Manfred Krafczyk

List of Publications by Year
in descending order

105	6,013	81900	71685
papers	citations	39 h-index	76 g-index

119	119	119	3708
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Multipleâ€“relaxationâ€“time lattice Boltzmann models in three dimensions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2002, 360, 437-451.	3.4	1,494
2	The cumulant lattice Boltzmann equation in three dimensions: Theory and validation. Computers and Mathematics With Applications, 2015, 70, 507-547.	2.7	297
3	TeraFLOP computing on a desktop PC with GPUs for 3D CFD. International Journal of Computational Fluid Dynamics, 2008, 22, 443-456.	1.2	231
4	Forcing term in single-phase and Shan-Chen-type multiphase lattice Boltzmann models. Physical Review E, 2011, 84, 046710.	2.1	170
5	Prediction of capillary hysteresis in a porous material using lattice-Boltzmann methods and comparison to experimental data and a morphological pore network model. Advances in Water Resources, 2008, 31, 1151-1173.	3.8	164
6	An adaptive scheme using hierarchical grids for lattice Boltzmann multi-phase flow simulations. Computers and Fluids, 2006, 35, 820-830.	2.5	159
7	LARGE-EDDY SIMULATIONS WITH A MULTIPLE-RELAXATION-TIME LBE MODEL. International Journal of Modern Physics B, 2003, 17, 33-39.	2.0	156
8	Benchmark computations based on lattice-Boltzmann, finite element and finite volume methods for laminar flows. Computers and Fluids, 2006, 35, 888-897.	2.5	155
9	Comparison of a Lattice-Boltzmann Model, a Full-Morphology Model, and a Pore Network Model for Determining Capillary Pressure-Saturation Relationships. Vadose Zone Journal, 2005, 4, 380-388.	2.2	151
10	Lattice Boltzmann simulations of binary fluid flow through porous media. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2002, 360, 535-545.	3.4	140
11	Analysis of 3D transient blood flow passing through an artificial aortic valve by Latticeâ€“Boltzmann methods. Journal of Biomechanics, 1998, 31, 453-462.	2.1	129
12	Spatial Characteristics of Roughness Sublayer Mean Flow and Turbulence Over a Realistic Urban Surface. Boundary-Layer Meteorology, 2016, 160, 425-452.	2.3	112
13	Intercomparison of 3D pore-scale flow and solute transport simulation methods. Advances in Water Resources, 2016, 95, 176-189.	3.8	105
14	Numerical investigation of double-diffusive (natural) convection in vertical annuluses with opposing temperature and concentration gradients. International Journal of Heat and Fluid Flow, 2010, 31, 217-226.	2.4	101
15	Rotation of spheroidal particles in Couette flows. Journal of Fluid Mechanics, 2012, 692, 369-394.	3.4	98
16	Multi-thread implementations of the lattice Boltzmann method on non-uniform grids for CPUs and GPUs. Computers and Mathematics With Applications, 2011, 61, 3730-3743.	2.7	95
17	Tomographical Imaging and Mathematical Description of Porous Media Used for the Prediction of Fluid Distribution. Vadose Zone Journal, 2006, 5, 80-97.	2.2	85
18	The application of multiscale modelling to the process of development and prevention of stenosis in a stented coronary artery. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 3343-3360.	3.4	84

