

Philip Broadbridge

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/8035499/publications.pdf>

Version: 2024-02-01

113
papers

2,026
citations

331259

21
h-index

301761

39
g-index

119
all docs

119
docs citations

119
times ranked

989
citing authors

#	ARTICLE	IF	CITATIONS
1	Constant rate rainfall infiltration: A versatile nonlinear model: 1. Analytic solution. <i>Water Resources Research</i> , 1988, 24, 145-154.	1.7	278
2	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
3	Nonclassical symmetry solutions and the methods of Bluman–Cole and Clarkson–Kruskal. <i>Journal of Mathematical Physics</i> , 1993, 34, 4692-4703.	0.5	81
4	Constant rate rainfall infiltration: A versatile nonlinear model: 2. Applications of solutions. <i>Water Resources Research</i> , 1988, 24, 155-162.	1.7	80
5	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
6	Exact solutions for vertical drainage and redistribution in soils. <i>Journal of Engineering Mathematics</i> , 1990, 24, 25-43.	0.6	61
7	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
8	Time to ponding: Comparison of analytic, quasi-analytic, and approximate predictions. <i>Water Resources Research</i> , 1987, 23, 2302-2310.	1.7	54
9	Exact Solutions of the Richards Equation With Nonlinear Plant–Root Extraction. <i>Water Resources Research</i> , 2017, 53, 9679-9691.	1.7	48
10	Sorptivity and macroscopic capillary length relationships. <i>Water Resources Research</i> , 1992, 28, 427-431.	1.7	46
11	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
12	Systematic review of virtual speech therapists for speech disorders. <i>Computer Speech and Language</i> , 2016, 37, 98-128.	2.9	42
13	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
14	Nonclassical symmetry analysis of nonlinear reaction-diffusion equations in two spatial dimensions. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 1996, 26, 735-754.	0.6	30
15	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
16	The Stefan solidification problem with nonmonotonic nonlinear heat diffusivity. <i>Mathematical and Computer Modelling</i> , 1996, 23, 87-98.	2.0	27
17	Huxley and Fisher equations for gene propagation: An exact solution. <i>ANZIAM Journal</i> , 2002, 44, 11-20.	0.3	26
18	A robust cubic reaction-diffusion system for gene propagation. <i>Mathematical and Computer Modelling</i> , 2004, 39, 1151-1163.	2.0	25

#	ARTICLE	IF	CITATIONS
19	Exact solvability of the Mullins nonlinear diffusion model of groove development. <i>Journal of Mathematical Physics</i> , 1989, 30, 1648-1651.	0.5	24
20	Exact transient solutions to nonlinear diffusion-convection equations in higher dimensions. <i>Journal of Physics A</i> , 1994, 27, 5455-5465.	1.6	23
21	Systematic construction of hidden nonlocal symmetries for the inhomogeneous nonlinear diffusion equation. <i>Journal of Physics A</i> , 2004, 37, 8279-8286.	1.6	22
22	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
23	Sedimentation in a bounded column. <i>International Journal of Non-Linear Mechanics</i> , 1992, 27, 661-667.	1.4	21
24	Series-parallel structure-oriented electrical conductivity model of saturated clays. <i>Applied Clay Science</i> , 2018, 162, 239-251.	2.6	21
25	Random Spherical Hyperbolic Diffusion. <i>Journal of Statistical Physics</i> , 2019, 177, 889-916.	0.5	21
26	Solution of a nonlinear absorption model of mixed saturated-unsaturated flow. <i>Water Resources Research</i> , 1990, 26, 2435-2443.	1.7	20
27	Analytical model of infiltration under constant concentration boundary conditions. <i>Water Resources Research</i> , 2010, 46, .	1.7	20
28	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
29	Nonlinear Superposition Principles Obtained by Lie Symmetry Methods. <i>Journal of Mathematical Analysis and Applications</i> , 1997, 214, 633-657.	0.5	19
30	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
31	Exact solutions for logistic reaction-diffusion equations in biology. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2016, 67, 1.	0.7	18
32	On approximation for fractional stochastic partial differential equations on the sphere. <i>Stochastic Environmental Research and Risk Assessment</i> , 2018, 32, 2585-2603.	1.9	18
33	Approximations for diffusion from a disc source. <i>Applied Mathematical Modelling</i> , 1992, 16, 155-161.	2.2	17
34	Normal forms for classical and boson systems. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1979, 99, 494-512.	1.2	16
35	Integrable flow equations that incorporate spatial heterogeneity. <i>Transport in Porous Media</i> , 1987, 2, 129-144.	1.2	16
36	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

