Darren Crowdy

List of Publications by Year in Descending Order

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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.

146 2,200 27 37 h-index g-index citations papers 2.6 6.03 153 2,499 L-index avg, IF ext. citations ext. papers

#	Paper	IF	Citations
146	Zeros of the isomonodromic tau functions in constructive conformal mapping of polycircular arc domains: the n-vertex case. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2022 , 55, 025201	2	
145	Viscous Marangoni Flow Driven by Insoluble Surfactant and the Complex Burgers Equation. <i>SIAM Journal on Applied Mathematics</i> , 2021 , 81, 2526-2546	1.8	1
144	Exact solutions for the formation of stagnant caps of insoluble surfactant on a planar free surface. <i>Journal of Engineering Mathematics</i> , 2021 , 131, 1	1.2	1
143	⊞-states⊡exact solutions for a rotating hollow vortex. <i>Journal of Fluid Mechanics</i> , 2021 , 913,	3.7	2
142	Viscous propulsion of a two-dimensional Marangoni boat driven by reaction and diffusion of insoluble surfactant. <i>Physical Review Fluids</i> , 2021 , 6,	2.8	2
141	Liouville chains: new hybrid vortex equilibria of the two-dimensional Euler equation. <i>Journal of Fluid Mechanics</i> , 2021 , 921,	3.7	1
140	Superhydrophobic annular pipes: a theoretical study. Journal of Fluid Mechanics, 2021, 906,	3.7	1
139	The corotating hollow vortex pair: steady merger and break-up via a topological singularity. <i>Journal of Fluid Mechanics</i> , 2021 , 907,	3.7	2
138	Stuart-type polar vortices on a rotating sphere. <i>Discrete and Continuous Dynamical Systems</i> , 2021 , 41, 201-215	2	5
137	Fay meets van der Pauw: the trisecant identity and the resistivity of holey samples. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021 , 477, 20200796	2.4	4
136	Thermocapillary stress and meniscus curvature effects on slip lengths in ridged microchannels. <i>Journal of Fluid Mechanics</i> , 2020 , 894,	3.7	5
135	Phoretic self-propulsion of Janus disks in the fast-reaction limit. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	1
134	Collective viscous propulsion of a two-dimensional flotilla of Marangoni boats. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	5
133	Solving Problems in Multiply Connected Domains 2020,		21
132	A transformation between stationary point vortex equilibria. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2020 , 476, 20200310	2.4	2
131	Longitudinal Thermocapillary Flow over a Dense Bubble Mattress. <i>SIAM Journal on Applied Mathematics</i> , 2020 , 80, 1-19	1.8	2
130	Periodic Schwarz-Christoffel mappings with multiple boundaries per period. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2019 , 475, 20190225	2.4	4

