

# Michael D Graham

## List of Publications by Year in descending order

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146  
papers

7,149  
citations

46918

47  
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64668

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155  
docs citations

155  
times ranked

4240  
citing authors

#	ARTICLE	IF	CITATIONS
1	Wrinkling and multiplicity in the dynamics of deformable sheets in uniaxial extensional flow. <i>Physical Review Fluids</i> , 2022, 7, .	1.0	3
2	Pathologic mechanobiological interactions between red blood cells and endothelial cells directly induce vasculopathy in iron deficiency anemia. <i>IScience</i> , 2022, 25, 104606.	1.9	9
3	Data-driven reduced-order modeling of spatiotemporal chaos with neural ordinary differential equations. <i>Chaos</i> , 2022, 32, .	1.0	12
4	Exact Coherent States and the Nonlinear Dynamics of Wall-Bounded Turbulent Flows. <i>Annual Review of Fluid Mechanics</i> , 2021, 53, 227-253.	10.8	61
5	Coil-like stretch-like transition of elastic sheets in extensional flows. <i>Soft Matter</i> , 2021, 17, 543-553.	1.2	10
6	Symmetry reduction for deep reinforcement learning active control of chaotic spatiotemporal dynamics. <i>Physical Review E</i> , 2021, 104, 014210.	0.8	14
7	Constitutive modeling of dilute wormlike micelle solutions: Shear-induced structure and transient dynamics. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2021, 295, 104606.	1.0	11
8	Tollmien-Schlichting route to elastoinertial turbulence in channel flow. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	17
9	Discovering multiscale and self-similar structure with data-driven wavelets. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	8
10	Low- and High-Drag Intermittencies in Turbulent Channel Flows. <i>Entropy</i> , 2020, 22, 1126.	1.1	8
11	Self-sustained elastoinertial Tollmien-Schlichting waves. <i>Journal of Fluid Mechanics</i> , 2020, 897, .	1.4	29
12	Deep learning to discover and predict dynamics on an inertial manifold. <i>Physical Review E</i> , 2020, 101, 062209.	0.8	38
13	Multiplicity of stable orbits for deformable prolate capsules in shear flow. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	3
14	Flow-induced segregation and dynamics of red blood cells in sickle cell disease. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	18
15	An experimental investigation into spatiotemporal intermittencies in turbulent channel flow close to transition. <i>Experiments in Fluids</i> , 2019, 60, 1.	1.1	9
16	Critical-Layer Structures and Mechanisms in Elastoinertial Turbulence. <i>Physical Review Letters</i> , 2019, 122, 124503.	2.9	61
17	Dynamics of deformable straight and curved prolate capsules in simple shear flow. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	10
18	Stiff Erythrocyte Subpopulations Biomechanically Induce Endothelial Inflammation in Sickle Cell Disease. <i>Blood</i> , 2019, 134, 3560-3560.	0.6	4

