

Roman O Popovych

List of Publications by Year in descending order

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Version: 2024-02-01

80
papers

1,826
citations

279798

23
h-index

289244

40
g-index

80
all docs

80
docs citations

80
times ranked

383
citing authors

#	ARTICLE	IF	CITATIONS
1	Realizations of real low-dimensional Lie algebras. <i>Journal of Physics A</i> , 2003, 36, 7337-7360.	1.6	126
2	New results on group classification of nonlinear diffusion-convection equations. <i>Journal of Physics A</i> , 2004, 37, 7547-7565.	1.6	101
3	Admissible Transformations and Normalized Classes of Nonlinear Schrödinger Equations. <i>Acta Applicandae Mathematicae</i> , 2010, 109, 315-359.	1.0	99
4	Enhanced group analysis and conservation laws of variable coefficient reaction-diffusion equations with power nonlinearities. <i>Journal of Mathematical Analysis and Applications</i> , 2007, 330, 1363-1386.	1.0	86
5	Enhanced Group Analysis and Exact Solutions of Variable Coefficient Semilinear Diffusion Equations with Power Source. <i>Acta Applicandae Mathematicae</i> , 2009, 106, 1-46.	1.0	77
6	A Precise Definition of Reduction of Partial Differential Equations. <i>Journal of Mathematical Analysis and Applications</i> , 1999, 238, 101-123.	1.0	62
7	Extended group analysis of variable coefficient reaction-diffusion equations with exponential nonlinearities. <i>Journal of Mathematical Analysis and Applications</i> , 2012, 396, 225-242.	1.0	61
8	Conservation Laws and Potential Symmetries of Linear Parabolic Equations. <i>Acta Applicandae Mathematicae</i> , 2008, 100, 113-185.	1.0	57
9	Contractions of low-dimensional Lie algebras. <i>Journal of Mathematical Physics</i> , 2006, 47, 123515.	1.1	52
10	More common errors in finding exact solutions of nonlinear differential equations: Part I. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2010, 15, 3887-3899.	3.3	50
11	Group analysis of variable coefficient diffusion-convection equations. I. Enhanced group classification. <i>Lobachevskii Journal of Mathematics</i> , 2010, 31, 100-122.	0.9	45
12	Hierarchy of conservation laws of diffusion-convection equations. <i>Journal of Mathematical Physics</i> , 2005, 46, 043502.	1.1	44
13	Complete group classification of a class of nonlinear wave equations. <i>Journal of Mathematical Physics</i> , 2012, 53, .	1.1	43
14	Symmetry preserving parameterization schemes. <i>Journal of Mathematical Physics</i> , 2012, 53, .	1.1	42
15	Equivalence transformations in the study of integrability. <i>Physica Scripta</i> , 2014, 89, 038003.	2.5	40
16	Potential nonclassical symmetries and solutions of fast diffusion equation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2007, 362, 166-173.	2.1	37
17	Enhanced preliminary group classification of a class of generalized diffusion equations. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2011, 16, 3622-3638.	3.3	36
18	Computation of invariants of Lie algebras by means of moving frames. <i>Journal of Physics A</i> , 2006, 39, 5749-5762.	1.6	35