129	Effect of Surface Curvature on Contact Resistance Between Cylinders. <i>Journal of Heat Transfer</i> , 2019 , 141,	1.8	2
128	Thermocapillary flow between grooved superhydrophobic surfaces: transverse temperature gradients. <i>Journal of Fluid Mechanics</i> , 2019 , 871, 775-798	3.7	5
127	Steady point vortex pair in a field of Stuart-type vorticity. Journal of Fluid Mechanics, 2019, 874,	3.7	5
126	Analytical solutions for two-dimensional singly periodic Stokes flow singularity arrays near walls. Journal of Engineering Mathematics, 2019 , 119, 199-215	1.2	2
125	Applying improved analytical methods for modelling flood displacement fronts in bounded reservoirs (Quitman field, east Texas). <i>Journal of Petroleum Science and Engineering</i> , 2018 , 166, 1018-10)44 ⁴	9
124	Fast evaluation of the fundamental singularities of two-dimensional doubly periodic Stokes flow. Journal of Engineering Mathematics, 2018 , 111, 95-110	1.2	1
123	The effect of core size on the speed of compressible hollow vortex streets. <i>Journal of Fluid Mechanics</i> , 2018 , 836, 797-827	3.7	4
122	Spreading and Contact Resistance Formulae Capturing Boundary Curvature and Contact Distribution Effects. <i>Journal of Heat Transfer</i> , 2018 , 140,	1.8	1
121	Special issue in honour of Professor John Blake FIMA CMath. <i>IMA Journal of Applied Mathematics</i> , 2018 , 83, 553-555	1	
120	Accessory parameters in conformal mapping: exploiting the isomonodromic tau function for PainlevIVI. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2018 , 474, 20180080	2.4	8
119	A transform method for the biharmonic equation in multiply connected circular domains. <i>IMA Journal of Applied Mathematics</i> , 2018 , 83, 942-976	1	9
118	Finite Gap Jacobi Matrices and the Schottky Rlein Prime Function. <i>Computational Methods and Function Theory</i> , 2017 , 17, 319-341	0.9	
117	Dynamics of a treadmilling microswimmer near a no-slip wall in simple shear. <i>Journal of Fluid Mechanics</i> , 2017 , 821, 647-667	3.7	8
116	Perturbation analysis of subphase gas and meniscus curvature effects for longitudinal flows over superhydrophobic surfaces. <i>Journal of Fluid Mechanics</i> , 2017 , 822, 307-326	3.7	19
115	Slip length for transverse shear flow over a periodic array of weakly curved menisci. <i>Physics of Fluids</i> , 2017 , 29, 091702	4.4	16
114	Effective slip lengths for immobilized superhydrophobic surfaces. <i>Journal of Fluid Mechanics</i> , 2017 , 825,	3.7	8
113	Analytical solutions for two-dimensional Stokes flow singularities in a no-slip wedge of arbitrary angle. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2017 , 473, 20170134	2.4	3
112	Speed of a von Kāmā point vortex street in a weakly compressible fluid. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	6

111	Effect of shear thinning on superhydrophobic slip: Perturbative corrections to the effective slip length. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	6
110	Hybrid basis scheme for computing electrostatic fields exterior to close-to-touching discs. <i>IMA Journal of Numerical Analysis</i> , 2016 , 36, 743-769	1.8	1
109	A constructive method for plane-wave representations of special functions. <i>Journal of Mathematical Analysis and Applications</i> , 2016 , 436, 149-167	1.1	1
108	Uniform flow past a periodic array of cylinders. European Journal of Mechanics, B/Fluids, 2016 , 56, 120-13	2 <u>9</u> .4	12
107	Asymptotic Modelling of a Six-Hole MOF. Journal of Lightwave Technology, 2016, 34, 5651-5656	4	4
106	Geometry-Fitted Fourier-Mellin Transform Pairs. <i>Springer Proceedings in Mathematics and Statistics</i> , 2016 , 37-53	0.2	O
105	The Schottky K lein prime function: a theoretical and computational tool for applications. <i>IMA Journal of Applied Mathematics</i> , 2016 , 81, 589-628	1	23
104	Flipping and scooping of curved 2D rigid fibers in simple shear: The Jeffery equations. <i>Physics of Fluids</i> , 2016 , 28, 053105	4.4	5
103	Analytical formulae for longitudinal slip lengths over unidirectional superhydrophobic surfaces with curved menisci. <i>Journal of Fluid Mechanics</i> , 2016 , 791,	3.7	32
102	Surface-tension-driven Stokes flow: A numerical method based on conformal geometry. <i>Journal of Computational Physics</i> , 2016 , 317, 347-361	4.1	5
101	Some highlights from 50 years of the IMA Journal of Applied Mathematics. <i>IMA Journal of Applied Mathematics</i> , 2016 , 81, 393-408	1	
100	Secondary SchottkyRlein prime functions associated with multiply connected planar domains. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015 , 471, 20140688	3 ^{2.4}	6
99	Matched asymptotics for a spherical low-Reynolds-number treadmilling swimmer near a rigid wall. <i>IMA Journal of Applied Mathematics</i> , 2015 , 80, 634-650	1	4
98	Elliptical pore regularisation of the inverse problem for microstructured optical fibre fabrication. <i>Journal of Fluid Mechanics</i> , 2015 , 778, 5-38	3.7	15
97	Microstructured optical fibre drawing with active channel pressurisation. <i>Journal of Fluid Mechanics</i> , 2015 , 783, 137-165	3.7	14
96	FourierMellin Transforms for Circular Domains. <i>Computational Methods and Function Theory</i> , 2015 , 15, 655-687	0.9	14
95	Stress fields around two pores in an elastic body: exact quadrature domain solutions. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015 , 471, 20150240	2.4	
94	Effective slip lengths for longitudinal shear flow over partial-slip circular bubble mattresses. <i>Fluid Dynamics Research</i> , 2015 , 47, 065507	1.2	10

