Scott P Maclachlan

List of Publications by Year
in descending order

42 papers	537 citations	687220 13 h-index	713332 21 g-index
42 all docs	42 docs citations	42 times ranked	318 citing authors

#	Article	IF	Citations
1	Monolithic Multigrid for a Reduced-Quadrature Discretization of Poroelasticity. SIAM Journal of Scientific Computing, 2023, 45, S54-S81.	1.3	4
2	Lowâ€order preconditioning of the Stokes equations. Numerical Linear Algebra With Applications, 2022, 29, .	0.9	3
3	A Boundary-Layer Preconditioner for Singularly Perturbed Convection Diffusion. SIAM Journal on Matrix Analysis and Applications, 2022, 43, 561-583.	0.7	0
4	Numerical modeling of a memory-based diffusivity equation and determination of its fractional order value. Computational Geosciences, 2021, 25, 655-669.	1.2	0
5	A local Fourier analysis of additive Vanka relaxation for the Stokes equations. Numerical Linear Algebra With Applications, 2021, 28, e2306.	0.9	15
6	Optimizing multigrid reductionâ€inâ€time and Parareal coarseâ€grid operators for linear advection. Numerical Linear Algebra With Applications, 2021, 28, e2367.	0.9	11
7	Structural Landscapes in Geometrically Frustrated Smectics. Physical Review Letters, 2021, 126, 177801.	2.9	16
8	Tuning Multigrid Methods with Robust Optimization and Local Fourier Analysis. SIAM Journal of Scientific Computing, 2021, 43, A109-A138.	1.3	11
9	Selective decay for the rotating shallow-water equations with a structure-preserving discretization. Physics of Fluids, 2021, 33, 116604.	1.6	3
10	Convergence analysis for parallelâ€inâ€time solution of hyperbolic systems. Numerical Linear Algebra With Applications, 2020, 27, e2271.	0.9	11
11	Block Preconditioning Techniques for Geophysical Electromagnetics. SIAM Journal of Scientific Computing, 2020, 42, B696-B721.	1.3	9
12	Finite element modelling of geophysical electromagnetic data with goal-oriented hr-adaptivity. Computational Geosciences, 2020, 24, 1257-1283.	1.2	2
13	Twoâ€level Fourier analysis of multigrid for higherâ€order finiteâ€element discretizations of the Laplacian. Numerical Linear Algebra With Applications, 2020, 27, e2285.	0.9	12
14	First-Order System Least Squares Finite-Elements for Singularly Perturbed Reaction-Diffusion Equations. Lecture Notes in Computer Science, 2020, , 3-14.	1.0	3
15	Variational integrator for the rotating shallowâ€water equations on the sphere. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 1070-1088.	1.0	14
16	Local Fourier analysis for mixed finite-element methods for the Stokes equations. Journal of Computational and Applied Mathematics, 2019, 357, 161-183.	1.1	11
17	Parallel-In-Time Multigrid with Adaptive Spatial Coarsening for The Linear Advection and Inviscid Burgers Equations. SIAM Journal of Scientific Computing, 2019, 41, A538-A565.	1.3	27
18	Local Fourier Analysis of Balancing Domain Decomposition By Constraints Algorithms. SIAM Journal of Scientific Computing, 2019, 41, S346-S369.	1.3	8

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19	Vector-potential finite-element formulations for two-dimensional resistive magnetohydrodynamics. Computers and Mathematics With Applications, 2019, 77, 476-493.	1.4	2
20	Local Fourier analysis of blockâ€structured multigrid relaxation schemes for the Stokes equations. Numerical Linear Algebra With Applications, 2018, 25, e2147.	0.9	15
21	A well-balanced meshless tsunami propagation and inundation model. Advances in Water Resources, 2018, 115, 273-285.	1.7	8
22	Well-balanced mesh-based and meshless schemes for the shallow-water equations. BIT Numerical Mathematics, 2018, 58, 579-598.	1.0	2
23	Compositeâ€grid multigrid for diffusion on the sphere. Numerical Linear Algebra With Applications, 2018, 25, e2115.	0.9	0
24	Computing equilibrium states of cholesteric liquid crystals in elliptical channels with deflation algorithms. Liquid Crystals, 2018, 45, 341-350.	0.9	6
25	Boundary layer preconditioners for finite-element discretizations of singularly perturbed reaction-diffusion problems. Numerical Algorithms, 2018, 79, 281-310.	1.1	3
26	Preconditioning a massâ€conserving discontinuous Galerkin discretization of the Stokes equations. Numerical Linear Algebra With Applications, 2017, 24, e2047.	0.9	14
27	Effect of thermocapillary stress on slip length for a channel textured with parallel ridges. Journal of Fluid Mechanics, 2017, 814, 301-324.	1.4	18
28	Multigrid methods with spaceâ€“time concurrency. Computing and Visualization in Science, 2017, 18, 123-143.	1.2	34
29	Monolithic Multigrid Methods for Two-Dimensional Resistive Magnetohydrodynamics. SIAM Journal of Scientific Computing, 2016, 38, B1-B24.	1.3	33
30	A first-order system Petrovâ€“Galerkin discretization for a reactionâ€“diffusion problem on a fitted mesh. IMA Journal of Numerical Analysis, 2016, 36, 1281-1309.	1.5	10
31	Effect of Evaporation and Condensation at Menisci on Apparent Thermal Slip. Journal of Heat Transfer, 2015, 137, .	1.2	19
32	Implied volatility and the risk-free rate of return in options markets. North American Journal of Economics and Finance, 2015, 31, 1-26.	1.8	12
33	Theoretical bounds for algebraic multigrid performance: review and analysis. Numerical Linear Algebra With Applications, 2014, 21, 194-220.	0.9	16
34	Parallel time integration with multigrid. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 951-952.	0.2	7
35	Robust Solution of Singularly Perturbed Problems Using Multigrid Methods. SIAM Journal of Scientific Computing, 2013, 35, A2225-A2254.	1.3	21
36	Local Fourier analysis for multigrid with overlapping smoothers applied to systems of PDEs. Numerical Linear Algebra With Applications, 2011, 18, 751-774.	0.9	52

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37	A fast method for the solution of the Helmholtz equation. Journal of Computational Physics, 2011, 230, 4403-4418.	1.9	30
38	An angular multigrid method for computing mono-energetic particle beams in Flatland. Journal of Computational Physics, 2010, 229, 2914-2931.	1.9	4
39	Algebraic Multigrid Solvers for Complex-Valued Matrices. SIAM Journal of Scientific Computing, 2008, 30, 1548-1571.	1.3	28
40	Greedy Coarsening Strategies for Nonsymmetric Problems. SIAM Journal of Scientific Computing, 2007, 29, 2115-2143.	1.3	7
41	Adaptive reduction-based AMG. Numerical Linear Algebra With Applications, 2006, 13, 599-620.	0.9	27
42	Monolithic Multigrid Methods for Magnetohydrodynamics. SIAM Journal of Scientific Computing, 0, , S70-S91.	1.3	9