

Carol S Woodward

List of Publications by Year in descending order

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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	SUNDIALS. ACM Transactions on Mathematical Software, 2005, 31, 363-396.	1.6	2,134
2	Newtonâ€“Krylov-multigrid solvers for large-scale, highly heterogeneous, variably saturated flow problems. Advances in Water Resources, 2001, 24, 763-774.	1.7	263
3	Multiphysics simulations. International Journal of High Performance Computing Applications, 2013, 27, 4-83.	2.4	244
4	Proof of concept of regional scale hydrologic simulations at hydrologic resolution utilizing massively parallel computer resources. Water Resources Research, 2010, 46, .	1.7	178
5	A Two-Grid Finite Difference Scheme for Nonlinear Parabolic Equations. SIAM Journal on Numerical Analysis, 1998, 35, 435-452.	1.1	171
6	Development of a Coupled Groundwaterâ€“Atmosphere Model. Monthly Weather Review, 2011, 139, 96-116.	0.5	126
7	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
8	An accelerated Picard method for nonlinear systems related to variably saturated flow. Advances in Water Resources, 2012, 38, 92-101.	1.7	74
9	Title is missing!. Annals of Software Engineering, 1997, 1, 215-249.	0.5	71
10	Simulating coupled surfaceâ€“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
11	A fully implicit numerical method for single-fluid resistive magnetohydrodynamics. Journal of Computational Physics, 2006, 219, 144-162.	1.9	46
12	A Hermite interpolation algorithm for hypersingular boundary integrals. International Journal for Numerical Methods in Engineering, 1993, 36, 2357-2367.	1.5	45
13	Research and Education in Computational Science and Engineering. SIAM Review, 2018, 60, 707-754.	4.2	43
14	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
15	Preconditioning Strategies for Fully Implicit Radiation Diffusion with Material-Energy Transfer. SIAM Journal of Scientific Computing, 2001, 23, 499-516.	1.3	36
16	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
17	Implicitâ€“explicit (IMEX) Rungeâ€“Kutta methods for non-hydrostatic atmospheric models. Geoscientific Model Development, 2018, 11, 1497-1515.	1.3	33
18	Implicit solvers for large-scale nonlinear problems. Journal of Physics: Conference Series, 2006, 46, 433-442.	0.3	28

#	ARTICLE	IF	CITATIONS
19	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
20	A federated simulation toolkit for electric power grid and communication network co-simulation. , 2015, , .		25
21	Improved numerical solvers for implicit coupling of subsurface and overland flow. Advances in Water Resources, 2014, 74, 185-195.	1.7	20
22	Operator-Based Preconditioning of Stiff Hyperbolic Systems. SIAM Journal of Scientific Computing, 2010, 32, 150-170.	1.3	18
23	On Mesh-Independent Convergence of an Inexact Newton–Multigrid Algorithm. SIAM Journal of Scientific Computing, 2003, 25, 570-590.	1.3	13
24	A parallel multigrid reduction in time method for power systems. , 2016, , .		13
25	A parallel-in-time algorithm for variable step multistep methods. Journal of Computational Science, 2019, 37, 101029.	1.5	13
26	On Using Approximate Finite Differences in Matrix-Free Newton–Krylov Methods. SIAM Journal on Numerical Analysis, 2008, 46, 1892-1911.	1.1	12
27	Implicit integration methods for dislocation dynamics. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 025006.	0.8	11
28	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
29	Implicit Multirate GARK Methods. Journal of Scientific Computing, 2021, 87, 1.	1.1	11
30	Enabling GPU accelerated computing in the SUNDIALS time integration library. Parallel Computing, 2021, 108, 102836.	1.3	11
31	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
32	Quantification of errors for operator-split advection–diffusion calculations. Computer Methods in Applied Mechanics and Engineering, 2014, 272, 181-197.	3.4	9
33	Parallel-in-Time Solution of Power Systems with Scheduled Events. , 2018, , .		9
34	On-line transient stability analysis using high performance computing. , 2014, , .		6
35	Algorithmically scalable block preconditioner for fully implicit shallow-water equations in CAM-SE. Computational Geosciences, 2015, 19, 49-61.	1.2	6
36	Analyzing radiation diffusion using time-dependent sensitivity-based techniques. Journal of Computational Physics, 2003, 192, 211-230.	1.9	5

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37	Improving Time Step Convergence in an Atmosphere Model With Simplified Physics: The Impacts of Closure Assumption and Process Coupling. <i>Journal of Advances in Modeling Earth Systems</i> , 2020, 12, e2019MS001982.	1.3	5
38	Performance analysis of fully explicit and fully implicit solvers within a spectral element shallow-water atmosphere model. <i>International Journal of High Performance Computing Applications</i> , 2019, 33, 268-284.	2.4	4
39	A Newton-Krylov solver for implicit solution of hydrodynamics in core collapse supernovae. <i>Journal of Physics: Conference Series</i> , 2008, 125, 012085.	0.3	3
40	A Method to Calculate Numerical Errors Using Adjoint Error Estimation for Linear Advection. <i>SIAM Journal on Numerical Analysis</i> , 2013, 51, 894-926.	1.1	3
41	On the Use of Finite Difference Matrix-vector Products in Newton-krylov Solvers for Implicit Climate Dynamics with Spectral Elements. <i>Procedia Computer Science</i> , 2015, 51, 2036-2045.	1.2	3
42	Preparation and optimization of a diverse workload for a large-scale heterogeneous system. , 2019, , .		3
43	Improving Time Step Convergence in an Atmosphere Model With Simplified Physics: Using Mathematical Rigor to Avoid Nonphysical Behavior in a Parameterization. <i>Journal of Advances in Modeling Earth Systems</i> , 2020, 12, e2019MS001974.	1.3	3
44	Progress in Fast, Accurate Multi-scale Climate Simulations. <i>Procedia Computer Science</i> , 2015, 51, 2006-2015.	1.2	2
45	Editorial: Computational challenges in the solution of water resources problems. <i>Advances in Water Resources</i> , 2011, 34, 1059-1061.	1.7	1
46	Implicit Solution of Non-Equilibrium Radiation Diffusion Including Reactive Heating Source in Material Energy Equation. , 2006, , 353-370.		1
47	Special issue on ?Solution Methods for Large-Scale Non-linear Problems?. <i>Numerical Linear Algebra With Applications</i> , 2001, 8, 497-497.	0.9	0
48	Special Section: 2010 Copper Mountain Conference. <i>SIAM Journal of Scientific Computing</i> , 2011, 33, 2685-2685.	1.3	0
49	An Objective and Efficient Method for Assessing the Impact of Reducedâ€Precision Calculations On Solution Correctness. <i>Journal of Advances in Modeling Earth Systems</i> , 2019, 11, 3131-3147.	1.3	0
50	On Metrics for Computation of Strength of Coupling in Multiphysics Simulations. <i>The IMA Volumes in Mathematics and Its Applications</i> , 2016, , 137-176.	0.5	0