#	ARTICLE	IF	CITATIONS
19	Invariant Discretization Schemes for the Shallow-Water Equations. SIAM Journal of Scientific Computing, 2012, 34, B810-B839.	2.8	35
20	Group classification of (1+1)-dimensional Schrödinger equations with potentials and power nonlinearities. Journal of Mathematical Physics, 2004, 45, 3049-3057.	1.1	31
21	Physics-informed neural networks for the shallow-water equations on the sphere. Journal of Computational Physics, 2022, 456, 111024.	3.8	30
22	Potential equivalence transformations for nonlinear diffusion-convection equations. Journal of Physics A, 2005, 38, 3145-3155.	1.6	28
23	Conservation laws and normal forms of evolution equations. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 2210-2217.	2.1	28
24	Lie symmetries and exact solutions of the barotropic vorticity equation. Journal of Mathematical Physics, 2009, 50, .	1.1	24
25	Generalized conditional symmetries of evolution equations. Journal of Mathematical Analysis and Applications, 2011, 379, 444-460.	1.0	23
26	Group analysis of nonlinear fin equations. Applied Mathematics Letters, 2008, 21, 248-253.	2.7	22
27	Invariants of Lie algebras with fixed structure of nilradicals. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 113-130.	2.1	21
28	Exact solutions of a remarkable fin equation. Applied Mathematics Letters, 2008, 21, 209-214.	2.7	21
29	Singular reduction operators in two dimensions. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 505201.	2.1	21
30	Group classification and exact solutions of variable-coefficient generalized Burgers equations with linear damping. Applied Mathematics and Computation, 2014, 243, 232-244.	2.2	21
31	Group analysis of general Burgers-Korteweg-de Vries equations. Journal of Mathematical Physics, 2017, 58, .	1.1	21
32	Lie symmetries of two-dimensional shallow water equations with variable bottom topography. Chaos, 2020, 30, 073132.	2.5	19
33	Conservation laws and hierarchies of potential symmetries for certain diffusion equations. Physica A: Statistical Mechanics and Its Applications, 2009, 388, 343-356.	2.6	18
34	Local conservation laws of second-order evolution equations. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 362002.	2.1	17
35	Group classification of linear evolution equations. Journal of Mathematical Analysis and Applications, 2017, 448, 982-1005.	1.0	17
36	Enhanced group classification of nonlinear diffusion-reaction equations with gradient-dependent diffusivity. Journal of Mathematical Analysis and Applications, 2020, 484, 123739.	1.0	17

#	ARTICLE	IF	CITATIONS
37	On Lie Reduction of the Navier-Stokes Equations. Journal of Nonlinear Mathematical Physics, 1995, 2, 301.	1.3	16
38	Lie symmetries of systems of second-order linear ordinary differential equations with constant coefficients. Journal of Mathematical Analysis and Applications, 2013, 397, 434-440.	1.0	16
39	Reduction operators of linear second-order parabolic equations. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 185202.	2.1	15
40	Complete point symmetry group of the barotropic vorticity equation on a rotating sphere. Journal of Engineering Mathematics, 2013, 82, 31-38.	1.2	15
41	Generalization of the algebraic method of group classification with application to nonlinear wave and elliptic equations. Communications in Nonlinear Science and Numerical Simulation, 2020, 91, 105419.	3.3	15
42	Potential conservation laws. Journal of Mathematical Physics, 2008, 49, .	1.1	14
43	Lie symmetry analysis and exact solutions of the quasigeostrophic two-layer problem. Journal of Mathematical Physics, 2011, 52, .	1.1	14
44	Singular reduction modules of differential equations. Journal of Mathematical Physics, 2016, 57, .	1.1	13
45	Enhanced Symmetry Analysis of Two-Dimensional Burgers System. Acta Applicandae Mathematicae, 2019, 163, 91-128.	1.0	13
46	Invariants of solvable lie algebras with triangular nilradicals and diagonal nilindependent elements. Linear Algebra and Its Applications, 2008, 428, 834-854.	0.9	12
47	Extended symmetry analysis of generalized Burgers equations. Journal of Mathematical Physics, 2017, 58, .	1.1	12
48	Algebraic Method for Group Classification of (1+1)-Dimensional Linear Schrödinger Equations. Acta Applicandae Mathematicae, 2018, 157, 171-203.	1.0	12
49	Multi-dimensional quasi-simple waves in weakly dissipative flows. Physica D: Nonlinear Phenomena, 2008, 237, 405-419.	2.8	10
50	Inverse problem on conservation laws. Physica D: Nonlinear Phenomena, 2020, 401, 132175.	2.8	10
51	Reduction operators and exact solutions of generalized Burgers equations. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 2847-2850.	2.1	9
52	Invariants of triangular Lie algebras. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 7557-7572.	2.1	8
53	Algebraic method for finding equivalence groups. Journal of Physics: Conference Series, 2015, 621, 012001.	0.4	8
54	Extended symmetry analysis of an isothermal no-slip drift flux model. Physica D: Nonlinear Phenomena, 2020, 402, 132188.	2.8	8

