

Max Gunzburger

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

58
papers

3,400
citations

21
h-index

58
g-index

60
ext. papers

3,937
ext. citations

3.1
avg. IF

5.57
L-index

#	Paper	IF	Citations
58	High-order multirate explicit time-stepping schemes for the baroclinic-barotropic split dynamics in primitive equations. <i>Journal of Computational Physics</i> , 2022 , 111050	4.1	
57	A mass conservative, well balanced, tangency preserving and energy decaying method for the shallow water equations on a sphere. <i>Journal of Computational Physics</i> , 2022 , 457, 111067	4.1	1
56	A cookbook for approximating Euclidean balls and for quadrature rules in finite element methods for nonlocal problems. <i>Mathematical Models and Methods in Applied Sciences</i> , 2021 , 31, 1505-1567	3.5	6
55	Approximation of Probability Density Functions for PDEs with Random Parameters Using Truncated Series Expansions. <i>Vietnam Journal of Mathematics</i> , 2021 , 49, 685-711	0.5	1
54	Numerical analyses of exponential time-differencing schemes for the solution of atmospheric models. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2021 , 147, 1477-1496	6.4	2
53	Parallel exponential time differencing methods for geophysical flow simulations. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021 , 387, 114151	5.7	1
52	An energy-based coupling approach to nonlocal interface problems. <i>Computers and Fluids</i> , 2020 , 207, 104593	2.8	12
51	An optimally convergent higher-order finite element coupling method for interface and domain decomposition problems. <i>Results in Applied Mathematics</i> , 2020 , 6, 100094	1.7	4
50	Numerical methods for nonlocal and fractional models. <i>Acta Numerica</i> , 2020 , 29, 1-124	15.1	29
49	High-precision computation of the weak Galerkin methods for the fourth-order problem. <i>Numerical Algorithms</i> , 2020 , 84, 181-205	2.1	1
48	Exponential time differencing for mimetic multilayer ocean models. <i>Journal of Computational Physics</i> , 2019 , 398, 108900	4.1	11
47	Optimally accurate higher-order finite element methods for polytopial approximations of domains with smooth boundaries. <i>Mathematics of Computation</i> , 2019 , 88, 2187-2219	1.6	7
46	Recent Progress in Mathematical and Computational Aspects of Peridynamics 2019 , 1197-1222		
45	An Improved Discrete Least-Squares/Reduced-Basis Method for Parameterized Elliptic PDEs. <i>Journal of Scientific Computing</i> , 2019 , 81, 76-91	2.3	
44	Weak-Galerkin finite element methods for a second-order elliptic variational inequality. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018 , 337, 677-688	5.7	10
43	Convergence analysis of multifidelity Monte Carlo estimation. <i>Numerische Mathematik</i> , 2018 , 139, 683-702		7
42	Analysis and approximation of a fractional Laplacian-based closure model for turbulent flows and its connection to Richardson pair dispersion. <i>Computers and Mathematics With Applications</i> , 2018 , 75, 1973-2001	2.7	7

41	Fast spherical centroidal Voronoi mesh generation: A Lloyd-preconditioned LBFGS method in parallel. <i>Journal of Computational Physics</i> , 2018 , 367, 235-252	4.1	3
40	Recent Progress in Mathematical and Computational Aspects of Peridynamics 2018 , 1-26		1
39	Pinning effects in two-band superconductors. <i>Physica C: Superconductivity and Its Applications</i> , 2018 , 555, 7-14	1.3	0
38	Reduced-order modeling for nonlocal diffusion problems. <i>International Journal for Numerical Methods in Fluids</i> , 2017 , 83, 307-327	1.9	9
37	Algorithms and analyses for stochastic optimization for turbofan noise reduction using parallel reduced-order modeling. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017 , 319, 217-239	5.7	9
36	The electroneutrality constraint in nonlocal models. <i>Journal of Chemical Physics</i> , 2017 , 147, 124102	3.9	3
35	Nonlocal Convection-Diffusion Problems on Bounded Domains and Finite-Range Jump Processes. <i>Computational Methods in Applied Mathematics</i> , 2017 , 17, 707-722	1.2	24
34	Optimal Model Management for Multifidelity Monte Carlo Estimation. <i>SIAM Journal of Scientific Computing</i> , 2016 , 38, A3163-A3194	2.6	89
33	A two phase field model for tracking vesicle-vesicle adhesion. <i>Journal of Mathematical Biology</i> , 2016 , 73, 1293-1319	2	14
32	Quadrature rules for finite element approximations of 1D nonlocal problems. <i>Journal of Computational Physics</i> , 2016 , 310, 213-236	4.1	9
31	A Multiscale Implementation Based on Adaptive Mesh Refinement for the Nonlocal Peridynamics Model in One Dimension. <i>Multiscale Modeling and Simulation</i> , 2016 , 14, 398-429	1.8	14
30	Nodal-type collocation methods for hypersingular integral equations and nonlocal diffusion problems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016 , 299, 401-420	5.7	9
29	A multiscale method for nonlocal mechanics and diffusion and for the approximation of discontinuous functions. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016 , 307, 117-143	5.7	21
28	Stability and accuracy of time-stepping schemes and dispersion relations for a nonlocal wave equation. <i>Numerical Methods for Partial Differential Equations</i> , 2015 , 31, 500-516	2.5	11
27	Peridynamics and Material Interfaces. <i>Journal of Elasticity</i> , 2015 , 120, 225-248	1.5	27
26	Stability and convergence of time-stepping methods for a nonlocal model for diffusion. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2015 , 20, 1315-1335	1.3	6
25	Schemes for finite element discretization of the space-time fractional diffusion equations. <i>Journal of Computational and Applied Mathematics</i> , 2015 , 288, 264-273	2.4	15
24	A generalized nonlocal vector calculus. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2015 , 66, 2807-2828	2.2	28

