Bastien Chopard

List of Publications by Year
in descending order

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88 papers	3,110 citations	279701 23 h-index	223716 46 g-index
92 all docs	92 docs citations	92 times ranked	2541 citing authors

#	Article	IF	Citations
1	Straight velocity boundaries in the lattice Boltzmann method. Physical Review E, 2008, 77, 056703.	0.8	246
2	Lattice Boltzmann model for melting with natural convection. International Journal of Heat and Fluid Flow, 2008, 29, 1469-1480.	1.1	237
3	Palabos: Parallel Lattice Boltzmann Solver. Computers and Mathematics With Applications, 2021, 81, 334-350.	1.4	193
4	Theory and applications of an alternative lattice Boltzmann grid refinement algorithm. Physical Review E, 2003, 67, 066707.	0.8	134
5	CELLULAR AUTOMATA AND LATTICE BOLTZMANN TECHNIQUES: AN APPROACH TO MODEL AND SIMULATE COMPLEX SYSTEMS. International Journal of Modeling, Simulation, and Scientific Computing, 2002, 05, 103-246.	0.9	126
6	Generalized three-dimensional lattice Boltzmann color-gradient method for immiscible two-phase pore-scale imbibition and drainage in porous media. Physical Review E, 2017, 95, 033306.	0.8	115
7	Lattice Boltzmann Simulations of Blood Flow: Non-Newtonian Rheology and Clotting Processes. Journal of Statistical Physics, 2005, 121, 209-221.	0.5	95
8	Comprehensive comparison of collision models in the lattice Boltzmann framework: Theoretical investigations. Physical Review E, 2019, 100, 033305.	0.8	77
9	Buckling of an Epithelium Growing under Spherical Confinement. Developmental Cell, 2020, 54, 655-668.e6.	3.1	75
10	Multiscale modelling and simulation: a position paper. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130377.	1.6	64
11	Characterization of flow reduction properties in an aneurysm due to a stent. Physical Review E, 2003, 68, 021918.	0.8	59
12	Foundations of distributed multiscale computing: Formalization, specification, and analysis. Journal of Parallel and Distributed Computing, 2013, 73, 465-483.	2.7	59
13	Parallel performance of an IB-LBM suspension simulation framework. Journal of Computational Science, 2015, 9, 45-50.	1.5	54
14	Toward a Complex Automata Formalism for MultiScale Modeling. International Journal for Multiscale Computational Engineering, 2007, 5, 491-502.	0.8	44
15	MML: towards a Multiscale Modeling Language. Procedia Computer Science, 2010, 1, 819-826.	1.2	40
16	A lattice Boltzmann model for coupled diffusion. Journal of Computational Physics, 2010, 229, 7956-7976.	1.9	40
17	Bridging the computational gap between mesoscopic and continuum modeling of red blood cells for fully resolved blood flow. Journal of Computational Physics, 2019, 398, 108905.	1.9	40
18	MULTIPARTICLE LATTICE GAS AUTOMATA FOR REACTION DIFFUSION SYSTEMS. International Journal of Modern Physics C, 1994, 05, 47-63.	0.8	38

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19	Lattice-Gas Cellular Automaton Models for Biology: From Fluids to Cells. Acta Biotheoretica, 2010, 58, 329-340.	0.7	35
20	Determination of a shear rate threshold for thrombus formation in intracranial aneurysms. Journal of NeuroInterventional Surgery, 2016, 8, 853-858.	2.0	32
21	Multiscale modelling: approaches and challenges. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130390.	1.6	31
22	A hybrid HPC/cloud distributed infrastructure: Coupling EC2 cloud resources with HPC clusters to run large tightly coupled multiscale applications. Future Generation Computer Systems, 2015, 42, 11-21.	4.9	30
23	Optimization of Strut Placement in Flow Diverter Stents for Four Different Aneurysm Configurations. Journal of Biomechanical Engineering, 2014, 136, 061006.	0.6	26
24	Virtual wave flume and Oscillating Water Column modeled by lattice Boltzmann method and comparison with experimental data. International Journal of Marine Energy, 2016, 14, 41-51.	1.8	22
25	The mechanical properties of a cell-based numerical model of epithelium. Soft Matter, 2016, 12, 4745-4754.	1.2	20
26	Three-dimensional lattice Boltzmann method benchmarks between color-gradient and pseudo-potential immiscible multi-component models. International Journal of Modern Physics C, 2017, 28, 1750085.	0.8	19
27	Lattice Boltzmann simulation of dense rigid spherical particle suspensions using immersed boundary method. Computers and Fluids, 2018, 166, 286-294.	1.3	19
28	Quantitative analysis of platelets aggregates in 3D by digital holographic microscopy. Biomedical Optics Express, 2015, 6, 3556.	1.5	18
29	Multiscale computing for science and engineering in the era of exascale performance. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180144.	1.6	18
30	Digital blood in massively parallel CPU/GPU systems for the study of platelet transport. Interface Focus, 2021, 11, 20190116.	1.5	18
31	Optimization of flow diverters for cerebral aneurysms. Journal of Computational Science, 2012, 3, 1-7.	1.5	17
32	Distributed Multiscale Computations Using the MAPPER Framework. Procedia Computer Science, 2013, 18, 1106-1115.	1.2	17
33	Two waves of anisotropic growth generate enlarged follicles in the spiny mouse. EvoDevo, 2014, 5, 33.	1.3	16
34	A physical description of the adhesion and aggregation of platelets. Royal Society Open Science, 2017, 4, 170219.	1.1	15
35	Redistribution of TPA Fluxes in the Presence of PAI-1 Regulates Spatial Thrombolysis. Biophysical Journal, 2020, 119, 638-651.	0.2	14
36	An agent-based model for the bibliometric h-index. European Physical Journal B, 2013, 86, 1.	0.6	13

