

Jay Gopalakrishnan

List of Publications by Year in descending order

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80
papers

4,045
citations

159525

30
h-index

118793

62
g-index

85
all docs

85
docs citations

85
times ranked

1241
citing authors

#	ARTICLE	IF	CITATIONS
1	Simulations of single- and two-tone Tm-doped optical fiber laser amplifiers. Optics Express, 2021, 29, 12599.	1.7	2
2	Recent Advances in Least-Squares and Discontinuous Petrov–Galerkin Finite Element Methods. Computers and Mathematics With Applications, 2021, 95, 1-3.	1.4	1
3	Computing leaky modes of optical fibers using a FEAST algorithm for polynomial eigenproblems. Wave Motion, 2021, 108, 102826.	1.0	2
4	A mass conserving mixed stress formulation for the Stokes equations. IMA Journal of Numerical Analysis, 2020, 40, 1838-1874.	1.5	14
5	Simulation of optical fiber amplifier gain using equivalent short fibers. Computer Methods in Applied Mechanics and Engineering, 2020, 360, 112698.	3.4	3
6	Structure aware Runge–Kutta time stepping for spacetime tents. SN Partial Differential Equations and Applications, 2020, 1, 19.	0.3	2
7	A Mass Conserving Mixed Stress Formulation for Stokes Flow with Weakly Imposed Stress Symmetry. SIAM Journal on Numerical Analysis, 2020, 58, 706-732.	1.1	9
8	The DPG-star method. Computers and Mathematics With Applications, 2020, 79, 3092-3116.	1.4	12
9	Recent Advances in Least-Squares and Discontinuous Petrov–Galerkin Finite Element Methods. Computational Methods in Applied Mathematics, 2019, 19, 395-397.	0.4	7
10	Spectral discretization errors in filtered subspace iteration. Mathematics of Computation, 2019, 89, 203-228.	1.1	9
11	Analysis of FEAST Spectral Approximations Using the DPG Discretization. Computational Methods in Applied Mathematics, 2019, 19, 251-266.	0.4	6
12	4. A space-time DPG method for the wave equation in multiple dimensions. , 2019, , 117-140.		3
13	A Scalable Preconditioner for a Primal Discontinuous Petrov–Galerkin Method. SIAM Journal of Scientific Computing, 2018, 40, A1187-A1203.	1.3	4
14	Dispersion Analysis of HDG Methods. Journal of Scientific Computing, 2018, 77, 1703-1735.	1.1	6
15	The Auxiliary Space Preconditioner for the de Rham Complex. SIAM Journal on Numerical Analysis, 2018, 56, 3196-3218.	1.1	6
16	A Spacetime DPG Method for the Schrödinger Equation. SIAM Journal on Numerical Analysis, 2017, 55, 1740-1759.	1.1	40
17	Reduced test spaces for DPG methods using rectangular elements. Computers and Mathematics With Applications, 2017, 74, 1955-1963.	1.4	1
18	Mapped Tent Pitching Schemes for Hyperbolic Systems. SIAM Journal of Scientific Computing, 2017, 39, B1043-B1063.	1.3	19

