## Darren Crowdy

## List of Publications by Year in descending order

Source: https://exaly.com/author-pdf/5823212/publications.pdf

Version: 2024-02-01

		159525	265120
150	2,806	30	42
papers	citations	h-index	g-index
153	153	153	824
all docs	docs citations	times ranked	citing authors

#	Article	IF	CITATIONS
1	Equilibrium tilt of slippery elliptical rods in creeping simple shear. Journal of Fluid Mechanics, 2022, 931, .	1.4	1
2	Harmonic-measure distribution functions for a class of multiply connected symmetrical slit domains. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	1.0	1
3	Zeros of the isomonodromic tau functions in constructive conformal mapping of polycircular arc domains: the n-vertex case. Journal of Physics A: Mathematical and Theoretical, 2022, 55, 025201.	0.7	2
4	Superhydrophobic annular pipes: a theoretical study. Journal of Fluid Mechanics, 2021, 906, .	1.4	12
5	The corotating hollow vortex pair: steady merger and break-up via a topological singularity. Journal of Fluid Mechanics, 2021, 907, .	1.4	2
6	Stuart-type polar vortices on a rotating sphere. Discrete and Continuous Dynamical Systems, 2021, 41, 201-215.	0.5	9
7	Fay meets van der Pauw: the trisecant identity and the resistivity of holey samples. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2021, 477, 20200796.	1.0	6
8	â€~H-states': exact solutions for a rotating hollow vortex. Journal of Fluid Mechanics, 2021, 913, .	1.4	4
9	Viscous propulsion of a two-dimensional Marangoni boat driven by reaction and diffusion of insoluble surfactant. Physical Review Fluids, 2021, 6, .	1.0	3
10	Liouville chains: new hybrid vortex equilibria of the two-dimensional Euler equation. Journal of Fluid Mechanics, 2021, 921, .	1.4	7
11	The Prime Function, the Fay Trisecant Identity, and the van der Pauw Method. Computational Methods and Function Theory, 2021, 21, 707-736.	0.8	3
12	Slip length formulas for longitudinal shear flow over a superhydrophobic grating with partially filled cavities. Journal of Fluid Mechanics, 2021, 925, .	1.4	14
13	A new approach to the complex Helmholtz equation with applications to diffusion wave fields, impedance spectroscopy and unsteady Stokes flow. IMA Journal of Applied Mathematics, 2021, 86, 1287-1326.	0.8	2
14	Exact solutions for the formation of stagnant caps of insoluble surfactant on a planar free surface. Journal of Engineering Mathematics, 2021, 131, 1.	0.6	4
15	Viscous Marangoni Flow Driven by Insoluble Surfactant and the Complex Burgers Equation. SIAM Journal on Applied Mathematics, 2021, 81, 2526-2546.	0.8	4
16	Longitudinal Thermocapillary Flow over a Dense Bubble Mattress. SIAM Journal on Applied Mathematics, 2020, 80, 1-19.	0.8	8
17	Thermocapillary stress and meniscus curvature effects on slip lengths in ridged microchannels. Journal of Fluid Mechanics, 2020, 894, .	1.4	10
18	A transformation between stationary point vortex equilibria. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200310.	1.0	4

