

# Michael A Gallis

## List of Publications by Year in descending order

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56  
papers

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394421

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345221

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58  
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58  
docs citations

58  
times ranked

707  
citing authors

#	ARTICLE	IF	CITATIONS
1	Navier-Stokes Equations Do Not Describe the Smallest Scales of Turbulence in Gases. <i>Physical Review Letters</i> , 2022, 128, 114501.	7.8	19
2	Enforcing detailed balance in the Borgnakke-Larsen redistribution method with temperature dependent relaxation models. <i>Physics of Fluids</i> , 2022, 34, 066118.	4.0	2
3	Turbulence at the edge of continuum. <i>Physical Review Fluids</i> , 2021, 6, .	2.5	17
4	Effect of slip on vortex shedding from a circular cylinder in a gas flow. <i>Physical Review Fluids</i> , 2021, 6, .	2.5	5
5	Molecular-Level Simulations of Compressible Turbulence. , 2020, , .		2
6	DSMC simulations of turbulent flows at moderate Reynolds numbers. <i>AIP Conference Proceedings</i> , 2019, , .	0.4	0
7	Direct simulation Monte Carlo on petaflop supercomputers and beyond. <i>Physics of Fluids</i> , 2019, 31, .	4.0	163
8	Graeme A. Bird. <i>Physics of Fluids</i> , 2019, 31, 110401.	4.0	1
9	Gas-kinetic simulation of sustained turbulence in minimal Couette flow. <i>Physical Review Fluids</i> , 2018, 3, .	2.5	12
10	Molecular-Level Simulations of Turbulence and Its Decay. <i>Physical Review Letters</i> , 2017, 118, 064501.	7.8	72
11	<i>Ab initio</i> -informed maximum entropy modeling of rovibrational relaxation and state-specific dissociation with application to the O <sub>2</sub> + O system. <i>Journal of Chemical Physics</i> , 2016, 144, 174302.	3.0	67
12	Direct simulation Monte Carlo investigation of hydrodynamic instabilities in gases. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	7
13	Direct simulation Monte Carlo investigation of the Rayleigh-Taylor instability. <i>Physical Review Fluids</i> , 2016, 1, .	2.5	59
14	Effect of O <sub>2</sub> + O <i>ab initio</i> and Morse additive pairwise potentials on dissociation and relaxation rates for nonequilibrium flow calculations. <i>Physics of Fluids</i> , 2015, 27, .	4.0	29
15	Direct simulation Monte Carlo investigation of the Richtmyer-Meshkov instability. <i>Physics of Fluids</i> , 2015, 27, .	4.0	51
16	Direct simulation Monte Carlo: The quest for speed. <i>AIP Conference Proceedings</i> , 2014, , .	0.4	86
17	Effect of collision partner selection schemes on the accuracy and efficiency of the direct simulation Monte Carlo method. <i>International Journal for Numerical Methods in Fluids</i> , 2011, 67, 1057-1072.	1.6	32
18	An experimental assembly for precise measurement of thermal accommodation coefficients. <i>Review of Scientific Instruments</i> , 2011, 82, 035120.	1.3	86