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19	Extended lattice Boltzmann method for numerical simulation of thermal phase change in two-phase fluid flow. Physical Review E, 2013, 88, 013304.	2.1	82
20	An upwind discretization scheme for the finite volume lattice Boltzmann method. Computers and Fluids, 2006, 35, 814-819.	2.5	74
21	Free surface flow simulations on GPGPUs using the LBM. Computers and Mathematics With Applications, 2011, 61, 3549-3563.	2.7	74
22	Lattice Boltzmann model for incompressible axisymmetric flows. Physical Review E, 2008, 78, 046703.	2.1	71
23	A Complex Automata approach for in-stent restenosis: Two-dimensional multiscale modelling and simulations. Journal of Computational Science, 2011, 2, 9-17.	2.9	70
24	Two-dimensional simulation of fluidâ€“structure interaction using lattice-Boltzmann methods. Computers and Structures, 2001, 79, 2031-2037.	4.4	67
25	Entropy generation in turbulent natural convection due to internal heat generation. International Journal of Thermal Sciences, 2009, 48, 1978-1987.	4.9	61
26	Fixedâ€grid fluidâ€“structure interaction in two dimensions based on a partitioned Lattice Boltzmann and pâ€FEM approach. International Journal for Numerical Methods in Engineering, 2009, 79, 817-845.	2.8	60
27	A lattice Boltzmann approach for free-surface-flow simulations on non-uniform block-structured grids. Computers and Mathematics With Applications, 2010, 59, 2215-2235.	2.7	59
28	Consistent simulation of droplet evaporation based on the phase-field multiphase lattice Boltzmann method. Physical Review E, 2014, 90, 033305.	2.1	59
29	A LB-BASED APPROACH FOR ADAPTIVE FLOW SIMULATIONS. International Journal of Modern Physics B, 2003, 17, 109-112.	2.0	58
30	Extension of a hybrid thermal LBE scheme for large-eddy simulations of turbulent convective flows. Computers and Fluids, 2006, 35, 863-871.	2.5	57
31	From dissipative particle dynamics scales to physical scales: a coarse-graining study for water flow in microchannel. Microfluidics and Nanofluidics, 2009, 7, 467-477.	2.2	56
32	Impact of geometrical properties on permeability and fluid phase distribution in porous media. Advances in Water Resources, 2008, 31, 1188-1204.	3.8	53
33	The lattice Boltzmann method for nearly incompressible flows. Journal of Computational Physics, 2021, 431, 109713.	3.8	52
34	Implicit discretization and nonuniform mesh refinement approaches for FD discretizations of LBGK Models. International Journal of Modern Physics C, 1998, 09, 1143-1157.	1.7	51
35	Simulation of buoyancy-driven flows in a vertical cylinder using a simple lattice Boltzmann model. Physical Review E, 2009, 79, 016704.	2.1	51
36	Lattice-Boltzmann simulations in reconstructed parametrized porous media. International Journal of Computational Fluid Dynamics, 2006, 20, 369-377.	1.2	49

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37	Turbulent jet computations based on MRT and Cascaded Lattice Boltzmann models. Computers and Mathematics With Applications, 2013, 65, 1956-1966.	2.7	49
38	Towards real-time simulation of turbulent air flow over a resolved urban canopy using the cumulant lattice Boltzmann method on a GPGPU. Journal of Wind Engineering and Industrial Aerodynamics, 2019, 189, 151-162.	3.9	48
39	A Multigrid-Solver for the Discrete Boltzmann Equation. Journal of Statistical Physics, 2002, 107, 573-591.	1.2	41
40	On enhanced non-linear free surface flow simulations with a hybrid LBMâ€“VOF model. Computers and Mathematics With Applications, 2013, 65, 211-229.	2.7	39
41	A new method for the numerical solution of vorticityâ€“streamfunction formulations. Computer Methods in Applied Mechanics and Engineering, 2008, 198, 367-376.	6.6	37
42	Lattice Boltzmann large eddy simulation of subcritical flows around a sphere on non-uniform grids. Computers and Mathematics With Applications, 2011, 61, 3475-3484.	2.7	37
43	Efficient GPGPU implementation of a lattice Boltzmann model for multiphase flows with high density ratios. Computers and Fluids, 2014, 93, 1-17.	2.5	33
44	Hybrid Lattice Boltzmann-finite difference model for low mach number combustion simulation. Combustion and Flame, 2019, 209, 394-404.	5.2	31
45	Multiscale simulation of turbulent flow interacting with porous media based on a massively parallel implementation of the cumulant lattice Boltzmann method. Computers and Fluids, 2019, 193, 103733.	2.5	31
46	Indoor air flow analysis based on lattice Boltzmann methods. Energy and Buildings, 2002, 34, 941-949.	6.7	30
47	Second order interpolation of the flow field in the lattice Boltzmann method. Computers and Mathematics With Applications, 2009, 58, 898-902.	2.7	29
48	Discrete adjoint sensitivity analysis for fluid flow topology optimization based on the generalized lattice Boltzmann method. Computers and Mathematics With Applications, 2014, 68, 1374-1392.	2.7	29
49	Near-wall treatment for the simulation of turbulent flow by the cumulant lattice Boltzmann method. Computers and Mathematics With Applications, 2020, 79, 195-212.	2.7	29
50	Advectionâ€“diffusion lattice Boltzmann scheme for hierarchical grids. Computers and Mathematics With Applications, 2008, 55, 1576-1584.	2.7	28
51	Simulation of micro aggregate breakage in turbulent flows by the cumulant lattice Boltzmann method. Computers and Fluids, 2016, 140, 222-231.	2.5	28
52	Two approaches to modeling the initiation and development of rills in a manâ€made catchment. Water Resources Research, 2012, 48, .	4.2	26
53	Simple lattice Boltzmann subgrid-scale model for convectional flows with high Rayleigh numbers within an enclosed circular annular cavity. Physical Review E, 2009, 80, 026702.	2.1	24
54	Numerical simulation of unsteady flows in Czochralski crystal growth by lattice Boltzmann methods. International Journal of Heat and Mass Transfer, 2014, 74, 156-163.	4.8	24

