George E Karniadakis

List of Publications by Year
in descending order

448 papers	42,327 citations	1980 101 h-index	3257 185 g-index
458 all docs	458 docs citations	458 times ranked	17356 citing authors

#	Article	IF	Citations
1	The Wiener--Askey Polynomial Chaos for Stochastic Differential Equations. SIAM Journal of Scientific Computing, 2002, 24, 619-644.	1.3	3,612
2	Physics-informed machine learning. Nature Reviews Physics, 2021, 3, 422-440.	11.9	1,789
3	Modeling uncertainty in flow simulations via generalized polynomial chaos. Journal of Computational Physics, 2003, 187, 137-167.	1.9	1,192
4	High-order splitting methods for the incompressible Navier-Stokes equations. Journal of Computational Physics, 1991, 97, 414-443.	1.9	1,089
5	Hidden fluid mechanics: Learning velocity and pressure fields from flow visualizations. Science, 2020, 367, 1026-1030.	6.0	846
6	Hidden physics models: Machine learning of nonlinear partial differential equations. Journal of Computational Physics, 2018, 357, 125-141.	1.9	739
7	DeepXDE: A Deep Learning Library for Solving Differential Equations. SIAM Review, 2021, 63, 208-228.	4.2	677
8	Learning nonlinear operators via DeepONet based on the universal approximation theorem of operators. Nature Machine Intelligence, 2021, 3, 218-229.	8.3	589
9	An adaptive multi-element generalized polynomial chaos method for stochastic differential equations. Journal of Computational Physics, 2005, 209, 617-642.	1.9	474
10	Physics-informed neural networks for high-speed flows. Computer Methods in Applied Mechanics and Engineering, 2020, 360, 112789.	3.4	464
11	A Multiscale Red Blood Cell Model with Accurate Mechanics, Rheology, and Dynamics. Biophysical Journal, 2010, 98, 2215-2225.	0.2	460
12	Modeling uncertainty in steady state diffusion problems via generalized polynomial chaos. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 4927-4948.	3.4	455
13	Lowâ€dimensional models for complex geometry flows: Application to grooved channels and circular cylinders. Physics of Fluids A, Fluid Dynamics, 1991, 3, 2337-2354.	1.6	430
14	NSFnets (Navier-Stokes flow nets): Physics-informed neural networks for the incompressible Navier-Stokes equations. Journal of Computational Physics, 2021, 426, 109951.	1.9	386
15	Multi-Element Generalized Polynomial Chaos for Arbitrary Probability Measures. SIAM Journal of Scientific Computing, 2006, 28, 901-928.	1.3	381
16	Adaptive activation functions accelerate convergence in deep and physics-informed neural networks. Journal of Computational Physics, 2020, 404, 109136.	1.9	373
17	fPINNs: Fractional Physics-Informed Neural Networks. SIAM Journal of Scientific Computing, 2019, 41, A2603-A2626.	1.3	365
18	Conservative physics-informed neural networks on discrete domains for conservation laws: Applications to forward and inverse problems. Computer Methods in Applied Mechanics and Engineering, 2020, 365, 113028.	3.4	362

