

Li-Shi Luo

List of Publications by Year in descending order

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103
papers

14,781
citations

57758

44
h-index

51608

86
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109
all docs

109
docs citations

109
times ranked

4423
citing authors

#	ARTICLE	IF	CITATIONS
1	Theory of the lattice Boltzmann method: Dispersion, dissipation, isotropy, Galilean invariance, and stability. <i>Physical Review E</i> , 2000, 61, 6546-6562.	2.1	1,660
2	Multiple "relaxation" time lattice Boltzmann models in three dimensions. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2002, 360, 437-451.	3.4	1,494
3	Theory of the lattice Boltzmann method: From the Boltzmann equation to the lattice Boltzmann equation. <i>Physical Review E</i> , 1997, 56, 6811-6817.	2.1	1,328
4	Lattice Boltzmann Model for the Incompressible Navier-Stokes Equation. <i>Journal of Statistical Physics</i> , 1997, 88, 927-944.	1.2	953
5	Viscous flow computations with the method of lattice Boltzmann equation. <i>Progress in Aerospace Sciences</i> , 2003, 39, 329-367.	12.1	746
6	A priori derivation of the lattice Boltzmann equation. <i>Physical Review E</i> , 1997, 55, R6333-R6336.	2.1	629
7	An evaluation of lattice Boltzmann schemes for porous medium flow simulation. <i>Computers and Fluids</i> , 2006, 35, 898-909.	2.5	617
8	Analytic solutions of simple flows and analysis of nonslip boundary conditions for the lattice Boltzmann BGK model. <i>Journal of Statistical Physics</i> , 1997, 87, 115-136.	1.2	589
9	An Accurate Curved Boundary Treatment in the Lattice Boltzmann Method. <i>Journal of Computational Physics</i> , 1999, 155, 307-330.	3.8	487
10	Lattice Boltzmann method for moving boundaries. <i>Journal of Computational Physics</i> , 2003, 184, 406-421.	3.8	452
11	Theory of the lattice Boltzmann method: Acoustic and thermal properties in two and three dimensions. <i>Physical Review E</i> , 2003, 68, 036706.	2.1	357
12	Unified Theory of Lattice Boltzmann Models for Nonideal Gases. <i>Physical Review Letters</i> , 1998, 81, 1618-1621.	7.8	327
13	Force evaluation in the lattice Boltzmann method involving curved geometry. <i>Physical Review E</i> , 2002, 65, 041203.	2.1	325
14	Some Progress in Lattice Boltzmann Method. Part I. Nonuniform Mesh Grids. <i>Journal of Computational Physics</i> , 1996, 129, 357-363.	3.8	310
15	Theory of the lattice Boltzmann method: Lattice Boltzmann models for nonideal gases. <i>Physical Review E</i> , 2000, 62, 4982-4996.	2.1	307
16	Asymptotic analysis of the lattice Boltzmann equation. <i>Journal of Computational Physics</i> , 2005, 210, 676-704.	3.8	304
17	Numerics of the lattice Boltzmann method: Effects of collision models on the lattice Boltzmann simulations. <i>Physical Review E</i> , 2011, 83, 056710.	2.1	287
18	Lattice Boltzmann Method for 3-D Flows with Curved Boundary. <i>Journal of Computational Physics</i> , 2000, 161, 680-699.	3.8	278