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19	Scattering of electromagnetic waves by thin high contrast dielectrics II: Asymptotics of the electric field and a method for inversion. <i>Communications in Mathematical Sciences</i> , 2017, 15, 1041-1053.	0.5	3
20	Breaking spaces and forms for the DPG method and applications including Maxwell equations. <i>Computers and Mathematics With Applications</i> , 2016, 72, 494-522.	1.4	117
21	A tent pitching scheme motivated by Friedrichs theory. <i>Computers and Mathematics With Applications</i> , 2015, 70, 1114-1135.	1.4	15
22	Stabilization in relation to wavenumber in HDG methods. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2015, 2, .	0.7	5
23	Mathematical model for bone mineralization. <i>Frontiers in Cell and Developmental Biology</i> , 2015, 3, 51.	1.8	19
24	Dispersive and Dissipative Errors in the DPG Method with Scaled Norms for Helmholtz Equation. <i>SIAM Journal of Scientific Computing</i> , 2014, 36, A20-A39.	1.3	23
25	Convergence rates of the DPG method with reduced test space degree. <i>Computers and Mathematics With Applications</i> , 2014, 68, 1550-1561.	1.4	21
26	Minimum Residual and Least Squares Finite Element Methods. <i>Computers and Mathematics With Applications</i> , 2014, 68, 1479.	1.4	1
27	A Posteriori Error Control for DPG Methods. <i>SIAM Journal on Numerical Analysis</i> , 2014, 52, 1335-1353.	1.1	69
28	Multigrid for an HDG method. <i>IMA Journal of Numerical Analysis</i> , 2014, 34, 1386-1425.	1.5	53
29	Spectral approximations by the HDG method. <i>Mathematics of Computation</i> , 2014, 84, 1037-1059.	1.1	12
30	Nonnegativity of exact and numerical solutions of some chemotactic models. <i>Computers and Mathematics With Applications</i> , 2013, 66, 356-375.	1.4	13
31	A primal DPG method without a first-order reformulation. <i>Computers and Mathematics With Applications</i> , 2013, 66, 1058-1064.	1.4	48
32	An analysis of the practical DPG method. <i>Mathematics of Computation</i> , 2013, 83, 537-552.	1.1	104
33	A second elasticity element using the matrix bubble. <i>IMA Journal of Numerical Analysis</i> , 2012, 32, 352-372.	1.5	66
34	Polynomial extension operators. Part III. <i>Mathematics of Computation</i> , 2012, 81, 1289-1326.	1.1	32
35	MIXED FINITE ELEMENT APPROXIMATION OF THE VECTOR LAPLACIAN WITH DIRICHLET BOUNDARY CONDITIONS. <i>Mathematical Models and Methods in Applied Sciences</i> , 2012, 22, .	1.7	20
36	Instability in a generalized Keller–Segel model. <i>Journal of Biological Dynamics</i> , 2012, 6, 974-991.	0.8	2

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37	A locking-free \mathbb{P}_1 DPG method for linear elasticity with symmetric stresses. <i>Numerische Mathematik</i> , 2012, 122, 671-707.	0.9	49
38	Commuting Smoothed Projectors in Weighted Norms with an Application to Axisymmetric Maxwell Equations. <i>Journal of Scientific Computing</i> , 2012, 51, 394-420.	1.1	9
39	Partial expansion of a Lipschitz domain and some applications. <i>Frontiers of Mathematics in China</i> , 2012, 7, 249-272.	0.4	13
40	A class of discontinuous Petrov-Galerkin methods. Part III: Adaptivity. <i>Applied Numerical Mathematics</i> , 2012, 62, 396-427.	1.2	92
41	Convergence analysis of a multigrid algorithm for the acoustic single layer equation. <i>Applied Numerical Mathematics</i> , 2012, 62, 767-786.	1.2	2
42	Wavenumber explicit analysis of a DPG method for the multidimensional Helmholtz equation. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2012, 213-216, 126-138.	3.4	68
43	Analysis of the DPG Method for the Poisson Equation. <i>SIAM Journal on Numerical Analysis</i> , 2011, 49, 1788-1809.	1.1	107
44	Determination of the electric field intensity and space charge density versus height prior to triggered lightning. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	28
45	A Hybridized Discontinuous Petrov-Galerkin Method for Compressible Flows. , 2011, , .		3
46	Symmetric Nonconforming Mixed Finite Elements for Linear Elasticity. <i>SIAM Journal on Numerical Analysis</i> , 2011, 49, 1504-1520.	1.1	57
47	A class of discontinuous Petrov-Galerkin methods. II. Optimal test functions. <i>Numerical Methods for Partial Differential Equations</i> , 2011, 27, 70-105.	2.0	195
48	A class of discontinuous Petrov-Galerkin methods. Part IV: The optimal test norm and time-harmonic wave propagation in 1D. <i>Journal of Computational Physics</i> , 2011, 230, 2406-2432.	1.9	115
49	Analysis of HDG methods for Stokes flow. <i>Mathematics of Computation</i> , 2011, 80, 723-723.	1.1	133
50	A class of discontinuous Petrov-Galerkin methods. Part I: The transport equation. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 1558-1572.	3.4	174
51	A projection-based error analysis of HDG methods. <i>Mathematics of Computation</i> , 2010, 79, 1351-1367.	1.1	202
52	A new elasticity element made for enforcing weak stress symmetry. <i>Mathematics of Computation</i> , 2010, 79, 1331-1349.	1.1	96
53	Hybridization and Postprocessing Techniques for Mixed Eigenfunctions. <i>SIAM Journal on Numerical Analysis</i> , 2010, 48, 857-881.	1.1	14
54	Multigrid in a weighted space arising from axisymmetric electromagnetics. <i>Mathematics of Computation</i> , 2010, 79, 2033-2058.	1.1	10

