Xiaowen Shan

List of Publications by Year in Descending Order

66 papers	7,852 citations	30 h-index	70 g-index
70 ext. papers	8,580 ext. citations	2.8 avg, IF	6.23 L-index

#	Paper	IF	Citations
66	Mesoscale perspective on the Tolman length.. *Physical Review E*, **2022**, 105, 015301	2.4	0
65	A multiple-relaxation-time collision model for nonequilibrium flows. *Physics of Fluids*, **2021**, 33, 037134	4.4	2
64	Rotational symmetry of the multiple-relaxation-time collision model. *Physical Review E*, **2021**, 103, 043309	2.4	1
63	Structure and isotropy of lattice pressure tensors for multirange potentials. *Physical Review E*, **2021** , 103, 063309	2.4	1
62	Accuracy of high-order lattice Boltzmann method for non-equilibrium gas flow. *Journal of Fluid Mechanics*, **2021**, 907,	3.7	3
61	A multiple-relaxation-time collision model by Hermite expansion. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2021**, 379, 20200406	3	1
60	Chemical-potential multiphase lattice Boltzmann method with superlarge density ratios. *Physical Review E*, **2020**, 102, 013303	2.4	12
59	On the transition behavior of laminar flow through and around a multi-cylinder array. *Physics of Fluids*, **2020**, 32, 013601	4.4	11
58	Connection between pore-scale and macroscopic flow characteristics of recirculating wake behind a porous cylinder. *Physics of Fluids*, **2020**, 32, 083606	4.4	4
57	Central-moment-based Galilean-invariant multiple-relaxation-time collision model. *Physical Review E*, **2019**, 100, 043308	2.4	22
56	Investigation of drag properties for flow through and around square arrays of cylinders at low Reynolds numbers. *Chemical Engineering Science*, **2019**, 199, 285-301	4.4	9
55	The formation mechanism of recirculating wake for steady flow through and around arrays of cylinders. *Physics of Fluids*, **2019**, 31, 043607	4.4	11
54	Temperature-scaled collision process for the high-order lattice Boltzmann model. *Physical Review E*, **2019**, 100, 013301	2.4	14
53	Modelling viscoacoustic wave propagation with the lattice Boltzmann method. *Scientific Reports*, **2017**, 7, 10169	4.9	4
52	Modeling adsorption with lattice Boltzmann equation. *Scientific Reports*, **2016**, 6, 27134	4.9	19
51	The mathematical structure of the lattices of the lattice Boltzmann method. *Journal of Computational Science*, **2016**, 17, 475-481	3.4	27
50	Lattice Boltzmann simulation of shale gas transport in organic nano-pores. *Scientific Reports*, **2014**, 4, 4843	4.9	53

49	Lattice ellipsoidal statistical BGK model for thermal non-equilibrium flows. *Journal of Fluid Mechanics*, **2013**, 718, 347-370	3.7	62
48	Lattice Boltzmann in micro- and nano-flow simulations. *IMA Journal of Applied Mathematics*, **2011**, 76, 650-660	1	8
47	Mass Transport/Diffusion and Surface Reaction Process with Lattice Boltzmann. *Communications in Computational Physics*, **2011**, 9, 1362-1374	2.4	5
46	Lattice Boltzmann method for adiabatic acoustics. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2011**, 369, 2371-80	3	13
45	Consistent pseudopotential interactions in lattice Boltzmann models. *Physical Review E*, **2011**, 84, 036702	2.4	34
44	Multiscale lattice Boltzmann approach to modeling gas flows. *Physical Review E*, **2011**, 83, 046701	2.4	40
43	Multicomponent lattice Boltzmann model from continuum kinetic theory. *Physical Review E*, **2010**, 81, 045701	2.4	24
42	General solution of lattices for Cartesian lattice Bhatanagar-Gross-Krook models. *Physical Review E*, **2010**, 81, 036702	2.4	58
41	Propagating high-frequency shear waves in simple fluids. *Physics of Fluids*, **2009**, 21, 013105	4.4	11
40	Lattice Boltzmann method with self-consistent thermo-hydrodynamic equilibria. *Journal of Fluid Mechanics*, **2009**, 628, 299-309	3.7	80
39	A Lattice-Boltzmann / Finite-Difference Hybrid Simulation of Transonic Flow **2009**,		12
38	Continuum free-energy formulation for a class of lattice Boltzmann multiphase models. *Europhysics Letters*, **2009**, 86, 24005	1.6	27
37	Lattice Boltzmann spray-like fluids. *Europhysics Letters*, **2008**, 82, 24005	1.6	26
36	Thermal lattice Boltzmann model for gases with internal degrees of freedom. *Physical Review E*, **2008**, 77, 035701	2.4	32
35	Pressure tensor calculation in a class of nonideal gas lattice Boltzmann models. *Physical Review E*, **2008**, 77, 066702	2.4	118
34	Galilean invariance of lattice Boltzmann models. *Europhysics Letters*, **2008**, 81, 34005	1.6	61
33	Shape changes and motion of a vesicle in a fluid using a lattice Boltzmann model. *Europhysics Letters*, **2008**, 81, 54002	1.6	23
32	Lattice Boltzmann models for nonideal fluids with arrested phase-separation. *Physical Review E*, **2008**, 77, 036705	2.4	36