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19	DNS and LES of decaying isotropic turbulence with and without frame rotation using lattice Boltzmann method. Journal of Computational Physics, 2005, 209, 599-616.	3.8	218
20	Lattice Boltzmann modeling of microchannel flow in slip flow regime. Journal of Computational Physics, 2009, 228, 147-157.	3.8	177
21	Lattice Boltzmann simulations of thermal convective flows in two dimensions. Computers and Mathematics With Applications, 2013, 65, 262-286.	2.7	176
22	Theory of the lattice Boltzmann method: Two-fluid model for binary mixtures. Physical Review E, 2003, 67, 036302.	2.1	165
23	LES of turbulent square jet flow using an MRT lattice Boltzmann model. Computers and Fluids, 2006, 35, 957-965.	2.5	159
24	LARGE-EDDY SIMULATIONS WITH A MULTIPLE-RELAXATION-TIME LBE MODEL. International Journal of Modern Physics B, 2003, 17, 33-39.	2.0	156
25	HYBRID FINITE-DIFFERENCE THERMAL LATTICE BOLTZMANN EQUATION. International Journal of Modern Physics B, 2003, 17, 41-47.	2.0	127
26	Consistent initial conditions for lattice Boltzmann simulations. Computers and Fluids, 2006, 35, 855-862.	2.5	125
27	A comparative study of the LBE and GKS methods for 2D near incompressible laminar flows. Journal of Computational Physics, 2008, 227, 4955-4976.	3.8	120
28	Lattice Boltzmann Equation on a Two-Dimensional Rectangular Grid. Journal of Computational Physics, 2001, 172, 704-717.	3.8	105
29	Intercomparison of 3D pore-scale flow and solute transport simulation methods. Advances in Water Resources, 2016, 95, 176-189.	3.8	105
30	Rotational and orientational behaviour of three-dimensional spheroidal particles in Couette flows. Journal of Fluid Mechanics, 2003, 477, .	3.4	92
31	Lattice Boltzmann simulations of decaying homogeneous isotropic turbulence. Physical Review E, 2005, 71, 016708.	2.1	87
32	Lattice-Boltzmann simulations of the thermally driven 2D square cavity at high Rayleigh numbers. Journal of Computational Physics, 2014, 275, 257-272.	3.8	87
33	Lattice Boltzmann model for binary mixtures. Physical Review E, 2002, 66, 035301.	2.1	77
34	A weighted multiple-relaxation-time lattice Boltzmann method for multiphase flows and its application to partial coalescence cascades. Journal of Computational Physics, 2017, 341, 22-43.	3.8	77
35	A lattice Boltzmann front-tracking method for interface dynamics with surface tension in two dimensions. Journal of Computational Physics, 2007, 226, 1367-1384.	3.8	71
36	Lattice Boltzmann simulations of 2D laminar flows past two tandem cylinders. Journal of Computational Physics, 2009, 228, 983-999.	3.8	65

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37	Numerical study of a vortex ring impacting a flat wall. <i>Journal of Fluid Mechanics</i> , 2010, 660, 430-455.	3.4	65
38	Some progress in the lattice Boltzmann method: Reynolds number enhancement in simulations. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1997, 239, 276-285.	2.6	53
39	SCALAR MIXING AND CHEMICAL REACTION SIMULATIONS USING LATTICE BOLTZMANN METHOD. <i>International Journal of Computational Engineering Science</i> , 2002, 03, 73-87.	0.1	53
40	Evaluation of PowerFLOW for Aerodynamic Applications. <i>Journal of Statistical Physics</i> , 2002, 107, 423-478.	1.2	52
41	Comparison of the lattice Boltzmann and pseudo-spectral methods for decaying turbulence: Low-order statistics. <i>Computers and Fluids</i> , 2010, 39, 568-591.	2.5	52
42	The lattice Boltzmann method for nearly incompressible flows. <i>Journal of Computational Physics</i> , 2021, 431, 109713.	3.8	52
43	Theory of the lattice Boltzmann method: Three-dimensional model for linear viscoelastic fluids. <i>Physical Review E</i> , 2003, 67, 021203.	2.1	46
44	Characteristics of two-dimensional flow around a rotating circular cylinder near a plane wall. <i>Physics of Fluids</i> , 2007, 19, 063601.	4.0	45
45	Comment on "Discrete Boltzmann Equation for Microfluidics": <i>Physical Review Letters</i> , 2004, 92, 139401; author reply 139402.	7.8	42
46	Theory of the Lattice Boltzmann method: Derivation of macroscopic equations via the Maxwell iteration. <i>Physical Review E</i> , 2016, 93, 033310.	2.1	41
47	Analytic Solutions of Linearized Lattice Boltzmann Equation for Simple Flows. <i>Journal of Statistical Physics</i> , 1997, 88, 913-926.	1.2	37
48	A consistent lattice Boltzmann equation with baroclinic coupling for mixtures. <i>Journal of Computational Physics</i> , 2008, 227, 3878-3895.	3.8	36
49	Lateral Migration and Orientation of Elliptical Particles in Poiseuille Flows. <i>Journal of Statistical Physics</i> , 2002, 107, 101-120.	1.2	35
50	Some recent results on discrete velocity models and ramifications for lattice Boltzmann equation. <i>Computer Physics Communications</i> , 2000, 129, 63-74.	7.5	31
51	Symmetry Breaking of Flow in 2D Symmetric Channels: Simulations by Lattice-Boltzmann Method. <i>International Journal of Modern Physics C</i> , 1997, 08, 859-867.	1.7	30
52	Accuracy of the viscous stress in the lattice Boltzmann equation with simple boundary conditions. <i>Physical Review E</i> , 2012, 86, 065701.	2.1	30
53	Gas-kinetic schemes for direct numerical simulations of compressible homogeneous turbulence. <i>Physical Review E</i> , 2009, 80, 046702.	2.1	29
54	Nonexistence of H-theorems for the athermal lattice Boltzmann models with polynomial equilibria. <i>Physical Review E</i> , 2003, 67, 051105.	2.1	28

