

# John Butcher

## List of Publications by Citations

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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	<b>2008,</b>		621
76	Coefficients for the study of Runge-Kutta integration processes. <i>Journal of the Australian Mathematical Society</i> , <b>1963</b> , 3, 185-201		233
75	Stability Criteria for Implicit Runge-Kutta Methods. <i>SIAM Journal on Numerical Analysis</i> , <b>1979</b> , 16, 46-57	2.4	219
74	<b>2016,</b>		218
73	Non-linear stability of a general class of differential equation methods. <i>BIT Numerical Mathematics</i> , <b>1980</b> , 20, 185-203	1.7	182
72	An algebraic theory of integration methods. <i>Mathematics of Computation</i> , <b>1972</b> , 26, 79-79	1.6	140
71	A stability property of implicit Runge-Kutta methods. <i>BIT Numerical Mathematics</i> , <b>1975</b> , 15, 358-361	1.7	125
70	On the convergence of numerical solutions to ordinary differential equations. <i>Mathematics of Computation</i> , <b>1966</b> , 20, 1-1	1.6	99
69	An implementation of singly-implicit Runge-Kutta methods. <i>BIT Numerical Mathematics</i> , <b>1980</b> , 20, 326-340	1.7	95
68	General linear methods. <i>Acta Numerica</i> , <b>2006</b> , 15, 157-256	15.1	73
67	Implementation of Diagonally Implicit Multistage Integration Methods for Ordinary Differential Equations. <i>SIAM Journal on Numerical Analysis</i> , <b>1997</b> , 34, 2119-2141	2.4	63
66	The Construction of Practical General Linear Methods. <i>BIT Numerical Mathematics</i> , <b>2003</b> , 43, 695-721	1.7	49
65	Second derivative methods with RK stability. <i>Numerical Algorithms</i> , <b>2005</b> , 40, 415-429	2.1	47
64	A Transformed implicit Runge-Kutta Method. <i>Journal of the ACM</i> , <b>1979</b> , 26, 731-738	2	43
63	Towards Efficient Runge-Kutta Methods for Stiff Systems. <i>SIAM Journal on Numerical Analysis</i> , <b>1990</b> , 27, 753-761	2.4	33
62	The effective order of Runge-Kutta methods. <i>Lecture Notes in Mathematics</i> , <b>1969</b> , 133-139	0.4	29
61	A Multistep Generalization of Runge-Kutta Methods With Four or Five Stages. <i>Journal of the ACM</i> , <b>1967</b> , 14, 84-99	2	29