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93	A transform method for Laplace's equation in multiply connected circular domains. <i>IMA Journal of Applied Mathematics</i> , 2015 , 80, 1902-1931	1	23	
92	Hollow vortices, capillary water waves and double quadrature domains. <i>Fluid Dynamics Research</i> , 2014 , 46, 031424	1.2	5	
91	Drawing of micro-structured fibres: circular and non-circular tubes. <i>Journal of Fluid Mechanics</i> , 2014 , 755, 176-203	3.7	27	
90	Philip Geoffrey Saffman. 19 March 1931 🛘 7 August 2008. <i>Biographical Memoirs of Fellows of the Royal Society</i> , 2014 , 60, 375-395	0.1	1	
89	Solving Wiener Hopf problems without kernel factorization. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences,</i> 2014, 470, 20140304	2.4	11	
88	Vortex patch equilibria of the Euler equation and random normal matrices. <i>Journal of Physics A:</i> Mathematical and Theoretical, 2014 , 47, 212002	2	2	
87	Surfactant-induced stagnant zones in the Jeong-Moffatt free surface Stokes flow problem. <i>Physics of Fluids</i> , 2013 , 25, 092104	4.4	9	
86	Exact solutions for cylindrical BlipBtickDanus swimmers in Stokes flow. <i>Journal of Fluid Mechanics</i> , 2013 , 719,	3.7	11	
85	Translating hollow vortex pairs. European Journal of Mechanics, B/Fluids, 2013, 37, 180-186	2.4	12	
84	Analytical formulae for source and sink flows in multiply connected domains. <i>Theoretical and Computational Fluid Dynamics</i> , 2013 , 27, 1-19	2.3	12	
83	Matched asymptotics for a treadmilling low-Reynolds-number swimmer near a wall. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2013 , 66, 53-73	1	7	
82	Stokes flow singularities in a two-dimensional channel: a novel transform approach with application to microswimming. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2013 , 469, 20130198	2.4	6	
81	Wall effects on self-diffusiophoretic Janus particles: a theoretical study. <i>Journal of Fluid Mechanics</i> , 2013 , 735, 473-498	3.7	46	
80	Structure and stability of hollow vortex equilibria. <i>Journal of Fluid Mechanics</i> , 2012 , 691, 178-200	3.7	15	
79	Conformal Mappings to Multiply Connected Polycircular Arc Domains. <i>Computational Methods and Function Theory</i> , 2012 , 11, 685-706	0.9	12	
78	CONFORMAL SLIT MAPS IN APPLIED MATHEMATICS. ANZIAM Journal, 2012 , 53, 171-189	0.5	23	
77	Stresslet asymptotics for a treadmilling swimmer near a two-dimensional corner: hydrodynamic bound states. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2012 , 468, 3765-3783	2.4	8	
76	The Schottky-Klein Prime Function on the Schottky Double of Planar Domains. <i>Computational Methods and Function Theory</i> , 2011 , 10, 501-517	0.9	16	

