Brynjulf Owren

List of Publications by Year
in descending order

62	1,863	257450 24	265206 42
papers	citations	h-index	g-index

63	63	63	730
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Lie group integrators for mechanical systems. International Journal of Computer Mathematics, 2022, 99, 58-88.	1.8	9
2	Computational geometric methods for preferential clustering of particle suspensions. Journal of Computational Physics, 2022, 448, 110725.	3.8	3
3	Detecting and determining preserved measures and integrals of birational maps. Journal of Computational Dynamics, 2022, 9, 553-574.	1.1	5
4	Adaptive time stepping for commutator free Lie group integrators. IFAC-PapersOnLine, 2021, 54, 103-107.	0.9	0
5	An integral model based on slender body theory, with applications to curved rigid fibers. Physics of Fluids, 2021, 33, .	4.0	11
6	Structure-preserving deep learning. European Journal of Applied Mathematics, 2021, 32, 888-936.	2.9	17
7	Equivariant neural networks for inverse problems. Inverse Problems, 2021, 37, 085006.	2.0	6
8	Deep learning as optimal control problems. IFAC-PapersOnLine, 2021, 54, 620-623.	0.9	2
9	The Magnus expansion and post-Lie algebras. Mathematics of Computation, 2020, 89, 2785-2799.	2.1	7
10	Variable step size commutator free Lie group integrators. Numerical Algorithms, 2019, 82, 1359-1376.	1.9	4
11	Energy-preserving methods on Riemannian manifolds. Mathematics of Computation, 2019, 89, 699-716.	2.1	9
12	Using discrete Darboux polynomials to detect and determine preserved measures and integrals of rational maps. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 31LT01.	2.1	11
13	Three classes of quadratic vector fields for which the Kahan discretisation is the root of a generalised Manin transformation. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 045204.	2.1	8
14	A novel approach to rigid spheroid models in viscous flows using operator splitting methods. Numerical Algorithms, 2019, 81, 1423-1441.	1.9	3
15	Deep learning as optimal control problems: Models and numerical methods. Journal of Computational Dynamics, 2019, 6, 171-198.	1.1	29
16	Adaptive energy preserving methods for partial differential equations. Advances in Computational Mathematics, 2018, 44, 815-839.	1.6	10
17	Dissipative Numerical Schemes on Riemannian Manifolds with Applications to Gradient Flows. SIAM Journal of Scientific Computing, 2018, 40, A3789-A3806.	2.8	10
18	Lie Group Integrators. Springer Proceedings in Mathematics and Statistics, 2018, , 29-69.	0.2	5

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19	Geometric integration of non-autonomous linear Hamiltonian problems. Advances in Computational Mathematics, 2016, 42, 313-332.	1.6	3
20	Discretization of polynomial vector fields by polarization. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150390.	2.1	13
21	The minimal stage, energy preserving Rungeâ€“Kutta method for polynomial Hamiltonian systems is the averaged vector field method. Mathematics of Computation, 2014, 83, 1689-1700.	2.1	25
22	Integrability properties of KahanÊ¼s method. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 365202.	2.1	28
23	An introduction to Lie group integrators â€“ basics, new developments and applications. Journal of Computational Physics, 2014, 257, 1040-1061.	3.8	56
24	Preserving first integrals with symmetric Lie group methods. Discrete and Continuous Dynamical Systems, 2014, 34, 977-990.	0.9	7
25	Geometric properties of Kahan's method. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 025201.	2.1	48
26	Preserving energy resp. dissipation in numerical PDEs using the â€œAverage Vector Fieldâ€•method. Journal of Computational Physics, 2012, 231, 6770-6789.	3.8	198
27	A General Framework for Deriving Integral Preserving Numerical Methods for PDEs. SIAM Journal of Scientific Computing, 2011, 33, 2318-2340.	2.8	87
28	Preserving multiple first integrals by discrete gradients. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 305205.	2.1	31
29	Topics in structure-preserving discretization. Acta Numerica, 2011, 20, 1-119.	10.7	89
30	Energy-Preserving Integrators and the Structure ofÂB-series. Foundations of Computational Mathematics, 2010, 10, 673-693.	2.5	51
31	Energy-preserving Runge-Kutta methods. ESAIM: Mathematical Modelling and Numerical Analysis, 2009, 43, 645-649.	1.9	89
32	Structure of B-series for Some Classes of Geometric Integrators. , 2009, , .		0
33	Plane wave stability of some conservative schemes for the cubic SchrÃ¶dinger equation. ESAIM: Mathematical Modelling and Numerical Analysis, 2009, 43, 677-687.	1.9	15
34	Symmetric Exponential Integrators with an Application to the Cubic SchrÃ¶dinger Equation. Foundations of Computational Mathematics, 2008, 8, 303-317.	2.5	78
35	Multi-symplectic integration of the Camassaâ€“Holm equation. Journal of Computational Physics, 2008, 227, 5492-5512.	3.8	67
36	Order conditions for commutator-free Lie group methods. Journal of Physics A, 2006, 39, 5585-5599.	1.6	22

