

Zhenning Cai

List of Publications by Year in descending order

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44
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158
citing authors

#	ARTICLE	IF	CITATIONS
1	Globally Hyperbolic Regularization of Grad's Moment System. Communications on Pure and Applied Mathematics, 2014, 67, 464-518.	1.2	84
2	Globally hyperbolic regularization of Grad's moment system in one-dimensional space. Communications in Mathematical Sciences, 2013, 11, 547-571.	0.5	65
3	Numerical Regularized Moment Method of Arbitrary Order for Boltzmann-BGK Equation. SIAM Journal of Scientific Computing, 2010, 32, 2875-2907.	1.3	56
4	A Framework on Moment Model Reduction for Kinetic Equation. SIAM Journal on Applied Mathematics, 2015, 75, 2001-2023.	0.8	44
5	On hyperbolicity of 13-moment system. Kinetic and Related Models, 2014, 7, 415-432.	0.5	31
6	Numerical Regularized Moment Method For High Mach Number Flow. Communications in Computational Physics, 2012, 11, 1415-1438.	0.7	28
7	NR Simulation of Microflows with Shakhov Model. SIAM Journal of Scientific Computing, 2012, 34, A339-A369.	1.3	27
8	Numerical Simulation of Microflows Using Moment Methods with Linearized Collision Operator. Journal of Scientific Computing, 2018, 74, 336-374.	1.1	21
9	Globally hyperbolic regularized moment method with applications to microflow simulation. Computers and Fluids, 2013, 81, 95-109.	1.3	20
10	Quantum hydrodynamic model by moment closure of Wigner equation. Journal of Mathematical Physics, 2012, 53, .	0.5	18
11	Approximation of the Boltzmann collision operator based on hermite spectral method. Journal of Computational Physics, 2019, 397, 108815.	1.9	18
12	Dimension-Reduced Hyperbolic Moment Method for the Boltzmann Equation with BGK-Type Collision. Communications in Computational Physics, 2014, 15, 1368-1406.	0.7	17
13	An Efficient NR Method for Boltzmann-BGK Equation. Journal of Scientific Computing, 2012, 50, 103-119.	1.1	16
14	Approximation of the linearized Boltzmann collision operator for hard-sphere and inverse-power-law models. Journal of Computational Physics, 2015, 295, 617-643.	1.9	16
15	On the Holway-Weiss debate: Convergence of the Grad-moment-expansion in kinetic gas theory. Physics of Fluids, 2019, 31, .	1.6	16
16	An efficient and accurate MPI-based parallel simulator for streamer discharges in three dimensions. Journal of Computational Physics, 2020, 401, 109026.	1.9	13
17	Solving Vlasov Equations Using NR Method. SIAM Journal of Scientific Computing, 2013, 35, A2807-A2831.	1.3	12
18	An Entropic Fourier Method for the Boltzmann Equation. SIAM Journal of Scientific Computing, 2018, 40, A2858-A2882.	1.3	12

#	ARTICLE	IF	CITATIONS
19	Numerical Simulation of Microflows Using Hermite Spectral Methods. <i>SIAM Journal of Scientific Computing</i> , 2020, 42, B105-B134.	1.3	12
20	Inchworm Monte Carlo Method for Open Quantum Systems. <i>Communications on Pure and Applied Mathematics</i> , 2020, 73, 2430-2472.	1.2	11
21	The NRxx method for polyatomic gases. <i>Journal of Computational Physics</i> , 2014, 267, 63-91.	1.9	10
22	Burnett Spectral Method for High-Speed Rarefied Gas Flows. <i>SIAM Journal of Scientific Computing</i> , 2020, 42, B1193-B1226.	1.3	10
23	Regularized 13-moment equations for inverse power law models. <i>Journal of Fluid Mechanics</i> , 2020, 894, .	1.4	10
24	Quantum hydrodynamic model of density functional theory. <i>Journal of Mathematical Chemistry</i> , 2013, 51, 1747-1771.	0.7	7
25	Burnett spectral method for the spatially homogeneous Boltzmann equation. <i>Computers and Fluids</i> , 2020, 200, 104456.	1.3	7
26	Inclusionâ€“exclusion principle for open quantum systems with bosonic bath. <i>New Journal of Physics</i> , 2021, 23, 063049.	1.2	7
27	How does Gauge Cooling Stabilize Complex Langevin?. <i>Communications in Computational Physics</i> , 2020, 27, 1344-1377.	0.7	6
28	Suppression of Recurrence in the Hermite-Spectral Method for Transport Equations. <i>SIAM Journal on Numerical Analysis</i> , 2018, 56, 3144-3168.	1.1	5
29	Fast algorithms of bath calculations in simulations of quantum system-bath dynamics. <i>Computer Physics Communications</i> , 2022, 278, 108417.	3.0	4
30	An h-adaptive mesh method for Boltzmann-BGK/hydrodynamics coupling. <i>Journal of Computational Physics</i> , 2010, 229, 1661-1680.	1.9	3
31	The Wigner function of ground state and one-dimensional numerics. <i>Journal of Computational Physics</i> , 2022, 449, 110780.	1.9	3
32	A Quantum Kinetic Monte Carlo Method for Quantum Many-Body Spin Dynamics. <i>SIAM Journal of Scientific Computing</i> , 2018, 40, B706-B722.	1.3	2
33	Alternating descent method for gauge cooling of complex Langevin simulations. <i>Physical Review D</i> , 2020, 102, .	1.6	2
34	On the Validity of Complex Langevin Method for Path Integral Computations. <i>SIAM Journal of Scientific Computing</i> , 2021, 43, A685-A719.	1.3	2
35	Moment method as a numerical solver: Challenge from shock structure problems. <i>Journal of Computational Physics</i> , 2021, 444, 110593.	1.9	2
36	Flows between parallel plates: Analytical solutions of regularized 13-moment equations for inverse-power-law models. <i>Physics of Fluids</i> , 2020, 32, .	1.6	2

#	ARTICLE	IF	CITATIONS
37	The development and application of the moment method in the gas kinetic theory. <i>Scientia Sinica Informationis</i> , 2016, 46, 1465-1488.	0.2	2
38	Accurate and efficient calculation of photoionization in streamer discharges using fast multipole method. <i>Plasma Sources Science and Technology</i> , 2020, 29, 125010.	1.3	2
39	Differential Equation Based Path Integral for Open Quantum Systems. <i>SIAM Journal of Scientific Computing</i> , 2022, 44, B771-B804.	1.3	2
40	Numerical simulation of large hyperbolic moment systems with linear and relaxation production terms. , 2014, , .		1
41	A Surface Hopping Gaussian Beam Method for High-Dimensional Transport Systems. <i>SIAM Journal of Scientific Computing</i> , 2018, 40, B1277-B1301.	1.3	1
42	Regularization of the complex Langevin method. <i>Physical Review D</i> , 2022, 105, .	1.6	0
43	Numerical Solver for the Boltzmann Equation with Self-Adaptive Collision Operators. <i>SIAM Journal of Scientific Computing</i> , 2022, 44, B275-B309.	1.3	0