#	Article	IF	Citations
19	Phoretic self-propulsion of Janus disks in the fast-reaction limit. Physical Review Fluids, 2020, 5, .	1.0	5
20	Collective viscous propulsion of a two-dimensional flotilla of Marangoni boats. Physical Review Fluids, 2020, 5, .	1.0	10
21	Solving Problems in Multiply Connected Domains. , 2020, , .		42
22	Steady point vortex pair in a field of Stuart-type vorticity. Journal of Fluid Mechanics, 2019, 874, .	1.4	8
23	Periodic Schwarz–Christoffel mappings with multiple boundaries per period. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 475, 20190225.	1.0	11
24	Effect of Surface Curvature on Contact Resistance Between Cylinders. Journal of Heat Transfer, 2019, 141, .	1.2	2
25	Thermocapillary flow between grooved superhydrophobic surfaces: transverse temperature gradients. Journal of Fluid Mechanics, 2019, 871, 775-798.	1.4	7
26	Analytical solutions for two-dimensional singly periodic Stokes flow singularity arrays near walls. Journal of Engineering Mathematics, 2019, 119, 199-215.	0.6	4
27	Applying improved analytical methods for modelling flood displacement fronts in bounded reservoirs (Quitman field, east Texas). Journal of Petroleum Science and Engineering, 2018, 166, 1018-1041.	2.1	12
28	Fast evaluation of the fundamental singularities of two-dimensional doubly periodic Stokes flow. Journal of Engineering Mathematics, 2018, 111, 95-110.	0.6	2
29	The effect of core size on the speed of compressible hollow vortex streets. Journal of Fluid Mechanics, 2018, 836, 797-827.	1.4	8
30	Spreading and Contact Resistance Formulae Capturing Boundary Curvature and Contact Distribution Effects. Journal of Heat Transfer, 2018, $140$ , .	1.2	2
31	Special issue in honour of Professor John Blake FIMA CMath. IMA Journal of Applied Mathematics, 2018, 83, 553-555.	0.8	О
32	Accessory parameters in conformal mapping: exploiting the isomonodromic tau function for Painlev $\tilde{A}$ © VI. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20180080.	1.0	13
33	A transform method for the biharmonic equation in multiply connected circular domains. IMA Journal of Applied Mathematics, 2018, 83, 942-976.	0.8	14
34	Finite Gap Jacobi Matrices and the Schottky–Klein Prime Function. Computational Methods and Function Theory, 2017, 17, 319-341.	0.8	0
35	Dynamics of a treadmilling microswimmer near a no-slip wall in simple shear. Journal of Fluid Mechanics, 2017, 821, 647-667.	1.4	16
36	Perturbation analysis of subphase gas and meniscus curvature effects for longitudinal flows over superhydrophobic surfaces. Journal of Fluid Mechanics, 2017, 822, 307-326.	1.4	31

#	Article	IF	CITATIONS
37	Slip length for transverse shear flow over a periodic array of weakly curved menisci. Physics of Fluids, 2017, 29, 091702.	1.6	19
38	Effective slip lengths for immobilized superhydrophobic surfaces. Journal of Fluid Mechanics, 2017, 825, .	1.4	15
39	Analytical solutions for two-dimensional Stokes flow singularities in a no-slip wedge of arbitrary angle. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170134.	1.0	4
40	Speed of a von $K\tilde{A}_i$ rm $\tilde{A}_i$ n point vortex street in a weakly compressible fluid. Physical Review Fluids, 2017, 2, .	1.0	10
41	Effect of shear thinning on superhydrophobic slip: Perturbative corrections to the effective slip length. Physical Review Fluids, 2017, 2, .	1.0	14
42	The Schottky–Klein prime function: a theoretical and computational tool for applications. IMA Journal of Applied Mathematics, 2016, 81, 589-628.	0.8	37
43	Flipping and scooping of curved 2D rigid fibers in simple shear: The Jeffery equations. Physics of Fluids, 2016, 28, 053105.	1.6	6
44	Analytical formulae for longitudinal slip lengths over unidirectional superhydrophobic surfaces with curved menisci. Journal of Fluid Mechanics, 2016, 791, .	1.4	40
45	Surface-tension-driven Stokes flow: A numerical method based on conformal geometry. Journal of Computational Physics, 2016, 317, 347-361.	1.9	8
46	Some highlights from 50 years of the IMA Journal of Applied Mathematics. IMA Journal of Applied Mathematics, 2016, 81, 393-408.	0.8	0
47	Hybrid basis scheme for computing electrostatic fields exterior to close-to-touching discs. IMA Journal of Numerical Analysis, 2016, 36, 743-769.	1.5	3
48	A constructive method for plane-wave representations of special functions. Journal of Mathematical Analysis and Applications, 2016, 436, 149-167.	0.5	1
49	Uniform flow past a periodic array of cylinders. European Journal of Mechanics, B/Fluids, 2016, 56, 120-129.	1.2	18
50	Geometry-Fitted Fourier-Mellin Transform Pairs. Springer Proceedings in Mathematics and Statistics, 2016, , 37-53.	0.1	1
51	Asymptotic Modelling of a Six-Hole MOF. Journal of Lightwave Technology, 2016, 34, 5651-5656.	2.7	9
52	Elliptical pore regularisation of the inverse problem for microstructured optical fibreÂfabrication. Journal of Fluid Mechanics, 2015, 778, 5-38.	1.4	20
53	Microstructured optical fibre drawing with active channel pressurisation. Journal of Fluid Mechanics, 2015, 783, 137-165.	1.4	19
54	Fourier–Mellin Transforms for Circular Domains. Computational Methods and Function Theory, 2015, 15, 655-687.	0.8	16