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19	Mechanistic constitutive model for wormlike micelle solutions with flow-induced structure formation. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2018, 251, 97-106.	1.0	22
20	Impacts of multiflagellarity on stability and speed of bacterial locomotion. <i>Physical Review E</i> , 2018, 98, .	0.8	22
21	Pressure-driven flow of lignocellulosic biomass: A compressible Bingham fluid. <i>Journal of Rheology</i> , 2018, 62, 801-815.	1.3	5
22	Polymer turbulence with Reynolds and Riemann. <i>Journal of Fluid Mechanics</i> , 2018, 848, 1-4.	1.4	4
23	Exact coherent states with hairpin-like vortex structure in channel flow. <i>Journal of Fluid Mechanics</i> , 2018, 849, 76-89.	1.4	15
24	Bursting and critical layer frequencies in minimal turbulent dynamics and connections to exact coherent states. <i>Physical Review Fluids</i> , 2018, 3, .	1.0	11
25	Spatiotemporal dynamics of viscoelastic turbulence in transitional channel flow. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2017, 244, 104-122.	1.0	25
26	Buckling Instabilities and Complex Trajectories in a Simple Model of Uniflagellar Bacteria. <i>Biophysical Journal</i> , 2017, 112, 1010-1022.	0.2	12
27	Dynamics of Miura-patterned foldable sheets in shear flow. <i>Soft Matter</i> , 2017, 13, 2620-2633.	1.2	5
28	Temporal and spatial intermittencies within channel flow turbulence near transition. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	23
29	Low-drag events in transitional wall-bounded turbulence. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	24
30	Low-dimensional representations of exact coherent states of the Navier-Stokes equations from the resolvent model of wall turbulence. <i>Physical Review E</i> , 2016, 93, 021102.	0.8	15
31	General Equations of Newtonian Fluid Dynamics. , 2016, , 3-1-3-18.		0
32	Shape-mediated margination and demargination in flowing multicomponent suspensions of deformable capsules. <i>Soft Matter</i> , 2016, 12, 1683-1700.	1.2	20
33	Cellular softening mediates leukocyte demargination and trafficking, thereby increasing clinical blood counts. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 1987-1992.	3.3	82
34	Mechanistic theory of margination and flow-induced segregation in confined multicomponent suspensions: Simple shear and Poiseuille flows. <i>Physical Review Fluids</i> , 2016, 1, .	1.0	38
35	Exact coherent states and connections to turbulent dynamics in minimal channel flow. <i>Journal of Fluid Mechanics</i> , 2015, 782, 430-454.	1.4	53
36	Dynamics of a single red blood cell in simple shear flow. <i>Physical Review E</i> , 2015, 92, 042710.	0.8	61

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37	Cell Distribution and Segregation Phenomena During Blood Flow. Biological and Medical Physics Series, 2015, , 399-435.	0.3	5
38	Margination Regimes and Drainage Transition in Confined Multicomponent Suspensions. Physical Review Letters, 2015, 114, 188101.	2.9	28
39	Turbulence spreads like wildfire. Nature, 2015, 526, 508-509.	13.7	8
40	Drag reduction and the dynamics of turbulence in simple and complex fluids. Physics of Fluids, 2014, 26, .	1.6	135
41	Shear-induced diffusion in dilute curved fiber suspensions in simple shear flow. Physics of Fluids, 2014, 26, .	1.6	6
42	Time-series and extended Karhunen-Loève analysis of turbulent drag reduction in polymer solutions. AIChE Journal, 2014, 60, 1460-1475.	1.8	31
43	Flow-induced segregation in confined multicomponent suspensions: effects of particle size and rigidity. Journal of Fluid Mechanics, 2014, 738, 423-462.	1.4	72
44	Depletion layer formation in suspensions of elastic capsules in Newtonian and viscoelastic fluids. Physics of Fluids, 2012, 24, .	1.6	48
45	Intermittent dynamics of turbulence hibernation in Newtonian and viscoelastic minimal channel flows. Journal of Fluid Mechanics, 2012, 693, 433-472.	1.4	46
46	Mechanism of Margination in Confined Flows of Blood and Other Multicomponent Suspensions. Physical Review Letters, 2012, 109, 108102.	2.9	134
47	Flipping, scooping, and spinning: Drift of rigid curved nonchiral fibers in simple shear flow. Physics of Fluids, 2012, 24, .	1.6	25
48	Accelerated boundary integral method for multiphase flow in non-periodic geometries. Journal of Computational Physics, 2012, 231, 6682-6713.	1.9	54
49	An immersed boundary method for Brownian dynamics simulation of polymers in complex geometries: Application to DNA flowing through a nanoslit with embedded nanopits. Journal of Chemical Physics, 2012, 136, 014901.	1.2	48
50	Dynamics on the Laminar-Turbulent Boundary and the Origin of the Maximum Drag Reduction Asymptote. Physical Review Letters, 2012, 108, 028301.	2.9	62
51	Margination and segregation in confined flows of blood and other multicomponent suspensions. Soft Matter, 2012, 8, 10536.	1.2	126
52	Streamwise Variations in Turbulence Statistics in Drag-Reducing Turbulent Boundary Layer of Viscoelastic Fluids. , 2011, , .		0
53	Fluid Dynamics of Dissolved Polymer Molecules in Confined Geometries. Annual Review of Fluid Mechanics, 2011, 43, 273-298.	10.8	127
54	Coexistence of tight and loose bundled states in a model of bacterial flagellar dynamics. Physical Review E, 2011, 84, 011910.	0.8	32

