

# Philip Broadbridge

## List of Publications by Year in descending order

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113  
papers

2,026  
citations

331259

21  
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301761

39  
g-index

119  
all docs

119  
docs citations

119  
times ranked

989  
citing authors

#	ARTICLE	IF	CITATIONS
1	Integrable nonlinear reaction-diffusion population models for fisheries. Applied Mathematical Modelling, 2022, 102, 748-767.	2.2	5
2	Stratified mobility fishery models with harvesting outside of no-take areas. Applied Mathematical Modelling, 2022, 105, 29-49.	2.2	2
3	Diffusion of dermatological irritant in drying laundered cloth. Mathematical Medicine and Biology, 2021, 38, 474-489.	0.8	0
4	On transport through heterogeneous media: application of conjugated reciprocal transformations. Zeitschrift Fur Angewandte Mathematik Und Physik, 2020, 71, 1.	0.7	3
5	Solution of Non-Autonomous Schrödinger Equation for Quantized de Sitter Klein-Gordon Oscillator Modes Undergoing Attraction-Repulsion Transition. Symmetry, 2020, 12, 943.	1.1	3
6	Solution for 4th-order nonlinear axisymmetric surface diffusion by inverse method. Physica D: Nonlinear Phenomena, 2020, 405, 132288.	1.3	1
7	Spherically Restricted Random Hyperbolic Diffusion. Entropy, 2020, 22, 217.	1.1	10
8	Conditionally Integrable Nonlinear Diffusion with Diffusivity $1/u$ . Symmetry, 2019, 11, 804.	1.1	2
9	Random Spherical Hyperbolic Diffusion. Journal of Statistical Physics, 2019, 177, 889-916.	0.5	21
10	A note on separation of variables solutions of generalized nonlinear diffusion equations. Applied Mathematics Letters, 2019, 98, 7-12.	1.5	1
11	Analytic solutions for calcium ion fertilisation waves on the surface of eggs. Mathematical Medicine and Biology, 2019, 36, 549-562.	0.8	6
12	Bregman inverse filter. Electronics Letters, 2019, 55, 192-194.	0.5	3
13	On approximation for fractional stochastic partial differential equations on the sphere. Stochastic Environmental Research and Risk Assessment, 2018, 32, 2585-2603.	1.9	18
14	Integrable Discrete Model for One-Dimensional Soil Water Infiltration. Studies in Applied Mathematics, 2018, 140, 483-507.	1.1	1
15	Series-parallel structure-oriented electrical conductivity model of saturated clays. Applied Clay Science, 2018, 162, 239-251.	2.6	21
16	Foreword: Proceedings of the 4th International Electronic Conference on Entropy and Its Applications. Proceedings (mdpi), 2018, 2, .	0.2	0
17	Nonclassical Symmetry Solutions for Fourth-Order Phase Field Reaction-Diffusion. Symmetry, 2018, 10, 72.	1.1	8
18	Sloping Saturated-Unsaturated Flow with Outflow at Seepage Face. Transport in Porous Media, 2017, 116, 777-796.	1.2	1

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19	Well-posed dual-phase-lag model of a thermoelastic dipolar body. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2017, 97, 1645-1658.	0.9	2
20	Exact Solutions of the Richards Equation With Nonlinear Plant-Root Extraction. Water Resources Research, 2017, 53, 9679-9691.	1.7	48
21	EDITORIAL: MATHEMATICAL METHODS FOR APPLICATIONS. ANZIAM Journal, 2017, 58, 209-210.	0.3	0
22	Exact solutions for logistic reaction-diffusion equations in biology. Zeitschrift Fur Angewandte Mathematik Und Physik, 2016, 67, 1.	0.7	18
23	Systematic review of virtual speech therapists for speech disorders. Computer Speech and Language, 2016, 37, 98-128.	2.9	42
24	Classical and Quantum Burgers Fluids: A Challenge for Group Analysis. Symmetry, 2015, 7, 1803-1815.	1.1	5
25	Exact non-classical symmetry solutions of Arrhenius reaction-diffusion. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150580.	1.0	14
26	Solutions and reductions for radiative energy transport in laser-heated plasma. Journal of Mathematical Physics, 2015, 56, 011503.	0.5	3
27	Applications of Integrable Nonlinear Diffusion Equations in Industrial Modelling. Mathematics for Industry, 2014, , 323-333.	0.4	1
28	Fourth Order Diffusion Equations with Increasing Entropy. Entropy, 2012, 14, 1127-1139.	1.1	5
29	When central finite differencing gives complex values for a real solution!. Complex Variables and Elliptic Equations, 2012, 57, 455-467.	0.4	0
30	The Green-Ampt limit with reference to infiltration coefficients. Water Resources Research, 2012, 48, .	1.7	13
31	Solutions of Helmholtz and Schrödinger Equations with Side Condition and Nonregular Separation of Variables. Symmetry, Integrability and Geometry: Methods and Applications (SIGMA), 2012, , .	0.5	5
32	Exact solution of a boundary value problem describing the uniform cylindrical or spherical piston motion. Applied Mathematical Modelling, 2011, 35, 3434-3442.	2.2	3
33	The Role of Symmetry and Separation in Surface Evolution and Curve Shortening. Symmetry, Integrability and Geometry: Methods and Applications (SIGMA), 2011, , .	0.5	2
34	Similarity: generalizations, applications and open problems. Journal of Engineering Mathematics, 2010, 66, 1-9.	0.6	7
35	Temperature-dependent surface diffusion near a grain boundary. Journal of Engineering Mathematics, 2010, 66, 87-102.	0.6	6
36	Analytical model of infiltration under constant-concentration boundary conditions. Water Resources Research, 2010, 46, .	1.7	20