#	Article	IF	CITATIONS
55	Stress fields around two pores in an elastic body: exact quadrature domain solutions. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150240.	1.0	O
56	Effective slip lengths for longitudinal shear flow over partial-slip circular bubble mattresses. Fluid Dynamics Research, 2015, 47, 065507.	0.6	14
57	A transform method for Laplace's equation in multiply connected circular domains. IMA Journal of Applied Mathematics, 2015, 80, 1902-1931.	0.8	27
58	Secondary Schottky–Klein prime functions associated with multiply connected planar domains. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20140688.	1.0	9
59	Matched asymptotics for a spherical low-Reynolds-number treadmilling swimmer near a rigid wall. IMA Journal of Applied Mathematics, 2015, 80, 634-650.	0.8	5
60	Philip Geoffrey Saffman. 19 March 1931 â€" 17 August 2008. Biographical Memoirs of Fellows of the Royal Society, 2014, 60, 375-395.	0.1	1
61	Solving Wiener–Hopf problems without kernel factorization. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20140304.	1.0	14
62	Hollow vortices, capillary water waves and double quadrature domains. Fluid Dynamics Research, 2014, 46, 031424.	0.6	9
63	Drawing of micro-structured fibres: circular and non-circular tubes. Journal of Fluid Mechanics, 2014, 755, 176-203.	1.4	31
64	Vortex patch equilibria of the Euler equation and random normal matrices. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 212002.	0.7	2
65	Surfactant-induced stagnant zones in the Jeong-Moffatt free surface Stokes flow problem. Physics of Fluids, 2013, 25, .	1.6	11
66	Exact solutions for cylindrical â€~slip–stick' Janus swimmers in Stokes flow. Journal of Fluid Mechanics, 2013, 719, .	1.4	11
67	Translating hollow vortex pairs. European Journal of Mechanics, B/Fluids, 2013, 37, 180-186.	1.2	16
68	Analytical formulae for source and sink flows in multiply connected domains. Theoretical and Computational Fluid Dynamics, 2013, 27, 1-19.	0.9	15
69	Matched asymptotics for a treadmilling low-Reynolds-number swimmer near a wall. Quarterly Journal of Mechanics and Applied Mathematics, 2013, 66, 53-73.	0.5	7
70	Stokes flow singularities in a two-dimensional channel: a novel transform approach with application to microswimming. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130198.	1.0	7
71	Wall effects on self-diffusiophoretic Janus particles: a theoretical study. Journal of Fluid Mechanics, 2013, 735, 473-498.	1.4	55
72	CONFORMAL SLIT MAPS IN APPLIED MATHEMATICS. ANZIAM Journal, 2012, 53, 171-189.	0.3	27

#	Article	IF	Citations
73	Stresslet asymptotics for a treadmilling swimmer near a two-dimensional corner: hydrodynamic bound states. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3765-3783.	1.0	9
74	Structure and stability of hollow vortex equilibria. Journal of Fluid Mechanics, 2012, 691, 178-200.	1.4	16
75	Conformal Mappings to Multiply Connected Polycircular Arc Domains. Computational Methods and Function Theory, 2012, 11, 685-706.	0.8	15
76	The Schottky-Klein Prime Function on the Schottky Double of Planar Domains. Computational Methods and Function Theory, 2011, 10, 501-517.	0.8	20
77	Frictional slip lengths for unidirectional superhydrophobic grooved surfaces. Physics of Fluids, 2011, 23, .	1.6	39
78	A two-dimensional model of low-Reynolds number swimming beneath a free surface. Journal of Fluid Mechanics, 2011, 681, 24-47.	1.4	40
79	Hydrodynamic bound states of a low-Reynolds-number swimmer near a gap in a wall. Journal of Fluid Mechanics, 2011, 667, 309-335.	1.4	27
80	Treadmilling swimmers near a no-slip wall at low Reynolds number. International Journal of Non-Linear Mechanics, 2011, 46, 577-585.	1.4	32
81	Frictional slip lengths and blockage coefficients. Physics of Fluids, 2011, 23, .	1.6	19
82	Analytical solutions for von $K\tilde{A}_i$ rm $\tilde{A}_i$ n streets of hollow vortices. Physics of Fluids, 2011, 23, .	1.6	35
83	Uniformizing Real Hyperelliptic M-Curves Using the Schottky–Klein Prime Function. Lecture Notes in Mathematics, 2011, , 183-193.	0.1	0
84	A new calculus for two-dimensional vortex dynamics. Theoretical and Computational Fluid Dynamics, 2010, 24, 9-24.	0.9	53
85	On rectangular vortex lattices. Applied Mathematics Letters, 2010, 23, 34-38.	1.5	9
86	Stokes flows past gaps in a wall. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 2727-2746.	1.0	4
87	Two-dimensional point singularity model of a low-Reynolds-number swimmer near a wall. Physical Review E, 2010, 81, 036313.	0.8	43
88	Steady interaction of a vortex street with a shear flow. Physics of Fluids, 2010, 22, 096601.	1.6	7
89	Slip length for longitudinal shear flow over a dilute periodic mattress of protruding bubbles. Physics of Fluids, 2010, 22, .	1.6	69
90	An assembly of steadily translating bubbles in a Hele–Shaw channel. Nonlinearity, 2009, 22, 51-65.	0.6	11