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55	Segregation by membrane rigidity in flowing binary suspensions of elastic capsules. <i>Physical Review E</i> , 2011, 84, 066316.	0.8	70
56	Streamwise variation of turbulent dynamics in boundary layer flow of drag-reducing fluid. <i>Journal of Fluid Mechanics</i> , 2011, 686, 352-377.	1.4	29
57	Correlations and fluctuations of stress and velocity in suspensions of swimming microorganisms. <i>Physics of Fluids</i> , 2011, 23, .	1.6	23
58	Turbulent drag reduction and multistage transitions in viscoelastic minimal flow units. <i>Journal of Fluid Mechanics</i> , 2010, 647, 421-452.	1.4	62
59	Active and Hibernating Turbulence in Minimal Channel Flow of Newtonian and Polymeric Fluids. <i>Physical Review Letters</i> , 2010, 104, 218301.	2.9	86
60	Pair collisions of fluid-filled elastic capsules in shear flow: Effects of membrane properties and polymer additives. <i>Physics of Fluids</i> , 2010, 22, .	1.6	40
61	Tethered DNA dynamics in shear flow. <i>Journal of Chemical Physics</i> , 2009, 130, 234902.	1.2	36
62	Dynamics of confined suspensions of swimming particles. <i>Journal of Physics Condensed Matter</i> , 2009, 21, 204107.	0.7	77
63	Multiple free energy minima in systems of confined tethered polymers toward soft nanomechanical bistable elements. <i>Soft Matter</i> , 2009, 5, 3694.	1.2	4
64	Dynamics of virus spread in the presence of fluid flow. <i>Integrative Biology (United Kingdom)</i> , 2009, 1, 664.	0.6	12
65	A mechanism for oscillatory instability in viscoelastic cross-slot flow. <i>Journal of Fluid Mechanics</i> , 2009, 622, 145-165.	1.4	42
66	The effect of hydrodynamic interactions on the dynamics of DNA translocation through pores. <i>Journal of Chemical Physics</i> , 2008, 128, 085102.	1.2	57
67	Diffusion and Spatial Correlations in Suspensions of Swimming Particles. <i>Physical Review Letters</i> , 2008, 100, 248101.	2.9	191
68	Enhancement of mixing and adsorption in microfluidic devices by shear-induced diffusion and topography-induced secondary flow. <i>Physics of Fluids</i> , 2008, 20, .	1.6	21
69	Shear-induced diffusion in dilute suspensions of spherical or nonspherical particles: Effects of irreversibility and symmetry breaking. <i>Physics of Fluids</i> , 2007, 19, 073602.	1.6	23
70	Simulation of nonlinear shear rheology of dilute salt-free polyelectrolyte solutions. <i>Journal of Chemical Physics</i> , 2007, 126, 124906.	1.2	21
71	Polymer induced drag reduction in exact coherent structures of plane Poiseuille flow. <i>Physics of Fluids</i> , 2007, 19, .	1.6	48
72	A single-molecule barcoding system using nanoslits for DNA analysis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 2673-2678.	3.3	285