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55	A convergent multigrid cycle for the hybridized mixed method. Numerical Linear Algebra With Applications, 2009, 16, 689-714.	0.9	21
56	Unified Hybridization of Discontinuous Galerkin, Mixed, and Continuous Galerkin Methods for Second Order Elliptic Problems. SIAM Journal on Numerical Analysis, 2009, 47, 1319-1365.	1.1	830
57	The Derivation of Hybridizable Discontinuous Galerkin Methods for Stokes Flow. SIAM Journal on Numerical Analysis, 2009, 47, 1092-1125.	1.1	102
58	Polynomial Extension Operators. Part II. SIAM Journal on Numerical Analysis, 2009, 47, 3293-3324.	1.1	23
59	Multigrid convergence for second order elliptic problems with smooth complex coefficients. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 4411-4418.	3.4	3
60	Asymptotic and Numerical Techniques for Resonances of Thin Photonic Structures. SIAM Journal on Applied Mathematics, 2008, 69, 37-63.	0.8	20
61	Polynomial Extension Operators. Part I. SIAM Journal on Numerical Analysis, 2008, 46, 3006-3031.	1.1	28
62	A mixed method for axisymmetric div-curl systems. Mathematics of Computation, 2008, 77, 1941-1965.	1.1	23
63	Locally Conservative Fluxes for the Continuous Galerkin Method. SIAM Journal on Numerical Analysis, 2007, 45, 1742-1776.	1.1	56
64	The convergence of V-cycle multigrid algorithms for axisymmetric Laplace and Maxwell equations. Mathematics of Computation, 2006, 75, 1697-1719.	1.1	30
65	Integration of hp-adaptivity and a two grid solver for electromagnetic problems. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 2533-2573.	3.4	8
66	NÄ©dÄ©lec spaces in affine coordinates. Computers and Mathematics With Applications, 2005, 49, 1285-1294.	1.4	31
67	Error analysis of variable degree mixed methods for elliptic problems via hybridization. Mathematics of Computation, 2005, 74, 1653-1678.	1.1	43
68	New hybridization techniques. GAMM Mitteilungen, 2005, 28, 154-182.	2.7	25
69	Incompressible Finite Elements via Hybridization. Part I: The Stokes System in Two Space Dimensions. SIAM Journal on Numerical Analysis, 2005, 43, 1627-1650.	1.1	58
70	Incompressible Finite Elements via Hybridization. Part II: The Stokes System in Three Space Dimensions. SIAM Journal on Numerical Analysis, 2005, 43, 1651-1672.	1.1	42
71	Quasioptimality of some spectral mixed methods. Journal of Computational and Applied Mathematics, 2004, 167, 163-182.	1.1	17
72	A Characterization of Hybridized Mixed Methods for Second Order Elliptic Problems. SIAM Journal on Numerical Analysis, 2004, 42, 283-301.	1.1	124

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73	Analysis of a Multigrid Algorithm for Time Harmonic Maxwell Equations. SIAM Journal on Numerical Analysis, 2004, 42, 90-108.	1.1	64
74	A multilevel discontinuous Galerkin method. Numerische Mathematik, 2003, 95, 551-551.	0.9	15
75	A multilevel discontinuous Galerkin method. Numerische Mathematik, 2003, 95, 527-550.	0.9	120
76	A Schwarz Preconditioner for a Hybridized Mixed Method. Computational Methods in Applied Mathematics, 2003, 3, 116-134.	0.4	34
77	A Mathematical Model for Irrigated Epicardial Radiofrequency Ablation. Annals of Biomedical Engineering, 2002, 30, 884-893.	1.3	31
78	Overlapping Schwarz preconditioners for indefinite time harmonic Maxwell equations. Mathematics of Computation, 2001, 72, 1-16.	1.1	38
79	An Efficient Method for Band Structure Calculations in 3D Photonic Crystals. Journal of Computational Physics, 2000, 161, 668-679.	1.9	70
80	Multigrid for the Mortar Finite Element Method. SIAM Journal on Numerical Analysis, 2000, 37, 1029-1052.	1.1	39