Mahadevan Ganesh

List of Publications by Year
in descending order

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85	1,174	430442	433756
papers	citations	18 h-index	31 g-index

85	85	85	668
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Spatio-temporal pattern formation on spherical surfaces: numerical simulation and application to solid tumour growth. Journal of Mathematical Biology, 2001, 42, 387-423.	0.8	169
2	A high-order algorithm for obstacle scattering in three dimensions. Journal of Computational Physics, 2004, 198, 211-242.	1.9	113
3	Numerical Solvability of Hammerstein Integral Equations of Mixed Type. IMA Journal of Numerical Analysis, 1991, 11, 21-31.	1.5	80
4	Multilevel compact radial functions based computational schemes for some elliptic problems. Computers and Mathematics With Applications, 2002, 43, 359-378.	1.4	61
5	Particular solutions of 3D Helmholtz-type equations using compactly supported radial basis functions. Engineering Analysis With Boundary Elements, 2000, 24, 539-547.	2.0	49
6	Algorithm 975. ACM Transactions on Mathematical Software, 2018, 44, 1-18.	1.6	43
7	A spectrally accurate algorithm for electromagnetic scattering in three dimensions. Numerical Algorithms, 2006, 43, 25-60.	1.1	36
8	A high-order tangential basis algorithm for electromagnetic scattering by curved surfaces. Journal of Computational Physics, 2008, 227, 4543-4562.	1.9	35
9	A reduced basis method for electromagnetic scattering by multiple particles in three dimensions. Journal of Computational Physics, 2012, 231, 7756-7779.	1.9	32
10	A Pseudospectral Three-Dimensional Boundary Integral Method Applied to a Nonlinear Model Problem from Finite Elasticity. SIAM Journal on Numerical Analysis, 1994, 31, 1378-1414.	1.1	30
11	A New Spectral Boundary Integral Collocation Method for Three-Dimensional Potential Problems. SIAM Journal on Numerical Analysis, 1998, 35, 778-805.	1.1	29
12	A fully discrete Galerkin method for high frequency exterior acoustic scattering in three dimensions. Journal of Computational Physics, 2011, 230, 104-125.	1.9	27
13	Computing spatial correlation of ground motion intensities for ShakeMap. Computers and Geosciences, 2017, 99, 145-154.	2.0	27
14	Optimal order spline methods for nonlinear differential and integro-differential equations. Applied Numerical Mathematics, 1999, 29, 445-478.	1.2	24
15	Convergence analysis with parameter estimates for a reduced basis acoustic scattering T-matrix method. IMA Journal of Numerical Analysis, 2012, 32, 1348-1374.	1.5	23
16	Three dimensional electromagnetic scattering T-matrix computations. Journal of Computational and Applied Mathematics, 2010, 234, 1702-1709.	1.1	22
17	A high-order algorithm for multiple electromagnetic scattering in three dimensions. Numerical Algorithms, 2009, 50, 469-510.	1.1	21
18	High-order FEMâ€“BEM computer models for wave propagation in unbounded and heterogeneous media: Application to time-harmonic acoustic horn problem. Journal of Computational and Applied Mathematics, 2016, 307, 183-203.	1.1	19

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19	A Petrov-Galerkin method with quadrature for elliptic boundary value problems. IMA Journal of Numerical Analysis, 2004, 24, 157-177.	1.5	15
20	A Hybrid High-Order Algorithm for Radar Cross Section Computations. SIAM Journal of Scientific Computing, 2007, 29, 1217-1243.	1.3	14
21	An efficient surface integral equation method for the time-harmonic Maxwell equations. ANZIAM Journal, 0, 48, 17.	0.0	14
22	Efficient evaluation of highly oscillatory acoustic scattering surface integrals. Journal of Computational and Applied Mathematics, 2007, 204, 363-374.	1.1	13
23	An efficient $$mathcal {O}(N)$$ O (N) algorithm for computing $$mathcal {O}(N^2)$$ O (N 2) acoustic wave interactions in large $$N$$ N -obstacle three dimensional configurations. BIT Numerical Mathematics, 2015, 55, 117-139.	1.0	13
24	Simulation of acoustic scattering by multiple obstacles in three dimensions. ANZIAM Journal, 0, 49, 31.	0.0	13
25	A High Performance Computing and Sensitivity Analysis Algorithm for Stochastic Many-Particle Wave Scattering. SIAM Journal of Scientific Computing, 2015, 37, A1475-A1503.	1.3	12
26	A coercive heterogeneous media Helmholtz model: formulation, wavenumber-explicit analysis, and preconditioned high-order FEM. Numerical Algorithms, 2020, 83, 1441-1487.	1.1	12
27	A stochastic pseudospectral and T-matrix algorithm for acoustic scattering by a class of multiple particle configurations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 123, 41-52.	1.1	11
28	A Crank-Nicolson and ADI Galerkin method with quadrature for hyperbolic problems. Numerical Methods for Partial Differential Equations, 2005, 21, 57-79.	2.0	10
29	Orthogonal collocation for a nonlinear integro-differential equation. IMA Journal of Numerical Analysis, 1998, 18, 191-206.	1.5	9
30	A fully discrete H 1-Galerkin method with quadrature for nonlinear advectionâ€“diffusionâ€“reaction equations. Numerical Algorithms, 2007, 43, 355-383.	1.1	9
31	A pseudospectral quadrature method for Navier-Stokes equations on rotating spheres. Mathematics of Computation, 2010, 80, 1397-1430.	1.1	9
32	A Sign-Definite Preconditioned High-Order FEM, Part I: Formulation and Simulation for Bounded Homogeneous Media Wave Propagation. SIAM Journal of Scientific Computing, 2017, 39, S563-S586.	1.3	9
33	High-order FEM domain decomposition models for high-frequency wave propagation in heterogeneous media. Computers and Mathematics With Applications, 2018, 75, 1961-1972.	1.4	9
34	An overlapping decomposition framework for wave propagation in heterogeneous and unbounded media: Formulation, analysis, algorithm, and simulation. Journal of Computational Physics, 2020, 403, 109052.	1.9	9
35	An efficient algorithm for simulating scattering by a large number of two dimensional particles. ANZIAM Journal, 0, 51, 139.	0.0	9
36	Boundary element methods for potential problems with nonlinear boundary conditions. Mathematics of Computation, 2000, 70, 1031-1043.	1.1	8