#	ARTICLE	IF	CITATIONS
37	Free boundary problems with nonlinear diffusion. <i>Mathematical and Computer Modelling</i> , 1993, 18, 15-34.	2.0	16
38	On a nonlinear reaction-diffusion boundary-value problem: application of a Lie-Bäcklund symmetry. <i>Journal of the Australian Mathematical Society Series B Applied Mathematics</i> , 1993, 34, 318-332.	0.3	15
39	Closed-form solutions for unsaturated flow under variable flux boundary conditions. <i>Advances in Water Resources</i> , 1996, 19, 207-213.	1.7	15
40	Nonclassical symmetry solutions for reaction-diffusion equations with explicit spatial dependence. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2007, 67, 2541-2552.	0.6	15
41	Steady saturated-unsaturated flow in irregular porous domains. <i>Mathematical and Computer Modelling</i> , 2001, 34, 177-194.	2.0	14
42	Infiltration from supply at constant water content: an integrable model. <i>Journal of Engineering Mathematics</i> , 2009, 64, 193-206.	0.6	14
43	Exact non-classical symmetry solutions of Arrhenius reaction-diffusion. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015, 471, 20150580.	1.0	14
44	Calculation of humidity during evaporation from soil. <i>Advances in Water Resources</i> , 1999, 22, 495-505.	1.7	13
45	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
46	Entropy Diagnostics for Fourth Order Partial Differential Equations in Conservation Form. <i>Entropy</i> , 2008, 10, 365-379.	1.1	13
47	The Green-Ampt limit with reference to infiltration coefficients. <i>Water Resources Research</i> , 2012, 48, .	1.7	13
48	The forced Burgers equation, plant roots and Schrödinger's eigenfunctions. <i>Journal of Engineering Mathematics</i> , 1999, 36, 25-39.	0.6	12
49	Existence of a complex structure for quadratic Hamiltonians?. <i>Annals of Physics</i> , 1981, 131, 104-117.	1.0	10
50	Exact Integration of Reduced Fisher's Equation, Reduced Blasius Equation, and the Lorenz Model. <i>Journal of Mathematical Analysis and Applications</i> , 2000, 251, 65-83.	0.5	10
51	Spherically Restricted Random Hyperbolic Diffusion. <i>Entropy</i> , 2020, 22, 217.	1.1	10
52	Canonical forms for quadratic Hamiltonians. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1981, 108, 39-62.	1.2	9
53	Series solutions for steady unsaturated flow in irregular porous domains. <i>Transport in Porous Media</i> , 1996, 22, 195-214.	1.2	9
54	Symmetry Reductions of Equations for Solute Transport in Soil. <i>Nonlinear Dynamics</i> , 2000, 22, 15-27.	2.7	9

