Carol S Woodward

List of Publications by Year
in descending order

50 papers	4,005 citations	393982 19 h-index	276539 41 g-index
54 all docs	54 docs citations	54 times ranked	4404 citing authors

#	Article	IF	Citations
1	Enabling New Flexibility in the SUNDIALS Suite of Nonlinear and Differential/Algebraic Equation Solvers. ACM Transactions on Mathematical Software, 2022, 48, 1-24.	1.6	28
2	Implicit Multirate GARK Methods. Journal of Scientific Computing, 2021, 87, 1.	1.1	11
3	Enabling GPU accelerated computing in the SUNDIALS time integration library. Parallel Computing, 2021, 108, 102836.	1.3	11
4	Improving Time Step Convergence in an Atmosphere Model With Simplified Physics: Using Mathematical Rigor to Avoid Nonphysical Behavior in a Parameterization. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001974.	1.3	3
5	Improving Time Step Convergence in an Atmosphere Model With Simplified Physics: The Impacts of Closure Assumption and Process Coupling. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001982.	1.3	5
6	Simulating coupled surface–subsurface flows with ParFlow v3.5.0: capabilities, applications, and ongoing development of an open-source, massively parallel, integrated hydrologic model. Geoscientific Model Development, 2020, 13, 1373-1397.	1.3	61
7	A parallel-in-time algorithm for variable step multistep methods. Journal of Computational Science, 2019, 37, 101029.	1.5	13
8	Evaluation of Implicit–Explicit Additive Runge–Kutta Integrators for the HOMME–NH Dynamical Core. Journal of Advances in Modeling Earth Systems, 2019, 11, 4228-4244.	1.3	11
9	An Objective and Efficient Method for Assessing the Impact of Reduced–Precision Calculations On Solution Correctness. Journal of Advances in Modeling Earth Systems, 2019, 11, 3131-3147.	1.3	0
10	Preparation and optimization of a diverse workload for a large-scale heterogeneous system. , 2019, , .		3
11	Performance analysis of fully explicit and fully implicit solvers within a spectral element shallow-water atmosphere model. International Journal of High Performance Computing Applications, 2019, 33, 268-284.	2.4	4
12	Implicit–explicit (IMEX) Runge–Kutta methods for non-hydrostatic atmospheric models. Geoscientific Model Development, 2018, 11, 1497-1515.	1.3	33
13	Parallel-in-Time Solution of Power Systems with Scheduled Events. , 2018, , .		9
14	Research and Education in Computational Science and Engineering. SIAM Review, 2018, 60, 707-754.	4.2	43
15	A parallel multigrid reduction in time method for power systems. , 2016, , .		13
16	Considerations on the Implementation and Use of Anderson Acceleration on Distributed Memory and GPU-based Parallel Computers. Association for Women in Mathematics Series, 2016, , 417-436.	0.1	10
17	On Metrics for Computation of Strength of Coupling in Multiphysics Simulations. The IMA Volumes in Mathematics and Its Applications, 2016, , 137-176.	0.5	0
18	On the Use of Finite Difference Matrix-vector Products in Newton-krylov Solvers for Implicit Climate Dynamics with Spectral Elements. Procedia Computer Science, 2015, 51, 2036-2045.	1.2	3