#	Article	IF	Citations
19	B-PINNs: Bayesian physics-informed neural networks for forward and inverse PDE problems with noisy data. Journal of Computational Physics, 2021, 425, 109913.	1.9	350
20	Machine learning of linear differential equations using Gaussian processes. Journal of Computational Physics, 2017, 348, 683-693.	1.9	343
21	Dynamics and low-dimensionality of a turbulent near wake. Journal of Fluid Mechanics, 2000, 410, 29-65.	1.4	331
22	Integrating machine learning and multiscale modelingâ€"perspectives, challenges, and opportunities in the biological, biomedical, and behavioral sciences. Npj Digital Medicine, 2019, 2, 115.	5.7	319
23	Three-dimensional dynamics and transition to turbulence in the wake of bluff objects. Journal of Fluid Mechanics, 1992, 238, 1-30.	1.4	315
24	Accurate Coarse-Grained Modeling of Red Blood Cells. Physical Review Letters, 2008, 101, 118105.	2.9	308
25	Physics-informed neural networks (PINNs) for fluid mechanics: a review. Acta Mechanica Sinica/Lixue Xuebao, 2021, 37, 1727-1738.	1.5	308
26	Physics-Informed Neural Networks for Heat Transfer Problems. Journal of Heat Transfer, 2021, 143, .	1.2	304
27	Predicting human blood viscosity in silico. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11772-11777.	3.3	278
28	A composite neural network that learns from multi-fidelity data: Application to function approximation and inverse PDE problems. Journal of Computational Physics, 2020, 401, 109020.	1.9	270
29	A combined direct numerical simulationâ€"particle image velocimetry study of the turbulent near wake. Journal of Fluid Mechanics, 2006, 569, 185.	1.4	268
30	Physics-informed neural networks for inverse problems in nano-optics and metamaterials. Optics Express, 2020, 28, 11618.	1.7	257
31	Deep learning of vortex-induced vibrations. Journal of Fluid Mechanics, 2019, 861, 119-137.	1.4	256
32	A low-dimensional model for simulating three-dimensional cylinder flow. Journal of Fluid Mechanics, 2002, 458, 181-190.	1.4	238
33	PPINN: Parareal physics-informed neural network for time-dependent PDEs. Computer Methods in Applied Mechanics and Engineering, 2020, 370, 113250.	3.4	231
34	Frequency selection and asymptotic states in laminar wakes. Journal of Fluid Mechanics, 1989, 199, 441-469.	1.4	229
35	Stochastic Modeling of Flow-Structure Interactions Using Generalized Polynomial Chaos. Journal of Fluids Engineering, Transactions of the ASME, 2002, 124, 51-59.	0.8	228
36	A direct numerical simulation study of flow past a freely vibrating cable. Journal of Fluid Mechanics, 1997, 344, 95-136.	1.4	227

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37	Systematic coarse-graining of spectrin-level red blood cell models. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 1937-1948.	3.4	227
38	hp-VPINNs: Variational physics-informed neural networks with domain decomposition. Computer Methods in Applied Mechanics and Engineering, 2021, 374, 113547.	3.4	220
39	Fractional Sturmâ€“Liouville eigen-problems: Theory and numerical approximation. Journal of Computational Physics, 2013, 252, 495-517.	1.9	213
40	Quantifying total uncertainty in physics-informed neural networks for solving forward and inverse stochastic problems. Journal of Computational Physics, 2019, 397, 108850.	1.9	212
41	What is the fractional Laplacian? A comparative review with new results. Journal of Computational Physics, 2020, 404, 109009.	1.9	208
42	Blood Flow and Cell-Free Layer in Microvessels. Microcirculation, 2010, 17, 615-628.	1.0	207
43	Simulation of heat and momentum transfer in complex microgeometries. Journal of Thermophysics and Heat Transfer, 1994, 8, 647-655.	0.9	205
44	Inferring solutions of differential equations using noisy multi-fidelity data. Journal of Computational Physics, 2017, 335, 736-746.	1.9	202
45	Fractional Spectral Collocation Method. SIAM Journal of Scientific Computing, 2014, 36, A40-A62.	1.3	198
46	Biomechanics of red blood cells in human spleen and consequences for physiology and disease. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 7804-7809.	3.3	193
47	A new stochastic approach to transient heat conduction modeling with uncertainty. International Journal of Heat and Mass Transfer, 2003, 46, 4681-4693.	2.5	191
48	The multi-element probabilistic collocation method (ME-PCM): Error analysis and applications. Journal of Computational Physics, 2008, 227, 9572-9595.	1.9	191
49	Suppressing Wall Turbulence by Means of a Transverse Traveling Wave. Science, 2000, 288, 1230-1234.	6.0	184
50	Drag reduction in wall-bounded turbulence via a transverse travelling wave. Journal of Fluid Mechanics, 2002, 457, 1-34.	1.4	182
51	Extraction of mechanical properties of materials through deep learning from instrumented indentation. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 7052-7062.	3.3	178
52	Multi-element probabilistic collocation method in high dimensions. Journal of Computational Physics, 2010, 229, 1536-1557.	1.9	177
53	Onset of three-dimensionality, equilibria, and early transition in flow over a backward-facing step. Journal of Fluid Mechanics, 1991, 231, 501-528.	1.4	176
54	Nonlinear information fusion algorithms for data-efficient multi-fidelity modelling. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20160751.	1.0	175

