

# Hao Shi

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

26 papers	967 citations	13 h-index	27 g-index
27 ext. papers	1,296 ext. citations	5.6 avg, IF	4.5 L-index

#	Paper	IF	Citations
26	Ab initio calculations in atoms, molecules, and solids, treating spin-orbit coupling and electron interaction on an equal footing.. <i>Journal of Chemical Physics</i> , <b>2022</b> , 156, 014107	3.9	1
25	Pseudo-BCS wave function from density matrix decomposition: Application in auxiliary-field quantum Monte Carlo. <i>Physical Review Research</i> , <b>2021</b> , 3,	3.9	2
24	Some recent developments in auxiliary-field quantum Monte Carlo for real materials. <i>Journal of Chemical Physics</i> , <b>2021</b> , 154, 024107	3.9	7
23	Metal-insulator and magnetic phase diagram of Ca <sub>2</sub> RuO <sub>4</sub> from auxiliary field quantum Monte Carlo and dynamical mean field theory. <i>Physical Review B</i> , <b>2020</b> , 101,	3.3	2
22	Direct Comparison of Many-Body Methods for Realistic Electronic Hamiltonians. <i>Physical Review X</i> , <b>2020</b> , 10,	9.1	46
21	Absence of Superconductivity in the Pure Two-Dimensional Hubbard Model. <i>Physical Review X</i> , <b>2020</b> , 10,	9.1	37
20	Ground-State Properties of the Hydrogen Chain: Dimerization, Insulator-to-Metal Transition, and Magnetic Phases. <i>Physical Review X</i> , <b>2020</b> , 10,	9.1	24
19	Reaching the Continuum Limit in Finite-Temperature Ab Initio Field-Theory Computations in Many-Fermion Systems. <i>Physical Review Letters</i> , <b>2019</b> , 123, 136402	7.4	8
18	Auxiliary field quantum Monte Carlo for multiband Hubbard models: Controlling the sign and phase problems to capture Hund's physics. <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	4
17	Metal-insulator transition in the ground state of the three-band Hubbard model at half filling. <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	9
16	Finite-temperature auxiliary-field quantum Monte Carlo: Self-consistent constraint and systematic approach to low temperatures. <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	18
15	Accurate computations of Rashba spin-orbit coupling in interacting systems: From the Fermi gas to real materials. <i>Journal of Physics and Chemistry of Solids</i> , <b>2019</b> , 128, 161-168	3.9	6
14	Magnetic orders in the hole-doped three-band Hubbard model: Spin spirals, nematicity, and ferromagnetic domain walls. <i>Physical Review B</i> , <b>2018</b> , 97,	3.3	6
13	Cluster size convergence of the density matrix embedding theory and its dynamical cluster formulation: A study with an auxiliary-field quantum Monte Carlo solver. <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	28
12	Response Functions for the Two-Dimensional Ultracold Fermi Gas: Dynamical BCS Theory and Beyond. <i>Journal of Low Temperature Physics</i> , <b>2017</b> , 189, 312-327	1.3	4
11	Many-body computations by stochastic sampling in Hartree-Fock-Bogoliubov space. <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	13
10	Stripe order in the underdoped region of the two-dimensional Hubbard model. <i>Science</i> , <b>2017</b> , 358, 1155-1160	33.9	215

9	Ultracold Atoms in a Square Lattice with Spin-Orbit Coupling: Charge Order, Superfluidity, and Topological Signatures. <i>Physical Review Letters</i> , <b>2017</b> , 119, 265301	7.4	13
8	Infinite variance in fermion quantum Monte Carlo calculations. <i>Physical Review E</i> , <b>2016</b> , 93, 033303	2.4	30
7	Rashba Spin-Orbit Coupling, Strong Interactions, and the BCS-BEC Crossover in the Ground State of the Two-Dimensional Fermi Gas. <i>Physical Review Letters</i> , <b>2016</b> , 117, 040401	7.4	13
6	Benchmark study of the two-dimensional Hubbard model with auxiliary-field quantum Monte Carlo method. <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	38
5	Coupling quantum Monte Carlo and independent-particle calculations: Self-consistent constraint for the sign problem based on the density or the density matrix. <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	24
4	Ground-state properties of strongly interacting Fermi gases in two dimensions. <i>Physical Review A</i> , <b>2015</b> , 92,	2.6	58
3	Solutions of the Two-Dimensional Hubbard Model: Benchmarks and Results from a Wide Range of Numerical Algorithms. <i>Physical Review X</i> , <b>2015</b> , 5,	9.1	269
2	Symmetry-projected wave functions in quantum Monte Carlo calculations. <i>Physical Review B</i> , <b>2014</b> , 89,	3.3	36
1	Symmetry in auxiliary-field quantum Monte Carlo calculations. <i>Physical Review B</i> , <b>2013</b> , 88,	3.3	56