Petros Koumoutsakos

List of Publications by Year in descending order

256 papers	19,840 citations	14614 66 h-index	11899 134 g-index
287 all docs	287 docs citations	287 times ranked	18339 citing authors

#	Article	IF	Citations
1	Reducing the Time Complexity of the Derandomized Evolution Strategy with Covariance Matrix Adaptation (CMA-ES). Evolutionary Computation, 2003, 11, 1-18.	2.3	1,762
2	Machine Learning for Fluid Mechanics. Annual Review of Fluid Mechanics, 2020, 52, 477-508.	10.8	1,324
3	Feature point tracking and trajectory analysis for video imaging in cell biology. Journal of Structural Biology, 2005, 151, 182-195.	1.3	1,234
4	On the Waterâ˜Carbon Interaction for Use in Molecular Dynamics Simulations of Graphite and Carbon Nanotubes. Journal of Physical Chemistry B, 2003, 107, 1345-1352.	1.2	1,150
5	TScratch: a novel and simple software tool for automated analysis of monolayer wound healing assays. BioTechniques, 2009, 46, 265-274.	0.8	532
6	Carbon Nanotubes in Water:Â Structural Characteristics and Energetics. Journal of Physical Chemistry B, 2001, 105, 9980-9987.	1.2	431
7	MorphoGraphX: A platform for quantifying morphogenesis in 4D. ELife, 2015, 4, 05864.	2.8	389
8	High-resolution simulations of the flow around an impulsively started cylinder using vortex methods. Journal of Fluid Mechanics, 1995, 296, 1-38.	1.4	345
9	Simulations of optimized anguilliform swimming. Journal of Experimental Biology, 2006, 209, 4841-4857.	0.8	314
10	Dispersion corrections to density functionals for water aromatic interactions. Journal of Chemical Physics, 2004, 120, 2693-2699.	1.2	283
11	MULTISCALE FLOW SIMULATIONS USING PARTICLES. Annual Review of Fluid Mechanics, 2005, 37, 457-487.	10.8	270
12	Optimization based on bacterial chemotaxis. IEEE Transactions on Evolutionary Computation, 2002, 6, 16-29.	7.5	264
13	Efficient collective swimming by harnessing vortices through deep reinforcement learning. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5849-5854.	3.3	261
14	Neural Network Modeling for Near Wall Turbulent Flow. Journal of Computational Physics, 2002, 182, 1-26.	1.9	260
15	Accelerating Evolutionary Algorithms With Gaussian Process Fitness Function Models. IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews, 2005, 35, 183-194.	3.3	252
16	Data-driven forecasting of high-dimensional chaotic systems with long short-term memory networks. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20170844.	1.0	245
17	A Method for Handling Uncertainty in Evolutionary Optimization With an Application to Feedback Control of Combustion. IEEE Transactions on Evolutionary Computation, 2009, 13, 180-197.	7.5	244
18	Single-particle tracking of murine polyoma virus-like particles on live cells and artificial membranes. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 15110-15115.	3.3	235

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19	Molecular Dynamics Simulation of Contact Angles of Water Droplets in Carbon Nanotubes. Nano Letters, 2001, 1, 697-702.	4.5	230
20	Backpropagation algorithms and Reservoir Computing in Recurrent Neural Networks for the forecasting of complex spatiotemporal dynamics. Neural Networks, 2020, 126, 191-217.	3.3	229
21	Barriers to Superfast Water Transport in Carbon Nanotube Membranes. Nano Letters, 2013, 13, 1910-1914.	4.5	220
22	Learning probability distributions in continuous evolutionary algorithms â€“ a comparative review. Natural Computing, 2004, 3, 77-112.	1.8	204
23	Contrasting Actions of Selective Inhibitors of Angiopoietin-1 and Angiopoietin-2 on the Normalization of Tumor Blood Vessels. American Journal of Pathology, 2009, 175, 2159-2170.	1.9	201
24	Hybrid atomisticâ€“continuum method for the simulation of dense fluid flows. Journal of Computational Physics, 2005, 205, 373-390.	1.9	184
25	A comparison of vortex and pseudo-spectral methods for the simulation of periodic vortical flows at high Reynolds numbers. Journal of Computational Physics, 2011, 230, 2794-2805.	1.9	183
26	Kapitza Resistance between Few-Layer Graphene and Water: Liquid Layering Effects. Nano Letters, 2015, 15, 5744-5749.	4.5	164
27	Bayesian uncertainty quantification and propagation in molecular dynamics simulations: A high performance computing framework. Journal of Chemical Physics, 2012, 137, 144103.	1.2	154
28	PPM â€“ A highly efficient parallel particleâ€“mesh library for the simulation of continuum systems. Journal of Computational Physics, 2006, 215, 566-588.	1.9	153
29	Remeshed Smoothed Particle Hydrodynamics for the Simulation of Viscous and Heat Conducting Flows. Journal of Computational Physics, 2002, 182, 67-90.	1.9	152
30	A theoretical prediction of friction drag reduction in turbulent flow by superhydrophobic surfaces. Physics of Fluids, 2006, 18, 051703.	1.6	150
31	Strain Engineering of Kapitza Resistance in Few-Layer Graphene. Nano Letters, 2014, 14, 819-825.	4.5	150
32	Data-assisted reduced-order modeling of extreme events in complex dynamical systems. PLoS ONE, 2018, 13, e0197704.	1.1	148
33	A Lagrangian particle level set method. Journal of Computational Physics, 2005, 210, 342-367.	1.9	140
34	An immersed boundaryâ€“lattice-Boltzmann method for the simulation of the flow past an impulsively started cylinder. Journal of Computational Physics, 2008, 227, 4486-4498.	1.9	134
35	Simulations of single and multiple swimmers with non-divergence free deforming geometries. Journal of Computational Physics, 2011, 230, 7093-7114.	1.9	132
36	A Hybrid Model for Three-Dimensional Simulations of Sprouting Angiogenesis. Biophysical Journal, 2008, 95, 3146-3160.	0.2	131