75	Frictional slip lengths for unidirectional superhydrophobic grooved surfaces. <i>Physics of Fluids</i> , 2011 , 23, 072001	4.4	32
74	A two-dimensional model of low-Reynolds number swimming beneath a free surface. <i>Journal of Fluid Mechanics</i> , 2011 , 681, 24-47	3.7	34
73	Hydrodynamic bound states of a low-Reynolds-number swimmer near a gap in a wall. <i>Journal of Fluid Mechanics</i> , 2011 , 667, 309-335	3.7	25
72	Treadmilling swimmers near a no-slip wall at low Reynolds number. <i>International Journal of Non-Linear Mechanics</i> , 2011 , 46, 577-585	2.8	27
71	Frictional slip lengths and blockage coefficients. <i>Physics of Fluids</i> , 2011 , 23, 091703	4.4	13
70	Analytical solutions for von KĒmĒ streets of hollow vortices. <i>Physics of Fluids</i> , 2011 , 23, 126602	4.4	26
69	Uniformizing Real Hyperelliptic M-Curves Using the Schottky Elein Prime Function. <i>Lecture Notes in Mathematics</i> , 2011 , 183-193	0.4	
68	Stokes flows past gaps in a wall. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2010 , 466, 2727-2746	2.4	4
67	Two-dimensional point singularity model of a low-Reynolds-number swimmer near a wall. <i>Physical Review E</i> , 2010 , 81, 036313	2.4	35
66	Steady interaction of a vortex street with a shear flow. <i>Physics of Fluids</i> , 2010 , 22, 096601	4.4	4
65	Slip length for longitudinal shear flow over a dilute periodic mattress of protruding bubbles. <i>Physics of Fluids</i> , 2010 , 22, 121703	4.4	56
64	A new calculus for two-dimensional vortex dynamics. <i>Theoretical and Computational Fluid Dynamics</i> , 2010 , 24, 9-24	2.3	38
63	On rectangular vortex lattices. <i>Applied Mathematics Letters</i> , 2010 , 23, 34-38	3.5	8
62	An assembly of steadily translating bubbles in a HeleBhaw channel. <i>Nonlinearity</i> , 2009 , 22, 51-65	1.7	10
61	Multiple steady bubbles in a Hele-Shaw cell. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2009 , 465, 421-435	2.4	13
60	Multiply Connected Quadrature Domains and the Bergman Kernel Function. <i>Complex Analysis and Operator Theory</i> , 2009 , 3, 379-397	0.7	5
59	The spreading phase in Lighthill's model of the Weis-Fogh lift mechanism. <i>Journal of Fluid Mechanics</i> , 2009 , 641, 195-204	3.7	4
58	A new calculus for two-dimensional vortex dynamics. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2009 , 25-40	0.3	1