60	On error estimation in general linear methods for stiff ODEs. <i>Applied Numerical Mathematics</i> , <b>2006</b> , 56, 345-357	2.5	27
59	Construction of General Linear Methods with Runge-Kutta Stability Properties. <i>Numerical Algorithms</i> , <b>2004</b> , 36, 53-72	2.1	24
58	General Linear Methods for Stiff Differential Equations. <i>BIT Numerical Mathematics</i> , <b>2001</b> , 41, 240-264	1.7	24
57	A Characterization of Energy-Preserving Methods and the Construction of Parallel Integrators for Hamiltonian Systems. <i>SIAM Journal on Numerical Analysis</i> , <b>2016</b> , 54, 1993-2013	2.4	23
56	A new type of singly-implicit Runge-Kutta method. <i>Applied Numerical Mathematics</i> , <b>2000</b> , 34, 179-188	2.5	23
55	ARK methods for stiff problems. <i>Applied Numerical Mathematics</i> , <b>2005</b> , 53, 165-181	2.5	20
54	The equivalence of algebraic stability and AN-stability. <i>BIT Numerical Mathematics</i> , <b>1987</b> , 27, 510-533	1.7	20
53	Trees and numerical methods for ordinary differential equations. <i>Numerical Algorithms</i> , <b>2010</b> , 53, 153-170	2.1	19
52	The Control of Parasitism in $\mathcal{G}\mathcal{S}$ -symplectic Methods. <i>SIAM Journal on Numerical Analysis</i> , <b>2014</b> , 52, 2440-2465	2.4	18
51	Polynomial algebra for Birkhoff interpolants. <i>Numerical Algorithms</i> , <b>2011</b> , 56, 319-347	2.1	18
50	General linear methods. <i>Computers and Mathematics With Applications</i> , <b>1996</b> , 31, 105-112	2.7	16
49	A transformation relating explicit and diagonally-implicit general linear methods. <i>Applied Numerical Mathematics</i> , <b>2003</b> , 44, 313-327	2.5	15
48	A Reliable Error Estimation for Diagonally Implicit Multistage Integration Methods. <i>BIT Numerical Mathematics</i> , <b>2001</b> , 41, 656-665	1.7	15
47	The effective order of singly-implicit Runge-Kutta methods. <i>Numerical Algorithms</i> , <b>1999</b> , 20, 269-284	2.1	14
46	On the integration processes of A. Huš. <i>Journal of the Australian Mathematical Society</i> , <b>1963</b> , 3, 202-206		14
45	Thirty years of G-stability. <i>BIT Numerical Mathematics</i> , <b>2006</b> , 46, 479-489	1.7	13
44	Partitioned general linear methods for separable Hamiltonian problems. <i>Applied Numerical Mathematics</i> , <b>2017</b> , 117, 69-86	2.5	12
43	The existence of symplectic general linear methods. <i>Numerical Algorithms</i> , <b>2009</b> , 51, 77-84	2.1	12

42	Unconditionally Stable General Linear Methods for Ordinary Differential Equations. <i>BIT Numerical Mathematics</i> , <b>2004</b> , 44, 557-570	1.7	12
41	Order, stepsize and stiffness switching. <i>Computing (Vienna/New York)</i> , <b>1990</b> , 44, 209-220	2.2	12
40	The order of numerical methods for ordinary differential equations. <i>Mathematics of Computation</i> , <b>1973</b> , 27, 793-793	1.6	12
39	Linear Multistep Methods as Irreducible General Linear Methods. <i>BIT Numerical Mathematics</i> , <b>2006</b> , 46, 5-19	1.7	11
38	Applications of doubly companion matrices. <i>Applied Numerical Mathematics</i> , <b>2006</b> , 56, 358-373	2.5	10
37	Error Estimation for Nordsieck Methods. <i>Numerical Algorithms</i> , <b>2002</b> , 31, 75-85	2.1	10
36	Generalized Padé Approximations to the exponential function. <i>BIT Numerical Mathematics</i> , <b>1992</b> , 32, 118-130	1.7	10
35	Order bounds for second derivative approximations. <i>BIT Numerical Mathematics</i> , <b>2012</b> , 52, 273-281	1.7	9
34	High Order A-stable Numerical Methods for Stiff Problems. <i>Journal of Scientific Computing</i> , <b>2005</b> , 25, 51-66	2.3	9
33	On fifth order Runge-Kutta methods. <i>BIT Numerical Mathematics</i> , <b>1995</b> , 35, 202-209	1.7	8
32	Symmetric general linear methods. <i>BIT Numerical Mathematics</i> , <b>2016</b> , 56, 1189-1212	1.7	7
31	General linear methods for ordinary differential equations. <i>Mathematics and Computers in Simulation</i> , <b>2009</b> , 79, 1834-1845	3.3	7
30	Order and effective order. <i>Applied Numerical Mathematics</i> , <b>1998</b> , 28, 179-191	2.5	7
29	An application of the runge-kutta space. <i>BIT Numerical Mathematics</i> , <b>1984</b> , 24, 425-440	1.7	7
28	The cohesiveness of G-symplectic methods. <i>Numerical Algorithms</i> , <b>2015</b> , 70, 607-624	2.1	6
27	Dealing with Parasitic Behaviour in G-Symplectic Integrators. <i>Notes on Numerical Fluid Mechanics and Multidisciplinary Design</i> , <b>2013</b> , 105-123	0.3	6
26	A modified approach to predict dissolution and absorption of polydisperse powders. <i>Pharmaceutical Research</i> , <b>2008</b> , 25, 2309-11	4.5	6
25	On symmetrizers for Gauss methods. <i>Numerische Mathematik</i> , <b>1991</b> , 60, 465-476	2.2	6