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37	Inviscid Axisymmetrization of an Elliptical Vortex. Journal of Computational Physics, 1997, 138, 821-857.	1.9	129
38	Boundary Conditions for Viscous Vortex Methods. Journal of Computational Physics, 1994, 113, 52-61.	1.9	128
39	Multiobjective evolutionary algorithm for the optimization of noisy combustion processes. IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews, 2002, 32, 460-473.	3.3	127
40	Thermophoretic Motion of Water Nanodroplets Confined inside Carbon Nanotubes. Nano Letters, 2009, 9, 66-71.	4.5	127
41	Multiphase water flow inside carbon nanotubes. International Journal of Multiphase Flow, 2004, 30, 995-1010.	1.6	119
42	Effects of Organelle Shape on Fluorescence Recovery after Photobleaching. Biophysical Journal, 2005, 89, 1482-1492.	0.2	119
43	The Fluid Mechanics of Cancer and Its Therapy. Annual Review of Fluid Mechanics, 2013, 45, 325-355.	10.8	117
44	Solidification of Gold Nanoparticles in Carbon Nanotubes. Physical Review Letters, 2005, 94, 105502.	2.9	111
45	Billion vortex particle direct numerical simulations of aircraft wakes. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1296-1304.	3.4	111
46	Covalently Bonded Grapheneâ€“Carbon Nanotube Hybrid for Highâ€Performance Thermal Interfaces. Advanced Functional Materials, 2015, 25, 7539-7545.	7.8	109
47	Hydrophobic hydration of C60 and carbon nanotubes in water. Carbon, 2004, 42, 1185-1194.	5.4	108
48	C-start: optimal start of larval fish. Journal of Fluid Mechanics, 2012, 698, 5-18.	1.4	104
49	Simulations of the viscous flow normal to an impulsively started and uniformly accelerated flat plate. Journal of Fluid Mechanics, 1996, 328, 177-227.	1.4	103
50	Learning to school in the presence of hydrodynamic interactions. Journal of Fluid Mechanics, 2016, 789, 726-749.	1.4	103
51	Synchronisation through learning for two self-propelled swimmers. Bioinspiration and Biomimetics, 2017, 12, 036001.	1.5	98
52	Personalized Radiotherapy Design for Glioblastoma: Integrating Mathematical Tumor Models, Multimodal Scans, and Bayesian Inference. IEEE Transactions on Medical Imaging, 2019, 38, 1875-1884.	5.4	96
53	Nanoparticle Traffic on Helical Tracks:â€‰ Thermophoretic Mass Transport through Carbon Nanotubes. Nano Letters, 2006, 6, 1910-1917.	4.5	93
54	A novel supervised trajectory segmentation algorithm identifies distinct types of human adenovirus motion in host cells. Journal of Structural Biology, 2007, 159, 347-358.	1.3	92