#	Article	IF	Citations
91	Multiple steady bubbles in a Hele-Shaw cell. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 421-435.	1.0	14
92	Multiply Connected Quadrature Domains and the Bergman Kernel Function. Complex Analysis and Operator Theory, 2009, 3, 379-397.	0.3	6
93	The spreading phase in Lighthill's model of the Weis-Fogh lift mechanism. Journal of Fluid Mechanics, 2009, 641, 195-204.	1.4	8
94	A new calculus for two-dimensional vortex dynamics. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 25-40.	0.1	1
95	Conformal mappings from annuli to canonical doubly connected Bell representations. Journal of Mathematical Analysis and Applications, 2008, 340, 669-674.	0.5	3
96	Explicit solution for the potential flow due to an assembly of stirrers in an inviscid fluid. Journal of Engineering Mathematics, 2008, 62, 333-344.	0.6	16
97	Vortex dynamics in complex domains on a spherical surface. Journal of Computational Physics, 2008, 227, 6058-6070.	1.9	17
98	The Schwarz problem in multiply connected domains and the Schottky–Klein prime function. Complex Variables and Elliptic Equations, 2008, 53, 221-236.	0.4	32
99	Geometric function theory: a modern view of a classical subject. Nonlinearity, 2008, 21, T205-T219.	0.6	35
100	The dipolar field of rotating bodies in two dimensions. Journal of Fluid Mechanics, 2008, 607, 109-118.	1.4	3
101	The irrotational motion generated by two planar stirrers in inviscid fluid. Physics of Fluids, 2007, 19, 018103.	1.6	26
102	Schwarz–Christoffel mappings to unbounded multiply connected polygonal regions. Mathematical Proceedings of the Cambridge Philosophical Society, 2007, 142, 319-339.	0.3	52
103	Computing the Schottky-Klein Prime Function on the Schottky Double of Planar Domains. Computational Methods and Function Theory, 2007, 7, 293-308.	0.8	64
104	Contour dynamics in complex domains. Journal of Fluid Mechanics, 2007, 593, 235-254.	1.4	28
105	Conformal mappings to a doubly connected polycircular arc domain. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 1885-1907.	1.0	15
106	Uniformizing the boundaries of multiply connected quadrature domains using Fuchsian groups. Physica D: Nonlinear Phenomena, 2007, 235, 82-89.	1.3	6
107	Green's functions for Laplace's equation in multiply connected domains. IMA Journal of Applied Mathematics, 2007, 72, 278-301.	0.8	39
108	Riemannâ€"Hilbert Problem for Automorphic Functions and the Schottkyâ€"Klein Prime Function. Complex Analysis and Operator Theory, 2007, 1, 317-334.	0.3	4

#	Article	IF	CITATIONS
109	Conformal Mappings between Canonical Multiply Connected Domains. Computational Methods and Function Theory, 2006, 6, 59-76.	0.8	98
110	The motion of a point vortex through gaps in walls. Journal of Fluid Mechanics, 2006, 551, 31.	1.4	29
111	Calculating the lift on a finite stack of cylindrical aerofoils. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2006, 462, 1387-1407.	1.0	36
112	Analytical solutions for uniform potential flow past multiple cylinders. European Journal of Mechanics, B/Fluids, 2006, 25, 459-470.	1.2	63
113	Point vortex motion on the surface of a sphere with impenetrable boundaries. Physics of Fluids, 2006, 18, 036602.	1.6	22
114	The motion of a point vortex around multiple circular islands. Physics of Fluids, 2005, 17, 056602.	1.6	44
115	Genus-Nalgebraic reductions of the Benney hierarchy within a Schottky model. Journal of Physics A, 2005, 38, 10917-10934.	1.6	7
116	Quadrature Domains and Fluid Dynamics. , 2005, , 113-129.		27
117	On a pair of interacting bubbles in planar Stokes flow. Journal of Fluid Mechanics, 2005, 541, 231.	1.4	10
118	The effect of solid boundaries on pore shrinkage in Stokes flow. Journal of Fluid Mechanics, 2005, 531, 359-379.	1.4	7
119	Analytical solutions for rotating vortex arrays involving multiple vortex patches. Journal of Fluid Mechanics, 2005, 523, 307-337.	1.4	22
120	Analytical formulae for the Kirchhoff–Routh path function in multiply connected domains. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005, 461, 2477-2501.	1.0	83
121	The Schwarz–Christoffel mapping to bounded multiply connected polygonal domains. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005, 461, 2653-2678.	1.0	73
122	Exact solutions for uniform vortex layers attached to corners and wedges. European Journal of Applied Mathematics, 2004, 15, 643-650.	1.4	11
123	Growing vortex patches. Physics of Fluids, 2004, 16, 3122-3130.	1.6	24
124	The Effect of Finiteness in the Saffman–Taylor Viscous Fingering Problem. Journal of Statistical Physics, 2004, 114, 1501-1536.	0.5	10
125	Explicit integral solutions for the plane elastostatic semi-strip. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 1285-1309.	1.0	27
126	Explicit solutions for a steady vortex–wave interaction. Journal of Fluid Mechanics, 2004, 513, 161-170.	1.4	8