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57	The Schwarz problem in multiply connected domains and the Schottky Llein prime function. <i>Complex Variables and Elliptic Equations</i> , 2008 , 53, 221-236	0.5	21	
56	Geometric function theory: a modern view of a classical subject. <i>Nonlinearity</i> , 2008 , 21, T205-T219	1.7	30	
55	The dipolar field of rotating bodies in two dimensions. <i>Journal of Fluid Mechanics</i> , 2008 , 607, 109-118	3.7	2	
54	Conformal mappings from annuli to canonical doubly connected Bell representations. <i>Journal of Mathematical Analysis and Applications</i> , 2008 , 340, 669-674	1.1	3	
53	Explicit solution for the potential flow due to an assembly of stirrers in an inviscid fluid. <i>Journal of Engineering Mathematics</i> , 2008 , 62, 333-344	1.2	14	
52	Vortex dynamics in complex domains on a spherical surface. <i>Journal of Computational Physics</i> , 2008 , 227, 6058-6070	4.1	16	
51	Contour dynamics in complex domains. <i>Journal of Fluid Mechanics</i> , 2007 , 593, 235-254	3.7	27	
50	Conformal mappings to a doubly connected polycircular arc domain. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2007 , 463, 1885-1907	2.4	11	
49	Uniformizing the boundaries of multiply connected quadrature domains using Fuchsian groups. <i>Physica D: Nonlinear Phenomena</i> , 2007 , 235, 82-89	3.3	4	
48	Green's functions for Laplace's equation in multiply connected domains. <i>IMA Journal of Applied Mathematics</i> , 2007 , 72, 278-301	1	31	
47	Riemann Hilbert Problem for Automorphic Functions and the Schottky Klein Prime Function. <i>Complex Analysis and Operator Theory</i> , 2007 , 1, 317-334	0.7	4	
46	The irrotational motion generated by two planar stirrers in inviscid fluid. <i>Physics of Fluids</i> , 2007 , 19, 018	31,0.3	21	
45	Schwarz Thristoffel mappings to unbounded multiply connected polygonal regions. <i>Mathematical Proceedings of the Cambridge Philosophical Society</i> , 2007 , 142, 319-339	0.7	44	
44	Computing the Schottky-Klein Prime Function on the Schottky Double of Planar Domains. <i>Computational Methods and Function Theory</i> , 2007 , 7, 293-308	0.9	55	
43	Point vortex motion on the surface of a sphere with impenetrable boundaries. <i>Physics of Fluids</i> , 2006 , 18, 036602	4.4	19	
42	Conformal Mappings between Canonical Multiply Connected Domains. <i>Computational Methods and Function Theory</i> , 2006 , 6, 59-76	0.9	84	
41	The motion of a point vortex through gaps in walls. <i>Journal of Fluid Mechanics</i> , 2006 , 551, 31	3.7	27	
40	Calculating the lift on a finite stack of cylindrical aerofoils. <i>Proceedings of the Royal Society A:</i> Mathematical, Physical and Engineering Sciences, 2006 , 462, 1387-1407	2.4	30	

39	Analytical solutions for uniform potential flow past multiple cylinders. <i>European Journal of Mechanics, B/Fluids</i> , 2006 , 25, 459-470	2.4	45
38	On a pair of interacting bubbles in planar Stokes flow. <i>Journal of Fluid Mechanics</i> , 2005 , 541, 231	3.7	9
37	The effect of solid boundaries on pore shrinkage in Stokes flow. <i>Journal of Fluid Mechanics</i> , 2005 , 531, 359-379	3.7	7
36	Analytical solutions for rotating vortex arrays involving multiple vortex patches. <i>Journal of Fluid Mechanics</i> , 2005 , 523, 307-337	3.7	17
35	Analytical formulae for the Kirchhoff R outh path function in multiply connected domains. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005 , 461, 2477-250	o 1^{2.4}	73
34	The Schwarzthristoffel mapping to bounded multiply connected polygonal domains. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2005 , 461, 2653-2678	2.4	59
33	The motion of a point vortex around multiple circular islands. <i>Physics of Fluids</i> , 2005 , 17, 056602	4.4	40
32	Genus-Nalgebraic reductions of the Benney hierarchy within a Schottky model. <i>Journal of Physics A</i> , 2005 , 38, 10917-10934		6
31	Quadrature Domains and Fluid Dynamics 2005 , 113-129		22
30	Exact solutions for uniform vortex layers attached to corners and wedges. <i>European Journal of Applied Mathematics</i> , 2004 , 15, 643-650	1	9
29	Growing vortex patches. <i>Physics of Fluids</i> , 2004 , 16, 3122-3130	4.4	19
28	The Effect of Finiteness in the Saffman Taylor Viscous Fingering Problem. <i>Journal of Statistical Physics</i> , 2004 , 114, 1501-1536	1.5	7
27	Explicit integral solutions for the plane elastostatic semi-strip. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences,</i> 2004 , 460, 1285-1309	2.4	20
26	Explicit solutions for a steady vortexwave interaction. <i>Journal of Fluid Mechanics</i> , 2004 , 513, 161-170	3.7	7
25	An elliptical-pore model for late-stage planar viscous sintering. <i>Journal of Fluid Mechanics</i> , 2004 , 501, 251-277	3.7	7
24	Stuart vortices on a sphere. <i>Journal of Fluid Mechanics</i> , 2004 , 498, 381-402	3.7	33
23	Constructing Multiply Connected Quadrature Domains. <i>SIAM Journal on Applied Mathematics</i> , 2004 , 64, 1334-1359	1.8	44
22	Polygonal N-vortex arrays: A Stuart model. <i>Physics of Fluids</i> , 2003 , 15, 3710-3717	4.4	13