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55	Curvature Induced L-Defects in Water Conduction in Carbon Nanotubes. Nano Letters, 2005, 5, 1017-1022.	4.5	90
56	Simulations of (An)Isotropic Diffusion on Curved Biological Surfaces. Biophysical Journal, 2006, 90, 878-885.	0.2	90
57	Î4U: A high performance computing framework for Bayesian uncertainty quantification of complex models. Journal of Computational Physics, 2015, 284, 1-21.	1.9	89
58	X-TMCMC: Adaptive kriging for Bayesian inverse modeling. Computer Methods in Applied Mechanics and Engineering, 2015, 289, 409-428.	3.4	87
59	Reinforcement Learning and Wavelet Adapted Vortex Methods for Simulations of Self-propelled Swimmers. SIAM Journal of Scientific Computing, 2014, 36, B622-B639.	1.3	86
60	R-leaping: Accelerating the stochastic simulation algorithm by reaction leaps. Journal of Chemical Physics, 2006, 125, 084103.	1.2	81
61	Automating turbulence modelling by multi-agent reinforcement learning. Nature Machine Intelligence, 2021, 3, 87-96.	8.3	81
62	A versatile and membrane-less electrochemical reactor for the electrolysis of water and brine. Energy and Environmental Science, 2019, 12, 1592-1604.	15.6	80
63	Hydrodynamic properties of carbon nanotubes. Physical Review E, 2004, 69, 062201.	0.8	73
64	GPU accelerated simulations of bluff body flows using vortex particle methods. Journal of Computational Physics, 2010, 229, 3316-3333.	1.9	73
65	Waterâ€“Carbon Interactions 2: Calibration of Potentials using Contact Angle Data for Different Interaction Models. Molecular Simulation, 2004, 30, 205-216.	0.9	72
66	Vorticity flux control for a turbulent channel flow. Physics of Fluids, 1999, 11, 248-250.	1.6	71
67	Accelerated endothelial wound healing on microstructured substrates under flow. Biomaterials, 2013, 34, 1488-1497.	5.7	71
68	Structure and Response to Flow of the Glycocalyx Layer. Biophysical Journal, 2014, 106, 232-243.	0.2	70
69	Antagonistic Growth Regulation by Dpp and Fat Drives Uniform Cell Proliferation. Developmental Cell, 2011, 20, 123-130.	3.1	69
70	Hydrodynamic interaction among vertical axisymmetric bodies restrained in waves. Applied Ocean Research, 1987, 9, 128-140.	1.8	67
71	A Lagrangian Particleâ€Wavelet Method. Multiscale Modeling and Simulation, 2006, 5, 980-995.	0.6	65
72	Vortex Methods with Spatially Varying Cores. Journal of Computational Physics, 2000, 162, 164-185.	1.9	64

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73	Optimal shapes for anguilliform swimmers at intermediate Reynolds numbers. Journal of Fluid Mechanics, 2013, 722, .	1.4	62
74	On the generation of vorticity at a free surface. Journal of Fluid Mechanics, 1999, 382, 351-366.	1.4	61
75	Multilevel Adaptive Particle Methods for Convection-Diffusion Equations. Multiscale Modeling and Simulation, 2005, 4, 328-357.	0.6	61
76	Edge detection in microscopy images using curvelets. BMC Bioinformatics, 2009, 10, 75.	1.2	61
77	An immersed boundary method for smoothed particle hydrodynamics of self-propelled swimmers. Journal of Computational Physics, 2008, 227, 8636-8654.	1.9	57
78	Sustaining dry surfaces under water. Scientific Reports, 2015, 5, 12311.	1.6	56
79	Evolutionary optimization of an anisotropic compliant surface for turbulent friction drag reduction. Journal of Turbulence, 2008, 9, N35.	0.5	55
80	ContextVP: Fully Context-Aware Video Prediction. Lecture Notes in Computer Science, 2018, , 781-797.	1.0	55
81	Phonon assisted thermophoretic motion of gold nanoparticles inside carbon nanotubes. Applied Physics Letters, 2007, 90, 253116.	1.5	54
82	Coupling lattice Boltzmann and molecular dynamics models for dense fluids. Physical Review E, 2007, 75, 046704.	0.8	53
83	Molecular Dynamics Simulation of Nanodroplet Evaporation. Journal of Heat Transfer, 2001, 123, 741-748.	1.2	52
84	A Fourier-based elliptic solver for vortical flows with periodic and unbounded directions. Journal of Computational Physics, 2010, 229, 2425-2431.	1.9	52
85	A Stochastic Model for Microtubule Motors Describes the In Vivo Cytoplasmic Transport of Human Adenovirus. PLoS Computational Biology, 2009, 5, e1000623.	1.5	51
86	Carbon Nanotubes as Thermally Induced Water Pumps. ACS Nano, 2017, 11, 9997-10002.	7.3	51
87	The mouse retina in 3D: quantification of vascular growth and remodeling. Integrative Biology (United Kingdom), 2013, 5, 1426-1438.	0.6	49
88	High order finite volume methods on wavelet-adapted grids with local time-stepping on multicore architectures for the simulation of shock-bubble interactions. Journal of Computational Physics, 2010, 229, 8364-8383.	1.9	48
89	Controlled gliding and perching through deep-reinforcement-learning. Physical Review Fluids, 2019, 4, .	1.0	48
90	Scientific multi-agent reinforcement learning for wall-models of turbulent flows. Nature Communications, 2022, 13, 1443.	5.8	48