#	Article	IF	CITATIONS
127	An elliptical-pore model for late-stage planar viscous sintering. Journal of Fluid Mechanics, 2004, 501, 251-277.	1.4	8
128	Stuart vortices on a sphere. Journal of Fluid Mechanics, 2004, 498, 381-402.	1.4	40
129	Constructing Multiply Connected Quadrature Domains. SIAM Journal on Applied Mathematics, 2004, 64, 1334-1359.	0.8	46
130	Compressible bubbles in Stokes flow. Journal of Fluid Mechanics, 2003, 476, 345-356.	1.4	18
131	Viscous sintering of unimodal and bimodal cylindrical packings with shrinking pores. European Journal of Applied Mathematics, 2003, 14, 421-445.	1.4	26
132	Polygonal N-vortex arrays: A Stuart model. Physics of Fluids, 2003, 15, 3710-3717.	1.6	14
133	Analytical solutions for distributed multipolar vortex equilibria on a sphere. Physics of Fluids, 2003, 15, 22-34.	1.6	26
134	The construction of exact multipolar equilibria of the two-dimensional Euler equations. Physics of Fluids, 2002, 14, 257-267.	1.6	36
135	Stability analysis of a class of two-dimensional multipolar vortex equilibria. Physics of Fluids, 2002, 14, 1862-1876.	1.6	18
136	Exact solutions for rotating vortex arrays with finite-area cores. Journal of Fluid Mechanics, 2002, 469, 209-235.	1.4	55
137	On a Class of Geometry-Driven Free Boundary Problems. SIAM Journal on Applied Mathematics, 2002, 62, 945-964.	0.8	25
138	Exact solutions for the viscous sintering of multiply-connected fluid domains. Journal of Engineering Mathematics, 2002, 42, 225-242.	0.6	16
139	Title is missing!. Journal of Engineering Mathematics, 2002, 44, 311-330.	0.6	4
140	Steady nonlinear capillary waves on curved sheets. European Journal of Applied Mathematics, 2001, 12, 689-708.	1.4	11
141	Hele-Shaw flows and water waves. Journal of Fluid Mechanics, 2000, 409, 223-242.	1.4	8
142	A New Approach to Free Surface Euler Flows with Capillarity. Studies in Applied Mathematics, 2000, 105, 35-58.	1.1	17
143	Shapes of two-dimensional bubbles deformed by circulation. Nonlinearity, 2000, 13, 2131-2141.	0.6	18
144	Circulation-induced shape deformations of drops and bubbles: Exact two-dimensional models. Physics of Fluids, 1999, 11, 2836-2845.	1.6	35

#	Article	lF	CITATIONS
145	Exact Solutions for Steady Capillary Waves on a Fluid Annulus. Journal of Nonlinear Science, 1999, 9, 615-640.	1.0	32
146	A class of exact multipolar vortices. Physics of Fluids, 1999, 11, 2556-2564.	1.6	71
147	A note on viscous sintering and quadrature identities. European Journal of Applied Mathematics, 1999, 10, 623-634.	1.4	8
148	A Theory of Exact Solutions for Plane Viscous Blobs. Journal of Nonlinear Science, 1998, 8, 261-279.	1.0	22
149	General solutions to the 2D Liouville equation. International Journal of Engineering Science, 1997, 35, 141-149.	2.7	40
150	Exact solutions for rotating vortex arrays with finite-area cores. , 0, .		1