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55	Theory of the lattice Boltzmann equation: Symmetry properties of discrete velocity sets. <i>Physical Review E</i> , 2008, 77, 036709.	2.1	28
56	Generalized hydrodynamic transport in lattice-gas automata. <i>Physical Review A</i> , 1991, 43, 7097-7100.	2.5	27
57	Finite Volume Lattice Boltzmann Method for Nearly Incompressible Flows on Arbitrary Unstructured Meshes. <i>Communications in Computational Physics</i> , 2016, 20, 301-324.	1.7	27
58	Analysis and accurate numerical solutions of the integral equation derived from the linearized BGKW equation for the steady Couette flow. <i>Journal of Computational Physics</i> , 2016, 316, 416-434.	3.8	24
59	The ordering of critical periodic points in coordinate space by symbolic dynamics. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991, 153, 345-352.	2.1	23
60	Accurate solution and approximations of the linearized BGK equation for steady Couette flow. <i>Computers and Fluids</i> , 2015, 111, 18-32.	2.5	22
61	Nonexistence of H Theorem for Some Lattice Boltzmann Models. <i>Journal of Statistical Physics</i> , 2005, 121, 91-103.	1.2	20
62	An exponential time-integrator scheme for steady and unsteady inviscid flows. <i>Journal of Computational Physics</i> , 2018, 365, 206-225.	3.8	20
63	An implicit block LU-SGS finite-volume lattice-Boltzmann scheme for steady flows on arbitrary unstructured meshes. <i>Journal of Computational Physics</i> , 2016, 327, 503-518.	3.8	19
64	Numerical simulation for a rising bubble interacting with a solid wall: Impact, bounce, and thin film dynamics. <i>Physics of Fluids</i> , 2018, 30, .	4.0	14
65	Gas-Kinetic Scheme for Continuum and Near-Continuum Hypersonic Flows. <i>Journal of Spacecraft and Rockets</i> , 2007, 44, 1232-1240.	1.9	12
66	Brownian motion on a square Lennard-Jones lattice: Trapping, hopping, and diffusion. <i>Physical Review E</i> , 1995, 51, 43-52.	2.1	10
67	Comment on "Heat transfer and fluid flow in microchannels and nanochannels at high Knudsen number using thermal lattice-Boltzmann method". <i>Physical Review E</i> , 2011, 84, 048301; discussion 048302.	2.1	10
68	Lattice Boltzmann equation with Overset method for moving objects in two-dimensional flows. <i>Journal of Computational Physics</i> , 2020, 407, 109223.	3.8	10
69	Stability analysis of a class of globally hyperbolic moment system. <i>Communications in Mathematical Sciences</i> , 2017, 15, 609-633.	1.0	10
70	Connection Between Lattice-Boltzmann Equation and Beam Scheme. <i>International Journal of Modern Physics C</i> , 1998, 09, 1177-1187.	1.7	9
71	Simulation of flow past a rotating circular cylinder near a plane wall. <i>International Journal of Computational Fluid Dynamics</i> , 2006, 20, 391-400.	1.2	9
72	A comparative study of interface-conforming ALE-FE scheme and diffuse interface AMR-LB scheme for interfacial dynamics. <i>Journal of Computational Physics</i> , 2019, 395, 602-619.	3.8	9