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91	Active control of vortexâ€“wall interactions. Physics of Fluids, 1997, 9, 3808-3816.	1.6	47
92	Ultrafast Propulsion of Water Nanodroplets on Patterned Graphene. ACS Nano, 2019, 13, 5465-5472.	7.3	46
93	Accelerated stochastic and hybrid methods for spatial simulations of reactionâ€“diffusion systems. Chemical Physics Letters, 2008, 451, 136-140.	1.2	44
94	MRAG-I2D: Multi-resolution adapted grids for remeshed vortex methods on multicore architectures. Journal of Computational Physics, 2015, 288, 1-18.	1.9	44
95	Direct numerical simulations of vortex rings at Reî“ = 7500. Journal of Fluid Mechanics, 2007, 581, 495-505.	1.4	43
96	A Clustering Genetic Algorithm for Cylinder Drag Optimization. Journal of Computational Physics, 2002, 175, 79-107.	1.9	42
97	Optimal morphokinematics for undulatory swimmers at intermediate Reynolds numbers. Journal of Fluid Mechanics, 2015, 775, 178-188.	1.4	42
98	The fate of the slabs interacting with a density/viscosity hill in the mid-mantle. Physics of the Earth and Planetary Interiors, 2010, 180, 271-282.	0.7	40
99	Data Driven, Predictive Molecular Dynamics for Nanoscale Flow Simulations under Uncertainty. Journal of Physical Chemistry B, 2013, 117, 14808-14816.	1.2	40
100	Control of density fluctuations in atomistic-continuum simulations of dense liquids. Physical Review E, 2007, 76, 016709.	0.8	39
101	Multiscale simulations of complex systems by learning their effective dynamics. Nature Machine Intelligence, 2022, 4, 359-366.	8.3	39
102	Cell Image Velocimetry (CIV): boosting the automated quantification of cell migration in wound healing assays. Integrative Biology (United Kingdom), 2012, 4, 1437-1447.	0.6	38
103	11 PFLOP/s simulations of cloud cavitation collapse. , 2013, , .		38
104	SEM++: A particle model of cellular growth, signaling and migration. Computational Particle Mechanics, 2014, 1, 211-227.	1.5	38
105	Evolution Strategies for Automatic Optimization of Jet Mixing. AIAA Journal, 2001, 39, 967-969.	1.5	37
106	Spatially distributed control for optimal drag reduction of the flow past a circular cylinder. Journal of Fluid Mechanics, 2008, 599, 111-120.	1.4	37
107	Shape optimization for drag reduction in linked bodies using evolution strategies. Computers and Structures, 2011, 89, 1224-1231.	2.4	37
108	Multiscale simulation of water flow past a C540 fullerene. Journal of Computational Physics, 2012, 231, 2677-2681.	1.9	37

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109	Simulations of Electrophoretic RNA Transport Through Transmembrane Carbon Nanotubes. Biophysical Journal, 2008, 94, 2546-2557.	0.2	36
110	Simulation of Pollutant Transport Using a Particle Method. Journal of Computational Physics, 2001, 173, 322-347.	1.9	35
111	Self-Organizing Nets for Optimization. IEEE Transactions on Neural Networks, 2004, 15, 758-765.	4.8	35
112	Automated identification and deep classification of cut marks on bones and its paleoanthropological implications. Journal of Computational Science, 2019, 32, 36-43.	1.5	35
113	Variability and constancy in cellular growth of Arabidopsis sepals. Plant Physiology, 2015, 169, pp.00839.2015.	2.3	34
114	Three-Dimensional Vortex Methods for Particle-Laden Flows with Two-Way Coupling. Journal of Computational Physics, 2001, 167, 39-71.	1.9	33
115	A Lagrangian particle method for reactionâ€“diffusion systems on deforming surfaces. Journal of Mathematical Biology, 2010, 61, 649-663.	0.8	33
116	Vortex tube reconnection at Re = 104. Physics of Fluids, 2012, 24, .	1.6	33
117	GPU and APU computations of Finite Time Lyapunov Exponent fields. Journal of Computational Physics, 2012, 231, 2229-2244.	1.9	33
118	A stochastic boundary forcing for dissipative particle dynamics. Journal of Computational Physics, 2007, 225, 1125-1136.	1.9	32
119	A hierarchical Bayesian framework for force field selection in molecular dynamics simulations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150032.	1.6	32
120	Bending models of lipid bilayer membranes: Spontaneous curvature and area-difference elasticity. Computer Methods in Applied Mechanics and Engineering, 2020, 359, 112758.	3.4	30
121	Flow mediated interactions between two cylinders at finite Re numbers. Physics of Fluids, 2012, 24, .	1.6	29
122	A Mixed Bayesian Optimization Algorithm with Variance Adaptation. Lecture Notes in Computer Science, 2004, , 352-361.	1.0	29
123	Learning efficient navigation in vortical flow fields. Nature Communications, 2021, 12, 7143.	5.8	29
124	Waterâ€“carbon interactions III: The influence of surface and fluid impurities. Physical Chemistry Chemical Physics, 2004, 6, 1988-1995.	1.3	28
125	A computational study of expiratory particle transport and vortex dynamics during breathing with and without face masks. Physics of Fluids, 2021, 33, 066605.	1.6	28
126	Ultrafast cooling by covalently bonded graphene-carbon nanotube hybrid immersed in water. Nanotechnology, 2016, 27, 465705.	1.3	27

