

Duncan A Lockerby

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

82

papers

1,545

citations

22

h-index

36

g-index

97

ext. papers

1,805

ext. citations

3.1

avg, IF

4.99

L-index

#	Paper	IF	Citations
82	Velocity boundary condition at solid walls in rarefied gas calculations. <i>Physical Review E</i> , 2004 , 70, 017303.4	3.4	175
81	Water transport through (7,7) carbon nanotubes of different lengths using molecular dynamics. <i>Microfluidics and Nanofluidics</i> , 2012 , 12, 257-264	2.8	91
80	New directions in fluid dynamics: non-equilibrium aerodynamic and microsystem flows. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2003 , 361, 2967-88 ³	3	72
79	On the modelling of isothermal gas flows at the microscale. <i>Journal of Fluid Mechanics</i> , 2008 , 604, 235-261	17	66
78	Capturing the Knudsen Layer in Continuum-Fluid Models of Nonequilibrium Gas Flows. <i>AIAA Journal</i> , 2005 , 43, 1391-1393	2.1	66
77	The usefulness of higher-order constitutive relations for describing the Knudsen layer. <i>Physics of Fluids</i> , 2005 , 17, 100609	4.4	60
76	Water transport through carbon nanotubes with defects. <i>Molecular Simulation</i> , 2012 , 38, 781-785	2	49
75	High-resolution Burnett simulations of micro Couette flow and heat transfer. <i>Journal of Computational Physics</i> , 2003 , 188, 333-347	4.1	49
74	A multiscale method for micro/nano flows of high aspect ratio. <i>Journal of Computational Physics</i> , 2013 , 233, 400-413	4.1	47
73	The effect of gaseous slip on microscale heat transfer: An extended Graetz problem. <i>International Journal of Heat and Mass Transfer</i> , 2006 , 49, 2502-2513	4.9	41
72	Modeling and Design of Microjet Actuators. <i>AIAA Journal</i> , 2004 , 42, 220-227	2.1	37
71	Molecular dynamics pre-simulations for nanoscale computational fluid dynamics. <i>Microfluidics and Nanofluidics</i> , 2015 , 18, 461-474	2.8	34
70	Multiscale simulation of water flow through laboratory-scale nanotube membranes. <i>Journal of Membrane Science</i> , 2018 , 567, 115-126	9.6	34
69	A hybrid molecular-continuum method for unsteady compressible multiscale flows. <i>Journal of Fluid Mechanics</i> , 2015 , 768, 388-414	3.7	32
68	Time-step coupling for hybrid simulations of multiscale flows. <i>Journal of Computational Physics</i> , 2013 , 237, 344-365	4.1	30
67	Fluid simulations with atomistic resolution: a hybrid multiscale method with field-wise coupling. <i>Journal of Computational Physics</i> , 2013 , 255, 149-165	4.1	26
66	A lumped-parameter model of the cerebrospinal system for investigating arterial-driven flow in posttraumatic syringomyelia. <i>Medical Engineering and Physics</i> , 2011 , 33, 874-82	2.4	26

65	Near-wall effects in rarefied gas micro-flows: some modern hydrodynamic approaches. <i>International Journal of Heat and Fluid Flow</i> , 2007 , 28, 37-43	2.4	26
64	Hybrid molecular-continuum simulations of water flow through carbon nanotube membranes of realistic thickness. <i>Microfluidics and Nanofluidics</i> , 2015 , 19, 997-1010	2.8	25
63	Modelling turbulent skin-friction control using linearized Navier-Stokes equations. <i>Journal of Fluid Mechanics</i> , 2012 , 702, 403-414	3.7	25
62	Revisiting the Rayleigh-Plateau instability for the nanoscale. <i>Journal of Fluid Mechanics</i> , 2019 , 861,	3.7	24
61	The FADE mass-stat: a technique for inserting or deleting particles in molecular dynamics simulations. <i>Journal of Chemical Physics</i> , 2014 , 140, 074110	3.9	23
60	A hybrid molecular-continuum simulation method for incompressible flows in micro/nanofluidic networks. <i>Microfluidics and Nanofluidics</i> , 2013 , 15, 541-557	2.8	22
59	Switching criteria for hybrid rarefied gas flow solvers. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2009 , 465, 1581-1598	2.4	22
58	Mean-field kinetic theory approach to evaporation of a binary liquid into vacuum. <i>Physical Review Fluids</i> , 2018 , 3,	2.8	21
57	Multiscale simulation of non-isothermal microchannel gas flows. <i>Journal of Computational Physics</i> , 2014 , 270, 532-543	4.1	20
56	Hybrid continuum-molecular modelling of multiscale internal gas flows. <i>Journal of Computational Physics</i> , 2013 , 255, 558-571	4.1	20
55	Control of Sublayer Streaks Using Microjet Actuators. <i>AIAA Journal</i> , 2005 , 43, 1878-1886	2.1	20
54	Surface contamination of cars: A review. <i>Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering</i> , 2017 , 231, 1160-1176	1.4	19
53	Computing the Near-Wall Region in Gas Micro- and Nanofluidics: Critical Knudsen Layer Phenomena. <i>Journal of Computational and Theoretical Nanoscience</i> , 2007 , 4, 807-813	0.3	18
52	Generalizing Murray's law: An optimization principle for fluidic networks of arbitrary shape and scale. <i>Journal of Applied Physics</i> , 2015 , 118, 174302	2.5	16
51	Numerical Simulation of the Interaction of Microactuators and Boundary Layers. <i>AIAA Journal</i> , 2002 , 40, 67-73	2.1	16
50	A Laplacian-based algorithm for non-isothermal atomistic-continuum hybrid simulation of micro and nano-flows. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013 , 264, 81-94	5.7	15
49	Effective mean free path and viscosity of confined gases. <i>Physics of Fluids</i> , 2019 , 31, 072002	4.4	14
48	Multiscale simulation of heat transfer in a rarefied gas. <i>International Journal of Heat and Fluid Flow</i> , 2014 , 50, 114-125	2.4	14