24	Optimal Order and Stepsize Sequences. <i>IMA Journal of Numerical Analysis</i> , <b>1986</b> , 6, 433-438	1.8	6
23	Stability Properties for a General Class of Methods for Ordinary Differential Equations. <i>SIAM Journal on Numerical Analysis</i> , <b>1981</b> , 18, 37-44	2.4	6
22	A New Approach to the Algebraic Structures for Integration Methods. <i>BIT Numerical Mathematics</i> , <b>2002</b> , 42, 477-489	1.7	6
21	PRACTICAL RUNGE-KUTTA METHODS FOR SCIENTIFIC COMPUTATION. <i>ANZIAM Journal</i> , <b>2009</b> , 50, 333-342	2.5	5
20	The tree and forest spaces with applications to initial-value problem methods. <i>BIT Numerical Mathematics</i> , <b>2010</b> , 50, 713-728	1.7	5
19	Stability of Numerical Methods for Ordinary Differential Equations. <i>Numerical Algorithms</i> , <b>2002</b> , 31, 59-73	2.1	5
18	Symplectic effective order methods. <i>Numerical Algorithms</i> , <b>2014</b> , 65, 499-517	2.1	4
17	Predictor-Corrector Obreshkov pairs. <i>Computing (Vienna/New York)</i> , <b>2013</b> , 95, 355-371	2.2	4
16	On the implementation of ESIRK methods for stiff IVPs. <i>Numerical Algorithms</i> , <b>2001</b> , 26, 201-218	2.1	4
15	Order conditions for G-symplectic methods. <i>BIT Numerical Mathematics</i> , <b>2015</b> , 55, 927-948	1.7	3
14	A G-symplectic method with order 6. <i>BIT Numerical Mathematics</i> , <b>2017</b> , 57, 313-328	1.7	3
13	Trees, Stumps, and Applications. <i>Axioms</i> , <b>2018</b> , 7, 52	1.6	3
12	Experiments with a New Fifth Order Method. <i>Numerical Algorithms</i> , <b>2003</b> , 33, 137-151	2.1	2
11	A convergence criterion for a class of integration methods. <i>Mathematics of Computation</i> , <b>1972</b> , 26, 107-108	2.0	2
10	Runge-Kutta Methods for Ordinary Differential Equations. <i>Springer Proceedings in Mathematics and Statistics</i> , <b>2015</b> , 37-58	0.2	1
9	High order A-stable numerical methods for stiff problems. <i>Journal of Scientific Computing</i> , <b>2005</b> , 25, 51-66	2.3	1
8	The order of differential equation methods. <i>Lecture Notes in Mathematics</i> , <b>1974</b> , 72-75	0.4	1
7	General linear methods for the parallel solution of ordinary differential equations <b>1993</b> , 99-111		1

- 6 Numerical methods for ordinary differential equations: early days **2009**, 35-44
- 5 RUNGE-KUTTA METHODS AS MATHEMATICAL OBJECTS **1996**, 39-55
- 4 Orthogonal polynomials, Padé approximations and A-stability. *Numerical Algorithms*, **1996**, 11, 71-78 2.1
- 3 Variable order and stepsize in general linear methods. *Numerical Algorithms*, **2019**, 81, 1403-1421 2.1
- 2 Trees and B-series. *Numerical Algorithms*, **2019**, 81, 1311-1325 2.1
- 1 A New Solution to a Cubic Diophantine Equation. *Axioms*, **2022**, 11, 184 1.6