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55	An Agent-Based Coupling Platform for Complex Automata. Lecture Notes in Computer Science, 2008, , 227-233.	1.3	22
56	A parallelisation concept for a multi-physics lattice Boltzmann prototype based on hierarchical grids. Progress in Computational Fluid Dynamics, 2008, 8, 168.	0.2	21
57	Lattice-Boltzmann Method on Quadtree-Type Grids for Fluid-Structure Interaction. , 2006, , 270-293.		19
58	Poreâ€scale determination of parameters for macroscale modeling of evaporation processes in porous media. Water Resources Research, 2011, 47, .	4.2	18
59	Under-resolved and large eddy simulations of a decaying Taylorâ€“Green vortex with the cumulant lattice Boltzmann method. Theoretical and Computational Fluid Dynamics, 2021, 35, 169-208.	2.2	18
60	Numerical simulation of fluid flow and heat transfer inside a rotating disk-cylinder configuration by a lattice Boltzmann model. Physical Review E, 2009, 80, 016702.	2.1	17
61	A multifunction and bidirectional valve-less rectification micropump based on bifurcation geometry. Microfluidics and Nanofluidics, 2010, 9, 267-280.	2.2	17
62	Large Eddy Simulation of liquid sheet breakup using a two-phase lattice Boltzmann method. Computers and Fluids, 2018, 160, 93-107.	2.5	17
63	The effect of the microfluidic diodicity on the efficiency of valve-less rectification micropumps using Lattice Boltzmann Method. Microsystem Technologies, 2009, 15, 1379-1387.	2.0	16
64	Distributed cumulant lattice Boltzmann simulation of the dispersion process of ceramic agglomerates. Journal of Computational Methods in Sciences and Engineering, 2016, 16, 231-252.	0.2	16
65	Simulation of rotating objects in fluids with the cumulant lattice Boltzmann model on sliding meshes. Computers and Mathematics With Applications, 2020, 79, 3-16.	2.7	16
66	Applying Modern Soft- and Hardware Technologies for Computational Steering Approaches in Computational Fluid Dynamics. , 2007, , .		14
67	Modelling subsurface drainage pathways in an artificial catchment. Physics and Chemistry of the Earth, 2011, 36, 101-112.	2.9	14
68	Fast kdâ€treeâ€based hierarchical radiosity for radiative heat transport problems. International Journal for Numerical Methods in Engineering, 2011, 86, 1082-1100.	2.8	14
69	Discretization of the Boltzmann equation in velocity space using a Galerkin approach. Computer Physics Communications, 2000, 129, 91-99.	7.5	13
70	Implicit Large Eddy Simulation of Flow in a Micro-Orifice with the Cumulant Lattice Boltzmann Method. Computation, 2017, 5, 23.	2.0	13
71	Highly interactive computational steering for coupled 3D flow problems utilizing multiple GPUs. Computing and Visualization in Science, 2010, 13, 299-314.	1.2	12
72	Towards a Complex Automata Multiscale Model of In-Stent Restenosis. Lecture Notes in Computer Science, 2009, , 705-714.	1.3	11