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55	A new method to impose no-slip boundary conditions in dissipative particle dynamics. Journal of Computational Physics, 2005, 207, 114-128.	1.9	173
56	Dynamics and flow structures in the turbulent wake of rigid and flexible cylinders subject to vortex-induced vibrations. Journal of Fluid Mechanics, 1999, 400, 91-124.	1.4	168
57	Physics-Informed Generative Adversarial Networks for Stochastic Differential Equations. SIAM Journal of Scientific Computing, 2020, 42, A292-A317.	1.3	168
58	A direct numerical simulation of laminar and turbulent flow over riblet-mounted surfaces. Journal of Fluid Mechanics, 1993, 250, 1-42.	1.4	166
59	Quantifying the biophysical characteristics of Plasmodium-falciparum -parasitized red blood cells in microcirculation. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 35-39.	3.3	165
60	Multiscale Modeling Meets Machine Learning: What Can We Learn?. Archives of Computational Methods in Engineering, 2021, 28, 1017-1037.	6.0	164
61	Numerical Gaussian Processes for Time-Dependent and Nonlinear Partial Differential Equations. SIAM Journal of Scientific Computing, 2018, 40, A172-A198.	1.3	162
62	A Semi-Lagrangian High-Order Method for Navierâ€“Stokes Equations. Journal of Computational Physics, 2001, 172, 658-684.	1.9	157
63	Second-order approximations for variable order fractional derivatives: Algorithms and applications. Journal of Computational Physics, 2015, 293, 184-200.	1.9	156
64	Stochastic Computational Fluid Mechanics. Computing in Science and Engineering, 2007, 9, 21-29.	1.2	155
65	Lipid bilayer and cytoskeletal interactions in a red blood cell. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13356-13361.	3.3	155
66	A deep convolutional neural network for classification of red blood cells in sickle cell anemia. PLoS Computational Biology, 2017, 13, e1005746.	1.5	154
67	Fractional spectral collocation methods for linear and nonlinear variable order FPDEs. Journal of Computational Physics, 2015, 293, 312-338.	1.9	152
68	Gappy data and reconstruction procedures for flow past a cylinder. Journal of Fluid Mechanics, 2004, 519, 315-336.	1.4	149
69	Blood flow velocity effects and role of activation delay time on growth and form of platelet thrombi. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 17164-17169.	3.3	149
70	Gradient-enhanced physics-informed neural networks for forward and inverse PDE problems. Computer Methods in Applied Mechanics and Engineering, 2022, 393, 114823.	3.4	148
71	Numerical simulation of turbulent drag reduction using micro-bubbles. Journal of Fluid Mechanics, 2002, 468, 271-281.	1.4	143
72	Exponentially accurate spectral and spectral element methods for fractional ODEs. Journal of Computational Physics, 2014, 257, 460-480.	1.9	139

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73	De-aliasing on non-uniform grids: algorithms and applications. Journal of Computational Physics, 2003, 191, 249-264.	1.9	137
74	Vortex-induced vibrations of a long flexible cylinder in shear flow. Journal of Fluid Mechanics, 2011, 677, 342-382.	1.4	135
75	Long-term behavior of polynomial chaos in stochastic flow simulations. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 5582-5596.	3.4	134
76	Systems biology informed deep learning for inferring parameters and hidden dynamics. PLoS Computational Biology, 2020, 16, e1007575.	1.5	133
77	Unstructured Spectral Element Methods for Simulation of Turbulent Flows. Journal of Computational Physics, 1995, 122, 191-217.	1.9	131
78	Time-dependent generalized polynomial chaos. Journal of Computational Physics, 2010, 229, 8333-8363.	1.9	131
79	Many-body dissipative particle dynamics simulation of liquid/vapor and liquid/solid interactions. Journal of Chemical Physics, 2011, 134, 204114.	1.2	131
80	Three-dimensionality effects in flow around two tandem cylinders. Journal of Fluid Mechanics, 2006, 558, 387.	1.4	130
81	111 years of Brownian motion. Soft Matter, 2016, 12, 6331-6346.	1.2	129
82	Learning in Modal Space: Solving Time-Dependent Stochastic PDEs Using Physics-Informed Neural Networks. SIAM Journal of Scientific Computing, 2020, 42, A639-A665.	1.3	129
83	Flow over an espresso cup: inferring 3-D velocity and pressure fields from tomographic background oriented Schlieren via physics-informed neural networks. Journal of Fluid Mechanics, 2021, 915, .	1.4	129
84	Nodes, Modes and Flow Codes. Physics Today, 1993, 46, 34-42.	0.3	126
85	Outflow Boundary Conditions for Arterial Networks with Multiple Outlets. Annals of Biomedical Engineering, 2008, 36, 1496-1514.	1.3	124
86	Minimum-dissipation transport enhancement by flow destabilization: Reynoldsâ€™ analogy revisited. Journal of Fluid Mechanics, 1988, 192, 365-391.	1.4	123
87	Resonant Vibrations of Bluff Bodies Cause Multivortex Shedding and High Frequency Forces. Physical Review Letters, 2007, 99, 144503.	2.9	123
88	Continuum- and particle-based modeling of shapes and dynamics of red blood cells in health and disease. Soft Matter, 2013, 9, 28-37.	1.2	122
89	A new triangular and tetrahedral basis for high-order (hp) finite element methods. International Journal for Numerical Methods in Engineering, 1995, 38, 3775-3802.	1.5	120
90	Parallel physics-informed neural networks via domain decomposition. Journal of Computational Physics, 2021, 447, 110683.	1.9	120