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73	Methods for Generation of Spatial Gradients in Concentration of Monomeric Surfactants and Micelles in Microfluidic Systems. <i>Langmuir</i> , 2007, 23, 9578-9585.	1.6	6
74	Modeling DNA in Confinement: A Comparison between the Brownian Dynamics and Lattice Boltzmann Method. <i>Macromolecules</i> , 2007, 40, 5978-5984.	2.2	36
75	Fast Computation of Many-Particle Hydrodynamic and Electrostatic Interactions in a Confined Geometry. <i>Physical Review Letters</i> , 2007, 98, 140602.	2.9	134
76	Concentration dependence of shear and extensional rheology of polymer solutions: Brownian dynamics simulations. <i>Journal of Rheology</i> , 2006, 50, 137-167.	1.3	80
77	Cross-stream-line migration in confined flowing polymer solutions: Theory and simulation. <i>Physics of Fluids</i> , 2006, 18, 123101.	1.6	59
78	Cross-Stream Migration of Flexible Molecules in a Nanochannel. <i>Physical Review Letters</i> , 2006, 96, 224505.	2.9	66
79	Nonlinear travelling waves as a framework for understanding turbulent drag reduction. <i>Journal of Fluid Mechanics</i> , 2006, 565, 353.	1.4	36
80	NlogN method for hydrodynamic interactions of confined polymer systems: Brownian dynamics. <i>Journal of Chemical Physics</i> , 2006, 125, 164906.	1.2	32
81	Theory of shear-induced migration in dilute polymer solutions near solid boundaries. <i>Physics of Fluids</i> , 2005, 17, 083103.	1.6	168
82	Transport and Collective Dynamics in Suspensions of Confined Swimming Particles. <i>Physical Review Letters</i> , 2005, 95, 204501.	2.9	340
83	Role of Desorption Kinetics in Determining Marangoni Flows Generated by Using Electrochemical Methods and Redox-Active Surfactants. <i>Langmuir</i> , 2005, 21, 2235-2241.	1.6	16
84	DNA Molecules in Microfluidic Oscillatory Flow. <i>Macromolecules</i> , 2005, 38, 6680-6687.	2.2	59
85	Viscoelastic Nonlinear Traveling Waves and Drag Reduction in Plane Poiseuille Flow. , 2005, , 289-312.		6
86	Conformation and dynamics of single DNA molecules in parallel-plate slit microchannels. <i>Physical Review E</i> , 2004, 70, 060901.	0.8	139
87	Shear-induced migration in flowing polymer solutions: Simulation of long-chain DNA in microchannels. <i>Journal of Chemical Physics</i> , 2004, 120, 2513-2529.	1.2	228
88	Numerical modeling of two-fluid Taylor-Couette flow with deformable capillary liquid-liquid interface. <i>Physics of Fluids</i> , 2004, 16, 4066-4074.	1.6	12
89	Polymer drag reduction in exact coherent structures of plane shear flow. <i>Physics of Fluids</i> , 2004, 16, 3470-3482.	1.6	71
90	An externally driven magnetic microstirrer. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2004, 362, 1059-1068.	1.6	93