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55	Invariant parameterization and turbulence modeling on the beta-plane. <i>Physica D: Nonlinear Phenomena</i> , 2014, 269, 48-62.	2.8	7
56	Extended symmetry analysis of two-dimensional degenerate Burgers equation. <i>Journal of Geometry and Physics</i> , 2021, 169, 104336.	1.4	7
57	Equivalence of Conservation Laws and Equivalence of Potential Systems. <i>International Journal of Theoretical Physics</i> , 2007, 46, 2658-2668.	1.2	6
58	Symmetry Analysis of Barotropic Potential Vorticity Equation. <i>Communications in Theoretical Physics</i> , 2009, 52, 697-700.	2.5	6
59	Lowest-dimensional example on non-universality of generalized Inönü-Wigner contractions. <i>Journal of Algebra</i> , 2010, 324, 2742-2756.	0.7	6
60	Lie reduction and exact solutions of vorticity equation on rotating sphere. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2012, 376, 1179-1184.	2.1	6
61	Equivalence groupoids of classes of linear ordinary differential equations and their group classification. <i>Journal of Physics: Conference Series</i> , 2015, 621, 012002.	0.4	6
62	Variational symmetries and conservation laws of the wave equation in one space dimension. <i>Applied Mathematics Letters</i> , 2020, 104, 106225.	2.7	6
63	Equivalence groupoid and group classification of a class of variable-coefficient Burgers equations. <i>Journal of Mathematical Analysis and Applications</i> , 2020, 491, 124215.	1.0	6
64	Invariants of triangular Lie algebras with one nil-independent diagonal element. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2007, 40, 9783-9792.	2.1	5
65	Equivalence of diagonal contractions to generalized IW-contractions with integer exponents. <i>Linear Algebra and Its Applications</i> , 2009, 431, 1096-1104.	0.9	5
66	Reduction operators of Burgers equation. <i>Journal of Mathematical Analysis and Applications</i> , 2013, 398, 270-277.	1.0	5
67	Generalized symmetries, conservation laws and Hamiltonian structures of an isothermal no-slip drift flux model. <i>Physica D: Nonlinear Phenomena</i> , 2020, 411, 132546.	2.8	5
68	Zeroth-order conservation laws of two-dimensional shallow water equations with variable bottom topography. <i>Studies in Applied Mathematics</i> , 2020, 145, 291-321.	2.4	5
69	Equivalence groupoids and group classification of multidimensional nonlinear Schrödinger equations. <i>Journal of Mathematical Analysis and Applications</i> , 2020, 491, 124271.	1.0	4
70	Realizations of Lie algebras on the line and the new group classification of (1+1)-dimensional generalized nonlinear Klein-Gordon equations. <i>Analysis and Mathematical Physics</i> , 2021, 11, 1.	1.3	4
71	Generalized symmetries and conservation laws of (1 + 1)-dimensional Klein-Gordon equation. <i>Journal of Mathematical Physics</i> , 2020, 61, .	1.1	3
72	Symmetry justification of Lorenz's maximum simplification. <i>Nonlinear Dynamics</i> , 2010, 61, 101-107.	5.2	2

#	ARTICLE	IF	CITATIONS
73	Mapping method of group classification. Journal of Mathematical Analysis and Applications, 2022, 513, 126209.	1.0	2
74	Group analysis of Benjaminâ€™Bonaâ€™Mahony equations with time dependent coefficients. Journal of Physics: Conference Series, 2015, 621, 012016.	0.4	1
75	Point and contact equivalence groupoids of two-dimensional quasilinear hyperbolic equations. Applied Mathematics Letters, 2021, 116, 107068.	2.7	1
76	On the ineffectiveness of constant rotation in the primitive equations and their symmetry analysis. Communications in Nonlinear Science and Numerical Simulation, 2021, 101, 105885.	3.3	1
77	Effect of External Sources on Finite Time Singularity. Physica Scripta, 2005, 71, 52-59.	2.5	0
78	Preface to the special issue on the tercentenary of the Laplaceâ€™Rungeâ€™Lenz vector. Journal of Engineering Mathematics, 2013, 82, 1-3.	1.2	0
79	GBDT version of the Darboux transformation for the matrix coupled dispersionless equations (local) Tj ETQq1 1 0.784314 rgBT /Overl	0.4	0
80	Parameter-dependent linear ordinary differential equations and topology of domains. Journal of Differential Equations, 2021, 284, 546-575.	2.2	0