Mark H Carpenter

List of Publications by Year
in descending order

56 papers	5,679 citations	117453 34 h-index	168136 53 g-index
56 all docs	56 docs citations	56 times ranked	1723 citing authors

#	Article	IF	Citations
1	Time-Stable Boundary Conditions for Finite-Difference Schemes Solving Hyperbolic Systems: Methodology and Application to High-Order Compact Schemes. Journal of Computational Physics, 1994, 111, 220-236.	1.9	535
2	Additive Rungeâ€“Kutta schemes for convectionâ€“diffusionâ€“reaction equations. Applied Numerical Mathematics, 2003, 44, 139-181.	1.2	507
3	Low-storage, explicit Rungeâ€“Kutta schemes for the compressible Navierâ€“Stokes equations. Applied Numerical Mathematics, 2000, 35, 177-219.	1.2	445
4	Several new numerical methods for compressible shear-layer simulations. Applied Numerical Mathematics, 1994, 14, 397-433.	1.2	432
5	A Stable and Conservative Interface Treatment of Arbitrary Spatial Accuracy. Journal of Computational Physics, 1999, 148, 341-365.	1.9	375
6	The Stability of Numerical Boundary Treatments for Compact High-Order Finite-Difference Schemes. Journal of Computational Physics, 1993, 108, 272-295.	1.9	361
7	High-order entropy stable finite difference schemes for nonlinear conservation laws: Finite domains. Journal of Computational Physics, 2013, 252, 518-557.	1.9	216
8	A stable high-order finite difference scheme for the compressible Navierâ€“Stokes equations, far-field boundary conditions. Journal of Computational Physics, 2007, 225, 1020-1038.	1.9	195
9	Entropy Stable Spectral Collocation Schemes for the Navier--Stokes Equations: Discontinuous Interfaces. SIAM Journal of Scientific Computing, 2014, 36, B835-B867.	1.3	190
10	Implicit Time Integration Schemes for the Unsteady Compressible Navierâ€“Stokes Equations: Laminar Flow. Journal of Computational Physics, 2002, 179, 313-329.	1.9	175
11	Boundary and Interface Conditions for High-Order Finite-Difference Methods Applied to the Euler and Navierâ€“Stokes Equations. Journal of Computational Physics, 1999, 148, 621-645.	1.9	148
12	A systematic methodology for constructing high-order energy stable WENO schemes. Journal of Computational Physics, 2009, 228, 4248-4272.	1.9	134
13	Application of implicitâ€“explicit high order Rungeâ€“Kutta methods to discontinuous-Galerkin schemes. Journal of Computational Physics, 2007, 225, 1753-1781.	1.9	130
14	The Theoretical Accuracy of Rungeâ€“Kutta Time Discretizations for the Initial Boundary Value Problem: A Study of the Boundary Error. SIAM Journal of Scientific Computing, 1995, 16, 1241-1252.	1.3	127
15	High-Order Finite Difference Methods, Multidimensional Linear Problems, and Curvilinear Coordinates. Journal of Computational Physics, 2001, 173, 149-174.	1.9	127
16	Discretely conservative finite-difference formulations for nonlinear conservation laws in split form: Theory and boundary conditions. Journal of Computational Physics, 2013, 234, 353-375.	1.9	120
17	Spectral Methods on Arbitrary Grids. Journal of Computational Physics, 1996, 129, 74-86.	1.9	116
18	Third-order Energy Stable WENO scheme. Journal of Computational Physics, 2009, 228, 3025-3047.	1.9	105