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37	Concepts of Entropy and Their Applications. Entropy, 2009, 11, 59-61.	1.1	5
38	Infiltration from supply at constant water content: an integrable model. Journal of Engineering Mathematics, 2009, 64, 193-206.	0.6	14
39	Expansion of high pressure gas into air " A more realistic blast wave model. Mathematical and Computer Modelling, 2009, 50, 1606-1621.	2.0	4
40	Evolving gene frequencies in a population with three possible alleles at a locus. Mathematical and Computer Modelling, 2008, 47, 210-217.	2.0	2
41	Entropy Diagnostics for Fourth Order Partial Differential Equations in Conservation Form. Entropy, 2008, 10, 365-379.	1.1	13
42	Nonclassical symmetry solutions for reaction-diffusion equations with explicit spatial dependence. Nonlinear Analysis: Theory, Methods & Applications, 2007, 67, 2541-2552.	0.6	15
43	Dark energy states from quantization of boson fields in a universe with unstable modes. Reports on Mathematical Physics, 2006, 57, 27-40.	0.4	8
44	Symmetry Solutions for Transient Solute Transport in Unsaturated Soils with Realistic Water Profile. Transport in Porous Media, 2005, 61, 109-125.	1.2	8
45	Systematic construction of hidden nonlocal symmetries for the inhomogeneous nonlinear diffusion equation. Journal of Physics A, 2004, 37, 8279-8286.	1.6	22
46	Exact solution of a degenerate fully nonlinear diffusion equation. Zeitschrift Fur Angewandte Mathematik Und Physik, 2004, 55, 534-538.	0.7	2
47	A robust cubic reaction-diffusion system for gene propagation. Mathematical and Computer Modelling, 2004, 39, 1151-1163.	2.0	25
48	Tractable forms of the bond pricing equation. Mathematical and Computer Modelling, 2004, 40, 151-172.	2.0	4
49	Huxley and Fisher equations for gene propagation: An exact solution. ANZIAM Journal, 2002, 44, 11-20.	0.3	26
50	Analytical solutions for two-dimensional solute transport with velocity-dependent dispersion. Geophysical Monograph Series, 2002, , 145-153.	0.1	8
51	Symmetry Analysis and Numerical Modelling of Invasion by Malignant Tumour Tissue. Nonlinear Dynamics, 2002, 28, 175-193.	2.7	8
52	Steady saturated-unsaturated flow in irregular porous domains. Mathematical and Computer Modelling, 2001, 34, 177-194.	2.0	14
53	Exact Integration of Reduced Fisher's Equation, Reduced Blasius Equation, and the Lorenz Model. Journal of Mathematical Analysis and Applications, 2000, 251, 65-83.	0.5	10
54	Symmetry Reductions of Equations for Solute Transport in Soil. Nonlinear Dynamics, 2000, 22, 15-27.	2.7	9