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91	Locally adaptive activation functions with slope recovery for deep and physics-informed neural networks. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200334.	1.0	119
92	Modeling Blood Flow Circulation in Intracranial Arterial Networks: A Comparative 3D/1D Simulation Study. Annals of Biomedical Engineering, 2011, 39, 297-309.	1.3	118
93	Unsteadiness and convective instabilities in two-dimensional flow over a backward-facing step. Journal of Fluid Mechanics, 1996, 321, 157-187.	1.4	117
94	Elimination of Vortex Streets in Bluff-Body Flows. Physical Review Letters, 2008, 100, 204501.	2.9	116
95	Reinforcement learning for bluff body active flow control in experiments and simulations. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 26091-26098.	3.3	114
96	Physics-Informed Neural Network for Ultrasound Nondestructive Quantification of Surface Breaking Cracks. Journal of Nondestructive Evaluation, 2020, 39, 1.	1.1	113
97	A Generalized Spectral Collocation Method with Tunable Accuracy for Variable-Order Fractional Differential Equations. SIAM Journal of Scientific Computing, 2015, 37, A2710-A2732.	1.3	110
98	Beyond Wienerâ€“Askey Expansions: Handling Arbitrary PDFs. Journal of Scientific Computing, 2006, 27, 455-464.	1.1	109
99	Incorporation of memory effects in coarse-grained modeling via the Mori-Zwanzig formalism. Journal of Chemical Physics, 2015, 143, 243128.	1.2	107
100	Adaptive ANOVA decomposition of stochastic incompressible and compressible flows. Journal of Computational Physics, 2012, 231, 1587-1614.	1.9	106
101	Multi-fidelity modelling via recursive co-kriging and Gaussianâ€“Markov random fields. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150018.	1.0	105
102	Generalized polynomial chaos and random oscillators. International Journal for Numerical Methods in Engineering, 2004, 60, 571-596.	1.5	104
103	Gappy data: To Krig or not to Krig?. Journal of Computational Physics, 2006, 212, 358-382.	1.9	104
104	A General Shear-Dependent Model for Thrombus Formation. PLoS Computational Biology, 2017, 13, e1005291.	1.5	104
105	Rheology, Microstructure and Migration in Brownian Colloidal Suspensions. Langmuir, 2010, 26, 133-142.	1.6	103
106	A physics-informed variational DeepONet for predicting crack path in quasi-brittle materials. Computer Methods in Applied Mechanics and Engineering, 2022, 391, 114587.	3.4	100
107	Dynamics of Self-Assembled Chaining in Magnetorheological Fluids. Langmuir, 2004, 20, 507-513.	1.6	99
108	Controlling Density Fluctuations in Wall-Bounded Dissipative Particle Dynamics Systems. Physical Review Letters, 2006, 96, 206001.	2.9	99

