

# Xiaowen Shan

## List of Publications by Year in descending order

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70  
papers

9,490  
citations

136950

32  
h-index

110387

64  
g-index

70  
all docs

70  
docs citations

70  
times ranked

3176  
citing authors

#	ARTICLE	IF	CITATIONS
1	Lattice Boltzmann model for simulating flows with multiple phases and components. <i>Physical Review E</i> , 1993, 47, 1815-1819.	2.1	2,718
2	Simulation of nonideal gases and liquid-gas phase transitions by the lattice Boltzmann equation. <i>Physical Review E</i> , 1994, 49, 2941-2948.	2.1	1,136
3	Kinetic theory representation of hydrodynamics: a way beyond the Navier-Stokes equation. <i>Journal of Fluid Mechanics</i> , 2006, 550, 413.	3.4	859
4	Multicomponent lattice-Boltzmann model with interparticle interaction. <i>Journal of Statistical Physics</i> , 1995, 81, 379-393.	1.2	498
5	Discrete Boltzmann equation model for nonideal gases. <i>Physical Review E</i> , 1998, 57, R13-R16.	2.1	495
6	Simulation of Rayleigh-Bénard convection using a lattice Boltzmann method. <i>Physical Review E</i> , 1997, 55, 2780-2788.	2.1	468
7	Discretization of the Velocity Space in the Solution of the Boltzmann Equation. <i>Physical Review Letters</i> , 1998, 80, 65-68.	7.8	351
8	Analysis and reduction of the spurious current in a class of multiphase lattice Boltzmann models. <i>Physical Review E</i> , 2006, 73, 047701.	2.1	252
9	Lattice Boltzmann computational fluid dynamics in three dimensions. <i>Journal of Statistical Physics</i> , 1992, 68, 379-400.	1.2	240
10	Diffusion in a multicomponent lattice Boltzmann equation model. <i>Physical Review E</i> , 1996, 54, 3614-3620.	2.1	220
11	Efficient kinetic method for fluid simulation beyond the Navier-Stokes equation. <i>Physical Review E</i> , 2006, 74, 046703.	2.1	214
12	Analysis of drag and virtual mass forces in bubbly suspensions using an implicit formulation of the lattice Boltzmann method. <i>Journal of Fluid Mechanics</i> , 2002, 452, 61-96.	3.4	171
13	Pressure tensor calculation in a class of nonideal gas lattice Boltzmann models. <i>Physical Review E</i> , 2008, 77, 066702.	2.1	152
14	Evaluation of the external force term in the discrete Boltzmann equation. <i>Physical Review E</i> , 1998, 58, 6855-6857.	2.1	124
15	Evaluation of Two Lattice Boltzmann Models for Multiphase Flows. <i>Journal of Computational Physics</i> , 1997, 138, 695-713.	3.8	122
16	A GENERAL MULTIPLE-RELAXATION-TIME BOLTZMANN COLLISION MODEL. <i>International Journal of Modern Physics C</i> , 2007, 18, 635-643.	1.7	90
17	Lattice Boltzmann method with self-consistent thermo-hydrodynamic equilibria. <i>Journal of Fluid Mechanics</i> , 2009, 628, 299-309.	3.4	86
18	Galilean invariance of lattice Boltzmann models. <i>Europhysics Letters</i> , 2008, 81, 34005.	2.0	69

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19	Lattice ellipsoidal statistical BCK model for thermal non-equilibrium flows. <i>Journal of Fluid Mechanics</i> , 2013, 718, 347-370.	3.4	68
20	General solution of lattices for Cartesian lattice Bhatnagar-Gross-Krook models. <i>Physical Review E</i> , 2010, 81, 036702.	2.1	63
21	Nonlinear magnetohydrodynamics by Galerkin-method computation. <i>Physical Review A</i> , 1991, 44, 6800-6818.	2.5	61
22	Lattice Boltzmann Simulation of Shale Gas Transport in Organic Nano-Pores. <i>Scientific Reports</i> , 2014, 4, 4843.	3.3	60
23	Navier-Stokes relaxation to Poisson states at finite Reynolds numbers. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 2207-2216.	1.6	59
24	Bubble flow simulations with the lattice Boltzmann method. <i>Chemical Engineering Science</i> , 1999, 54, 4817-4823.	3.8	58
25	High-resolution turbulent simulations using the Connection Machine-2. <i>Computers in Physics</i> , 1992, 6, 643.	0.5	54
26	Fundamental conditions for N-th-order accurate lattice Boltzmann models. <i>Physica D: Nonlinear Phenomena</i> , 2008, 237, 2003-2008.	2.8	53
27	Consistent pseudopotential interactions in lattice Boltzmann models. <i>Physical Review E</i> , 2011, 84, 036703.	2.1	45
28	Multiscale lattice Boltzmann approach to modeling gas flows. <i>Physical Review E</i> , 2011, 83, 046701.	2.1	43
29	Thermal lattice Boltzmann model for gases with internal degrees of freedom. <i>Physical Review E</i> , 2008, 77, 035701.	2.1	41
30	Lattice Boltzmann models for nonideal fluids with arrested phase-separation. <i>Physical Review E</i> , 2008, 77, 036705.	2.1	39
31	The mathematical structure of the lattices of the lattice Boltzmann method. <i>Journal of Computational Science</i> , 2016, 17, 475-481.	2.9	37
32	Continuum free-energy formulation for a class of lattice Boltzmann multiphase models. <i>Europhysics Letters</i> , 2009, 86, 24005.	2.0	34
33	Lattice Boltzmann spray-like fluids. <i>Europhysics Letters</i> , 2008, 82, 24005.	2.0	32
34	Central-moment-based Galilean-invariant multiple-relaxation-time collision model. <i>Physical Review E</i> , 2019, 100, 043308.	2.1	32
35	On the role of the Hartmann number in magnetohydrodynamic activity. <i>Plasma Physics and Controlled Fusion</i> , 1993, 35, 619-631.	2.1	31
36	Chemical-potential multiphase lattice Boltzmann method with superlarge density ratios. <i>Physical Review E</i> , 2020, 102, 013303.	2.1	30

