text{Ba}$, Sr , or Ca). <i>Physical Review B</i> , 2010 , 81,	3-3	29

92	String order and hidden topological symmetry in the $SO(2n+1)$ symmetric matrix product states. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008 , 41, 415201	2	29
91	Partial order and finite-temperature phase transitions in Potts models on irregular lattices. <i>Physical Review Letters</i> , 2011 , 107, 165701	7.4	28
90	c-axis superfluid response and pseudogap in high- T_c superconductors. <i>Physical Review B</i> , 2000 , 61, R3808-R3810	3.3	26
89	Effect of Li-deficiency impurities on the electron-overdoped LiFeAs superconductor. <i>Physical Review B</i> , 2012 , 86,	3.3	25
88	Tree tensor networks for generative modeling. <i>Physical Review B</i> , 2019 , 99,	3.3	24
87	Gapped spin-liquid states in a one-dimensional Hubbard model with antiferromagnetic exchange interaction. <i>Physical Review B</i> , 2004 , 70,	3.3	24
86	Low-frequency spins and the ground state in high- T_c cuprates. <i>Solid State Communications</i> , 2003 , 126, 47-55	1.6	23
85	Pressure-induced phase transitions and superconductivity in a black phosphorus single crystal. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 9935-9940	11.5	23
84	Tensor network algorithm by coarse-graining tensor renormalization on finite periodic lattices. <i>Physical Review B</i> , 2016 , 93,	3.3	22
83	Electron-hole balance and the anomalous pressure-dependent superconductivity in black phosphorus. <i>Physical Review B</i> , 2017 , 96,	3.3	22
82	Midgap states in antiferromagnetic Heisenberg chains with a staggered field. <i>Physical Review Letters</i> , 2005 , 94, 217207	7.4	22
81	Effects of the Cu-O chains on the anisotropic penetration depth of $YBa_2Cu_4O_8$. <i>Physical Review B</i> , 1999 , 59, R6635-R6638	3.3	22
80	Tunable giant magnetoresistance in a single-molecule junction. <i>Nature Communications</i> , 2019 , 10, 3599	17.4	21
79	Underdoped superconducting cuprates as topological superconductors. <i>Nature Physics</i> , 2014 , 10, 634-637	6.2	21
78	Majorana surface modes of nodal topological pairings in spin-32 semimetals. <i>Physical Review B</i> , 2017 , 96,	3.3	21
77	Phase Transitions of Ferromagnetic Potts Models on the Simple Cubic Lattice. <i>Chinese Physics Letters</i> , 2014 , 31, 070503	1.8	21
76	Transition from band insulator to Mott insulator in one dimension: Critical behavior and phase diagram. <i>Physical Review B</i> , 2003 , 68,	3.3	21
75	Prediction of phonon-mediated high-temperature superconductivity in $Li_3B_4C_2$. <i>Physical Review B</i> , 2015 , 91,	3.3	20

74	Evolution of electronic states in n-type copper oxide superconductor via electric double layer gating. <i>Scientific Reports</i> , 2016 , 6, 26642	4.9	19
73	Absence of the zero bias peak in vortex tunneling spectra of high-temperature superconductors. <i>Physical Review B</i> , 2000 , 62, 14427-14430	3.3	19
72	Optimized contraction scheme for tensor-network states. <i>Physical Review B</i> , 2017 , 96,	3.3	18
71	Phase Transition of the q -State Clock Model: Duality and Tensor Renormalization. <i>Chinese Physics Letters</i> , 2017 , 34, 050503	1.8	16
70	Nematic antiferromagnetic states in bulk FeSe. <i>Physical Review B</i> , 2016 , 93,	3.3	16
69	Superconductivity in electron-doped arsenene. <i>Chinese Physics B</i> , 2018 , 27, 046301	1.2	16
68	Neutron scattering studies of spin excitations in superconducting Rb _{0.82} Fe _{1.68} Se ₂ . <i>Physical Review B</i> , 2012 , 86,	3.3	16
67	Stability of d-wave pairing in two dimensions. <i>Solid State Communications</i> , 1993 , 88, 593-595	1.6	16
66	Thermal Hall signatures of non-Kitaev spin liquids in honeycomb Kitaev materials. <i>Physical Review Research</i> , 2019 , 1,	3.9	16
65	Superconductivity in pressurized CeRhGe ₃ and related noncentrosymmetric compounds. <i>Physical Review B</i> , 2018 , 97,	3.3	14
64	Magnetic frustration and iron-vacancy ordering in iron chalcogenide. <i>Physical Review B</i> , 2012 , 85,	3.3	14
63	Exact solutions of a class of S=1 quantum Ising spin models. <i>Physical Review B</i> , 2009 , 79,	3.3	14
62	Density matrix renormalization group study of a quantum impurity model with Landau-Zener time-dependent Hamiltonian. <i>Physical Review B</i> , 2009 , 79,	3.3	14
61	Electron-phonon coupling in a honeycomb borophene grown on Al(111) surface. <i>Physical Review B</i> , 2019 , 100,	3.3	13
60	Ni-based transition metal trichalcogenide monolayer: A strongly correlated quadruple-layer graphene. <i>Physical Review B</i> , 2019 , 100,	3.3	12
59	Continuous quantum phase transition between two topologically distinct valence bond solid states associated with the same spin value. <i>Physical Review B</i> , 2011 , 83,	3.3	12
58	Inter-valley spiral order in the Mott insulating state of a heterostructure of trilayer graphene-boron nitride. <i>Science Bulletin</i> , 2018 , 63, 1087-1091	10.6	12
57	Emergent symmetry and conserved current at a one-dimensional incarnation of deconfined quantum critical point. <i>Physical Review B</i> , 2019 , 100,	3.3	11