31	Fundamental conditions for N-th-order accurate lattice Boltzmann models. *Physica D: Nonlinear Phenomena*, **2008**, 237, 2003-2008	3.3	40
30	New direction of computational fluid dynamics and its applications in industry. *Science in China Series D: Earth Sciences*, **2007**, 50, 521-533		12
29	A GENERAL MULTIPLE-RELAXATION-TIME BOLTZMANN COLLISION MODEL. *International Journal of Modern Physics C*, **2007**, 18, 635-643	1.1	71
28	Efficient kinetic method for fluid simulation beyond the Navier-Stokes equation. *Physical Review E*, **2006**, 74, 046703	2.4	167
27	Kinetic theory representation of hydrodynamics: a way beyond the Navier–Stokes equation. *Journal of Fluid Mechanics*, **2006**, 550, 413	3.7	689
26	Analysis and reduction of the spurious current in a class of multiphase lattice Boltzmann models. *Physical Review E*, **2006**, 73, 047701	2.4	217
25	Analysis of drag and virtual mass forces in bubbly suspensions using an implicit formulation of the lattice Boltzmann method. *Journal of Fluid Mechanics*, **2002**, 452, 61-96	3.7	156
24	Bubble flow simulations with the lattice Boltzmann method. *Chemical Engineering Science*, **1999**, 54, 4817-4823	4.4	52
23	Discrete Boltzmann equation model for nonideal gases. *Physical Review E*, **1998**, 57, R13-R16	2.4	414
22	Discretization of the Velocity Space in the Solution of the Boltzmann Equation. *Physical Review Letters*, **1998**, 80, 65-68	7.4	310
21	Evaluation of the external force term in the discrete Boltzmann equation. *Physical Review E*, **1998**, 58, 6855-6857	2.4	109
20	Simulation of Rayleigh-Bénard convection using a lattice Boltzmann method. *Physical Review E*, **1997**, 55, 2780-2788	2.4	385
19	Evaluation of Two Lattice Boltzmann Models for Multiphase Flows. *Journal of Computational Physics*, **1997**, 138, 695-713	4.1	107
18	Diffusion in a multicomponent lattice Boltzmann equation model. *Physical Review E*, **1996**, 54, 3614-3620	2.4	191
17	Entropies for Continua: Fluids and Magnetofluids **1996**, 303-314		1
16	Magnetohydrodynamic turbulence with net currents **1995**, 241-254		
15	Microscopic origins and macroscopic uses of plasma rotation. *Journal of Plasma Physics*, **1995**, 54, 1-10	2.7	2
14	Multicomponent lattice-Boltzmann model with interparticle interaction. *Journal of Statistical Physics*, **1995**, 81, 379-393	1.5	413

13	Magnetohydrodynamic stabilization through rotation. *Physical Review Letters*, **1994**, 73, 1624-1627	7.4	25
12	Simulation of nonideal gases and liquid-gas phase transitions by the lattice Boltzmann equation. *Physical Review E*, **1994**, 49, 2941-2948	2.4	938
11	Rotating magnetohydrodynamics. *Journal of Plasma Physics*, **1994**, 52, 113-128	2.7	8
10	On the role of the Hartmann number in magnetohydrodynamic activity. *Plasma Physics and Controlled Fusion*, **1993**, 35, 619-631	2	30
9	Global searches of Hartmann-number-dependent stability boundaries. *Plasma Physics and Controlled Fusion*, **1993**, 35, 1019-1032	2	23
8	Navier-Stokes relaxation to sinh-Poisson states at finite Reynolds numbers. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 2207-2216		50
7	Lattice Boltzmann model for simulating flows with multiple phases and components. *Physical Review E*, **1993**, 47, 1815-1819	2.4	2233
6	High-resolution turbulent simulations using the Connection Machine-2. *Computers in Physics*, **1992**, 6, 643		51
5	Lattice Boltzmann computational fluid dynamics in three dimensions. *Journal of Statistical Physics*, **1992**, 68, 379-400	1.5	209
4	Effects of uniform rotation on helically-deformed, resistive, magnetohydrodynamic equilibria. *Plasma Physics and Controlled Fusion*, **1991**, 33, 1871-1875	2	5
3	Nonlinear magnetohydrodynamics by Galerkin-method computation. *Physical Review A*, **1991**, 44, 6800-6818	2.8	57
2	Galerkin approximations for dissipative magnetohydrodynamics. *Physical Review A*, **1990**, 42, 6158-6165	2.6	22
1	Effect of Airfoil Dimple on Low-Reynolds-Number Differing Laminar Separation Behavior via Multi-Objective Optimization. *Journal of Aircraft*,1-14	1.6	1