#	ARTICLE	IF	CITATIONS
19	Investigation of the ellipsoidal-statistical Bhatnagar-Gross-Krook kinetic model applied to gas-phase transport of heat and tangential momentum between parallel walls. <i>Physics of Fluids</i> , 2011, 23, .	4.0	42
20	Efficient DSMC Collision-Partner Selection Schemes. <i>AIP Conference Proceedings</i> , 2011, , .	0.4	7
21	DSMC Moving-Boundary Algorithms for Simulating MEMS Geometries with Opening and Closing Gaps. <i>AIP Conference Proceedings</i> , 2011, , .	0.4	9
22	DSMC-Based Shear-Stress-Velocity-Slip Boundary Condition for Navier-Stokes Couette-Flow Simulations. <i>AIP Conference Proceedings</i> , 2011, , .	0.4	5
23	DSMC Predictions of Non-equilibrium Reaction Rates. , 2011, , .		1
24	Assessment of Collisional-Energy-Based Models for Atmospheric Species Reactions in Hypersonic Flows. <i>Journal of Thermophysics and Heat Transfer</i> , 2010, 24, 241-253.	1.6	18
25	Accuracy and efficiency of the sophisticated direct simulation Monte Carlo algorithm for simulating noncontinuum gas flows. <i>Physics of Fluids</i> , 2009, 21, .	4.0	93
26	Measurement of Gas-Surface Accommodation. , 2008, , .		17
27	An Improved-Accuracy DSMC Algorithm. , 2008, , .		3
28	Nanoparticle Aerosols Form Knudsen Layers at Walls. , 2008, , .		0
29	Nonzero-Concentration Boundary Condition for Advection-Diffusion Aerosol-Transport Modeling. <i>Aerosol Science and Technology</i> , 2008, 42, 829-831.	3.1	5
30	Nanoparticle Knudsen layers in gas-filled microscale geometries. <i>Physical Review E</i> , 2008, 77, 036302.	2.1	3
31	Applying the Direct Simulation Monte Carlo (DSMC) Method to Gas-Filled MEMS Devices. <i>Computational and Experimental Methods in Structures</i> , 2008, , 81-119.	0.3	0
32	Normal solutions of the Boltzmann equation for highly nonequilibrium Fourier flow and Couette flow. <i>Physics of Fluids</i> , 2006, 18, 017104.	4.0	57
33	Direct simulation Monte Carlo convergence behavior of the hard-sphere-gas thermal conductivity for Fourier heat flow. <i>Physics of Fluids</i> , 2006, 18, 077102.	4.0	64
34	Empirical slip and viscosity model performance for microscale gas flow. <i>International Journal for Numerical Methods in Fluids</i> , 2005, 49, 1169-1191.	1.6	27
35	DSMC Convergence Behavior for Fourier Flow. <i>AIP Conference Proceedings</i> , 2005, , .	0.4	9
36	DSMC Simulations of Fourier and Couette Flow: Chapman-Enskog Behavior and Departures Therefrom. <i>AIP Conference Proceedings</i> , 2005, , .	0.4	5

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37	Molecular gas dynamics observations of Chapman-Enskog behavior and departures therefrom in nonequilibrium gases. <i>Physical Review E</i> , 2004, 69, 042201.	2.1	52
38	A Generalized Approximation for the Thermophoretic Force on a Free-Molecular Particle. <i>Aerosol Science and Technology</i> , 2004, 38, 692-706.	3.1	15
39	Comment on "Thermophoresis of a Near-Wall Particle at Great Knudsen Numbers". <i>Aerosol Science and Technology</i> , 2003, 37, 547-549.	3.1	1
40	Thermophoresis in Rarefied Gas Flows. <i>AIP Conference Proceedings</i> , 2003, , .	0.4	0
41	Calculations of the near-wall thermophoretic force in rarefied gas flow. <i>Physics of Fluids</i> , 2002, 14, 4290-4301.	4.0	26
42	An approach for simulating the transport of spherical particles in a rarefied gas flow via the direct simulation Monte Carlo method. <i>Physics of Fluids</i> , 2001, 13, 3482-3492.	4.0	77
43	A collective collision operator for DSMC. <i>AIP Conference Proceedings</i> , 2001, , .	0.4	1
44	Review of Code Validation Studies in High-Speed Low-Density Flows. <i>Journal of Spacecraft and Rockets</i> , 2000, 37, 8-20.	1.9	7
45	A review of code validation studies in high-speed low-density flows. , 1998, , .		0
46	The modeling of chemical reactions and thermochemical nonequilibrium in particle simulation computations. <i>Physics of Fluids</i> , 1998, 10, 1344-1358.	4.0	17
47	The effect of plasmas on the aerodynamic performance of vehicles. , 1998, , .		2
48	Modelling of chemical reactions in hypersonic rarefied flow with the direct simulation Monte Carlo method. <i>Journal of Fluid Mechanics</i> , 1996, 312, 149-172.	3.4	16
49	Direct simulation of chemical deposition of silicon. , 1996, , .		0
50	New ionization model for the direct simulation Monte Carlo method. , 1996, , .		0
51	Comparison of maximum entropy direct simulation Monte Carlo code with flowfield measurements. <i>AIAA Journal</i> , 1996, 34, 1378-1385.	2.6	1
52	Maximum entropy analysis of chemical reaction energy dependence. <i>Journal of Thermophysics and Heat Transfer</i> , 1996, 10, 217-223.	1.6	17
53	Comparison of computations and experiments for nonequilibrium flow expansions around a blunted cone. , 1996, , .		4
54	Simulation of chemically reacting flowfields around a 70-deg spherically blunted cone. <i>Journal of Spacecraft and Rockets</i> , 1995, 32, 581-587.	1.9	2

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55	Atomic species radiation from air modeled with direct simulation Monte Carlo method. Journal of Thermophysics and Heat Transfer, 1995, 9, 456-463.	1.6	21
56	Nonequilibrium thermal radiation from air shock layers modeled with direct simulation Monte Carlo. Journal of Thermophysics and Heat Transfer, 1994, 8, 765-772.	1.6	21