Ken Mattsson

List of Publications by Year
in descending order

39 papers	1,469 citations	361045 20 h-index	344852 36 g-index
41 all docs	41 docs citations	41 times ranked	399 citing authors

#	Article	IF	Citations
1	Summation by parts operators for finite difference approximations of second derivatives. Journal of Computational Physics, 2004, 199, 503-540.	1.9	288
2	Stable and Accurate Artificial Dissipation. Journal of Scientific Computing, 2004, 21, 57-79.	1.1	144
3	Summation by Parts Operators for Finite Difference Approximations of Second-Derivatives with Variable Coefficients. Journal of Scientific Computing, 2012, 51, 650-682.	1.1	120
4	Stable and Accurate Interpolation Operators for High-Order Multiblock Finite Difference Methods. SIAM Journal of Scientific Computing, 2010, 32, 2298-2320.	1.3	87
5	Stable and accurate schemes for the compressible Navierâ€“Stokes equations. Journal of Computational Physics, 2008, 227, 2293-2316.	1.9	73
6	Stable and accurate wave-propagation in discontinuous media. Journal of Computational Physics, 2008, 227, 8753-8767.	1.9	58
7	Boundary Procedures for Summation-by-Parts Operators. Journal of Scientific Computing, 2003, 18, 133-153.	1.1	55
8	High order finite difference methods for wave propagation in discontinuous media. Journal of Computational Physics, 2006, 220, 249-269.	1.9	51
9	Stable Boundary Treatment for the Wave Equation onÂSecond-Order Form. Journal of Scientific Computing, 2009, 41, 366-383.	1.1	51
10	High-order accurate computations for unsteady aerodynamics. Computers and Fluids, 2007, 36, 636-649.	1.3	47
11	Boundary conditions for a divergence free velocityâ€“pressure formulation of the Navierâ€“Stokes equations. Journal of Computational Physics, 2007, 225, 874-890.	1.9	45
12	Steady-State Computations Using Summation-by-Parts Operators. Journal of Scientific Computing, 2005, 24, 79-95.	1.1	44
13	Optimal diagonal-norm SBP operators. Journal of Computational Physics, 2014, 264, 91-111.	1.9	40
14	Acoustic Wave Propagation in Complicated Geometries and Heterogeneous Media. Journal of Scientific Computing, 2014, 61, 90-118.	1.1	35
15	A solution to the stability issues with block norm summation by parts operators. Journal of Computational Physics, 2013, 253, 418-442.	1.9	31
16	Diagonal-norm upwind SBP operators. Journal of Computational Physics, 2017, 335, 283-310.	1.9	26
17	CHIMPS: A High-Performance Scalable Module for Multi-Physics Simulations. , 2006, , .		24
18	Stable and Accurate Second-order Formulation of the Shifted Wave Equation. Communications in Computational Physics, 2010, 7, 103-137.	0.7	24

#	Article	IF	Citations
19	A hybrid method for unsteady inviscid fluid flow. Computers and Fluids, 2009, 38, 875-882.	1.3	22
20	Stable and High-Order Accurate Boundary Treatments for the Elastic Wave Equation on Second-Order Form. SIAM Journal of Scientific Computing, 2014, 36, A2787-A2818.	1.3	22
21	Diagonal-norm summation by parts operators for finite difference approximations of third and fourth derivatives. Journal of Computational Physics, 2014, 274, 432-454.	1.9	22
22	A finite difference method for earthquake sequences in poroelastic solids. Computational Geosciences, 2018, 22, 1351-1370.	1.2	17
23	High-fidelity numerical solution of the time-dependent Dirac equation. Journal of Computational Physics, 2014, 262, 86-103.	1.9	16
24	A high-order accurate embedded boundary method for first order hyperbolic equations. Journal of Computational Physics, 2017, 334, 255-279.	1.9	16
25	Compatible diagonal-norm staggered and upwind SBP operators. Journal of Computational Physics, 2018, 352, 52-75.	1.9	16
26	An efficient finite difference method for the shallow water equations. Journal of Computational Physics, 2020, 422, 109784.	1.9	13
27	An improved projection method. Journal of Computational Physics, 2018, 372, 349-372.	1.9	12
28	High-fidelity numerical simulation of solitons in the nerve axon. Journal of Computational Physics, 2016, 305, 793-816.	1.9	10
29	Boundary optimized diagonal-norm SBP operators. Journal of Computational Physics, 2018, 374, 1261-1266.	1.9	10
30	A residual-based artificial viscosity finite difference method for scalar conservation laws. Journal of Computational Physics, 2021, 430, 110100.	1.9	10
31	Atmospheric Sound Propagation Over Large-Scale Irregular Terrain. Journal of Scientific Computing, 2014, 61, 369-397.	1.1	9
32	High-fidelity numerical simulation of the dynamic beam equation. Journal of Computational Physics, 2015, 286, 194-213.	1.9	7
33	Simulation of acoustic and flexural-gravity waves in ice-covered oceans. Journal of Computational Physics, 2018, 373, 230-252.	1.9	7
34	Accuracy Requirements for Transient Aerodynamics. , 2003, , .		5
35	High-fidelity Sound Propagation in a Varying 3D Atmosphere. Journal of Scientific Computing, 2018, 77, 1278-1302.	1.1	4
36	Energy stable and accurate coupling of finite element methods and finite difference methods. Journal of Computational Physics, 2022, 449, 110791.	1.9	4

#	Article	IF	Citations
37	Realization of adiabatic Aharonov-Bohm scattering with neutrons. Physical Review A, 2015, 92, .	1.0	1
38	High-order finite difference method for the SchrÃ¶dinger equation on deforming domains. Journal of Computational Physics, 2021, 443, 110530.	1.9	1
39	A High Order Accurate Finite Difference Method for the Drinfelâ€™dâ€“Sokolovâ€“Wilson Equation. Journal of Scientific Computing, 2021, 88, 1.	1.1	0