#	ARTICLE	IF	CITATIONS
55	Specific yield for a two-dimensional flow. <i>Water Resources Research</i> , 2000, 36, 1393-1402.	1.7	9
56	INFILTRATION IN SATURATED SWELLING SOILS AND SLURRIES. <i>Soil Science</i> , 1990, 149, 13-22.	0.9	8
57	Analytical solutions for two-dimensional solute transport with velocity-dependent dispersion. <i>Geophysical Monograph Series</i> , 2002, , 145-153.	0.1	8
58	Symmetry Analysis and Numerical Modelling of Invasion by Malignant Tumour Tissue. <i>Nonlinear Dynamics</i> , 2002, 28, 175-193.	2.7	8
59	Symmetry Solutions for Transient Solute Transport in Unsaturated Soils with Realistic Water Profile. <i>Transport in Porous Media</i> , 2005, 61, 109-125.	1.2	8
60	Dark energy states from quantization of boson fields in a universe with unstable modes. <i>Reports on Mathematical Physics</i> , 2006, 57, 27-40.	0.4	8
61	Nonclassical Symmetry Solutions for Fourth-Order Phase Field Reaction-Diffusion. <i>Symmetry</i> , 2018, 10, 72.	1.1	8
62	Algebraic quantisation with indefinite metric. <i>Journal of Physics A</i> , 1983, 16, 3271-3290.	1.6	7
63	Existence theorems for Segal quantization via spectral theory in Krein space. <i>Journal of the Australian Mathematical Society Series B Applied Mathematics</i> , 1983, 24, 439-460.	0.3	7
64	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
65	Integrable heterogeneous nonlinear Schrödinger equations with dielectric loss: Lie-Bäcklund symmetries. <i>Journal of Mathematical Physics</i> , 1991, 32, 8-18.	0.5	7
66	Similarity: generalizations, applications and open problems. <i>Journal of Engineering Mathematics</i> , 2010, 66, 1-9.	0.6	7
67	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
68	Temperature-dependent surface diffusion near a grain boundary. <i>Journal of Engineering Mathematics</i> , 2010, 66, 87-102.	0.6	6
69	Analytic solutions for calcium ion fertilisation waves on the surface of eggs. <i>Mathematical Medicine and Biology</i> , 2019, 36, 549-562.	0.8	6
70	Fermi-Dirac quantization of linear systems. <i>Annals of Physics</i> , 1981, 137, 86-103.	1.0	5
71	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
72	Bubbles in Wet, Gummed Wine Labels. <i>SIAM Review</i> , 1999, 41, 363-372.	4.2	5

#	ARTICLE	IF	CITATIONS
73	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
74	Concepts of Entropy and Their Applications. <i>Entropy</i> , 2009, 11, 59-61.	1.1	5
75	Fourth Order Diffusion Equations with Increasing Entropy. <i>Entropy</i> , 2012, 14, 1127-1139.	1.1	5
76	Classical and Quantum Burgers Fluids: A Challenge for Group Analysis. <i>Symmetry</i> , 2015, 7, 1803-1815.	1.1	5
77	Solutions of Helmholtz and Schrödinger Equations with Side Condition and Nonregular Separation of Variables. <i>Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)</i> , 2012, , .	0.5	5
78	Integrable nonlinear reaction-diffusion population models for fisheries. <i>Applied Mathematical Modelling</i> , 2022, 102, 748-767.	2.2	5
79	Boundary value problems for strongly degenerate parabolic equations. <i>Communications in Partial Differential Equations</i> , 1997, 22, 17-38.	1.0	4
80	Potential transients for an electrochemical corrosion reaction under constant current conditions. <i>Mathematical and Computer Modelling</i> , 1999, 30, 111-131.	2.0	4
81	Tractable forms of the bond pricing equation. <i>Mathematical and Computer Modelling</i> , 2004, 40, 151-172.	2.0	4
82	Expansion of high pressure gas into air " A more realistic blast wave model. <i>Mathematical and Computer Modelling</i> , 2009, 50, 1606-1621.	2.0	4
83	Degenerate Nonlinear Diffusion with an Initially Sharp Front. <i>Studies in Applied Mathematics</i> , 1997, 99, 377-391.	1.1	3
84	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
85	Steady Infiltration in Sloping Porous Domains: the Onset of Saturation. <i>Transport in Porous Media</i> , 1998, 31, 1-17.	1.2	3
86	Exact solution of a boundary value problem describing the uniform cylindrical or spherical piston motion. <i>Applied Mathematical Modelling</i> , 2011, 35, 3434-3442.	2.2	3
87	Solutions and reductions for radiative energy transport in laser-heated plasma. <i>Journal of Mathematical Physics</i> , 2015, 56, 011503.	0.5	3
88	On transport through heterogeneous media: application of conjugated reciprocal transformations. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2020, 71, 1.	0.7	3
89	Solution of Non-Autonomous Schrödinger Equation for Quantized de Sitter Klein-Gordon Oscillator Modes Undergoing Attraction-Repulsion Transition. <i>Symmetry</i> , 2020, 12, 943.	1.1	3
90	Bregman inverse filter. <i>Electronics Letters</i> , 2019, 55, 192-194.	0.5	3

