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	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
2	Multigrid methods with space–time concurrency. Computing and Visualization in Science, 2017, 18, 123-143.	1.2	34
3	Monolithic Multigrid Methods for Two-Dimensional Resistive Magnetohydrodynamics. SIAM Journal of Scientific Computing, 2016, 38, B1-B24.	1.3	33
4	A fast method for the solution of the Helmholtz equation. Journal of Computational Physics, 2011, 230, 4403-4418.	1.9	30
5	Algebraic Multigrid Solvers for Complex-Valued Matrices. SIAM Journal of Scientific Computing, 2008, 30, 1548-1571.	1.3	28
6	Adaptive reduction-based AMG. Numerical Linear Algebra With Applications, 2006, 13, 599-620.	0.9	27
7	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
8	Robust Solution of Singularly Perturbed Problems Using Multigrid Methods. SIAM Journal of Scientific Computing, 2013, 35, A2225-A2254.	1.3	21
9	Effect of Evaporation and Condensation at Menisci on Apparent Thermal Slip. Journal of Heat Transfer, 2015, 137, .	1.2	19
10	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
11	Theoretical bounds for algebraic multigrid performance: review and analysis. Numerical Linear Algebra With Applications, 2014, 21, 194-220.	0.9	16
12	Structural Landscapes in Geometrically Frustrated Smectics. Physical Review Letters, 2021, 126, 177801.	2.9	16
13	Local Fourier analysis of block–structured multigrid relaxation schemes for the Stokes equations. Numerical Linear Algebra With Applications, 2018, 25, e2147.	0.9	15
14	A local Fourier analysis of additive Vanka relaxation for the Stokes equations. Numerical Linear Algebra With Applications, 2021, 28, e2306.	0.9	15
15	Preconditioning a mass–conserving discontinuous Galerkin discretization of the Stokes equations. Numerical Linear Algebra With Applications, 2017, 24, e2047.	0.9	14
16	Variational integrator for the rotating shallow–water equations on the sphere. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 1070-1088.	1.0	14
17	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
18	Two–level Fourier analysis of multigrid for higher–order finite–element discretizations of the Laplacian. Numerical Linear Algebra With Applications, 2020, 27, e2285.	0.9	12

#	Article	IF	Citations
19	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
20	Convergence analysis for parallel‑in‑time solution of hyperbolic systems. Numerical Linear Algebra With Applications, 2020, 27, e2271.	0.9	11
21	Optimizing multigrid reduction‑in‑time and Parareal coarse‑grid operators for linear advection. Numerical Linear Algebra With Applications, 2021, 28, e2367.	0.9	11
22	Tuning Multigrid Methods with Robust Optimization and Local Fourier Analysis. SIAM Journal of Scientific Computing, 2021, 43, A109-A138.	1.3	11
23	A first-order system Petrov–Galerkin discretization for a reaction–diffusion problem on a fitted mesh. IMA Journal of Numerical Analysis, 2016, 36, 1281-1309.	1.5	10
24	Block Preconditioning Techniques for Geophysical Electromagnetics. SIAM Journal of Scientific Computing, 2020, 42, B696-B721.	1.3	9
25	Monolithic Multigrid Methods for Magnetohydrodynamics. SIAM Journal of Scientific Computing, 0, , S70-S91.	1.3	9
26	A well-balanced meshless tsunami propagation and inundation model. Advances in Water Resources, 2018, 115, 273-285.	1.7	8
27	Local Fourier Analysis of Balancing Domain Decomposition By Constraints Algorithms. SIAM Journal of Scientific Computing, 2019, 41, S346-S369.	1.3	8
28	Greedy Coarsening Strategies for Nonsymmetric Problems. SIAM Journal of Scientific Computing, 2007, 29, 2115-2143.	1.3	7
29	Parallel time integration with multigrid. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 951-952.	0.2	7
30	Computing equilibrium states of cholesteric liquid crystals in elliptical channels with deflation algorithms. Liquid Crystals, 2018, 45, 341-350.	0.9	6
31	An angular multigrid method for computing mono-energetic particle beams in Flatland. Journal of Computational Physics, 2010, 229, 2914-2931.	1.9	4
32	Monolithic Multigrid for a Reduced-Quadrature Discretization of Poroelasticity. SIAM Journal of Scientific Computing, 2023, 45, S54-S81.	1.3	4
33	Boundary layer preconditioners for finite-element discretizations of singularly perturbed reaction-diffusion problems. Numerical Algorithms, 2018, 79, 281-310.	1.1	3
34	First-Order System Least Squares Finite-Elements for Singularly Perturbed Reaction-Diffusion Equations. Lecture Notes in Computer Science, 2020, , 3-14.	1.0	3
35	Selective decay for the rotating shallow-water equations with a structure-preserving discretization. Physics of Fluids, 2021, 33, 116604.	1.6	3
36	Low‑order preconditioning of the Stokes equations. Numerical Linear Algebra With Applications, 2022, 29, .	0.9	3

#	ARTICLE	IF	CITATIONS
37	Well-balanced mesh-based and meshless schemes for the shallow-water equations. BIT Numerical Mathematics, 2018, 58, 579-598.	1.0	2
38	Vector-potential finite-element formulations for two-dimensional resistive magnetohydrodynamics. Computers and Mathematics With Applications, 2019, 77, 476-493.	1.4	2
39	Finite element modelling of geophysical electromagnetic data with goal-oriented hr-adaptivity. Computational Geosciences, 2020, 24, 1257-1283.	1.2	2
40	Composite‐grid multigrid for diffusion on the sphere. Numerical Linear Algebra With Applications, 2018, 25, e2115.	0.9	0
41	Numerical modeling of a memory-based diffusivity equation and determination of its fractional order value. Computational Geosciences, 2021, 25, 655-669.	1.2	0
42	A Boundary-Layer Preconditioner for Singularly Perturbed Convection Diffusion. SIAM Journal on Matrix Analysis and Applications, 2022, 43, 561-583.	0.7	0