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109	Fractional-Order Viscoelasticity in One-Dimensional Blood Flow Models. Annals of Biomedical Engineering, 2014, 42, 1012-1023.	1.3	99
110	Construction of dissipative particle dynamics models for complex fluids via the Moriâ€“Zwanzig formulation. Soft Matter, 2014, 10, 8659-8672.	1.2	99
111	Multiscale Modeling of Red Blood Cell Mechanics and Blood Flow in Malaria. PLoS Computational Biology, 2011, 7, e1002270.	1.5	98
112	Second-order numerical methods for multi-term fractional differential equations: Smooth and non-smooth solutions. Computer Methods in Applied Mechanics and Engineering, 2017, 327, 478-502.	3.4	97
113	Reynolds stress analysis of EMHD-controlled wall turbulence. Part I. Streamwise forcing. Physics of Fluids, 1997, 9, 788-806.	1.6	96
114	Equation-free/Galerkin-free POD-assisted computation of incompressible flows. Journal of Computational Physics, 2005, 207, 568-587.	1.9	93
115	Triple-decker: Interfacing atomisticâ€“mesoscopicâ€“continuum flow regimes. Journal of Computational Physics, 2009, 228, 1157-1171.	1.9	93
116	Mechanics of diseased red blood cells in human spleen and consequences for hereditary blood disorders. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9574-9579.	3.3	93
117	Numerical simulation of forced convection heat transfer from a cylinder in crossflow. International Journal of Heat and Mass Transfer, 1988, 31, 107-118.	2.5	92
118	Shape Transformations of Membrane Vesicles from Amphiphilic Triblock Copolymers: A Dissipative Particle Dynamics Simulation Study. Macromolecules, 2009, 42, 3195-3200.	2.2	92
119	DeepM&Mnet: Inferring the electroconvection multiphysics fields based on operator approximation by neural networks. Journal of Computational Physics, 2021, 436, 110296.	1.9	92
120	A comprehensive and fair comparison of two neural operators (with practical extensions) based on FAIR data. Computer Methods in Applied Mechanics and Engineering, 2022, 393, 114778.	3.4	92
121	Multifidelity Information Fusion Algorithms for High-Dimensional Systems and Massive Data sets. SIAM Journal of Scientific Computing, 2016, 38, B521-B538.	1.3	91
122	Velocity limit in DPD simulations of wall-bounded flows. Journal of Computational Physics, 2008, 227, 2540-2559.	1.9	88
123	Combined Simulation and Experimental Study of Large Deformation of Red Blood Cells in Microfluidic Systems. Annals of Biomedical Engineering, 2011, 39, 1041-1050.	1.3	88
124	Reweighted minimization method for stochastic elliptic differential equations. Journal of Computational Physics, 2013, 248, 87-108.	1.9	87
125	A unified Petrovâ€“Galerkin spectral method for fractional PDEs. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1545-1569.	3.4	87
126	Biomechanics and biorheology of red blood cells in sickle cell anemia. Journal of Biomechanics, 2017, 50, 34-41.	0.9	87