#	ARTICLE	IF	CITATIONS
91	Exact nonlinear solution for constant-rate expression from material of finite thickness. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1992, 33, 430-450.	0.3	2
92	Nonlinear Heat Conduction through an Externally Heated Radiant Plasma: Background Analysis for a Numerical Study. Journal of Mathematical Analysis and Applications, 1999, 238, 353-368.	0.5	2
93	Solutions to Nonlinear Partial Differential Equations from Symmetry-Enhancing and Symmetry-Preserving Constraints. Journal of Mathematical Analysis and Applications, 1999, 238, 369-384.	0.5	2
94	Exact solution of a degenerate fully nonlinear diffusion equation. Zeitschrift Fur Angewandte Mathematik Und Physik, 2004, 55, 534-538.	0.7	2
95	Evolving gene frequencies in a population with three possible alleles at a locus. Mathematical and Computer Modelling, 2008, 47, 210-217.	2.0	2
96	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
97	Conditionally Integrable Nonlinear Diffusion with Diffusivity $1/u$. Symmetry, 2019, 11, 804.	1.1	2
98	The Role of Symmetry and Separation in Surface Evolution and Curve Shortening. Symmetry, Integrability and Geometry: Methods and Applications (SIGMA), 2011, . .	0.5	2
99	Stratified mobility fishery models with harvesting outside of no-take areas. Applied Mathematical Modelling, 2022, 105, 29-49.	2.2	2
100	Classical and quantum quadratic Hamiltonians. Bulletin of the Australian Mathematical Society, 1983, 27, 475-476.	0.3	1
101	Reply [to "Comment on "Solution of a Nonlinear absorption model of mixed saturated-unsaturated flow" by P. Broadbridge]. Water Resources Research, 1992, 28, 1739-1740.	1.7	1
102	Sloping Saturated-Unsaturated Flow with Outflow at Seepage Face. Transport in Porous Media, 2017, 116, 777-796.	1.2	1
103	Integrable Discrete Model for One-Dimensional Soil Water Infiltration. Studies in Applied Mathematics, 2018, 140, 483-507.	1.1	1
104	A note on separation of variables solutions of generalized nonlinear diffusion equations. Applied Mathematics Letters, 2019, 98, 7-12.	1.5	1
105	Solution for 4th-order nonlinear axisymmetric surface diffusion by inverse method. Physica D: Nonlinear Phenomena, 2020, 405, 132288.	1.3	1
106	Applications of Integrable Nonlinear Diffusion Equations in Industrial Modelling. Mathematics for Industry, 2014, , 323-333.	0.4	1
107	Quantization of gyroscopically stable systems with indefinite Hamiltonian. Annals of Physics, 1986, 168, 273-283.	1.0	0
108	Steady unsaturated flow in two-dimensional scale-heterogeneous porous media. Mathematical and Computer Modelling, 1997, 26, 45-54.	2.0	0

#	ARTICLE	IF	CITATIONS
109	When central finite differencing gives complex values for a real solution!. Complex Variables and Elliptic Equations, 2012, 57, 455-467.	0.4	0
110	EDITORIAL: MATHEMATICAL METHODS FOR APPLICATIONS. ANZIAM Journal, 2017, 58, 209-210.	0.3	0
111	Foreword: Proceedings of the 4th International Electronic Conference on Entropy and Its Applications. Proceedings (mdpi), 2018, 2, .	0.2	0
112	Diffusion of dermatological irritant in drying laundered cloth. Mathematical Medicine and Biology, 2021, 38, 474-489.	0.8	0
113	Selection of Solvable Nonlinear Evolution Equations by Systematic Searches for Lie Bäcklund Symmetries. Research Reports in Physics, 1990, , 51-54.	0.0	0