John Butcher

List of Publications by Year in Descending Order

77 papers	2,842 citations	22 h-index	52 g-index
90 ext. papers	3,351 ext. citations	2 avg, IF	5.86 L-index

#	Paper	IF	Citations
77	A New Solution to a Cubic Diophantine Equation. *Axioms*, **2022**, 11, 184	1.6	
76	Variable order and stepsize in general linear methods. *Numerical Algorithms*, **2019**, 81, 1403-1421	2.1	
75	Trees and B-series. *Numerical Algorithms*, **2019**, 81, 1311-1325	2.1	
74	Trees, Stumps, and Applications. *Axioms*, **2018**, 7, 52	1.6	3
73	Partitioned general linear methods for separable Hamiltonian problems. *Applied Numerical Mathematics*, **2017**, 117, 69-86	2.5	12
72	A G-symplectic method with order 6. *BIT Numerical Mathematics*, **2017**, 57, 313-328	1.7	3
71	Symmetric general linear methods. *BIT Numerical Mathematics*, **2016**, 56, 1189-1212	1.7	7
70	A Characterization of Energy-Preserving Methods and the Construction of Parallel Integrators for Hamiltonian Systems. *SIAM Journal on Numerical Analysis*, **2016**, 54, 1993-2013	2.4	23
69	**2016**,		218
68	Order conditions for G-symplectic methods. *BIT Numerical Mathematics*, **2015**, 55, 927-948	1.7	3
67	Runge-Kutta Methods for Ordinary Differential Equations. *Springer Proceedings in Mathematics and Statistics*, **2015**, 37-58	0.2	1
66	The cohesiveness of G-symplectic methods. *Numerical Algorithms*, **2015**, 70, 607-624	2.1	6
65	Symplectic effective order methods. *Numerical Algorithms*, **2014**, 65, 499-517	2.1	4
64	The Control of Parasitism in G-symplectic Methods. *SIAM Journal on Numerical Analysis*, **2014**, 52, 2440-2465	2.4	18
63	Predictor-Corrector Obreshkov pairs. *Computing (Vienna/New York)*, **2013**, 95, 355-371	2.2	4
62	Dealing with Parasitic Behaviour in G-Symplectic Integrators. *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, **2013**, 105-123	0.3	6
61	Order bounds for second derivative approximations. *BIT Numerical Mathematics*, **2012**, 52, 273-281	1.7	9

60	Polynomial algebra for Birkhoff interpolants. *Numerical Algorithms*, **2011**, 56, 319-347	2.1	18
59	The tree and forest spaces with applications to initial-value problem methods. *BIT Numerical Mathematics*, **2010**, 50, 713-728	1.7	5
58	Trees and numerical methods for ordinary differential equations. *Numerical Algorithms*, **2010**, 53, 153-170	2.1	19
57	PRACTICAL RUNGE–KUTTA METHODS FOR SCIENTIFIC COMPUTATION. *ANZIAM Journal*, **2009**, 50, 333-342	2.5	5
56	The existence of symplectic general linear methods. *Numerical Algorithms*, **2009**, 51, 77-84	2.1	12
55	General linear methods for ordinary differential equations. *Mathematics and Computers in Simulation*, **2009**, 79, 1834-1845	3.3	7
54	Numerical methods for ordinary differential equations: early days **2009**, 35-44		
53	**2008**,		621
52	A modified approach to predict dissolution and absorption of polydisperse powders. *Pharmaceutical Research*, **2008**, 25, 2309-11	4.5	6
51	General linear methods. *Acta Numerica*, **2006**, 15, 157-256	15.1	73
50	On error estimation in general linear methods for stiff ODEs. *Applied Numerical Mathematics*, **2006**, 56, 345-357	2.5	27
49	Applications of doubly companion matrices. *Applied Numerical Mathematics*, **2006**, 56, 358-373	2.5	10
48	Linear Multistep Methods as Irreducible General Linear Methods. *BIT Numerical Mathematics*, **2006**, 46, 5-19	1.7	11
47	Thirty years of G-stability. *BIT Numerical Mathematics*, **2006**, 46, 479-489	1.7	13
46	ARK methods for stiff problems. *Applied Numerical Mathematics*, **2005**, 53, 165-181	2.5	20
45	High order A-stable numerical methods for stiff problems. *Journal of Scientific Computing*, **2005**, 25, 51-66	6.3	1
44	High Order A-stable Numerical Methods for Stiff Problems. *Journal of Scientific Computing*, **2005**, 25, 51-66	2.3	9
43	Second derivative methods with RK stability. *Numerical Algorithms*, **2005**, 40, 415-429	2.1	47