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73	The Future of Lattice-Gas and Lattice Boltzmann Methods. , 2000, , 165-187.		9
74	An exactly force-balanced boundary-conforming arbitrary-Lagrangian-Eulerian method for interfacial dynamics. Journal of Computational Physics, 2020, 408, 109237.	3.8	8
75	Brownian motion through a two-dimensional glass: Trapping, hopping, and diffusion. Journal of Chemical Physics, 1996, 105, 598-604.	3.0	7
76	Exact bounds to one-dimensional potential scattering amplitudes through the classical theory of moments. Physical Review A, 1988, 38, 490-493.	2.5	6
77	Spectrally accurate Stokes eigen-modes on isosceles triangles. Computers and Fluids, 2016, 132, 1-9.	2.5	6
78	An accurate curved boundary treatment in the lattice Boltzmann method. , 1999, , .		5
79	Effects of multitemperature nonequilibrium on compressible homogeneous turbulence. Physical Review E, 2010, 81, 046704.	2.1	4
80	Approximation Theory and the Calculation of Energies from Divergent Perturbation Series. Physical Review Letters, 1986, 57, 2241-2243.	7.8	3
81	Mesoscopic methods in engineering and science. International Journal of Computational Fluid Dynamics, 2006, 20, 359-360.	1.2	3
82	Textbook-efficiency multigrid solver for three-dimensional unsteady compressible Navier-Stokes equations. Journal of Computational Physics, 2008, 227, 7160-7177.	3.8	3
83	Parallel spectral-element direction splitting method for incompressible Navier-Stokes equations. Applied Numerical Mathematics, 2014, 84, 66-79.	2.1	3
84	Preface: Mesoscopic Methods in Engineering and Science. Journal of Statistical Physics, 2005, 121, 1-2.	1.2	2
85	A Comparative Study of the LBE and GKS Methods for DNS of Decaying Turbulence. , 2008, , .		2
86	Improve the efficiency of the Cartesian tensor based fast multipole method for Coulomb interaction using the traces. Journal of Computational Physics, 2018, 371, 122-136.	3.8	2
87	Lattice Boltzmann method for 3-D flows with curved boundary. , 2000, , .		1
88	Gas Kinetic Scheme for DNS of Decaying Compressible Turbulence. , 2009, , .		1
89	Reply to "Comment on "Numerics of the lattice Boltzmann method: Effects of collision models on the lattice Boltzmann simulations" Physical Review E, 2012, 86, 048701.	2.1	1
90	Lattice Boltzmann Methods. , 2015, , 774-778.		1

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91	Evaluation of Abramowitz functions in the right half of the complex plane. Journal of Computational Physics, 2020, 405, 109169.	3.8	1
92	Textbook Efficiency Multigrid Solver for Three-Dimensional Unsteady Compressible Navier-Stokes Equations. , 2007, , .		0
93	Mesoscopic methods and their applications to CFD. International Journal of Computational Fluid Dynamics, 2008, 22, 441-442.	1.2	0
94	Comment on "Alternative approach to the solution of the dispersion relation for a generalized lattice Boltzmann equation". Physical Review E, 2008, 78, 068701, discussion 068702.	2.1	0
95	Mesoscopic methods in engineering and science. Computers and Mathematics With Applications, 2009, 58, 819-820.	2.7	0
96	Dedication to Pierre Lallemand on the occasion of his retirement. Computers and Mathematics With Applications, 2009, 58, 821-822.	2.7	0
97	A Comparative Study of the Lattice Boltzmann and Pseudo-Spectral Methods for Decaying Homogeneous Isotropic Turbulence. , 2009, , .		0
98	Decay of Compressible Homogeneous Turbulence with Multi-Temperature Non-Equilibrium. , 2010, , .		0
99	Mesoscopic methods in engineering and science. Computers and Mathematics With Applications, 2011, 61, 3401-3403.	2.7	0
100	Mesoscopic Methods in Engineering and Science. Computers and Fluids, 2017, 155, 1-2.	2.5	0
101	Fast multipole method using Cartesian tensor in beam dynamic simulation. AIP Conference Proceedings, 2017, , .	0.4	0
102	Stokes Eigenmodes on two-dimensional regular polygons. Computers and Fluids, 2021, 228, 105069.	2.5	0
103	Evaluation of Abramowitz functions in the right half of the complex plane. Journal of Computational Physics, 2020, 405, .	3.8	0