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37	An all-frequency weakly-singular surface integral equation for electromagnetism in dielectric media: Reformulation and well-posedness analysis. Journal of Mathematical Analysis and Applications, 2014, 412, 277-300.	0.5	8
38	Discrete numerical solvability of Hammerstein integral equations of mixed type. Journal of Integral Equations and Applications, 1989, 2, .	0.2	8
39	Nonlinear Boundary Integral Equations for Harmonic Problems. Journal of Integral Equations and Applications, 1999, 11, .	0.2	8
40	A far field based T-matrix method for three dimensional acoustic scattering. ANZIAM Journal, 0, 49, 121.	0.0	8
41	The numerical solution of a nonlinear hypersingular boundary integral equation. Journal of Computational and Applied Mathematics, 2001, 131, 267-280.	1.1	7
42	Matrix-free Interpolation on the Sphere. SIAM Journal on Numerical Analysis, 2006, 44, 1314-1331.	1.1	7
43	An efficient multigrid algorithm for heterogeneous acoustic media signâ€indefinite highâ€order FEM models. Numerical Linear Algebra With Applications, 2017, 24, e2049.	0.9	7
44	Numerical solutions of nonlinear integral equations on the half line. Numerical Functional Analysis and Optimization, 1989, 10, 1115-1138.	0.6	6
45	A BIE method for a nonlinear BVP. Journal of Computational and Applied Mathematics, 1993, 45, 299-308.	1.1	6
46	An efficient algorithm for a class of stochastic forward and inverse Maxwell models in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msup><mml:mrow><mml:mi mathvariant="double-struck">R</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msup></mml:math>. Journal of Computational Physics, 2019, 398, 108881.	1.9	6
47	Quasi-Monte Carlo Finite Element Analysis for Wave Propagation in Heterogeneous Random Media. SIAM-ASA Journal on Uncertainty Quantification, 2021, 9, 106-134.	1.1	6
48	A far-field based T-matrix method for two dimensional obstacle scattering. ANZIAM Journal, 0, 51, 215.	0.0	6
49	A Spectrally Accurate Algorithm and Analysis for a Ginzburg--Landau Model on Superconducting Surfaces. Multiscale Modeling and Simulation, 2018, 16, 78-105.	0.6	5
50	Optimality of nonlinear control systems. Nonlinear Analysis: Theory, Methods & Applications, 1991, 16, 553-566.	0.6	4
51	A Crank-Nicolson Petrov-Galerkin method with quadrature for semi-linear parabolic problems. Numerical Methods for Partial Differential Equations, 2005, 21, 918-937.	2.0	4
52	An ADI Petrovâ€“Galerkin method with quadrature for parabolic problems. Numerical Methods for Partial Differential Equations, 2009, 25, 1129-1148.	2.0	4
53	Interpolation and cubature approximations and analysis for a class of wideband integrals on the sphere. Advances in Computational Mathematics, 2013, 39, 547-584.	0.8	4
54	Spectral properties of SchrÃ¶dinger operators on superconducting surfaces. Journal of Spectral Theory, 2014, 4, 569-612.	0.4	4