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37	A LATTICE BOLTZMANN SIMULATION OF THE RHONE RIVER. International Journal of Modern Physics C, 2013, 24, 1340008.	0.8	13
38	Towards the patient-specific design of flow diverters made from helix-like wires: an optimization study. BioMedical Engineering OnLine, 2016, 15, 159.	1.3	13
39	MUSCLE-HPC: A new high performance API to couple multiscale parallel applications. Future Generation Computer Systems, 2017, 67, 72-82.	4.9	13
40	PARALLEL AND DISTRIBUTED EVOLUTIONARY COMPUTATION FOR FINANCIAL APPLICATIONS. International Journal of Parallel, Emergent and Distributed Systems, 2000, 15, 15-36.	0.4	12
41	Multiscale modeling: recent progress and open questions. Multiscale and Multidisciplinary Modeling, Experiments and Design, 2018, 1, 57-68.	0.9	12
42	Continuum model for flow diverting stents in 3D patient-specific simulation of intracranial aneurysms. Journal of Computational Science, 2019, 38, 101045.	1.5	12
43	A Principled Approach to Distributed Multiscale Computing, from Formalization to Execution. , 2011, , .		11
44	Enhanced single-node lattice Boltzmann boundary condition for fluid flows. Physical Review E, 2021, 103, 053308.	0.8	11
45	PalaCell2D: A framework for detailed tissue morphogenesis. Journal of Computational Science, 2021, 53, 101353.	1.5	11
46	Lattice Boltzmann Solid Particles in a Lattice Boltzmann Fluid. Journal of Statistical Physics, 2002, 107, 23-37.	0.5	10
47	Influence of cell mechanics and proliferation on the buckling of simulated tissues using a vertex model. Natural Computing, 2018, 17, 511-519.	1.8	10
48	SIMULATING TIME HARMONIC FLOWS WITH THE REGULARIZED L-BGK METHOD. International Journal of Modern Physics C, 2007, 18, 661-666.	0.8	9
49	Asymptotic analysis of Complex Automata models for reactionâ€“diffusion systems. Applied Numerical Mathematics, 2009, 59, 2023-2034.	1.2	9
50	A Multiscale Approach for the Coupled Simulation of Blood Flow and Thrombus Formation in Intracranial Aneurysms. Procedia Computer Science, 2013, 18, 1006-1015.	1.2	9
51	Motifs tree: a new method for predicting post-translational modifications. Bioinformatics, 2014, 30, 1974-1982.	1.8	8
52	A Framework for Multiscale and Multiscience Modeling and Numerical Simulations. Lecture Notes in Computer Science, 2011, , 2-8.	1.0	8
53	Turbulence Effects on Kinetic Equations. Journal of Scientific Computing, 2006, 28, 459-466.	1.1	7
54	Spherization of red blood cells and platelet margination in COPD patients. Annals of the New York Academy of Sciences, 2021, 1485, 71-82.	1.8	7

