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	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
2	The lattice Boltzmann method for nearly incompressible flows. Journal of Computational Physics, 2021, 431, 109713.	3.8	52
3	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
4	A Parallel Coupled Lattice Boltzmann-Volume of Fluid Framework for Modeling Porous Media Evolution. Materials, 2021, 14, 2510.	2.9	3
5	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
6	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
7	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
8	Simulation of Fire with a Gas Kinetic Scheme on Distributed GPGPU Architectures. Computation, 2020, 8, 50.	2.0	4
9	Hybrid Lattice Boltzmann-finite difference model for low mach number combustion simulation. Combustion and Flame, 2019, 209, 394-404.	5.2	31
10	An explicit gas kinetic scheme algorithm on non-uniform Cartesian meshes for GPGPU architectures. Computers and Fluids, 2019, 186, 58-73.	2.5	6
11	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
12	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
13	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
14	Large Eddy Simulation of liquid sheet breakup using a two-phase lattice Boltzmann method. Computers and Fluids, 2018, 160, 93-107.	2.5	17
15	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
16	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
17	Mesoscopic Methods in Engineering and Science. Computers and Fluids, 2017, 155, 1-2.	2.5	0
18	Implicit Large Eddy Simulation of Flow in a Micro-Orifice with the Cumulant Lattice Boltzmann Method. Computation, 2017, 5, 23.	2.0	13

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19	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
20	Spatial Characteristics of Roughness Sublayer Mean Flow and Turbulence Over a Realistic Urban Surface. Boundary-Layer Meteorology, 2016, 160, 425-452.	2.3	112
21	Simulation of micro aggregate breakage in turbulent flows by the cumulant lattice Boltzmann method. Computers and Fluids, 2016, 140, 222-231.	2.5	28
22	Intercomparison of 3D pore-scale flow and solute transport simulation methods. Advances in Water Resources, 2016, 95, 176-189.	3.8	105
23	The cumulant lattice Boltzmann equation in three dimensions: Theory and validation. Computers and Mathematics With Applications, 2015, 70, 507-547.	2.7	297
24	DNS/LES Studies of Turbulent Flows Based on the Cumulant Lattice Boltzmann Approach. , 2015, , 519-531.		7
25	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
26	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
27	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
28	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
29	Consistent simulation of droplet evaporation based on the phase-field multiphase lattice Boltzmann method. Physical Review E, 2014, 90, 033305.	2.1	59
30	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
31	Numerische Simulation von GebÃudebelÃ¼ftung mit einem Lattice Boltzmann-LES-Modell. Bauphysik, 2013, 35, 2-7.	0.5	2
32	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
33	Turbulent jet computations based on MRT and Cascaded Lattice Boltzmann models. Computers and Mathematics With Applications, 2013, 65, 1956-1966.	2.7	49
34	Two approaches to modeling the initiation and development of rills in a manâ€made catchment. Water Resources Research, 2012, 48, .	4.2	26
35	Rotation of spheroidal particles in Couette flows. Journal of Fluid Mechanics, 2012, 692, 369-394.	3.4	98
36	Towards Distributed Multiscale Simulation of Biological Processes. , 2011, , .		1

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37	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
38	Forcing term in single-phase and Shan-Chen-type multiphase lattice Boltzmann models. Physical Review E, 2011, 84, 046710.	2.1	170
39	Poreâ€scale determination of parameters for macroscale modeling of evaporation processes in porous media. Water Resources Research, 2011, 47, .	4.2	18
40	Modelling subsurface drainage pathways in an artificial catchment. Physics and Chemistry of the Earth, 2011, 36, 101-112.	2.9	14
41	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
42	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
43	Free surface flow simulations on GPGPUs using the LBM. Computers and Mathematics With Applications, 2011, 61, 3549-3563.	2.7	74
44	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
45	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
46	Mesoscopic methods in engineering and science. Computers and Mathematics With Applications, 2011, 61, 3401-3403.	2.7	0
47	Comment on â€œLattice Boltzmann method for simulations of liquid-vapor thermal flowsâ€• Physical Review E, 2011, 84, 038701; discussion 038702.	2.1	2
48	A Valve-Less Rectification Minipump Based on Dynamic Rectifying Geometries. , 2010, , .		1
49	The Effect of Material Properties on the Efficiency of Valve-Less Rectification Micropumps. , 2010, , .		0
50	A Multifunctional Microfluidic Device Based on Bifurcation Geometry. , 2010, , .		0
51	Highly interactive computational steering for coupled 3D flow problems utilizing multiple GPUs. Computing and Visualization in Science, 2010, 13, 299-314.	1.2	12
52	A multifunction and bidirectional valve-less rectification micropump based on bifurcation geometry. Microfluidics and Nanofluidics, 2010, 9, 267-280.	2.2	17
53	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
54	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