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37	Solving the nonlinear SchrÃ¶dinger equation using exponential integrators. Modeling, Identification and Control, 2006, 27, 201-218.	1.1	23
38	B-series and Order Conditions for Exponential Integrators. SIAM Journal on Numerical Analysis, 2005, 43, 1715-1727.	2.3	42
39	The behaviour of the local error in splitting methods applied to stiff problems. Journal of Computational Physics, 2004, 195, 576-593.	3.8	16
40	On the Implementation of Lie Group Methods on the Stiefel Manifold. Numerical Algorithms, 2003, 32, 163-183.	1.9	21
41	Cost Efficient Lie Group Integrators in the RKMK Class. BIT Numerical Mathematics, 2003, 43, 723-742.	2.0	11
42	Lie group methods for rigid body dynamics and time integration on manifolds. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 421-438.	6.6	64
43	Commutator-free Lie group methods. Future Generation Computer Systems, 2003, 19, 341-352.	7.5	69
44	A Class of Intrinsic Schemes for Orthogonal Integration. SIAM Journal on Numerical Analysis, 2002, 40, 2069-2084.	2.3	27
45	Integration methods based on canonical coordinates of the second kind. Numerische Mathematik, 2001, 87, 763-790.	1.9	30
46	Quadrature methods based on the Cayley transform. Applied Numerical Mathematics, 2001, 39, 403-413.	2.1	8
47	A Note on the Construction of Crouch-Grossman Methods. BIT Numerical Mathematics, 2001, 41, 207-214.	2.0	8
48	Construction of Rungeâ€“Kutta methods of Crouchâ€“Grossman type of high order. Advances in Computational Mathematics, 2000, 13, 405-415.	1.6	16
49	The Newton Iteration on Lie Groups. BIT Numerical Mathematics, 2000, 40, 121-145.	2.0	49
50	Computations in a free Lie algebra. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1999, 357, 957-981.	3.4	124
51	Runge-Kutta Methods Adapted to Manifolds and Based on Rigid Frames. BIT Numerical Mathematics, 1999, 39, 116-142.	2.0	64
52	Stiffness detection and estimation of dominant spectrum with explicit Runge-Kutta methods. ACM Transactions on Mathematical Software, 1998, 24, 368-382.	2.9	7
53	Pseudospectra of waveform relaxation operators. Computers and Mathematics With Applications, 1998, 36, 67-85.	2.7	9
54	Simulation of ordinary differential equations on manifolds: some numerical experiments and verifications. Modeling, Identification and Control, 1997, 18, 75-88.	1.1	20

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55	Nonnormality Effects in a Discretised Nonlinear Reaction-Convectionâ€“Diffusion Equation. Journal of Computational Physics, 1996, 124, 309-323.	3.8	4
56	Stability of Runge-Kutta methods used in modular integration. Journal of Computational and Applied Mathematics, 1995, 62, 89-101.	2.0	2
57	Alternative integration methods for problems in structural dynamics. Computer Methods in Applied Mechanics and Engineering, 1995, 122, 1-10.	6.6	43
58	Order barriers and characterizations for continuous mono-implicit Runge-Kutta schemes. Mathematics of Computation, 1993, 61, 675-699.	2.1	15
59	Derivation of Efficient, Continuous, Explicit Rungeâ€“Kutta Methods. SIAM Journal on Scientific and Statistical Computing, 1992, 13, 1488-1501.	1.5	78
60	A uniqueness result related to the stability of explicit Runge-Kutta methods. BIT Numerical Mathematics, 1991, 31, 373-374.	2.0	1
61	Order barriers for continuous explicit Runge-Kutta methods. Mathematics of Computation, 1991, 56, 645-661.	2.1	48
62	Some stability results for explicit Runge-Kutta methods. BIT Numerical Mathematics, 1990, 30, 700-706.	2.0	8