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55	Maximum Entropy Rate Reconstruction of Markov Dynamics. Entropy, 2015, 17, 3738-3751.	1.1	6
56	Kinetic Theory beyond the Stosszahlansatz. Entropy, 2017, 19, 381.	1.1	6
57	The application of the screen-model based approach for stents in cerebral aneurysms. Computers and Fluids, 2018, 172, 651-660.	1.3	6
58	Model for pressure drop and flow deflection in the numerical simulation of stents in aneurysms. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2949.	1.0	6
59	Information Processing Features Can Detect Behavioral Regimes of Dynamical Systems. Complexity, 2018, 2018, 1-16.	0.9	6
60	Modelling Settling-Driven Gravitational Instabilities at the Base of Volcanic Clouds Using the Lattice Boltzmann Method. Frontiers in Earth Science, 2021, 9, .	0.8	6
61	A Branch-and-Bound algorithm using multiple GPU-based LP solvers. , 2013, , .		5
62	Multi-scale representation of high frequency market liquidity. Algorithmic Finance, 2016, 5, 3-19.	0.3	5
63	Parallel simulation of particle transport in an advection field applied to volcanic explosive eruptions. Computers and Geosciences, 2016, 89, 174-185.	2.0	5
64	Anatomy and Physiology of Multiscale Modeling and Simulation in Systems Medicine. Methods in Molecular Biology, 2016, 1386, 375-404.	0.4	5
65	Parameter Estimation of Platelets Deposition: Approximate Bayesian Computation With High Performance Computing. Frontiers in Physiology, 2018, 9, 1128.	1.3	5
66	Distance-learning For Approximate Bayesian Computation To Model a Volcanic Eruption. Sankhya B, 2021, 83, 288-317.	0.4	4
67	Thrombolysis: Observations and numerical models. Journal of Biomechanics, 2022, 132, 110902.	0.9	4
68	VLADYMIRâ€"a C++ matrix library for data-parallel applications. Future Generation Computer Systems, 2004, 20, 1023-1039.	4.9	3
69	A Lattice Boltzmann Model to Study Sedimentation Phenomena in Irrigation Canals. Communications in Computational Physics, 2013, 13, 880-899.	0.7	3
70	A Truncation Scheme for the BBGKY2 Equation. Entropy, 2015, 17, 7522-7529.	1.1	3
71	Uncovering Discrete Non-Linear Dependence with Information Theory. Entropy, 2015, 17, 2606-2623.	1.1	3
72	Does the gravity orientation of saccular aneurysms influence hemodynamics? An experimental study with and without flow diverter stent. Journal of Biomechanics, 2016, 49, 3808-3814.	0.9	3

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73	Investigating the two regimes of fibrin clot lysis: an experimental and computational approach. Biophysical Journal, 2021, 120, 4091-4106.	0.2	3
74	Personalized pathology test for Cardio-vascular disease: Approximate Bayesian computation with discriminative summary statistics learning. PLoS Computational Biology, 2022, 18, e1009910.	1.5	3
75	A SIMPLE ALGORITHM TO ENFORCE DIRICHLET BOUNDARY CONDITIONS IN COMPLEX GEOMETRIES. International Journal of Modern Physics C, 2011, 22, 1093-1105.	0.8	2
76	Three-dimensional analysis of blood platelet spreading using digital holographic microscopy: a statistical study of the differential effect of coatings in healthy volunteers and dialyzed patients. Biomedical Optics Express, 2022, 13, 502.	1.5	2
77	Towards Distributed Multiscale Simulation of Biological Processes. , 2011, , .		1
78	Comparison of Two Advection-Diffusion Methods for Tephra Transport in Volcanic Eruptions. Communications in Computational Physics, 2011, 9, 1323-1334.	0.7	1
79	On the Benefits of Anticipating Load Imbalance for Performance Optimization of Parallel Applications. , 2019, , .		1
80	Implementation of lattice Boltzmann free-surface and shallow water models and their two-way coupling. MethodsX, 2021, 8, 101338.	0.7	1
81	Toward informed partitioning for load balancing: A proof-of-concept. Journal of Computational Science, 2022, 61, 101644.	1.5	1
82	Optimal load balancing and assessment of existing load balancing criteria. Journal of Parallel and Distributed Computing, 2022, 169, 211-225.	2.7	1
83	PARALLEL COMPUTING AT THE UNIVERSITY OF GENEVA. International Journal of Modern Physics C, 1993, 04, 207-208.	0.8	0
84	STUDY OF THE A + B â†’ C REACTION-DIFFUSION PROCESS. International Journal of Modern Physics C, 1993, 04, 209-215.	0.8	0
85	Boundary port variables and uniform controllability: the shallow water example. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 103-108.	0.4	0
86	Impact of immigrants on a multi-agent economical system. PLoS ONE, 2018, 13, e0197509.	1.1	0
87	Assessing complexity in cellular automata using information theory. International Journal of Parallel, Emergent and Distributed Systems, 2019, 34, 142-160.	0.7	0
88	Simulation of 1-D wave propagation by Meshless Lattice Boltzmann method based on Extended Boussinesq equations. Coastal Engineering Journal, 2022, 64, 285-301.	0.7	0