47	The pathogenesis of syringomyelia: a re-evaluation of the elastic-jump hypothesis. <i>Journal of Biomechanical Engineering</i> , 2009 , 131, 044503	2.1	14
46	Simulation of rear surface contamination for a simple bluff body. <i>Journal of Wind Engineering and Industrial Aerodynamics</i> , 2017 , 165, 13-22	3.7	13
45	Molecular simulation of thin liquid films: Thermal fluctuations and instability. <i>Physical Review E</i> , 2019 , 100, 023108	2.4	11
44	Is Helmholtz Resonance a Problem for Micro-jet Actuators?. <i>Flow, Turbulence and Combustion</i> , 2007 , 78, 205-222	2.5	11
43	Bouncing off the Walls: The Influence of Gas-Kinetic and van der Waals Effects in Drop Impact. <i>Physical Review Letters</i> , 2020 , 124, 084501	7.4	10
42	mdFoam+: Advanced molecular dynamics in OpenFOAM. <i>Computer Physics Communications</i> , 2018 , 224, 1-21	4.2	10
41	Boundary conditions for molecular dynamics simulations of water transport through nanotubes. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2014 , 228, 186-195	1.3	10
40	A Critical Review Of The Drag Force On A Sphere In The Transition Flow Regime. <i>AIP Conference Proceedings</i> , 2005 ,	0	10
39	Numerical investigation of nanoporous evaporation using direct simulation Monte Carlo. <i>Physical Review Fluids</i> , 2019 , 4,	2.8	10
38	Enhancing nano-scale computational fluid dynamics with molecular pre-simulations: Unsteady problems and design optimisation. <i>Computers and Fluids</i> , 2015 , 115, 46-53	2.8	9
37	Multiscale simulation of nanofluidic networks of arbitrary complexity. <i>Microfluidics and Nanofluidics</i> , 2015 , 18, 841-858	2.8	8
36	Asynchronous coupling of hybrid models for efficient simulation of multiscale systems. <i>Journal of Computational Physics</i> , 2015 , 284, 261-272	4.1	8
35	Lifetime of a Nanodroplet: Kinetic Effects and Regime Transitions. <i>Physical Review Letters</i> , 2019 , 123, 154501	7.4	8
34	Fundamental solutions to the regularised 13-moment equations: efficient computation of three-dimensional kinetic effects. <i>Journal of Fluid Mechanics</i> , 2017 , 833,	3.7	8
33	Liquid slip over gas nanofilms. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	8
32	Fundamental solutions to moment equations for the simulation of microscale gas flows. <i>Journal of Fluid Mechanics</i> , 2016 , 806, 413-436	3.7	8
31	Dynamics of liquid nanothreads: Fluctuation-driven instability and rupture. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	7
30	Importance sampling variance reduction for the Fokker-Planck rarefied gas particle method. <i>Journal of Computational Physics</i> , 2016 , 325, 116-128	4.1	7