#	Article	IF	Citations
19	Progress in Fast, Accurate Multi-scale Climate Simulations. Procedia Computer Science, 2015, 51, 2006-2015.	1.2	2
20	A federated simulation toolkit for electric power grid and communication network co-simulation. , 2015, , .		25
21	Implicit integration methods for dislocation dynamics. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 025006.	0.8	11
22	Algorithmically scalable block preconditioner for fully implicit shallow-water equations in CAM-SE. Computational Geosciences, 2015, 19, 49-61.	1.2	6
23	Quantification of errors for operator-split advection–diffusion calculations. Computer Methods in Applied Mechanics and Engineering, 2014, 272, 181-197.	3.4	9
24	On-line transient stability analysis using high performance computing. , 2014, , .		6
25	Improved numerical solvers for implicit coupling of subsurface and overland flow. Advances in Water Resources, 2014, 74, 185-195.	1.7	20
26	Multiphysics simulations. International Journal of High Performance Computing Applications, 2013, 27, 4-83.	2.4	244
27	A Method to Calculate Numerical Errors Using Adjoint Error Estimation for Linear Advection. SIAM Journal on Numerical Analysis, 2013, 51, 894-926.	1.1	3
28	An accelerated Picard method for nonlinear systems related to variably saturated flow. Advances in Water Resources, 2012, 38, 92-101.	1.7	74
29	Numerical error estimation for nonlinear hyperbolic PDEs via nonlinear error transport. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 1-15.	3.4	36
30	Special Section: 2010 Copper Mountain Conference. SIAM Journal of Scientific Computing, 2011, 33, 2685-2685.	1.3	0
31	Editorial: Computational challenges in the solution of water resources problems. Advances in Water Resources, 2011, 34, 1059-1061.	1.7	1
32	Development of a Coupled Groundwater–Atmosphere Model. Monthly Weather Review, 2011, 139, 96-116.	0.5	126
33	Operator-Based Preconditioning of Stiff Hyperbolic Systems. SIAM Journal of Scientific Computing, 2010, 32, 150-170.	1.3	18
34	Proof of concept of regional scale hydrologic simulations at hydrologic resolution utilizing massively parallel computer resources. Water Resources Research, 2010, 46, .	1.7	178
35	On Using Approximate Finite Differences in Matrix-Free Newton–Krylov Methods. SIAM Journal on Numerical Analysis, 2008, 46, 1892-1911.	1.1	12
36	A Newton-Krylov solver for implicit solution of hydrodynamics in core collapse supernovae. Journal of Physics: Conference Series, 2008, 125, 012085.	0.3	3

#	Article	IF	Citations
37	Implicit solvers for large-scale nonlinear problems. Journal of Physics: Conference Series, 2006, 46, 433-442.	0.3	28
38	A fully implicit numerical method for single-fluid resistive magnetohydrodynamics. Journal of Computational Physics, 2006, 219, 144-162.	1.9	46
39	Implicit Solution of Non-Equilibrium Radiation Diffusion Including Reactive Heating Source in Material Energy Equation. , 2006, , 353-370.		1
40	Fully implicit solution of large-scale non-equilibrium radiation diffusion with high order time integration. Journal of Computational Physics, 2005, 204, 760-783.	1.9	41
41	SUNDIALS. ACM Transactions on Mathematical Software, 2005, 31, 363-396.	1.6	2,134
42	Analyzing radiation diffusion using time-dependent sensitivity-based techniques. Journal of Computational Physics, 2003, 192, 211-230.	1.9	5
43	On Mesh-Independent Convergence of an Inexact Newton--Multigrid Algorithm. SIAM Journal of Scientific Computing, 2003, 25, 570-590.	1.3	13
44	Preconditioning Strategies for Fully Implicit Radiation Diffusion with Material-Energy Transfer. SIAM Journal of Scientific Computing, 2001, 23, 499-516.	1.3	36
45	Newtonâ€"Krylov-multigrid solvers for large-scale, highly heterogeneous, variably saturated flow problems. Advances in Water Resources, 2001, 24, 763-774.	1.7	263
46	Special issue on ?Solution Methods for Large-Scale Non-linear Problems?. Numerical Linear Algebra With Applications, 2001, 8, 497-497.	0.9	0
47	Analysis of Expanded Mixed Finite Element Methods for a Nonlinear Parabolic Equation Modeling Flow into Variably Saturated Porous Media. SIAM Journal on Numerical Analysis, 2000, 37, 701-724.	1.1	110
48	A Two-Grid Finite Difference Scheme for Nonlinear Parabolic Equations. SIAM Journal on Numerical Analysis, 1998, 35, 435-452.	1.1	171
49	Title is missing!. Annals of Software Engineering, 1997, 1, 215-249.	0.5	71
50	A Hermite interpolation algorithm for hypersingular boundary integrals. International Journal for Numerical Methods in Engineering, 1993, 36, 2357-2367.	1.5	45