23	Fractional Diffusion on Bounded Domains. <i>Fractional Calculus and Applied Analysis</i> , 2015 , 18, 342-360	2.7	67
22	Optimal Distributed Control of Nonlocal Steady Diffusion Problems. <i>SIAM Journal on Control and Optimization</i> , 2014 , 52, 243-273	1.9	23
21	Analysis of the Volume-Constrained Peridynamic Navier Equation of Linear Elasticity. <i>Journal of Elasticity</i> , 2013 , 113, 193-217	1.5	64
20	The fractional Laplacian operator on bounded domains as a special case of the nonlocal diffusion operator. <i>Computers and Mathematics With Applications</i> , 2013 , 66, 1245-1260	2.7	120
19	A NONLOCAL VECTOR CALCULUS, NONLOCAL VOLUME-CONSTRAINED PROBLEMS, AND NONLOCAL BALANCE LAWS. <i>Mathematical Models and Methods in Applied Sciences</i> , 2013 , 23, 493-540	3.5	244
18	Analysis and Approximation of Nonlocal Diffusion Problems with Volume Constraints. <i>SIAM Review</i> , 2012 , 54, 667-696	7.4	316
17	Maximizing critical currents in superconductors by optimization of normal inclusion properties. <i>Physica D: Nonlinear Phenomena</i> , 2011 , 240, 1701-1713	3.3	2
16	Continuous and discontinuous finite element methods for a peridynamics model of mechanics. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2011 , 200, 1237-1250	5.7	145
15	Exploring a Multiresolution Modeling Approach within the Shallow-Water Equations. <i>Monthly Weather Review</i> , 2011 , 139, 3348-3368	2.4	78
14	A Scale-Invariant Formulation of the Anticipated Potential Vorticity Method. <i>Monthly Weather Review</i> , 2011 , 139, 2614-2629	2.4	27
13	A Nonlocal Vector Calculus with Application to Nonlocal Boundary Value Problems. <i>Multiscale Modeling and Simulation</i> , 2010 , 8, 1581-1598	1.8	114
12	Partial and spectral-viscosity models for geophysical flows. <i>Chinese Annals of Mathematics Series B</i> , 2010 , 31, 579-606	0.4	
11	Analysis of Nonlinear Spectral Eddy-Viscosity Models of Turbulence. <i>Journal of Scientific Computing</i> , 2010 , 45, 294-332	2.3	5
10	Constrained CVT meshes and a comparison of triangular mesh generators. <i>Computational Geometry: Theory and Applications</i> , 2009 , 42, 1-19	0.4	21
9	Peridynamics as an Upscaling of Molecular Dynamics. <i>Multiscale Modeling and Simulation</i> , 2009 , 8, 204-227	2.8	119
8	A multiresolution method for climate system modeling: application of spherical centroidal Voronoi tessellations. <i>Ocean Dynamics</i> , 2008 , 58, 475-498	2.3	97
7	An adaptive wavelet viscosity method for hyperbolic conservation laws. <i>Numerical Methods for Partial Differential Equations</i> , 2008 , 24, 1388-1404	2.5	6
6	Probabilistic methods for centroidal Voronoi tessellations and their parallel implementations. <i>Parallel Computing</i> , 2002 , 28, 1477-1500	1	101

5	Grid generation and optimization based on centroidal Voronoi tessellations. <i>Applied Mathematics and Computation</i> , 2002 , 133, 591-607	2.7	111
4	Insensitive Functionals, Inconsistent Gradients, Spurious Minima, and Regularized Functionals in Flow Optimization Problems. <i>International Journal of Computational Fluid Dynamics</i> , 2002 , 16, 171-185	1.2	23
3	Adjoint Equation-Based Methods for Control Problems in Incompressible, Viscous Flows. <i>Flow, Turbulence and Combustion</i> , 2000 , 65, 249-272	2.5	55
2	Centroidal Voronoi Tessellations: Applications and Algorithms. <i>SIAM Review</i> , 1999 , 41, 637-676	7.4	1275
1	Vortices in superconductors: modelling and computer simulations. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 1997 , 355, 1957-1968	3	16