Patrick E Farrell

List of Publications by Year
in descending order

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43 papers	1,047 citations	687220 13 h-index	434063 31 g-index
43 all docs	43 docs citations	43 times ranked	855 citing authors

#	Article	IF	Citations
1	Conservative interpolation between volume meshes by local Galerkin projection. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 89-100.	3.4	246
2	Automated Derivation of the Adjoint of High-Level Transient Finite Element Programs. SIAM Journal of Scientific Computing, 2013, 35, C369-C393.	1.3	180
3	Conservative interpolation between unstructured meshes via supermesh construction. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2632-2642.	3.4	128
4	Deflation Techniques for Finding Distinct Solutions of Nonlinear Partial Differential Equations. SIAM Journal of Scientific Computing, 2015, 37, A2026-A2045.	1.3	92
5	An Augmented Lagrangian Preconditioner for the 3D Stationary Incompressible Navier--Stokes Equations at High Reynolds Number. SIAM Journal of Scientific Computing, 2019, 41, A3073-A3096.	1.3	55
6	From molecular to continuum modelling of bistable liquid crystal devices. Liquid Crystals, 2017, 44, 2267-2284.	0.9	36
7	Computing stationary solutions of the two-dimensional Grossâ€“Pitaevskii equation with deflated continuation. Communications in Nonlinear Science and Numerical Simulation, 2018, 54, 482-499.	1.7	27
8	Navigating the landscape of nonlinear mechanical metamaterials for advanced programmability. Physical Review B, 2020, 101, .	1.1	22
9	Efficient White Noise Sampling and Coupling for Multilevel Monte Carlo with Nonnested Meshes. SIAM-ASA Journal on Uncertainty Quantification, 2018, 6, 1630-1655.	1.1	20
10	Bifurcation analysis of stationary solutions of two-dimensional coupled Grossâ€“Pitaevskii equations using deflated continuation. Communications in Nonlinear Science and Numerical Simulation, 2020, 87, 105255.	1.7	19
11	Structural Landscapes in Geometrically Frustrated Smectics. Physical Review Letters, 2021, 126, 177801.	2.9	16
12	A local Fourier analysis of additive Vanka relaxation for the Stokes equations. Numerical Linear Algebra With Applications, 2021, 28, e2306.	0.9	15
13	PCPATCH. ACM Transactions on Mathematical Software, 2021, 47, 1-22.	1.6	14
14	Deflation-based identification of nonlinear excitations of the three-dimensional Gross-Pitaevskii equation. Physical Review A, 2020, 102, .	1.0	12
15	Computing Multiple Solutions of Topology Optimization Problems. SIAM Journal of Scientific Computing, 2021, 43, A1555-A1582.	1.3	12
16	An Augmented Lagrangian Preconditioner for Implicitly Constituted Non-Newtonian Incompressible Flow. SIAM Journal of Scientific Computing, 2020, 42, B1329-B1349.	1.3	10
17	Nonlinear bifurcation analysis of stiffener profiles via deflation techniques. Thin-Walled Structures, 2020, 149, 106662.	2.7	10
18	Numerical Analysis of Unsteady Implicitly Constituted Incompressible Fluids: 3-Field Formulation. SIAM Journal on Numerical Analysis, 2020, 58, 757-787.	1.1	10

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19	Phase-field modeling of multivariant martensitic transformation at finite-strain: Computational aspects and large-scale finite-element simulations. Computer Methods in Applied Mechanics and Engineering, 2021, 377, 113705.	3.4	10
20	Mixed Kirchhoff stressâ€“displacementâ€“pressure formulations for incompressible hyperelasticity. Computer Methods in Applied Mechanics and Engineering, 2021, 374, 113562.	3.4	9
21	Monolithic Multigrid Methods for Magnetohydrodynamics. SIAM Journal of Scientific Computing, 0, , S70-S91.	1.3	9
22	Rapid development and adjoining of transient finite element models. Computer Methods in Applied Mechanics and Engineering, 2014, 276, 95-121.	3.4	8
23	Higher-Order Moving Mesh Methods for PDE-Constrained Shape Optimization. SIAM Journal of Scientific Computing, 2018, 40, A2356-A2382.	1.3	8
24	Cavity flow characteristics and applications to kidney stone removal. Journal of Fluid Mechanics, 2020, 902, .	1.4	8
25	Accurate numerical simulation of electrodiffusion and water movement in brain tissue. Mathematical Medicine and Biology, 2021, 38, 516-551.	0.8	8
26	Irksome: Automating Rungeâ€“Kutta Time-stepping for Finite Element Methods. ACM Transactions on Mathematical Software, 2021, 47, 1-26.	1.6	7
27	Computing equilibrium states of cholesteric liquid crystals in elliptical channels with deflation algorithms. Liquid Crystals, 2018, 45, 341-350.	0.9	6
28	Deflation for semismooth equations. Optimization Methods and Software, 2020, 35, 1248-1271.	1.6	6
29	Directional integration on unstructured meshes via supermesh construction. Journal of Computational Physics, 2012, 231, 4422-4432.	1.9	5
30	Numerical approximation of viscous contact problems applied to glacial sliding. Journal of Fluid Mechanics, 2022, 938, .	1.4	5
31	Automated Adjoints of Coupled PDE-ODE Systems. SIAM Journal of Scientific Computing, 2019, 41, C219-C244.	1.3	4
32	Augmented Lagrangian preconditioners for the Oseenâ€“Frank model of nematic and cholesteric liquid crystals. BIT Numerical Mathematics, 2021, 61, 607-644.	1.0	4
33	Control of Bifurcation Structures using Shape Optimization. SIAM Journal of Scientific Computing, 2022, 44, A57-A76.	1.3	4
34	Consolidated theory of fluid thermodiffusion. AICHE Journal, 2022, 68, .	1.8	4
35	A Framework for the Automation of Generalized Stability Theory. SIAM Journal of Scientific Computing, 2014, 36, C25-C48.	1.3	3
36	Analysis of Carrier's Problem. SIAM Journal on Applied Mathematics, 2017, 77, 924-950.	0.8	3

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37	Augmented saddle-point formulation of the steady-state Stefanâ€“Maxwell diffusion problem. IMA Journal of Numerical Analysis, 2022, 42, 3272-3305.	1.5	3
38	Bifurcation analysis of two-dimensional Rayleigh-BÃ©nard convection using deflation. Physical Review E, 2022, 105, .	0.8	3
39	Complexity bounds on supermesh construction for quasi-uniform meshes. Journal of Computational Physics, 2020, 414, 109459.	1.9	2
40	One-Dimensional Ferronematics in a Channel: Order Reconstruction, Bifurcations, and Multistability. SIAM Journal on Applied Mathematics, 2022, 82, 694-719.	0.8	2
41	Multilevel Quasi Monte Carlo Methods for Elliptic PDEs with Random Field Coefficients via Fast White Noise Sampling. SIAM Journal of Scientific Computing, 2021, 43, A2840-A2868.	1.3	1
42	Code Generation for Productive, Portable, and Scalable Finite Element Simulation in Firedrake. Computing in Science and Engineering, 2021, 23, 8-17.	1.2	1
43	A Numerical Framework for Concentrated-Solution Theory. ECS Meeting Abstracts, 2020, MA2020-02, 786-786.	0.0	0