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37	Magnetohydrodynamic Stabilization through Rotation. <i>Physical Review Letters</i> , 1994, 73, 1624-1627.	7.8	28
38	Multicomponent lattice Boltzmann model from continuum kinetic theory. <i>Physical Review E</i> , 2010, 81, 045701.	2.1	26
39	Shape changes and motion of a vesicle in a fluid using a lattice Boltzmann model. <i>Europhysics Letters</i> , 2008, 81, 54002.	2.0	25
40	Global searches of Hartmann-number-dependent stability boundaries. <i>Plasma Physics and Controlled Fusion</i> , 1993, 35, 1019-1032.	2.1	24
41	On the transition behavior of laminar flow through and around a multi-cylinder array. <i>Physics of Fluids</i> , 2020, 32, .	4.0	24
42	Galerkin approximations for dissipative magnetohydrodynamics. <i>Physical Review A</i> , 1990, 42, 6158-6165.	2.5	23
43	A Lattice-Boltzmann / Finite-Difference Hybrid Simulation of Transonic Flow. , 2009, , .		23
44	Modeling adsorption with lattice Boltzmann equation. <i>Scientific Reports</i> , 2016, 6, 27134.	3.3	22
45	Lattice Boltzmann method for adiabatic acoustics. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2011, 369, 2371-2380.	3.4	20
46	Temperature-scaled collision process for the high-order lattice Boltzmann model. <i>Physical Review E</i> , 2019, 100, 013301.	2.1	20
47	The formation mechanism of recirculating wake for steady flow through and around arrays of cylinders. <i>Physics of Fluids</i> , 2019, 31, .	4.0	16
48	Investigation of drag properties for flow through and around square arrays of cylinders at low Reynolds numbers. <i>Chemical Engineering Science</i> , 2019, 199, 285-301.	3.8	15
49	New direction of computational fluid dynamics and its applications in industry. <i>Science in China Series D: Earth Sciences</i> , 2007, 50, 521-533.	0.9	13
50	Propagating high-frequency shear waves in simple fluids. <i>Physics of Fluids</i> , 2009, 21, 013105.	4.0	11
51	Modelling viscoacoustic wave propagation with the lattice Boltzmann method. <i>Scientific Reports</i> , 2017, 7, 10169.	3.3	11
52	Accuracy of high-order lattice Boltzmann method for non-equilibrium gas flow. <i>Journal of Fluid Mechanics</i> , 2021, 907, .	3.4	11
53	Lattice Boltzmann in micro- and nano-flow simulations. <i>IMA Journal of Applied Mathematics</i> , 2011, 76, 650-660.	1.6	10
54	Rotating magnetohydrodynamics. <i>Journal of Plasma Physics</i> , 1994, 52, 113-128.	2.1	8

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55	A multiple-relaxation-time collision model for nonequilibrium flows. <i>Physics of Fluids</i> , 2021, 33, .	4.0	8
56	Mass Transport/Diffusion and Surface Reaction Process with Lattice Boltzmann. <i>Communications in Computational Physics</i> , 2011, 9, 1362-1374.	1.7	6
57	Connection between pore-scale and macroscopic flow characteristics of recirculating wake behind a porous cylinder. <i>Physics of Fluids</i> , 2020, 32, 083606.	4.0	6
58	Mesoscale perspective on the Tolman length. <i>Physical Review E</i> , 2022, 105, 015301.	2.1	6
59	Effects of uniform rotation on helically-deformed, resistive, magnetohydrodynamic equilibria. <i>Plasma Physics and Controlled Fusion</i> , 1991, 33, 1871-1875.	2.1	5
60	Rotational symmetry of the multiple-relaxation-time collision model. <i>Physical Review E</i> , 2021, 103, 043309.	2.1	5
61	A multiple-relaxation-time collision model by Hermite expansion. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2021, 379, 20200406.	3.4	5
62	Structure and isotropy of lattice pressure tensors for multirange potentials. <i>Physical Review E</i> , 2021, 103, 063309.	2.1	4
63	Effect of Airfoil Dimple on Low-Reynolds-Number Differing Laminar Separation Behavior via Multi-Objective Optimization. <i>Journal of Aircraft</i> , 2022, 59, 1243-1256.	2.4	3
64	Microscopic origins and macroscopic uses of plasma rotation. <i>Journal of Plasma Physics</i> , 1995, 54, 1-10.	2.1	2
65	The Hovering Stability of the Egretta Tail-Sitter VTOL UAV. <i>International Journal of Aerospace Engineering</i> , 2022, 2022, 1-12.	0.9	2
66	Magnetohydrodynamic turbulence with net currents. , 1995, , 241-254.		1
67	Application of a Higher Order Lattice Boltzmann/ Hybrid Method for Simulation of Compressible Viscous Flows with Curved Boundary. , 2009, , .		1
68	Entropies for Continua: Fluids and Magnetofluids. , 1996, , 303-314.		1
69	Time Domain Approaches to the Stability Analysis of Flexible Dynamical Systems. <i>Journal of Computational and Nonlinear Dynamics</i> , 2016, 11, .	1.2	0
70	High Precision Height Control for Wing-in-Ground Crafts. <i>International Journal of Aerospace Engineering</i> , 2022, 2022, 1-11.	0.9	0