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73	Validation of a two-dimensional gas-kinetic scheme for compressible natural convection on structured and unstructured meshes. International Journal of Thermal Sciences, 2019, 136, 299-315.	4.9	9
74	VALIDATION OF A VRANS-MODEL FOR TURBULENT FLOW OVER A POROUS FLAT PLATE BY CUMULANT LATTICE BOLTZMANN DNS/LES AND EXPERIMENTS. Journal of Porous Media, 2018, 21, 471-482.	1.9	8
75	DNS/LES Studies of Turbulent Flows Based on the Cumulant Lattice Boltzmann Approach. , 2015, , 519-531.		7
76	An explicit gas kinetic scheme algorithm on non-uniform Cartesian meshes for GPGPU architectures. Computers and Fluids, 2019, 186, 58-73.	2.5	6
77	A parallelized Lattice-Gas solver for transient Navier-Stokes-flow: Implementation and simulation results. International Journal for Numerical Methods in Engineering, 1995, 38, 1243-1258.	2.8	5
78	Lattice-gas simulations of two-phase flow in porous media. Communications in Numerical Methods in Engineering, 1998, 14, 709-717.	1.3	5
79	From a Product Model to Visualization: Simulation of Indoor Flows with Lattice-Boltzmann Methods. Computer-Aided Civil and Infrastructure Engineering, 2004, 19, 411-420.	9.8	5
80	Simulation of Fire with a Gas Kinetic Scheme on Distributed GPGPU Architectures. Computation, 2020, 8, 50.	2.0	4
81	Mesoscopic methods in engineering and science. International Journal of Computational Fluid Dynamics, 2006, 20, 359-360.	1.2	3
82	Fluid Streaming in Micro/Minibifurcating Networks. Journal of Fluids Engineering, Transactions of the ASME, 2009, 131, .	1.5	3
83	A Parallel Coupled Lattice Boltzmann-Volume of Fluid Framework for Modeling Porous Media Evolution. Materials, 2021, 14, 2510.	2.9	3
84	Preface: Mesoscopic Methods in Engineering and Science. Journal of Statistical Physics, 2005, 121, 1-2.	1.2	2
85	Perception of Compliant Environments through a Visual-Haptic Human System Interface. , 2007, , .		2
86	Oscillatory Streaming Flow Based Mini/Microheat Pipe Technology. Journal of Heat Transfer, 2010, 132, .	2.1	2
87	Comment on â€œLattice Boltzmann method for simulations of liquid-vapor thermal flowsâ€• Physical Review E, 2011, 84, 038701; discussion 038702.	2.1	2
88	Numerische Simulation von GebÃudebelÃ¼ftung mit einem Lattice Boltzmann-LES-Modell. Bauphysik, 2013, 35, 2-7.	0.5	2
89	A HIERARCHICAL APPROACH TO DETERMINING ACOUSTIC ABSORPTION PROPERTIES OF POROUS MEDIA COMBINING PORE-RESOLVED AND MACROSCOPIC MODELS. Journal of Porous Media, 2018, 21, 83-100.	1.9	2
90	Parallel Free-Surface and Multi-Phase Simulations in Complex Geometries Using Lattice Boltzmann Methods. , 2009, , 397-410.		2

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91	A Valve-Less Rectification Minipump Based on Dynamic Rectifying Geometries. , 2010, , .		1
92	Towards Distributed Multiscale Simulation of Biological Processes. , 2011, , .		1
93	A Direct Effective Viscosity Approach for Modeling and Simulating Bingham Fluids with the Cumulant Lattice Boltzmann Method. Open Journal of Fluid Dynamics, 2021, 11, 34-54.	0.5	1
94	Massively Parallel Lattice Boltzmann Simulations of Turbulent Flow over and Inside Porous Media. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2021, , 513-527.	0.3	1
95	Mesoscopic methods and their applications to CFD. International Journal of Computational Fluid Dynamics, 2008, 22, 441-442.	1.2	0
96	Mesoscopic methods in engineering and science. Computers and Mathematics With Applications, 2009, 58, 819-820.	2.7	0
97	Dedication to Pierre Lallemand on the occasion of his retirement. Computers and Mathematics With Applications, 2009, 58, 821-822.	2.7	0
98	The Effect of Material Properties on the Efficiency of Valve-Less Rectification Micropumps. , 2010, , .		0
99	A Multifunctional Microfluidic Device Based on Bifurcation Geometry. , 2010, , .		0
100	Parallel Lattice-Boltzmann Simulation of Transitional Flow on Non-uniform Grids. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2011, , 283-295.	0.3	0
101	Efficient Simulation of Transient Heat Transfer Problems in Civil Engineering. , 0, , .		0
102	Mesoscopic methods in engineering and science. Computers and Mathematics With Applications, 2011, 61, 3401-3403.	2.7	0
103	Mesoscopic Methods in Engineering and Science. Computers and Fluids, 2017, 155, 1-2.	2.5	0
104	COAST: Modelling Restenosis and Stent Based Therapies. IFMBE Proceedings, 2009, , 319-322.	0.3	0
105	PS5-4 CFD analyses for the flow in cancellous bone with LBM(PS5: Poster Short Presentation V,Poster) Tj ETQq1 1 0.784314 rgBT /Ov Technology in Biomechanics, 2015, 2015.8, 302.	0.0	0