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55	Oscillatory Streaming Flow Based Mini/Microheat Pipe Technology. Journal of Heat Transfer, 2010, 132, .	2.1	2
56	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
57	Simulation of buoyancy-driven flows in a vertical cylinder using a simple lattice Boltzmann model. Physical Review E, 2009, 79, 016704.	2.1	51
58	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
59	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
60	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
61	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
62	Mesoscopic methods in engineering and science. Computers and Mathematics With Applications, 2009, 58, 819-820.	2.7	0
63	Dedication to Pierre Lallemand on the occasion of his retirement. Computers and Mathematics With Applications, 2009, 58, 821-822.	2.7	0
64	Entropy generation in turbulent natural convection due to internal heat generation. International Journal of Thermal Sciences, 2009, 48, 1978-1987.	4.9	61
65	Second order interpolation of the flow field in the lattice Boltzmann method. Computers and Mathematics With Applications, 2009, 58, 898-902.	2.7	29
66	Fluid Streaming in Micro/Minibifurcating Networks. Journal of Fluids Engineering, Transactions of the ASME, 2009, 131, .	1.5	3
67	Towards a Complex Automata Multiscale Model of In-Stent Restenosis. Lecture Notes in Computer Science, 2009, , 705-714.	1.3	11
68	COAST: Modelling Restenosis and Stent Based Therapies. IFMBE Proceedings, 2009, , 319-322.	0.3	0
69	Parallel Free-Surface and Multi-Phase Simulations in Complex Geometries Using Lattice Boltzmann Methods. , 2009, , 397-410.		2
70	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
71	Advectionâ€“diffusion lattice Boltzmann scheme for hierarchical grids. Computers and Mathematics With Applications, 2008, 55, 1576-1584.	2.7	28
72	Impact of geometrical properties on permeability and fluid phase distribution in porous media. Advances in Water Resources, 2008, 31, 1188-1204.	3.8	53

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73	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
74	TeraFLOP computing on a desktop PC with GPUs for 3D CFD. International Journal of Computational Fluid Dynamics, 2008, 22, 443-456.	1.2	231
75	Lattice Boltzmann model for incompressible axisymmetric flows. Physical Review E, 2008, 78, 046703.	2.1	71
76	Mesoscopic methods and their applications to CFD. International Journal of Computational Fluid Dynamics, 2008, 22, 441-442.	1.2	0
77	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
78	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
79	An Agent-Based Coupling Platform for Complex Automata. Lecture Notes in Computer Science, 2008, , 227-233.	1.3	22
80	Perception of Compliant Environments through a Visual-Haptic Human System Interface. , 2007, , .		2
81	Applying Modern Soft- and Hardware Technologies for Computational Steering Approaches in Computational Fluid Dynamics. , 2007, , .		14
82	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
83	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
84	An upwind discretization scheme for the finite volume lattice Boltzmann method. Computers and Fluids, 2006, 35, 814-819.	2.5	74
85	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
86	An adaptive scheme using hierarchical grids for lattice Boltzmann multi-phase flow simulations. Computers and Fluids, 2006, 35, 820-830.	2.5	159
87	Mesoscopic methods in engineering and science. International Journal of Computational Fluid Dynamics, 2006, 20, 359-360.	1.2	3
88	Lattice-Boltzmann simulations in reconstructed parametrized porous media. International Journal of Computational Fluid Dynamics, 2006, 20, 369-377.	1.2	49
89	Lattice-Boltzmann Method on Quadtree-Type Grids for Fluid-Structure Interaction. , 2006, , 270-293.		19
90	Preface: Mesoscopic Methods in Engineering and Science. Journal of Statistical Physics, 2005, 121, 1-2.	1.2	2

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91	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
92	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
93	A LB-BASED APPROACH FOR ADAPTIVE FLOW SIMULATIONS. International Journal of Modern Physics B, 2003, 17, 109-112.	2.0	58
94	LARGE-EDDY SIMULATIONS WITH A MULTIPLE-RELAXATION-TIME LBE MODEL. International Journal of Modern Physics B, 2003, 17, 33-39.	2.0	156
95	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
96	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
97	Indoor air flow analysis based on lattice Boltzmann methods. Energy and Buildings, 2002, 34, 941-949.	6.7	30
98	A Multigrid-Solver for the Discrete Boltzmann Equation. Journal of Statistical Physics, 2002, 107, 573-591.	1.2	41
99	Two-dimensional simulation of fluidâ€“structure interaction using lattice-Boltzmann methods. Computers and Structures, 2001, 79, 2031-2037.	4.4	67
100	Discretization of the Boltzmann equation in velocity space using a Galerkin approach. Computer Physics Communications, 2000, 129, 91-99.	7.5	13
101	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
102	Lattice-gas simulations of two-phase flow in porous media. Communications in Numerical Methods in Engineering, 1998, 14, 709-717.	1.3	5
103	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
104	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
105	Efficient Simulation of Transient Heat Transfer Problems in Civil Engineering. , 0, , .		0