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91	A Microfluidic System for Large DNA Molecule Arrays. <i>Analytical Chemistry</i> , 2004, 76, 5293-5301.	3.2	175
92	DNA Dynamics in a Microchannel. <i>Physical Review Letters</i> , 2003, 91, 038102.	2.9	161
93	Coarse Brownian dynamics for nematic liquid crystals: Bifurcation, projective integration, and control via stochastic simulation. <i>Journal of Chemical Physics</i> , 2003, 118, 10149-10156.	1.2	82
94	Effect of confinement on DNA dynamics in microfluidic devices. <i>Journal of Chemical Physics</i> , 2003, 119, 1165-1173.	1.2	160
95	Structure evolution in electrorheological and magnetorheological suspensions from a continuum perspective. <i>Journal of Applied Physics</i> , 2003, 93, 5769-5779.	1.1	51
96	Interfacial hoop stress and instability of viscoelastic free surface flows. <i>Physics of Fluids</i> , 2003, 15, 1702.	1.6	47
97	Polymer dynamics in a model of the turbulent buffer layer. <i>Physics of Fluids</i> , 2003, 15, 1247-1256.	1.6	45
98	Toward a Structural Understanding of Turbulent Drag Reduction: Nonlinear Coherent States in Viscoelastic Shear Flows. <i>Physical Review Letters</i> , 2002, 89, 208301.	2.9	64
99	Stochastic simulations of DNA in flow: Dynamics and the effects of hydrodynamic interactions. <i>Journal of Chemical Physics</i> , 2002, 116, 7752-7759.	1.2	252
100	A TWO-FLUID MODEL FOR ELECTRO- AND MAGNETORHEOLOGICAL SUSPENSIONS. <i>International Journal of Modern Physics B</i> , 2002, 16, 2669-2675.	1.0	2
101	Influence of Surface Tension-Driven Convection on Cyclic Voltammograms of Langmuir Films of Redox-Active Amphiphiles. <i>Langmuir</i> , 2002, 18, 9882-9887.	1.6	7
102	Pattern Formation in Flowing Electrorheological Fluids. <i>Physical Review Letters</i> , 2002, 88, 188301.	2.9	43
103	A method for multiscale simulation of flowing complex fluids. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2002, 108, 123-142.	1.0	18
104	Finite-amplitude solitary states in viscoelastic shear flow: computation and mechanism. <i>Journal of Fluid Mechanics</i> , 2001, 443, 301-328.	1.4	14
105	Slip, Concentration Fluctuations, and Flow Instability in Sheared Polymer Solutions. <i>Macromolecules</i> , 2001, 34, 5731-5733.	2.2	23
106	Comment on "Convective Nonlinearity in Non-Newtonian Fluids". <i>Physical Review Letters</i> , 2001, 86, 744-744.	2.9	6
107	Stability of viscoelastic shear flows subjected to parallel flow superposition. <i>Physics of Fluids</i> , 2000, 12, 2702.	1.6	5
108	Mass transport in a novel two-fluid Taylor vortex extractor. <i>AIChE Journal</i> , 2000, 46, 2395-2407.	1.8	51

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109	Buckling instabilities in models of viscoelastic free surface flows. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2000, 89, 337-351.	1.0	12
110	Two-fluid Taylor-Couette flow with countercurrent axial flow: Linear theory for immiscible liquids between corotating cylinders. <i>Physics of Fluids</i> , 2000, 12, 294-303.	1.6	28
111	Symmetric diblock copolymer thin films confined between homogeneous and patterned surfaces: Simulations and theory. <i>Journal of Chemical Physics</i> , 2000, 112, 9996-10010.	1.2	84
112	Solitary Coherent Structures in Viscoelastic Shear Flow: Computation and Mechanism. <i>Physical Review Letters</i> , 2000, 85, 4056-4059.	2.9	18
113	Hydrodynamic interactions in long chain polymers: Application of the Chebyshev polynomial approximation in stochastic simulations. <i>Journal of Chemical Physics</i> , 2000, 113, 2894-2900.	1.2	153
114	Prediction of mass transfer rates in spatially periodic flows. <i>Chemical Engineering Science</i> , 1999, 54, 343-355.	1.9	38
115	The sharkskin instability of polymer melt flows. <i>Chaos</i> , 1999, 9, 154-163.	1.0	46
116	Effect of wall slip on the stability of viscoelastic plane shear flow. <i>Physics of Fluids</i> , 1999, 11, 1749-1756.	1.6	17
117	Effect of pressure-dependent slip on flow curve multiplicity. <i>Rheologica Acta</i> , 1998, 37, 245-255.	1.1	15
118	A model for slip at polymer/solid interfaces. <i>Journal of Rheology</i> , 1998, 42, 1491-1504.	1.3	55
119	Two-fluid Taylor-Couette flow: Experiments and linear theory for immiscible liquids between corotating cylinders. <i>Physics of Fluids</i> , 1998, 10, 3045-3055.	1.6	47
120	Alternative approaches to the Karhunen-Loève decomposition for model reduction and data analysis. <i>Computers and Chemical Engineering</i> , 1996, 20, 495-506.	2.0	145
121	Wall-Slip and Polymer-Melt Flow Instability. <i>Physical Review Letters</i> , 1996, 77, 956-959.	2.9	49
122	Dynamics of concentration patterns of the NO + CO reaction on Pt: Analysis with the Karhunen-Loève decomposition. <i>Chaos, Solitons and Fractals</i> , 1995, 5, 1817-1831.	2.5	7
123	Catalysis on microstructured surfaces: Pattern formation during CO oxidation in complex Pt domains. <i>Physical Review E</i> , 1995, 52, 76-93.	0.8	63
124	Wall slip and the nonlinear dynamics of large amplitude oscillatory shear flows. <i>Journal of Rheology</i> , 1995, 39, 697-712.	1.3	96
125	Plume formation and resonant bifurcations in porous-media convection. <i>Journal of Fluid Mechanics</i> , 1994, 272, 67-90.	1.4	55
126	Effects of Boundaries on Pattern Formation: Catalytic Oxidation of CO on Platinum. <i>Science</i> , 1994, 264, 80-82.	6.0	145