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127	Wetting of doped carbon nanotubes by water droplets. Chemical Physics Letters, 2005, 412, 250-254.	1.2	26
128	Coarse-grained molecular dynamics simulations of shear-induced instabilities of lipid bilayer membranes in water. Physical Review E, 2010, 82, 051602.	0.8	26
129	Towards a living earth simulator. European Physical Journal: Special Topics, 2012, 214, 77-108.	1.2	26
130	Data-driven inference of the reproduction number for COVID-19 before and after interventions for 51 European countries. Swiss Medical Weekly, 2020, 150, w20313.	0.8	26
131	Step size adaptation in evolution strategies using reinforcement learning. , 0, , .		25
132	Control of three-dimensional wakes using evolution strategies. Comptes Rendus - Mecanique, 2005, 333, 65-77.	2.1	25
133	Multicore/Multi-GPU Accelerated Simulations of Multiphase Compressible Flows Using Wavelet Adapted Grids. SIAM Journal of Scientific Computing, 2011, 33, 512-540.	1.3	25
134	Large Scale Simulation of Cloud Cavitation Collapse. Procedia Computer Science, 2017, 108, 1763-1772.	1.2	25
135	Optimal sensor placement for artificialÂswimmers. Journal of Fluid Mechanics, 2020, 884, .	1.4	25
136	When Do Heavy-Tail Distributions Help?. Lecture Notes in Computer Science, 2006, , 62-71.	1.0	25
137	A numerical study of the stabilitiy of helical vortices using vortex methods. Journal of Physics: Conference Series, 2007, 75, 012034.	0.3	24
138	Earth curvature effects on subduction morphology: Modeling subduction in a spherical setting. Acta Geotechnica, 2009, 4, 95-105.	2.9	24
139	Bayesian uncertainty quantification and propagation for discrete element simulations of granular materials. Computer Methods in Applied Mechanics and Engineering, 2014, 282, 218-238.	3.4	24
140	Dynamic particle ordering in oscillatory inertial microfluidics. Microfluidics and Nanofluidics, 2019, 23, 1.	1.0	24
141	Remeshed smoothed particle hydrodynamics simulation of the mechanical behavior of human organs. Technology and Health Care, 2004, 12, 305-314.	0.5	23
142	Adaptive mesh refinement for stochastic reactionâ€“diffusion processes. Journal of Computational Physics, 2011, 230, 13-26.	1.9	23
143	Continuum simulations of water flow in carbon nanotube membranes. New Journal of Physics, 2014, 16, 082001.	1.2	23
144	Iterative Brinkman penalization for remeshed vortex methods. Journal of Computational Physics, 2015, 280, 547-562.	1.9	23

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145	A Lagrangian particle method for the simulation of linear and nonlinear elastic models of soft tissue. Journal of Computational Physics, 2008, 227, 9195-9215.	1.9	22
146	Transverse momentum micromixer optimization with evolution strategies. Computers and Fluids, 2004, 33, 521-531.	1.3	21
147	Control algorithm for multiscale flow simulations of water. Physical Review E, 2009, 79, 045701.	0.8	21
148	Fusing heterogeneous data for the calibration of molecular dynamics force fields using hierarchical Bayesian models. Journal of Chemical Physics, 2016, 145, 244112.	1.2	21
149	Bayesian identification of the tendon fascicleâ€™s structural composition using finite element models for helical geometries. Computer Methods in Applied Mechanics and Engineering, 2017, 313, 744-758.	3.4	20
150	A hybrid particle volume-of-fluid method for curvature estimation in multiphase flows. International Journal of Multiphase Flow, 2020, 125, 103209.	1.6	20
151	Pharmacokinetics of Antiâ€VEGF Agent Aflibercept in Cancer Predicted by Dataâ€Driven, Molecularâ€Detailed Model. CPT: Pharmacometrics and Systems Pharmacology, 2015, 4, 641-649.	1.3	19
152	Data driven inference for the repulsive exponent of the Lennard-Jones potential in molecular dynamics simulations. Scientific Reports, 2017, 7, 16576.	1.6	19
153	On phonons and water flow enhancement in carbon nanotubes. Nature Nanotechnology, 2017, 12, 1106-1108.	15.6	19
154	Bayesian Annealed Sequential Importance Sampling: An Unbiased Version of Transitional Markov Chain Monte Carlo. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering, 2018, 4, .	0.7	19
155	Bayesian selection for coarse-grained models of liquid water. Scientific Reports, 2019, 9, 99.	1.6	18
156	Vortex methods for incompressible flow simulations on the GPU. Visual Computer, 2008, 24, 699-708.	2.5	17
157	PARTICLE SIMULATIONS OF MORPHOGENESIS. Mathematical Models and Methods in Applied Sciences, 2011, 21, 955-1006.	1.7	17
158	Direct Numerical Simulations using Vortex Methods. , 1993, , 179-190.		17
159	Computational study of the collapse of a cloud with<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>12</mml:mn><mml:mspace width="0.16em" /><mml:mn>500</mml:mn></mml:mrow></mml:math>gas bubbles in a liquid. Physical Review Fluids, 2019, 4, .	1.0	17
160	Accelerated Simulations of Molecular Systems through Learning of Effective Dynamics. Journal of Chemical Theory and Computation, 2022, 18, 538-549.	2.3	17
161	D-leaping: Accelerating stochastic simulation algorithms for reactions with delays. Journal of Computational Physics, 2009, 228, 5908-5916.	1.9	16
162	Quantitative flow analysis of swimming dynamics with coherent Lagrangian vortices. Chaos, 2015, 25, 087405.	1.0	16