56	Reorthonormalization of Chebyshev matrix product states for dynamical correlation functions. <i>Physical Review B</i> , 2018 , 97,	3.3	11
55	Pseudogap and Fermi arc in E-type organic superconductors. <i>Physical Review B</i> , 2011 , 84,	3.3	11
54	Record-High Superconductivity in Niobium-Titanium Alloy. <i>Advanced Materials</i> , 2019 , 31, e1807240	24	11
53	Anisotropic electron-phonon coupling in the spinel oxide superconductor LiTi ₂ O ₄ . <i>Physical Review B</i> , 2017 , 95,	3.3	10
52	Heisenberg antiferromagnet on the Husimi lattice. <i>Physical Review B</i> , 2016 , 93,	3.3	10
51	A tight-binding model for Sr ₂ RuO ₄ . <i>Physica C: Superconductivity and Its Applications</i> , 1997 , 282-287, 1713-1714	3.3	10
50	Electronic structures of quasi-one-dimensional cuprate superconductors Ba ₂ CuO ₃ + δ . <i>Physical Review Materials</i> , 2019 , 3,	3.2	9
49	Mott phase in a van der Waals transition-metal halide at single-layer limit. <i>Physical Review Research</i> , 2020 , 2,	3.9	9
48	Scanning tunneling microscopic observation of enhanced superconductivity in epitaxial Sn islands grown on SrTiO ₃ substrate. <i>Science Bulletin</i> , 2018 , 63, 1332-1337	10.6	9
47	Charge dynamics of the antiferromagnetically ordered Mott insulator. <i>New Journal of Physics</i> , 2016 , 18, 103004	2.9	8
46	Strong-coupling superconductivity in LiB ₂ C ₂ trilayer films. <i>Physical Review B</i> , 2020 , 101,	3.3	7
45	Ground state degeneracy of interacting spinless fermions. <i>Physical Review B</i> , 2015 , 92,	3.3	7
44	First-principles study of FeSe epitaxial films on SrTiO ₃ . <i>Chinese Physics B</i> , 2015 , 24, 117402	1.2	7
43	Small-cluster study of a single-hole t-J model. <i>Physical Review B</i> , 1991 , 44, 2276-2282	3.3	7
42	Antiferromagnetic Heisenberg ladders in staggered magnetic field. <i>Physical Review B</i> , 2006 , 73,	3.3	6
41	A selective control of volatile and non-volatile superconductivity in an insulating copper oxide via ionic liquid gating. <i>Science Bulletin</i> , 2020 , 65, 1607-1613	10.6	6
40	Crossover from two-dimensional to three-dimensional superconducting states in bismuth-based cuprate superconductor. <i>Nature Physics</i> , 2020 , 16, 295-300	16.2	6
39	Automatic differentiation for second renormalization of tensor networks. <i>Physical Review B</i> , 2020 , 101,	3.3	5