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127	Spatiotemporal temperature patterns during hydrogen oxidation on a nickel disk. AICHE Journal, 1993, 39, 1497-1508.	1.8	19
128	Patterns of temperature pulses on electrically heated catalytic ribbons. Physica D: Nonlinear Phenomena, 1993, 63, 393-409.	1.3	50
129	Computational efficiency and approximate inertial manifolds for a Bénard convection system. Journal of Nonlinear Science, 1993, 3, 153-167.	1.0	38
130	Proper orthogonal decomposition analysis of spatiotemporal temperature patterns. The Journal of Physical Chemistry, 1993, 97, 889-894.	2.9	45
131	Temperature pulse dynamics on a catalytic ring. The Journal of Physical Chemistry, 1993, 97, 7564-7571.	2.9	43
132	Pattern selection in controlled reaction-diffusion systems. Journal of Chemical Physics, 1993, 98, 2823-2836.	1.2	70
133	Pulses and global bifurcations in a nonlocal reaction-diffusion system. Physical Review E, 1993, 48, 2917-2923.	0.8	11
134	Time-periodic thermal convection in Hele-Shaw slots: The diagonal oscillation. Physics of Fluids A, Fluid Dynamics, 1992, 4, 2382-2393.	1.6	12
135	Strongly interacting travelling waves and quasiperiodic dynamics in porous medium convection. Physica D: Nonlinear Phenomena, 1992, 54, 331-350.	1.3	20
136	Structure and mechanism of oscillatory convection in a cube of fluid-saturated porous material heated from below. Journal of Fluid Mechanics, 1991, 232, 591.	1.4	7
137	Predicting Emissions from the Thermal Processing of Hazardous Wastes. Hazardous Waste and Hazardous Materials, 1986, 3, 293-307.	0.4	25
138	Kinematics, Balance Equations, and Principles of Stokes Flow. , 0, , 1-25.		0
139	Fundamental Solutions of the Stokes Equation and the Point-Particle Approximation. , 0, , 26-54.		0
140	Beyond Point Particles. , 0, , 55-89.		0
141	Fundamental Solutions for Bounded Geometries. , 0, , 90-103.		0
142	First Effects of Inertia. , 0, , 104-113.		0
143	Thermal Fluctuations and Brownian Motion. , 0, , 114-138.		0
144	Coarse-Grained Models of Polymers in Dilute Solution. , 0, , 170-200.		0

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145	Rheology and Viscoelastic Flow Phenomena. , 0, , 201-236.		0
146	Exciting Turbulence with Polymers. Physics Magazine, 0, 14, .	0.1	0