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163	Vortex dynamics in 3D shock-bubble interaction. Physics of Fluids, 2013, 25, .	1.6	15
164	An exact accelerated stochastic simulation algorithm. Journal of Chemical Physics, 2009, 130, 144110.	1.2	14
165	Bayesian Hierarchical Models for Uncertainty Quantification in Structural Dynamics. , 2014, , .		14
166	The in-silico lab-on-a-chip. , 2015, , .		14
167	Ï-SHAKE: An extension to SHAKE for the explicit treatment of angular constraints. Computer Physics Communications, 2009, 180, 360-364.	3.0	13
168	Meshâ€“particle interpolations on graphics processing units and multicore central processing units. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 2164-2175.	1.6	13
169	Self-propulsion of a counter-rotating cylinder pair in a viscous fluid. Physics of Fluids, 2015, 27, .	1.6	13
170	Hierarchical Stochastic Model in Bayesian Inference for Engineering Applications: Theoretical Implications and Efficient Approximation. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering, 2019, 5, .	0.7	13
171	Optimal Flow Sensing for Schooling Swimmers. Biomimetics, 2020, 5, 10.	1.5	13
172	Increasing the Serial and the Parallel Performance of the CMA-Evolution Strategy with Large Populations. Lecture Notes in Computer Science, 2002, , 422-431.	1.0	13
173	Optimal allocation of limited test resources for the quantification of COVID-19 infections. Swiss Medical Weekly, 2020, 150, w20445.	0.8	13
174	Independent Control and Path Planning of Microswimmers with a Uniform Magnetic Field. Advanced Intelligent Systems, 2022, 4, .	3.3	13
175	Large Scale Three-Dimensional Boundary Element Simulation of Subduction. Lecture Notes in Computer Science, 2007, , 1122-1129.	1.0	12
176	Self-Adaptation for Multi-objective Evolutionary Algorithms. Lecture Notes in Computer Science, 2003, , 267-281.	1.0	11
177	PARTICLE MESH HYDRODYNAMICS FOR ASTROPHYSICS SIMULATIONS. International Journal of Modern Physics C, 2007, 18, 610-618.	0.8	11
178	Petascale simulations of compressible flows with interfaces. Journal of Computational Science, 2018, 26, 217-225.	1.5	11
179	Computing the force distribution on the surface of complex, deforming geometries using vortex methods and Brinkman penalization. International Journal for Numerical Methods in Fluids, 2017, 85, 484-501.	0.9	10
180	Flow of Aqueous Solutions in Carbon Nanotubes. Lecture Notes in Computational Science and Engineering, 2004, , 215-226.	0.1	10