29	Fluid-structure interactions in a cylindrical layered wave guide with application in the spinal column to syringomyelia. <i>Journal of Fluids and Structures</i> , 2017 , 70, 464-499	3.1	6
28	Thermophoresis of a spherical particle: modelling through moment-based, macroscopic transport equations. <i>Journal of Fluid Mechanics</i> , 2019 , 862, 312-347	3.7	6
27	The atomistic-continuum hybrid taxonomy and the hybrid-hybrid approach. <i>International Journal for Numerical Methods in Engineering</i> , 2014 , 98, 534-546	2.4	6
26	Nanoscale thin-film flows with thermal fluctuations and slip. <i>Physical Review E</i> , 2020 , 102, 053105	2.4	6
25	Evaporation-driven vapour microflows: analytical solutions from moment methods. <i>Journal of Fluid Mechanics</i> , 2018 , 841, 962-988	3.7	5
24	Velocity distribution function of spontaneously evaporating atoms. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	5
23	Coupling heterogeneous continuum-particle fields to simulate non-isothermal microscale gas flows. <i>International Journal of Heat and Mass Transfer</i> , 2016 , 98, 712-727	4.9	5
22	A Particle-Continuum Hybrid Framework for Transport Phenomena and Chemical Reactions in Multicomponent Systems at the Micro and Nanoscale. <i>Journal of Heat Transfer</i> , 2015 , 137,	1.8	4
21	Evaporation from arbitrary nanoporous membrane configurations: An effective evaporation coefficient approach. <i>Physics of Fluids</i> , 2021 , 33, 032022	4.4	4
20	Thermal capillary wave growth and surface roughening of nanoscale liquid films. <i>Journal of Fluid Mechanics</i> , 2021 , 915,	3.7	4
19	Numerical solution of the Falkner-Skan equation using third-order and high-order-compact finite difference schemes. <i>Journal of the Brazilian Society of Mechanical Sciences and Engineering</i> , 2011 , 33, 381-392	2	3
18	A generalized optimization principle for asymmetric branching in fluidic networks. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016 , 472, 20160451	2.4	3
17	A wall-function approach to incorporating Knudsen-layer effects in gas micro flow simulations. <i>AIP Conference Proceedings</i> , 2005 ,	0	2
16	Efficient simulation of non-classical liquid-vapour phase-transition flows: a method of fundamental solutions. <i>Journal of Fluid Mechanics</i> , 2021 , 919,	3.7	2
15	Accelerating multiscale modelling of fluids with on-the-fly Gaussian process regression. <i>Microfluidics and Nanofluidics</i> , 2018 , 22, 139	2.8	2
14	Simulation of the head-disk interface gap using a hybrid multi-scale method. <i>Microfluidics and Nanofluidics</i> , 2018 , 22, 1	2.8	2
13	Numerical simulation of a confined cavitating gas bubble driven by ultrasound. <i>Physics of Fluids</i> , 2021 , 33, 122114	4.4	2
12	Syringomyelia and the Fluid-Structure Interactions of a Cerebrospinal Waveguide 2014 ,		1

11	An experimental study into the effects of streamwise and spanwise acceleration in a turbulent boundary layer. <i>Experiments in Fluids</i> , 2013 , 54, 1	2.5	1
10	An Atomistic-Continuum Hybrid Approach for Modelling Transport Phenomena at the Micro- and Nano-Scale 2013 ,		1
9	Geometric and constitutive dependence of Maxwell's velocity slip boundary condition. <i>AIP Conference Proceedings</i> , 2005 ,	0	1
8	Is Helmholtz Resonance a Problem for Micro-Jet Actuators?. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2008 , 95-101	0.3	1
7	Coupling Molecular Dynamics and Direct Simulation Monte Carlo using a general and high-performance code coupling library. <i>Computers and Fluids</i> , 2020 , 213, 104726	2.8	1
6	Relaxation of Thermal Capillary Waves for Nanoscale Liquid Films on Anisotropic-Slip Substrates. <i>Langmuir</i> , 2021 , 37, 8667-8676	4	0
5	Comment on Applying a second-kind boundary integral equation for surface tractions in Stokes flow <i>Journal of Computational Physics</i> , 2020 , 401, 109007	4.1	0
4	Modelling turbulent skin-friction control using linearised Navier-Stokes equations. <i>Journal of Physics: Conference Series</i> , 2011 , 318, 042026	0.3	
3	Editorial introduction: modelling the mesoscale. <i>IMA Journal of Applied Mathematics</i> , 2011 , 76, 643-649		1
2	Efficient Time-Step Coupling For Hybrid Continuum/Molecular Modelling of Unsteady Micro-Scale Gas Flows. <i>Journal of Physics: Conference Series</i> , 2012 , 362, 012044	0.3	
1	Integration over discrete closed surfaces using the Method of Fundamental Solutions. <i>Engineering Analysis With Boundary Elements</i> , 2022 , 136, 232-237	2.6	