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127	Self-Cleaning of Hydrophobic Rough Surfaces by Coalescence-Induced Wetting Transition. Langmuir, 2019, 35, 2431-2442.	1.6	87
128	Wall Shear Stress-Based Model for Adhesive Dynamics of Red Blood Cells in Malaria. Biophysical Journal, 2011, 100, 2084-2093.	0.2	84
129	Discontinuous Spectral Element Methods for Time- and Space-Fractional Advection Equations. SIAM Journal of Scientific Computing, 2014, 36, B684-B707.	1.3	84
130	Physicsâ€Informed Neural Networks (PINNs) for Wave Propagation and Full Waveform Inversions. Journal of Geophysical Research: Solid Earth, 2022, 127, .	1.4	84
131	Omics, big data and machine learning as tools to propel understanding of biological mechanisms and to discover novel diagnostics and therapeutics. Metabolism: Clinical and Experimental, 2018, 87, A1-A9.	1.5	83
132	Non-invasive inference of thrombus material properties with physics-informed neural networks. Computer Methods in Applied Mechanics and Engineering, 2021, 375, 113603.	3.4	82
133	Smoothed profile method for particulate flows: Error analysis and simulations. Journal of Computational Physics, 2009, 228, 1750-1769.	1.9	80
134	Bloodâ€“plasma separation in Y-shaped bifurcating microfluidic channels: a dissipative particle dynamics simulation study. Physical Biology, 2012, 9, 026010.	0.8	80
135	Analyses of internal structures and defects in materials using physics-informed neural networks. Science Advances, 2022, 8, eabk0644.	4.7	80
136	Spectral Polynomial Chaos Solutions of the Stochastic Advection Equation. Journal of Scientific Computing, 2002, 17, 319-338.	1.1	79
137	Blood flow in small tubes: quantifying the transition to the non-continuum regime. Journal of Fluid Mechanics, 2013, 722, 214-239.	1.4	76
138	Energy-conserving dissipative particle dynamics with temperature-dependent properties. Journal of Computational Physics, 2014, 265, 113-127.	1.9	76
139	Enabling High-Dimensional Hierarchical Uncertainty Quantification by ANOVA and Tensor-Train Decomposition. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2015, 34, 63-76.	1.9	75
140	A fractional phase-field model for two-phase flows with tunable sharpness: Algorithms and simulations. Computer Methods in Applied Mechanics and Engineering, 2016, 305, 376-404.	3.4	74
141	Deep Kronecker neural networks: A general framework for neural networks with adaptive activation functions. Neurocomputing, 2022, 468, 165-180.	3.5	74
142	Computational Biorheology of Human Blood Flow in Health and Disease. Annals of Biomedical Engineering, 2014, 42, 368-387.	1.3	73
143	Computing the non-Markovian coarse-grained interactions derived from the Moriâ€“Zwanzig formalism in molecular systems: Application to polymer melts. Journal of Chemical Physics, 2017, 146, 014104.	1.2	73
144	Physics-informed neural networks for inverse problems in supersonic flows. Journal of Computational Physics, 2022, 466, 111402.	1.9	73

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145	Physics-informed neural networks for solving forward and inverse flow problems via the Boltzmann-BGK formulation. Journal of Computational Physics, 2021, 447, 110676.	1.9	72
146	Flow instability and wall shear stress variation in intracranial aneurysms. Journal of the Royal Society Interface, 2010, 7, 967-988.	1.5	71
147	Operator learning for predicting multiscale bubble growth dynamics. Journal of Chemical Physics, 2021, 154, 104118.	1.2	71
148	Coarse-graining limits in open and wall-bounded dissipative particle dynamics systems. Journal of Chemical Physics, 2006, 124, 184101.	1.2	69
149	Quantifying the Rheological and Hemodynamic Characteristics of Sickle Cell Anemia. Biophysical Journal, 2012, 102, 185-194.	0.2	69
150	A Spectral Method (of Exponential Convergence) for Singular Solutions of the Diffusion Equation with General Two-Sided Fractional Derivative. SIAM Journal on Numerical Analysis, 2018, 56, 24-49.	1.1	69
151	A comparative study between dissipative particle dynamics and molecular dynamics for simple- and complex-geometry flows. Journal of Chemical Physics, 2005, 123, 104107.	1.2	68
152	Analyzing Transient Turbulence in a Stenosed Carotid Artery by Proper Orthogonal Decomposition. Annals of Biomedical Engineering, 2009, 37, 2200-2217.	1.3	68
153	Probing vasoocclusion phenomena in sickle cell anemia via mesoscopic simulations. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 11326-11330.	3.3	68
154	Probing red blood cell mechanics, rheology and dynamics with a two-component multi-scale model. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130389.	1.6	68
155	SympNets: Intrinsic structure-preserving symplectic networks for identifying Hamiltonian systems. Neural Networks, 2020, 132, 166-179.	3.3	68
156	Model inversion via multi-fidelity Bayesian optimization: a new paradigm for parameter estimation in haemodynamics, and beyond. Journal of the Royal Society Interface, 2016, 13, 20151107.	1.5	67
157	Multi-fidelity Bayesian neural networks: Algorithms and applications. Journal of Computational Physics, 2021, 438, 110361.	1.9	67
158	Effects of Oblique Inflow in Vortex-Induced Vibrations. Flow, Turbulence and Combustion, 2003, 71, 375-389.	1.4	66
159	Fractional modeling of viscoelasticity in 3D cerebral arteries and aneurysms. Journal of Computational Physics, 2016, 323, 219-242.	1.9	66
160	Steady shear rheometry of dissipative particle dynamics models of polymer fluids in reverse Poiseuille flow. Journal of Chemical Physics, 2010, 132, 144103.	1.2	65
161	A convergence study of a new partitioned fluidâ€“structure interaction algorithm based on fictitious mass and damping. Journal of Computational Physics, 2012, 231, 629-652.	1.9	65
162	Multiscale Universal Interface: A concurrent framework for coupling heterogeneous solvers. Journal of Computational Physics, 2015, 297, 13-31.	1.9	65