42	Unconditionally Stable General Linear Methods for Ordinary Differential Equations. *BIT Numerical Mathematics*, **2004**, 44, 557-570	1.7	12
41	Construction of General Linear Methods with Runge-Kutta Stability Properties. *Numerical Algorithms*, **2004**, 36, 53-72	2.1	24
40	Experiments with a New Fifth Order Method. *Numerical Algorithms*, **2003**, 33, 137-151	2.1	2
39	The Construction of Practical General Linear Methods. *BIT Numerical Mathematics*, **2003**, 43, 695-721	1.7	49
38	A transformation relating explicit and diagonally-implicit general linear methods. *Applied Numerical Mathematics*, **2003**, 44, 313-327	2.5	15
37	Stability of Numerical Methods for Ordinary Differential Equations. *Numerical Algorithms*, **2002**, 31, 59-73	2.1	5
36	Error Estimation for Nordsieck Methods. *Numerical Algorithms*, **2002**, 31, 75-85	2.1	10
35	A New Approach to the Algebraic Structures for Integration Methods. *BIT Numerical Mathematics*, **2002**, 42, 477-489	1.7	6
34	General Linear Methods for Stiff Differential Equations. *BIT Numerical Mathematics*, **2001**, 41, 240-264	1.7	24
33	A Reliable Error Estimation for Diagonally Implicit Multistage Integration Methods. *BIT Numerical Mathematics*, **2001**, 41, 656-665	1.7	15
32	On the implementation of ESIRK methods for stiff IVPs. *Numerical Algorithms*, **2001**, 26, 201-218	2.1	4
31	A new type of singly-implicit Runge-Kutta method. *Applied Numerical Mathematics*, **2000**, 34, 179-188	2.5	23
30	The effective order of singly-implicit Runge-Kutta methods. *Numerical Algorithms*, **1999**, 20, 269-284	2.1	14
29	Order and effective order. *Applied Numerical Mathematics*, **1998**, 28, 179-191	2.5	7
28	Implementation of Diagonally Implicit Multistage Integration Methods for Ordinary Differential Equations. *SIAM Journal on Numerical Analysis*, **1997**, 34, 2119-2141	2.4	63
27	RUNGE-KUTTA METHODS AS MATHEMATICAL OBJECTS **1996**, 39-55		
26	Orthogonal polynomials, Padé approximations and A-stability. *Numerical Algorithms*, **1996**, 11, 71-78	2.1	
25	General linear methods. *Computers and Mathematics With Applications*, **1996**, 31, 105-112	2.7	16

24	On fifth order Runge-Kutta methods. *BIT Numerical Mathematics*, **1995**, 35, 202-209	1.7	8
23	General linear methods for the parallel solution of ordinary differential equations **1993**, 99-111		1
22	Generalized Padé approximations to the exponential function. *BIT Numerical Mathematics*, **1992**, 32, 118-130	1.7	10
21	On symmetrizers for Gauss methods. *Numerische Mathematik*, **1991**, 60, 465-476	2.2	6
20	Order, stepsize and stiffness switching. *Computing (Vienna/New York)*, **1990**, 44, 209-220	2.2	12
19	Towards Efficient Runge-Kutta Methods for Stiff Systems. *SIAM Journal on Numerical Analysis*, **1990**, 27, 753-761	2.4	33
18	The equivalence of algebraic stability and AN-stability. *BIT Numerical Mathematics*, **1987**, 27, 510-533	1.7	20
17	Optimal Order and Stepsize Sequences. *IMA Journal of Numerical Analysis*, **1986**, 6, 433-438	1.8	6
16	An application of the runge-kutta space. *BIT Numerical Mathematics*, **1984**, 24, 425-440	1.7	7
15	Stability Properties for a General Class of Methods for Ordinary Differential Equations. *SIAM Journal on Numerical Analysis*, **1981**, 18, 37-44	2.4	6
14	An implementation of singly-implicit Runge-Kutta methods. *BIT Numerical Mathematics*, **1980**, 20, 326-340	1.7	95
13	Non-linear stability of a general class of differential equation methods. *BIT Numerical Mathematics*, **1980**, 20, 185-203	1.7	182
12	Stability Criteria for Implicit Runge-Kutta Methods. *SIAM Journal on Numerical Analysis*, **1979**, 16, 46-57	2.4	219
11	A Transformed implicit Runge-Kutta Method. *Journal of the ACM*, **1979**, 26, 731-738	2	43
10	A stability property of implicit Runge-Kutta methods. *BIT Numerical Mathematics*, **1975**, 15, 358-361	1.7	125
9	The order of differential equation methods. *Lecture Notes in Mathematics*, **1974**, 72-75	0.4	1
8	The order of numerical methods for ordinary differential equations. *Mathematics of Computation*, **1973**, 27, 793-793	1.6	12
7	A convergence criterion for a class of integration methods. *Mathematics of Computation*, **1972**, 26, 107-107	1.6	2

6	An algebraic theory of integration methods. *Mathematics of Computation*, **1972**, 26, 79-79	1.6	140
5	The effective order of Runge-Kutta methods. *Lecture Notes in Mathematics*, **1969**, 133-139	0.4	29
4	A Multistep Generalization of Runge-Kutta Methods With Four or Five Stages. *Journal of the ACM*, **1967**, 14, 84-99	2	29
3	On the convergence of numerical solutions to ordinary differential equations. *Mathematics of Computation*, **1966**, 20, 1-1	1.6	99
2	Coefficients for the study of Runge-Kutta integration processes. *Journal of the Australian Mathematical Society*, **1963**, 3, 185-201		233
1	On the integration processes of A. Hu. *Journal of the Australian Mathematical Society*, **1963**, 3, 202-206		14