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21	Analytical solutions for distributed multipolar vortex equilibria on a sphere. <i>Physics of Fluids</i> , 2003 , 15, 22-34	4.4	23
20	Compressible bubbles in Stokes flow. <i>Journal of Fluid Mechanics</i> , 2003 , 476, 345-356	3.7	16
19	Viscous sintering of unimodal and bimodal cylindrical packings with shrinking pores. <i>European Journal of Applied Mathematics</i> , 2003 , 14, 421-445	1	19
18	Exact solutions for the viscous sintering of multiply-connected fluid domains. <i>Journal of Engineering Mathematics</i> , 2002 , 42, 225-242	1.2	11
17	Exact solutions for two steady inviscid bubbles in the slow viscous flow generated by a four-roller mill. <i>Journal of Engineering Mathematics</i> , 2002 , 44, 311-330	1.2	2
16	The construction of exact multipolar equilibria of the two-dimensional Euler equations. <i>Physics of Fluids</i> , 2002 , 14, 257-267	4.4	32
15	Stability analysis of a class of two-dimensional multipolar vortex equilibria. <i>Physics of Fluids</i> , 2002 , 14, 1862-1876	4.4	14
14	Exact solutions for rotating vortex arrays with finite-area cores. <i>Journal of Fluid Mechanics</i> , 2002 , 469, 209-235	3.7	49
13	On a Class of Geometry-Driven Free Boundary Problems. <i>SIAM Journal on Applied Mathematics</i> , 2002 , 62, 945-964	1.8	21
12	Steady nonlinear capillary waves on curved sheets. <i>European Journal of Applied Mathematics</i> , 2001 , 12, 689-708	1	11
11	Hele-Shaw flows and water waves. Journal of Fluid Mechanics, 2000, 409, 223-242	3.7	8
10	A New Approach to Free Surface Euler Flows with Capillarity. <i>Studies in Applied Mathematics</i> , 2000 , 105, 35-58	2.1	13
9	Shapes of two-dimensional bubbles deformed by circulation. <i>Nonlinearity</i> , 2000 , 13, 2131-2141	1.7	14
8	Circulation-induced shape deformations of drops and bubbles: Exact two-dimensional models. <i>Physics of Fluids</i> , 1999 , 11, 2836-2845	4.4	31
7	Exact Solutions for Steady Capillary Waves on a Fluid Annulus. <i>Journal of Nonlinear Science</i> , 1999 , 9, 615	5- <u>6</u> . \$ 0	24
6	A class of exact multipolar vortices. <i>Physics of Fluids</i> , 1999 , 11, 2556-2564	4.4	64
5	A note on viscous sintering and quadrature identities. <i>European Journal of Applied Mathematics</i> , 1999 , 10, 623-634	1	6
4	A Theory of Exact Solutions for Plane Viscous Blobs. <i>Journal of Nonlinear Science</i> , 1998 , 8, 261-279	2.8	20

3	35, 141-149	5.7	35	
2	Exact solutions for rotating vortex arrays with finite-area cores		1	
1	The Prime Function, the Fay Trisecant Identity, and the van der Pauw Method. <i>Computational Methods and Function Theory</i> ,1	0.9	2	