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181	Mirheo: High-performance mesoscale simulations for microfluidics. Computer Physics Communications, 2020, 254, 107298.	3.0	10
182	Tuning the Dielectric Response of Water in Nanoconfinement through Surface Wettability. ACS Nano, 2021, 15, 20311-20318.	7.3	10
183	Flow simulations using particles. , 2008, , .		9
184	Self-organizing Maps for Pareto Optimization of Airfoils. Lecture Notes in Computer Science, 2002, , 122-131.	1.0	9
185	Continuum simulations of water flow past fullerene molecules. European Physical Journal: Special Topics, 2015, 224, 2321-2330.	1.2	8
186	Korali: Efficient and scalable software framework for Bayesian uncertainty quantification and stochastic optimization. Computer Methods in Applied Mechanics and Engineering, 2022, 389, 114264.	3.4	8
187	Placental plasticity in monochorionic twins: Impact on birth weight and placental weight. Placenta, 2015, 36, 1018-1023.	0.7	7
188	Bayesian calibration of force fields for molecular simulations. , 2020, , 169-227.		7
189	A cutoff phenomenon in accelerated stochastic simulations of chemical kinetics via flow averaging (FLAVOR-SSA). Journal of Chemical Physics, 2010, 133, 244117.	1.2	6
190	Waveletâ€adaptive solvers on multiâ€core architectures for the simulation of complex systems. Concurrency Computation Practice and Experience, 2011, 23, 172-186.	1.4	6
191	An Efficient Compressible Multicomponent Flow Solver for Heterogeneous CPU/GPU Architectures. , 2016, , .		6
192	Reference Ranges for Fetal Atrioventricular and Ventriculoatrial Time Intervals and Their Ratios during Normal Pregnancy. Fetal Diagnosis and Therapy, 2018, 44, 228-235.	0.6	6
193	Detection of arterial wall abnormalities via Bayesian model selection. Royal Society Open Science, 2019, 6, 182229.	1.1	6
194	Computing foaming flows across scales: From breaking waves to microfluidics. Science Advances, 2022, 8, eabm0590.	4.7	6
195	Non-periodic Molecular Dynamics simulations of coarse grained lipid bilayer in water. Computers and Mathematics With Applications, 2010, 59, 2370-2373.	1.4	5
196	High throughput software for direct numerical simulations of compressible two-phase flows. , 2012, , .		5
197	Hierarchical Bayesian Uncertainty Quantification for a Model of the Red Blood Cell. Physical Review Applied, 2021, 15, .	1.5	5
198	A Software Framework for the Portable Parallelization of Particle-Mesh Simulations. Lecture Notes in Computer Science, 2006, , 730-739.	1.0	5

#	Article	IF	Citations
199	Modelling glioma progression, mass effect and intracranial pressure in patient anatomy. Journal of the Royal Society Interface, 2022, 19, 20210922.	1.5	5
200	Improved boundary integral method for inviscid boundary condition applications. AIAA Journal, 1993, 31, 401-404.	1.5	4
201	EFFECTS OF ATOMISTIC DOMAIN SIZE ON HYBRID LATTICE BOLTZMANNâ€“MOLECULAR DYNAMICS SIMULATIONS OF DENSE FLUIDS. International Journal of Modern Physics C, 2007, 18, 644-651.	0.8	4
202	Evolutionary Optimization of Feedback Controllers for Thermoacoustic Instabilities. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 311-317.	0.1	4
203	Coupling Remeshed Particle and Phase Field Methods for the Simulation of Reaction-Diffusion on the Surface and the Interior of Deforming Geometries. SIAM Journal of Scientific Computing, 2013, 35, B1285-B1303.	1.3	4
204	Multilevel Control Variates for Uncertainty Quantification in Simulations of Cloud Cavitation. SIAM Journal of Scientific Computing, 2018, 40, B1361-B1390.	1.3	4
205	Bubbles in turbulent flows: Data-driven, kinematic models with history terms. International Journal of Multiphase Flow, 2020, 129, 103286.	1.6	4
206	Learning swimming escape patterns for larval fish under energy constraints. Physical Review Fluids, 2021, 6, .	1.0	4
207	Nanopumps without Pressure Gradients: Ultrafast Transport of Water in Patterned Nanotubes. Journal of Physical Chemistry B, 2022, 126, 660-669.	1.2	4
208	High resolution vortex simulation of bluff body flows. Journal of Wind Engineering and Industrial Aerodynamics, 1993, 46-47, 315-325.	1.7	3
209	Evolving strategies for active flow control. , 0, , .		3
210	A clustering genetic algorithm for actuator optimization in flow control. , 0, , .		3
211	Multiresolution stochastic simulations of reactionâ€“diffusion processes. Physical Chemistry Chemical Physics, 2008, 10, 5963.	1.3	3
212	Multiscale stochastic simulations of chemical reactions with regulated scale separation. Journal of Computational Physics, 2013, 244, 290-297.	1.9	3
213	High Order Semi-Lagrangian Particle Methods. Lecture Notes in Computational Science and Engineering, 2017, , 103-117.	0.1	3
214	S-Leaping: An Adaptive, Accelerated Stochastic Simulation Algorithm, Bridging $$au $$ Ï„ -Leaping and R-Leaping. Bulletin of Mathematical Biology, 2019, 81, 3074-3096.	0.9	3
215	Microchannel Optimization Using Multiobjective Evolution Strategies. Lecture Notes in Computer Science, 2001, , 516-530.	1.0	3
216	Flow Optimization Using Stochastic Algorithms. Lecture Notes in Control and Information Sciences, 2006, , 213-229.	0.6	3

