

# Zhenning Cai

## List of Publications by Year in descending order

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Version: 2024-02-01

43  
papers

627  
citations

567144

15  
h-index

610775

24  
g-index

44  
all docs

44  
docs citations

44  
times ranked

158  
citing authors

#	ARTICLE	IF	CITATIONS
1	The Wigner function of ground state and one-dimensional numerics. <i>Journal of Computational Physics</i> , 2022, 449, 110780.	1.9	3
2	Regularization of the complex Langevin method. <i>Physical Review D</i> , 2022, 105, .	1.6	0
3	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
4	Fast algorithms of bath calculations in simulations of quantum system-bath dynamics. <i>Computer Physics Communications</i> , 2022, 278, 108417.	3.0	4
5	Differential Equation Based Path Integral for Open Quantum Systems. <i>SIAM Journal of Scientific Computing</i> , 2022, 44, B771-B804.	1.3	2
6	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
7	Inclusion&quot;exclusion principle for open quantum systems with bosonic bath. <i>New Journal of Physics</i> , 2021, 23, 063049.	1.2	7
8	Moment method as a numerical solver: Challenge from shock structure problems. <i>Journal of Computational Physics</i> , 2021, 444, 110593.	1.9	2
9	An efficient and accurate MPI-based parallel simulator for streamer discharges in three dimensions. <i>Journal of Computational Physics</i> , 2020, 401, 109026.	1.9	13
10	Numerical Simulation of Microflows Using Hermite Spectral Methods. <i>SIAM Journal of Scientific Computing</i> , 2020, 42, B105-B134.	1.3	12
11	Burnett Spectral Method for High-Speed Rarefied Gas Flows. <i>SIAM Journal of Scientific Computing</i> , 2020, 42, B1193-B1226.	1.3	10
12	Alternating descent method for gauge cooling of complex Langevin simulations. <i>Physical Review D</i> , 2020, 102, .	1.6	2
13	Regularized 13-moment equations for inverse power law models. <i>Journal of Fluid Mechanics</i> , 2020, 894, .	1.4	10
14	Burnett spectral method for the spatially homogeneous Boltzmann equation. <i>Computers and Fluids</i> , 2020, 200, 104456.	1.3	7
15	Inchworm Monte Carlo Method for Open Quantum Systems. <i>Communications on Pure and Applied Mathematics</i> , 2020, 73, 2430-2472.	1.2	11
16	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
17	How does Gauge Cooling Stabilize Complex Langevin?. <i>Communications in Computational Physics</i> , 2020, 27, 1344-1377.	0.7	6
18	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

#	ARTICLE	IF	CITATIONS
19	Approximation of the Boltzmann collision operator based on hermite spectral method. Journal of Computational Physics, 2019, 397, 108815.	1.9	18
20	On the Holway-Weiss debate: Convergence of the Grad-moment-expansion in kinetic gas theory. Physics of Fluids, 2019, 31, .	1.6	16
21	A Quantum Kinetic Monte Carlo Method for Quantum Many-Body Spin Dynamics. SIAM Journal of Scientific Computing, 2018, 40, B706-B722.	1.3	2
22	Numerical Simulation of Microflows Using Moment Methods with Linearized Collision Operator. Journal of Scientific Computing, 2018, 74, 336-374.	1.1	21
23	A Surface Hopping Gaussian Beam Method for High-Dimensional Transport Systems. SIAM Journal of Scientific Computing, 2018, 40, B1277-B1301.	1.3	1
24	Suppression of Recurrence in the Hermite-Spectral Method for Transport Equations. SIAM Journal on Numerical Analysis, 2018, 56, 3144-3168.	1.1	5
25	An Entropic Fourier Method for the Boltzmann Equation. SIAM Journal of Scientific Computing, 2018, 40, A2858-A2882.	1.3	12
26	The development and application of the moment method in the gas kinetic theory. Scientia Sinica Informationis, 2016, 46, 1465-1488.	0.2	2
27	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
28	A Framework on Moment Model Reduction for Kinetic Equation. SIAM Journal on Applied Mathematics, 2015, 75, 2001-2023.	0.8	44
29	Numerical simulation of large hyperbolic moment systems with linear and relaxation production terms. , 2014, , .		1
30	Globally Hyperbolic Regularization of Grad's Moment System. Communications on Pure and Applied Mathematics, 2014, 67, 464-518.	1.2	84
31	The NRxx method for polyatomic gases. Journal of Computational Physics, 2014, 267, 63-91.	1.9	10
32	Dimension-Reduced Hyperbolic Moment Method for the Boltzmann Equation with BGK-Type Collision. Communications in Computational Physics, 2014, 15, 1368-1406.	0.7	17
33	On hyperbolicity of 13-moment system. Kinetic and Related Models, 2014, 7, 415-432.	0.5	31
34	Globally hyperbolic regularized moment method with applications to microflow simulation. Computers and Fluids, 2013, 81, 95-109.	1.3	20
35	Quantum hydrodynamic model of density functional theory. Journal of Mathematical Chemistry, 2013, 51, 1747-1771.	0.7	7
36	Solving Vlasov Equations Using NRxx\$ Method. SIAM Journal of Scientific Computing, 2013, 35, A2807-A2831.	1.3	12

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37	Globally hyperbolic regularization of Grad's moment system in one-dimensional space. Communications in Mathematical Sciences, 2013, 11, 547-571.	0.5	65
38	Quantum hydrodynamic model by moment closure of Wigner equation. Journal of Mathematical Physics, 2012, 53, .	0.5	18
39	Numerical Regularized Moment Method For High Mach Number Flow. Communications in Computational Physics, 2012, 11, 1415-1438.	0.7	28
40	NR Simulation of Microflows with Shakhov Model. SIAM Journal of Scientific Computing, 2012, 34, A339-A369.	1.3	27
41	An Efficient NR Method for Boltzmann-BGK Equation. Journal of Scientific Computing, 2012, 50, 103-119.	1.1	16
42	An h-adaptive mesh method for Boltzmann-BGK/hydrodynamics coupling. Journal of Computational Physics, 2010, 229, 1661-1680.	1.9	3
43	Numerical Regularized Moment Method of Arbitrary Order for Boltzmann-BGK Equation. SIAM Journal of Scientific Computing, 2010, 32, 2875-2907.	1.3	56