

Steven J Ruuth

List of Publications by Year in descending order

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4,392
citations

218381

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all docs

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45
times ranked

2672
citing authors

#	ARTICLE	IF	CITATIONS
1	A New Class of Optimal High-Order Strong-Stability-Preserving Time Discretization Methods. SIAM Journal on Numerical Analysis, 2002, 40, 469-491.	1.1	902
2	Implicit-explicit Runge-Kutta methods for time-dependent partial differential equations. Applied Numerical Mathematics, 1997, 25, 151-167.	1.2	854
3	Implicit-Explicit Methods for Time-Dependent Partial Differential Equations. SIAM Journal on Numerical Analysis, 1995, 32, 797-823.	1.1	741
4	A simple embedding method for solving partial differential equations on surfaces. Journal of Computational Physics, 2008, 227, 1943-1961.	1.9	191
5	Implicit-explicit methods for reaction-diffusion problems in pattern formation. Journal of Mathematical Biology, 1995, 34, 148-176.	0.8	186
6	The Implicit Closest Point Method for the Numerical Solution of Partial Differential Equations on Surfaces. SIAM Journal of Scientific Computing, 2010, 31, 4330-4350.	1.3	129
7	IMEX extensions of linear multistep methods with general monotonicity and boundedness properties. Journal of Computational Physics, 2007, 225, 2016-2042.	1.9	121
8	Global optimization of explicit strong-stability-preserving Runge-Kutta methods. Mathematics of Computation, 2005, 75, 183-208.	1.1	102
9	Level Set Equations on Surfaces via the Closest Point Method. Journal of Scientific Computing, 2008, 35, 219-240.	1.1	88
10	Monotonicity-Preserving Linear Multistep Methods. SIAM Journal on Numerical Analysis, 2003, 41, 605-623.	1.1	78
11	Non-linear evolution using optimal fourth-order strong-stability-preserving Runge-Kutta methods. Mathematics and Computers in Simulation, 2003, 62, 125-135.	2.4	74
12	Two Barriers on Strong-Stability-Preserving Time Discretization Methods. Journal of Scientific Computing, 2002, 17, 211-220.	1.1	70
13	Efficient Algorithms for Diffusion-Generated Motion by Mean Curvature. Journal of Computational Physics, 1998, 144, 603-625.	1.9	68
14	High-Order Strong-Stability-Preserving Runge-Kutta Methods with Downwind-Biased Spatial Discretizations. SIAM Journal on Numerical Analysis, 2004, 42, 974-996.	1.1	61
15	High-order linear multistep methods with general monotonicity and boundedness properties. Journal of Computational Physics, 2005, 209, 226-248.	1.9	61
16	Solving eigenvalue problems on curved surfaces using the Closest Point Method. Journal of Computational Physics, 2011, 230, 7944-7956.	1.9	58
17	A Diffusion-Generated Approach to Multiphase Motion. Journal of Computational Physics, 1998, 145, 166-192.	1.9	57
18	Simple computation of reaction-diffusion processes on point clouds. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9209-9214.	3.3	46

#	ARTICLE	IF	CITATIONS
19	A Simple Scheme for Volume-Preserving Motion by Mean Curvature. <i>Journal of Scientific Computing</i> , 2003, 19, 373-384.	1.1	44
20	On monotonicity and boundedness properties of linear multistep methods. <i>Mathematics of Computation</i> , 2005, 75, 655-673.	1.1	39
21	Convolution-Generated Motion and Generalized Huygens' Principles for Interface Motion. <i>SIAM Journal on Applied Mathematics</i> , 2000, 60, 868-890.	0.8	36
22	A Fixed Grid Method for Capturing the Motion of Self-Intersecting Wavefronts and Related PDEs. <i>Journal of Computational Physics</i> , 2000, 163, 1-21.	1.9	33
23	Diffusion generated motion using signed distance functions. <i>Journal of Computational Physics</i> , 2010, 229, 1017-1042.	1.9	33
24	The Stability of Localized Spot Patterns for the Brusselator on the Sphere. <i>SIAM Journal on Applied Dynamical Systems</i> , 2014, 13, 564-627.	0.7	33
25	Molecular Dynamics of Extreme Mass Segregation in a Rapidly Collapsing Bubble. <i>Physical Review Letters</i> , 2008, 101, 234301.	2.9	31
26	A Fifth Order Flux Implicit WENO Method. <i>Journal of Scientific Computing</i> , 2006, 27, 271-287.	1.1	28
27	Diffusion generated motion of curves on surfaces. <i>Journal of Computational Physics</i> , 2007, 225, 2267-2282.	1.9	26
28	Convolution-Thresholding Methods for Interface Motion. <i>Journal of Computational Physics</i> , 2001, 169, 678-707.	1.9	25
29	Molecular dynamics simulation of the response of a gas to a spherical piston: Implications for sonoluminescence. <i>Physical Review E</i> , 2002, 66, 036310.	0.8	25
30	Optimal Strong-Stability-Preserving Time-Stepping Schemes with Fast Downwind Spatial Discretizations. <i>Journal of Scientific Computing</i> , 2006, 27, 289-303.	1.1	25
31	Convolution-Generated Motion as a Link between Cellular Automata and Continuum Pattern Dynamics. <i>Journal of Computational Physics</i> , 1999, 151, 836-861.	1.9	22
32	On the Linear Stability of the Fifth-Order WENO Discretization. <i>Journal of Scientific Computing</i> , 2011, 47, 127-149.	1.1	22
33	A Numerical Study of Diagonally Split Runge-Kutta Methods for PDEs with Discontinuities. <i>Journal of Scientific Computing</i> , 2008, 36, 89-112.	1.1	18
34	Spatially Partitioned Embedded Runge-Kutta Methods. <i>SIAM Journal on Numerical Analysis</i> , 2013, 51, 2887-2910.	1.1	17
35	A localized meshless method for diffusion on folded surfaces. <i>Journal of Computational Physics</i> , 2015, 297, 194-206.	1.9	12
36	Segmentation on surfaces with the Closest Point Method. , 2009, , .		11

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37	Symmetry reduction for molecular dynamics simulation of an imploding gas bubble. Journal of Computational Physics, 2008, 227, 2118-2129.	1.9	6
38	Boundary treatment of high order Runge-Kutta methods for hyperbolic conservation laws. Journal of Computational Physics, 2020, 421, 109697.	1.9	6
39	Moving Mesh Methods on Parametric Surfaces. Procedia Engineering, 2015, 124, 148-160.	1.2	3
40	Schwarz Solvers and Preconditioners for the Closest Point Method. SIAM Journal of Scientific Computing, 2020, 42, A3584-A3609.	1.3	3
41	An embedding technique for the solution of reaction-diffusion equations on algebraic surfaces with isolated singularities. Journal of Mathematical Analysis and Applications, 2016, 436, 911-943.	0.5	2
42	Solving variational problems and partial differential equations that map between manifolds via the closest point method. Journal of Computational Physics, 2017, 336, 330-346.	1.9	2
43	Linearly Stabilized Schemes for the Time Integration of Stiff Nonlinear PDEs. Journal of Scientific Computing, 2021, 87, 1.	1.1	2
44	Laplace-Beltrami spectra for shape comparison of surfaces in 3D using the closest point method. , 2015, , .		1
45	THRESHOLD AND REDISTANCING DYNAMICS FOR GEOMETRIC MOTIONS. , 2009, , .		0