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55	Specific yield for a two-dimensional flow. <i>Water Resources Research</i> , 2000, 36, 1393-1402.	1.7	9
56	Bubbles in Wet, Gummed Wine Labels. <i>SIAM Review</i> , 1999, 41, 363-372.	4.2	5
57	Exact solutions of potentiostatic current transients for a corrosion reaction under mixed charge transfer and diffusion control. <i>Mathematical and Computer Modelling</i> , 1999, 29, 27-41.	2.0	5
58	Potential transients for an electrochemical corrosion reaction under constant current conditions. <i>Mathematical and Computer Modelling</i> , 1999, 30, 111-131.	2.0	4
59	Calculation of humidity during evaporation from soil. <i>Advances in Water Resources</i> , 1999, 22, 495-505.	1.7	13
60	The forced Burgers equation, plant roots and Schrödinger's eigenfunctions. <i>Journal of Engineering Mathematics</i> , 1999, 36, 25-39.	0.6	12
61	All Solutions of Standard Symmetric Linear Partial Differential Equations Have Classical Lie Symmetry. <i>Journal of Mathematical Analysis and Applications</i> , 1999, 234, 109-122.	0.5	13
62	Nonlinear Heat Conduction through an Externally Heated Radiant Plasma: Background Analysis for a Numerical Study. <i>Journal of Mathematical Analysis and Applications</i> , 1999, 238, 353-368.	0.5	2
63	Solutions to Nonlinear Partial Differential Equations from Symmetry-Enhancing and Symmetry-Preserving Constraints. <i>Journal of Mathematical Analysis and Applications</i> , 1999, 238, 369-384.	0.5	2
64	Steady Infiltration in Sloping Porous Domains: the Onset of Saturation. <i>Transport in Porous Media</i> , 1998, 31, 1-17.	1.2	3
65	Boundary value problems for strongly degenerate parabolic equations. <i>Communications in Partial Differential Equations</i> , 1997, 22, 17-38.	1.0	4
66	Degenerate Nonlinear Diffusion with an Initially Sharp Front. <i>Studies in Applied Mathematics</i> , 1997, 99, 377-391.	1.1	3
67	The depth of a steep evaporating grain boundary groove: Application of comparison theorems. <i>Mathematical and Computer Modelling</i> , 1997, 25, 1-8.	2.0	3
68	Steady unsaturated flow in two-dimensional scale-heterogeneous porous media. <i>Mathematical and Computer Modelling</i> , 1997, 26, 45-54.	2.0	0
69	Nonlinear Superposition Principles Obtained by Lie Symmetry Methods. <i>Journal of Mathematical Analysis and Applications</i> , 1997, 214, 633-657.	0.5	19
70	Nonclassical Solutions Are Non-existent for the Heat Equation and Rare for Nonlinear Diffusion. <i>Journal of Mathematical Analysis and Applications</i> , 1996, 202, 259-279.	0.5	19
71	The Stefan solidification problem with nonmonotonic nonlinear heat diffusivity. <i>Mathematical and Computer Modelling</i> , 1996, 23, 87-98.	2.0	27
72	Closed-form solutions for unsaturated flow under variable flux boundary conditions. <i>Advances in Water Resources</i> , 1996, 19, 207-213.	1.7	15

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73	Nonclassical symmetry analysis of nonlinear reaction-diffusion equations in two spatial dimensions. <i>Nonlinear Analysis: Theory, Methods &amp; Applications</i> , 1996, 26, 735-754.	0.6	30
74	The integrable nonlinear degenerate diffusion equation $u_t = [f(u)u_x]_x$ and its relatives. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 1996, 47, 926-942.	0.7	5
75	Series solutions for steady unsaturated flow in irregular porous domains. <i>Transport in Porous Media</i> , 1996, 22, 195-214.	1.2	9
76	Exceptional symmetry reductions of Burgers' equation in two and three spatial dimensions. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 1995, 46, 595-622.	0.7	18
77	An integrable fourth-order nonlinear evolution equation applied to thermal grooving of metal surfaces. <i>IMA Journal of Applied Mathematics</i> , 1994, 53, 249-265.	0.8	43
78	Exact transient solutions to nonlinear diffusion-convection equations in higher dimensions. <i>Journal of Physics A</i> , 1994, 27, 5455-5465.	1.6	23
79	Nonclassical symmetry reductions of the linear diffusion equation with a nonlinear source. <i>IMA Journal of Applied Mathematics</i> , 1994, 52, 1-24.	0.8	91
80	A similarity solution of a multiphase Stefan problem incorporating general non-linear heat conduction. <i>International Journal of Heat and Mass Transfer</i> , 1994, 37, 2113-2121.	2.5	31
81	Free boundary problems with nonlinear diffusion. <i>Mathematical and Computer Modelling</i> , 1993, 18, 15-34.	2.0	16
82	Nonclassical symmetry solutions and the methods of Blumanâ€“Cole and Clarksonâ€“Kruskal. <i>Journal of Mathematical Physics</i> , 1993, 34, 4692-4703.	0.5	81
83	On a nonlinear reaction-diffusion boundary-value problem: application of a Lie-BÃcklund symmetry. <i>Journal of the Australian Mathematical Society Series B Applied Mathematics</i> , 1993, 34, 318-332.	0.3	15
84	Exact nonlinear solution for constant-rate expression from material of finite thickness. <i>Journal of the Australian Mathematical Society Series B Applied Mathematics</i> , 1992, 33, 430-450.	0.3	2
85	Sorptivity and macroscopic capillary length relationships. <i>Water Resources Research</i> , 1992, 28, 427-431.	1.7	46
86	Reply [to â€œComment on â€œSolution of a Nonlinear absorption model of mixed saturated-unsaturated flowâ€“by P. Broadbridgeâ€œ]. <i>Water Resources Research</i> , 1992, 28, 1739-1740.	1.7	1
87	Burgers' equation and layered media: Exact solutions and applications to soil-water flow. <i>Mathematical and Computer Modelling</i> , 1992, 16, 163-169.	2.0	16
88	Sedimentation in a bounded column. <i>International Journal of Non-Linear Mechanics</i> , 1992, 27, 661-667.	1.4	21
89	Approximations for diffusion from a disc source. <i>Applied Mathematical Modelling</i> , 1992, 16, 155-161.	2.2	17
90	Integrable heterogeneous nonlinear SchrÃdinger equations with dielectric loss: Lieâ€“BÃcklund symmetries. <i>Journal of Mathematical Physics</i> , 1991, 32, 8-18.	0.5	7