#	Article	IF	Citations
217	Aphros. , 2020, , .		3
218	A comparative study of penalization and phase field methods for the solution of the diffusion equation in complex geometries. Journal of Computational Physics, 2015, 283, 388-407.	1.9	2
219	The Art of Computational Science, Bridging Gaps â€“ Forming Alloys. Preface for ICCS 2017. Procedia Computer Science, 2017, 108, 1-6.	1.2	2
220	Fast Motion of Heaving Airfoils. Procedia Computer Science, 2017, 108, 235-244.	1.2	2
221	Multi-objective optimization of artificial swimmers. , 2017, , .		2
222	Pareto Optimal Swimmers. , 2017, , .		2
223	Langevin Diffusion for Population Based Sampling with an Application in Bayesian Inference for Pharmacodynamics. SIAM Journal of Scientific Computing, 2018, 40, B788-B811.	1.3	2
224	Vortex methods for three-dimensional separated flows. , 1995, , 21-30.		2
225	A Hybrid Model of Sprouting Angiogenesis. Lecture Notes in Computer Science, 2008, , 167-176.	1.0	2
226	Optimization of Aircraft Wake Alleviation Schemes through an Evolution Strategy. Lecture Notes in Computer Science, 2011, , 210-221.	1.0	2
227	Active Learning with Adaptive Grids. Lecture Notes in Computer Science, 2001, , 436-442.	1.0	2
228	Load Balancing in Large Scale Bayesian Inference. , 2020, , .		2
229	Breaking waves: To foam or not to foam?. Physical Review Fluids, 2020, 5, .	1.0	2
230	Reverse Engineering of Self-Propelled Anguilliform Swimmers. Advances in Science and Technology, 0, , .	0.2	1
231	Approximate Bayesian Computation for Granular and Molecular Dynamics Simulations. , 2016, , .		1
232	(Î¼,Î»)-CCMA-ES for Constrained Optimization with an Application in Pharmacodynamics. , 2019, , .		1
233	A High Performance Computing Framework for Multiphase, Turbulent Flows on Structured Grids. , 2019, , .		1
234	Particle Simulations of Growth: Application to Tumorigenesis. , 2012, , 261-303.		1

#	Article	IF	Citations
235	Dispersion corrected density functionals applied to the water naphthalene cluster. Lecture Notes in Computational Science and Engineering, 2004, , 205-214.	0.1	1
236	Modeling, Simulation and Optimization of Anguilliform Swimmers. , 2008, , 167-178.		1
237	Control of Micromixers, Jets, and Turbine Cooling using Evolution Strategies. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2003, , 139-156.	0.3	1
238	Continuum-particle hybrid methods for dense fluids. Lecture Notes in Computational Science and Engineering, 2004, , 227-235.	0.1	1
239	A Control Algorithm for Multiscale Simulations of Liquid Water. Lecture Notes in Computer Science, 2008, , 234-241.	1.0	1
240	High Resolution Vortex Simulation of Bluff Body Flows. , 1993, , 315-325.		1
241	Special Section on Multiscale Modeling in Materials and Life Sciences. Multiscale Modeling and Simulation, 2005, 4, 213-214.	0.6	0
242	Multiscale Modelling and Simulation, 14th International Workshop. Procedia Computer Science, 2017, 108, 1811-1812.	1.2	0
243	Towards the Virtual Rheometer. , 2017, , .		0
244	Data-driven prediction and origin identification of epidemics in population networks. Royal Society Open Science, 2021, 8, 200531.	1.1	0
245	Medusoid Vortex Rings. , 2000, , 177-177.		0
246	Multi-Objective Evolutionary Algorithm for Optimization of Combustion Processes. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2003, , 157-169.	0.3	0
247	Simulation of Particulate Flow Using Particle Methods a P3M Algorithm for Charged Particulates. , 2003, , 165-168.		0
248	Vortex Methods for Massively Parallel Computer Architectures. Lecture Notes in Computer Science, 2008, , 479-489.	1.0	0
249	Coupling Atomistic and Continuum Descriptions Using Dynamic Control. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 157-165.	0.1	0
250	Wavelet-Based Adaptive Solvers on Multi-core Architectures for the Simulation of Complex Systems. Lecture Notes in Computer Science, 2009, , 721-734.	1.0	0
251	Particle Simulations of Growth: Application to Angiogenesis. , 2012, , 305-334.		0
252	High Performance CPU Kernels for Multiphase Compressible Flows. Lecture Notes in Computer Science, 2013, , 216-225.	1.0	0

#	Article	IF	Citations
253	Efficient techniques for Bayesian inverse modeling of large-order computational models. , 2014, , 1937-1944.		0
254	Abstract B04: From modeling to in vivo tracking: a new platform for the design of delivery vectors that exploit tumor microfluidics. , 2017, , .		0
255	Multiresolution Particle Methods. , 2007, , 49-61.		0
256	Large Scale, Multiresolution Flow Simulations Using Remeshed Particle Methods. Lecture Notes in Computational Science and Engineering, 2008, , 35-46.	0.1	0