38	Analytic Continuation with PadDecomposition. <i>Chinese Physics Letters</i> , 2017 , 34, 077102	1.8	5
37	Long-time dynamics of quantum chains: Transfer-matrix renormalization group and entanglement of the maximal eigenvector. <i>Physical Review B</i> , 2014 , 89,	3.3	5
36	Partial Order in Potts Models on the Generalized Decorated Square Lattice. <i>Chinese Physics Letters</i> , 2013 , 30, 076402	1.8	5
35	Pnicogen-bridged antiferromagnetic superexchange interactions in iron pnictides. <i>Journal of Physics and Chemistry of Solids</i> , 2011 , 72, 319-323	3.9	5
34	Real space renormalisation group study of Heisenberg spin chain. <i>Journal of Magnetism and Magnetic Materials</i> , 1992 , 104-107, 861-862	2.8	5
33	Phonon-mediated high-temperature superconductivity in the ternary borohydride KB ₂ H ₈ under pressure near 12 GPa. <i>Physical Review B</i> , 2021 , 104,	3.3	5
32	Scaling of the strange-metal scattering in unconventional superconductors.. <i>Nature</i> , 2022 , 602, 431-436	50.4	5
31	Emergent superconductivity in single-crystalline MgTi ₂ O ₄ films via structural engineering. <i>Physical Review B</i> , 2020 , 101,	3.3	4
30	Finite-temperature charge dynamics and the melting of the Mott insulator. <i>Physical Review B</i> , 2019 , 99,	3.3	4
29	Quantum transfer-matrix and momentum-space DMRG 1999 , 149-172		4
28	Superconductivity in chromium nitrides PrCrN with strong electron correlations. <i>National Science Review</i> , 2020 , 7, 21-26	10.8	4
27	Anomalous connection between antiferromagnetic and superconducting phases in the pressurized noncentrosymmetric heavy-fermion compound CeRhGe ₃ . <i>Physical Review B</i> , 2019 , 99,	3.3	3
26	Pseudogap phase in the U(1) gauge theory with incoherent spinon pairs. <i>Physical Review B</i> , 2000 , 61, 8683-8686	3.3	3
25	Effect of superconducting correlation on the localization of quasiparticles in low dimensions. <i>Physical Review B</i> , 1995 , 52, 6204-6207	3.3	3
24	Spectroscopic Evidence for an Additional Symmetry Breaking in the Nematic State of FeSe Superconductor. <i>Physical Review X</i> , 2020 , 10,	9.1	3
23	Thermal tensor network simulations of the Heisenberg model on the Bethe lattice. <i>Physical Review B</i> , 2019 , 100,	3.3	2
22	Critical properties of the two-dimensional q-state clock model. <i>Physical Review E</i> , 2020 , 101, 060105	2.4	2
21	Selective hybridization between the main band and the superstructure band in the Bi ₂ Sr ₂ CaCu ₂ O ₈ + δ superconductor. <i>Physical Review B</i> , 2020 , 101,	3.3	2

20	Quantum phase transition in a multiconnected Jaynes-Cummings lattice. <i>Physical Review B</i> , 2017 , 96,	3.3	2
19	Topological term in the non-linear \mathbb{Z}_2 model of the spin chains. <i>Nuclear Physics B</i> , 2011 , 846, 607-615	2.8	2
18	Compressing deep neural networks by matrix product operators. <i>Physical Review Research</i> , 2020 , 2,	3.9	2
17	Momentum-resolved visualization of electronic evolution in doping a Mott insulator. <i>Nature Communications</i> , 2021 , 12, 1356	17.4	2
16	Quantum phase transition from superconducting to insulating-like state in a pressurized cuprate superconductor. <i>Nature Physics</i> ,	16.2	2
15	AFeSe ₂ (A=Tl, K, Rb, or Cs): Iron-based superconducting analog of the cuprates. <i>Physical Review B</i> , 2020 , 101,	3.3	1
14	Maximized string order parameters in the valence bond solid states of quantum integer spin chains. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009 , 42, 285202	2	1
13	Fractality of Hofstadter Butterfly in Specific Heat Oscillation. <i>Journal of the Physical Society of Japan</i> , 2012 , 81, 044605	1.5	1
12	Probing superconducting phase fluctuations from the current noise spectrum of pseudogapped metal-superconductor tunnel junctions. <i>Physical Review Letters</i> , 2000 , 85, 3009-12	7.4	1
11	RSVS superconductors: Materials with a superconducting state that is robust against large volume shrinkage. <i>Physical Review Materials</i> , 2020 , 4,	3.2	1
10	Self-Consistent Spin-Wave Analysis of the 1/3 Magnetization Plateau in the Kagome Antiferromagnet. <i>Chinese Physics Letters</i> , 2016 , 33, 077503	1.8	1
9	Quantum criticality tuned by magnetic field in optimally electron-doped cuprate thin films. <i>Physical Review B</i> , 2021 , 103,	3.3	1
8	Generalized Lanczos method for systematic optimization of tensor network states. <i>Chinese Physics B</i> , 2018 , 27, 070501	1.2	1
7	Entanglement entropy of non-Hermitian free fermions. <i>Journal of Physics Condensed Matter</i> , 2021 , 33,	1.8	1
6	Translation invariant tensor product states in a finite lattice system. <i>Chinese Physics B</i> , 2011 , 20, 117501	1.2	0
5	Long-Time Magnetic Relaxation in Antiferromagnetic Topological Material EuCd ₂ As ₂ . <i>Chinese Physics Letters</i> , 2021 , 38, 077201	1.8	0
4	Scaling of superconducting energy gap with critical temperature in high-T _c superconductors. <i>Physica C: Superconductivity and Its Applications</i> , 1999 , 317-318, 373-377	1.3	
3	A Ginzburg-Landau approach for the Ba ₂ yCa ₂ O ₇ superconductor. <i>Physica C: Superconductivity and Its Applications</i> , 1988 , 153-155, 687-688	1.3	

- 2 The Two-Band Model of Electron-Doped High-TC Superconductors. *Peking University-World Scientific Advanced Physics Series*, **2020**, 383-392 0
- 1 Effect of Impurity on the Doping-Induced in-Gap States in a Mott Insulator. *Chinese Physics Letters*, **2022**, 39, 057401 1.8