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91	INFILTRATION IN SATURATED SWELLING SOILS AND SLURRIES. <i>Soil Science</i> , 1990, 149, 13-22.	0.9	8
92	Exact solutions for vertical drainage and redistribution in soils. <i>Journal of Engineering Mathematics</i> , 1990, 24, 25-43.	0.6	61
93	Solution of a nonlinear absorption model of mixed saturated-unsaturated flow. <i>Water Resources Research</i> , 1990, 26, 2435-2443.	1.7	20
94	Selection of Solvable Nonlinear Evolution Equations by Systematic Searches for Lie Bäcklund Symmetries. <i>Research Reports in Physics</i> , 1990, , 51-54.	0.0	0
95	Reply [to "Comment on "Constant rate rainfall infiltration: A versatile nonlinear model: 2. Applications of solutions" by I. White and P. Broadbridge]. <i>Water Resources Research</i> , 1989, 25, 1054-1059.	1.7	6
96	Exact solvability of the Mullins nonlinear diffusion model of groove development. <i>Journal of Mathematical Physics</i> , 1989, 30, 1648-1651.	0.5	24
97	On a nonlinear moving boundary problem with heterogeneity: application of a reciprocal transformation. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 1988, 39, 122-128.	0.7	58
98	Constant rate rainfall infiltration: A versatile nonlinear model: 1. Analytic solution. <i>Water Resources Research</i> , 1988, 24, 145-154.	1.7	278
99	Constant rate rainfall infiltration: A versatile nonlinear model: 2. Applications of solutions. <i>Water Resources Research</i> , 1988, 24, 155-162.	1.7	80
100	Reply [to "Comment on "Constant rate rainfall infiltration: A versatile nonlinear model: 1. Analytic solution" by P. Broadbridge and I. White]. <i>Water Resources Research</i> , 1988, 24, 2109-2110.	1.7	7
101	Constant Rate Rainfall Infiltration in a Bounded Profile: Solutions of a Nonlinear Model. <i>Soil Science Society of America Journal</i> , 1988, 52, 1526-1533.	1.2	64
102	Integrable forms of the one-dimensional flow equation for unsaturated heterogeneous porous media. <i>Journal of Mathematical Physics</i> , 1988, 29, 622-627.	0.5	27
103	Time to ponding: Comparison of analytic, quasi-analytic, and approximate predictions. <i>Water Resources Research</i> , 1987, 23, 2302-2310.	1.7	54
104	Integrable flow equations that incorporate spatial heterogeneity. <i>Transport in Porous Media</i> , 1987, 2, 129-144.	1.2	16
105	Quantization of gyroscopically stable systems with indefinite Hamiltonian. <i>Annals of Physics</i> , 1986, 168, 273-283.	1.0	0
106	Non-integrability of non-linear diffusion-convection equations in two-spatial dimensions. <i>Journal of Physics A</i> , 1986, 19, 1245-1257.	1.6	21
107	Algebraic quantisation with indefinite metric. <i>Journal of Physics A</i> , 1983, 16, 3271-3290.	1.6	7
108	Classical and quantum quadratic Hamiltonians. <i>Bulletin of the Australian Mathematical Society</i> , 1983, 27, 475-476.	0.3	1

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109	Existence theorems for Segal quantization via spectral theory in Krein space. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1983, 24, 439-460.	0.3	7
110	Fermi-Dirac quantization of linear systems. Annals of Physics, 1981, 137, 86-103.	1.0	5
111	Existence of a complex structure for quadratic Hamiltonians?. Annals of Physics, 1981, 131, 104-117.	1.0	10
112	Canonical forms for quadratic Hamiltonians. Physica A: Statistical Mechanics and Its Applications, 1981, 108, 39-62.	1.2	9
113	Normal forms for classical and boson systems. Physica A: Statistical Mechanics and Its Applications, 1979, 99, 494-512.	1.2	16