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163	Tempered Fractional Sturm–Liouville EigenProblems. SIAM Journal of Scientific Computing, 2015, 37, A1777-A1800.	1.3	65
164	LARGEâ€SCALE SIMULATION OF THE HUMAN ARTERIAL TREE. Clinical and Experimental Pharmacology and Physiology, 2009, 36, 194-205.	0.9	64
165	Implicit-Explicit Difference Schemes for Nonlinear Fractional Differential Equations with Nonsmooth Solutions. SIAM Journal of Scientific Computing, 2016, 38, A3070-A3093.	1.3	63
166	A discontinuous Galerkin method for the Navier-Stokes equations. International Journal for Numerical Methods in Fluids, 1999, 29, 587-603.	0.9	62
167	Schmidt number effects in dissipative particle dynamics simulation of polymers. Journal of Chemical Physics, 2006, 125, 184902.	1.2	61
168	Petrov–Galerkin and Spectral Collocation Methods for Distributed Order Differential Equations. SIAM Journal of Scientific Computing, 2017, 39, A1003-A1037.	1.3	60
169	A dissipative particle dynamics method for arbitrarily complex geometries. Journal of Computational Physics, 2018, 355, 534-547.	1.9	60
170	Spectral element simulations of laminar and turbulent flows in complex geometries. Applied Numerical Mathematics, 1989, 6, 85-105.	1.2	58
171	Unsteady Two-Dimensional Flows in Complex Geometries: Comparative Bifurcation Studies with Global Eigenfunction Expansions. SIAM Journal of Scientific Computing, 1997, 18, 775-805.	1.3	58
172	Lock-in of the vortex-induced vibrations of a long tensioned beam in shear flow. Journal of Fluids and Structures, 2011, 27, 838-847.	1.5	58
173	Simulation and modelling of slip flow over surfaces grafted with polymer brushes and glycocalyx fibres. Journal of Fluid Mechanics, 2012, 711, 192-211.	1.4	58
174	Sub-cellular modeling of platelet transport in blood flow through microchannels with constriction. Soft Matter, 2016, 12, 4339-4351.	1.2	58
175	Fast difference schemes for solving high-dimensional time-fractional subdiffusion equations. Journal of Computational Physics, 2016, 307, 15-33.	1.9	58
176	Predicting dynamics and rheology of blood flow: A comparative study of multiscale and low-dimensional models of red blood cells. Microvascular Research, 2011, 82, 163-170.	1.1	57
177	Distributed lock-in drives broadband vortex-induced vibrations of a long flexible cylinder in shear flow. Journal of Fluid Mechanics, 2013, 717, 361-375.	1.4	57
178	A Generalized Spectral Collocation Method with Tunable Accuracy for Fractional Differential Equations with End-Point Singularities. SIAM Journal of Scientific Computing, 2017, 39, A360-A383.	1.3	56
179	Simultaneous polymerization and adhesion under hypoxia in sickle cell disease. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9473-9478.	3.3	55
180	DeepM&Mnet for hypersonics: Predicting the coupled flow and finite-rate chemistry behind a normal shock using neural-network approximation of operators. Journal of Computational Physics, 2021, 447, 110698.	1.9	55

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181	Modeling of Biomechanics and Biorheology of Red Blood Cells in Type 2 Diabetes Mellitus. Biophysical Journal, 2017, 113, 481-490.	0.2	54
182	Adaptive finite element method for fractional differential equations using hierarchical matrices. Computer Methods in Applied Mechanics and Engineering, 2017, 325, 56-76.	3.4	54
183	Single-particle hydrodynamics in DPD: A new formulation. Europhysics Letters, 2008, 84, 10012.	0.7	53
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