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19	Computational Considerations for the Simulation of Shock-Induced Sound. SIAM Journal of Scientific Computing, 1998, 19, 813-828.	1.3	94
20	Accuracy of Shock Capturing in Two Spatial Dimensions. AIAA Journal, 1999, 37, 1072-1079.	1.5	92
21	Stable and Accurate Interpolation Operators for High-Order Multiblock Finite Difference Methods. SIAM Journal of Scientific Computing, 2010, 32, 2298-2320.	1.3	87
22	Spatial direct numerical simulation of high-speed boundary-layer flows part I: Algorithmic considerations and validation. Theoretical and Computational Fluid Dynamics, 1995, 7, 49-76.	0.9	80
23	Stable and accurate boundary treatments for compact, high-order finite-difference schemes. Applied Numerical Mathematics, 1993, 12, 55-87.	1.2	74
24	Entropy stable wall boundary conditions for the three-dimensional compressible Navierâ€“Stokes equations. Journal of Computational Physics, 2015, 292, 88-113.	1.9	74
25	Entropy-stable summation-by-parts discretization of the Euler equations on general curved elements. Journal of Computational Physics, 2018, 356, 410-438.	1.9	74
26	Revisiting and Extending Interface Penalties forÂMulti-domain Summation-by-Parts Operators. Journal of Scientific Computing, 2010, 45, 118-150.	1.1	66
27	Entropy Stable Staggered Grid Discontinuous Spectral Collocation Methods of any Order for the Compressible Navier--Stokes Equations. SIAM Journal of Scientific Computing, 2016, 38, A3129-A3162.	1.3	49
28	Diagonally implicit Rungeâ€“Kutta methods for stiff ODEs. Applied Numerical Mathematics, 2019, 146, 221-244.	1.2	43
29	Entropy Stable Spaceâ€“Time Discontinuous Galerkin Schemes with Summation-by-Parts Property for Hyperbolic Conservation Laws. Journal of Scientific Computing, 2019, 80, 175-222.	1.1	43
30	On the Removal of Boundary Errors Caused by Rungeâ€“Kutta Integration of Nonlinear Partial Differential Equations. SIAM Journal of Scientific Computing, 1996, 17, 777-782.	1.3	42
31	Optimal diagonal-norm SBP operators. Journal of Computational Physics, 2014, 264, 91-111.	1.9	40
32	Higher-order additive Rungeâ€“Kutta schemes for ordinary differential equations. Applied Numerical Mathematics, 2019, 136, 183-205.	1.2	40
33	Entropy stable discontinuous interfaces coupling for the three-dimensional compressible Navierâ€“Stokes equations. Journal of Computational Physics, 2015, 290, 132-138.	1.9	39
34	An Entropy Stable hÂ/Âp Non-Conforming Discontinuous Galerkin Method with the Summation-by-Parts Property. Journal of Scientific Computing, 2018, 77, 689-725.	1.1	39
35	Efficient Entropy Stable Gauss Collocation Methods. SIAM Journal of Scientific Computing, 2019, 41, A2938-A2966.	1.3	35
36	Boundary closures for fourth-order energy stable weighted essentially non-oscillatory finite-difference schemes. Journal of Computational Physics, 2011, 230, 3727-3752.	1.9	30

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37	Conservative and entropy stable solid wall boundary conditions for the compressible Navierâ€“Stokes equations: Adiabatic wall and heat entropy transfer. Journal of Computational Physics, 2019, 397, 108775.	1.9	26
38	Idempotent filtering in spectral and spectral element methods. Journal of Computational Physics, 2006, 220, 41-58.	1.9	24
39	Staggered-grid entropy-stable multidimensional summation-by-parts discretizations on curvilinear coordinates. Journal of Computational Physics, 2019, 392, 161-186.	1.9	21
40	On Accuracy of Adaptive Grid Methods for Captured Shocks. Journal of Computational Physics, 2002, 181, 280-316.	1.9	17
41	Extension of Tensor-Product Generalized and Dense-Norm Summation-by-Parts Operators to Curvilinear Coordinates. Journal of Scientific Computing, 2019, 80, 1957-1996.	1.1	17
42	A family of fourth-order entropy stable nonoscillatory spectral collocation schemes for the 1-D Navierâ€“Stokes equations. Journal of Computational Physics, 2017, 331, 90-107.	1.9	13
43	Entropy Stability and the No-Slip Wall Boundary Condition. SIAM Journal on Numerical Analysis, 2018, 56, 256-273.	1.1	12
44	Entropy stable spectral collocation schemes for the 3-D Navier-Stokes equations on dynamic unstructured grids. Journal of Computational Physics, 2019, 399, 108897.	1.9	11
45	Towards an Entropy Stable Spectral Element Framework for Computational Fluid Dynamics. , 2016, , .		10
46	High-Order Entropy Stable Formulations for Computational Fluid Dynamics. , 2013, , .		8
47	Entropy-stable p-nonconforming discretizations with the summation-by-parts property for the compressible Navierâ€“Stokes equations. Computers and Fluids, 2020, 210, 104631.	1.3	8
48	Entropy stable h/p-nonconforming discretization with the summation-by-parts property for the compressible Euler and Navierâ€“Stokes equations. SN Partial Differential Equations and Applications, 2020, 1, 1.	0.3	7
49	High-Order "Cyclo-Difference" Techniques: An Alternative to Finite Differences. Journal of Computational Physics, 1995, 118, 242-260.	1.9	5
50	On the Conservation and Convergence to Weak Solutions of Global Schemes. Journal of Scientific Computing, 2003, 18, 111-132.	1.1	5
51	Characteristic and Finite-Wave Shock-Fitting Boundary Conditions for Chebyshev Methods. ICASE/LaRC Interdisciplinary Series in Science and Engineering, 1994, , 301-312.	0.1	5
52	Provably stable flux reconstruction high-order methods on curvilinear elements. Journal of Computational Physics, 2022, 463, 111259.	1.9	5
53	Accurate solution-adaptive finite difference schemes for coarse and fine grids. Journal of Computational Physics, 2020, 410, 109393.	1.9	3
54	Boundary Closures for Sixth-Order Energy-Stable Weighted Essentially Non-Oscillatory Finite-Difference Schemes. Fields Institute Communications, 2013, , 117-160.	0.6	2

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55	Computational Considerations for the Simulation of Discontinuous Flows. ICASE/LaRC Interdisciplinary Series in Science and Engineering, 1998, , 63-78.	0.1	1
56	Generalized Entropy Stable Weighted Essentially Non-Oscillatory Finite Difference Scheme in Curvilinear Multi-Block Domains. , 2019, , .		0