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55	A fast high order algorithm for multiple scattering from large sound-hard three dimensional configurations. Journal of Computational and Applied Mathematics, 2019, 362, 324-340.	1.1	4
56	An offline/online algorithm for a class of stochastic multiple obstacle scattering configurations in the half-plane. Journal of Computational and Applied Mathematics, 2016, 307, 52-64.	1.1	3
57	Scattering by stochastic boundaries: hybrid low- and high-order quantification algorithms. ANZIAM Journal, 0, 56, 312.	0.0	3
58	Approximate solvability of hammerstein equation. Numerical Functional Analysis and Optimization, 1987, 9, 1039-1058.	0.6	2
59	A general convergence theory for nonlinear equations with application to integro-differential equations. Applied Numerical Mathematics, 1996, 22, 435-449.	1.2	2
60	Discrete petrov-galerkin scheme for boundary value differential and integral problems: Theory and applications. Mathematical and Computer Modelling, 2004, 40, 1323-1334.	2.0	2
61	A Petrov-Galerkin method with quadrature for semi-linear second-order hyperbolic problems. Numerical Methods for Partial Differential Equations, 2006, 22, 1052-1069.	2.0	2
62	SchrÃ¶dinger eigenbasis on a class of superconducting surfaces: Ansatz, analysis, FEM approximations and computations. Applied Numerical Mathematics, 2015, 89, 45-75.	1.2	2
63	Analysis and application of an overlapped FEM-BEM for wave propagation in unbounded and heterogeneous media. Applied Numerical Mathematics, 2022, 171, 76-105.	1.2	2
64	Approximation of radiating waves in the near-field: Error estimates and application to a class of inverse problems. Journal of Computational and Applied Mathematics, 2022, 401, 113769.	1.1	1
65	Sparse preconditioners for dense complex linear systems arising in some radar cross section computations. ANZIAM Journal, 0, 49, 233.	0.0	1
66	An FEM-MLMC algorithm for a moving shutter diffraction in time stochastic model. Discrete and Continuous Dynamical Systems - Series B, 2019, 24, 257-272.	0.5	1
67	A Parallel-in-Time-and-Space HPC Framework for a Class of Fractional Evolution Equations. Lecture Notes in Computational Science and Engineering, 2015, , 127-135.	0.1	1
68	A well-posed surface currents and charges system for electromagnetism in dielectric media. Journal of Integral Equations and Applications, 2020, 32, .	0.2	1
69	A numerically stable T-matrix method for acoustic scattering by nonspherical particles with large aspect ratios and size parameters. Journal of the Acoustical Society of America, 2022, 151, 1978-1988.	0.5	1
70	A discrete Galerkin method for a catalytic combustion model. Computers and Mathematics With Applications, 2001, 41, 1545-1557.	1.4	0
71	Fully discrete spectral methods for boundary integral equations on slender spheroids. Journal of Computational and Applied Mathematics, 2004, 164-165, 307-322.	1.1	0
72	Surface integral methods for high-frequency electromagnetic scattering. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1022703-1022704.	0.2	0

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73	Constructive approximations of spherical functions. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1051101-1051102.	0.2	0
74	Simulation of the interaction of electromagnetic fields with multiple rough scatterers in three dimensions. , 2010, , .		0
75	An Efficient HPC Framework for Parallel Long-Time and Large-Scale Simulation of a Class of Anomalous Single-Phase Models. , 2015, , .		0
76	Sobolev estimates for constructive uniform-grid FFT interpolatory approximations of spherical functions. Advances in Computational Mathematics, 2016, 42, 843-887.	0.8	0
77	Parallel mixed FEM simulation of a class of single-phase models with non-local operators. Journal of Computational and Applied Mathematics, 2016, 307, 106-118.	1.1	0
78	Hyperinterpolation for Spectral Wave Propagation Models in Three Dimensions. , 2018, , 351-372.		0
79	An efficient multi-level high-order algorithm for simulation of a class of Allenâ€“Cahn stochastic systems. Journal of Computational and Applied Mathematics, 2022, 401, 113765.	1.1	0
80	Mathematical Modelling of Solid Tumour Growth: Applications of Pre-pattern Formation. , 2003, , 283-293.		0
81	Post-processing of solutions of incompressible Navier-Stokes equations on rotating spheres. ANZIAM Journal, 0, 49, 90.	0.0	0
82	A radial basis Galerkin method for spherical surface Stokes equations. ANZIAM Journal, 0, 51, 56.	0.0	0
83	An efficient algorithm for simulation of stochastic scattering cross-sections. ANZIAM Journal, 0, 54, 119.	0.0	0
84	A Reduced-Order-Model Bayesian Obstacle Detection Algorithm. MATRIX Book Series, 2020, , 17-27.	0.2	0
85	A surrogate Bayesian framework for a SARS-CoV-2 data driven stochastic model. Computational and Mathematical Biophysics, 2022, 10, 34-67.	0.6	0