Leszek F Demkowicz

List of Publications by Year
in descending order

74 papers	2,304 citations	201674 27 h-index	276875 41 g-index
82 all docs	82 docs citations	82 times ranked	806 citing authors

#	Article	IF	Citations
1	Breaking spaces and forms for the DPG method and applications including Maxwell equations. Computers and Mathematics With Applications, 2016, 72, 494-522.	2.7	117
2	A class of discontinuous Petrovâ€“Galerkin methods. Part IV: The optimal test norm and time-harmonic wave propagation in 1D. Journal of Computational Physics, 2011, 230, 2406-2432.	3.8	115
3	A class of discontinuous Petrovâ€“Galerkin methods. Part III: Adaptivity. Applied Numerical Mathematics, 2012, 62, 396-427.	2.1	92
4	Robust DPG Method for Convection-Dominated Diffusion Problems. SIAM Journal on Numerical Analysis, 2013, 51, 2514-2537.	2.3	76
5	Orientation embedded high order shape functions for the exact sequence elements of all shapes. Computers and Mathematics With Applications, 2015, 70, 353-458.	2.7	75
6	A robust DPG method for convection-dominated diffusion problems II: Adjoint boundary conditions and mesh-dependent test norms. Computers and Mathematics With Applications, 2014, 67, 771-795.	2.7	72
7	A Posteriori Error Control for DPG Methods. SIAM Journal on Numerical Analysis, 2014, 52, 1335-1353.	2.3	69
8	Analysis of a Multigrid Algorithm for Time Harmonic Maxwell Equations. SIAM Journal on Numerical Analysis, 2004, 42, 90-108.	2.3	64
9	Fully automatic hp-adaptivity in three dimensions. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 4816-4842.	6.6	53
10	A locking-free $$hp$$ DPG method for linear elasticity with symmetric stresses. Numerische Mathematik, 2012, 122, 671-707.	1.9	49
11	On some convergence results for FDM with irregular mesh. Computer Methods in Applied Mechanics and Engineering, 1984, 42, 343-355.	6.6	42
12	A parallel direct solver for the self-adaptive hp Finite Element Method. Journal of Parallel and Distributed Computing, 2010, 70, 270-281.	4.1	42
13	High-order finite elements applied to the discrete Boltzmann equation. International Journal for Numerical Methods in Engineering, 2006, 67, 1094-1121.	2.8	40
14	The DPG method for the Stokes problem. Computers and Mathematics With Applications, 2014, 67, 966-995.	2.7	36
15	Discrete Compactness for the hp Version of Rectangular Edge Finite Elements. SIAM Journal on Numerical Analysis, 2006, 44, 979-1004.	2.3	35
16	Discrete Compactness for thep-Version of Discrete Differential Forms. SIAM Journal on Numerical Analysis, 2011, 49, 135-158.	2.3	35
17	A discontinuous Petrovâ€“Galerkin methodology for adaptive solutions to the incompressible Navierâ€“Stokes equations. Journal of Computational Physics, 2015, 301, 456-483.	3.8	33
18	Mixed hp-finite element method for linear elasticity with weakly imposed symmetry. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3682-3701.	6.6	32

#	Article	IF	Citations
19	Parametric finite elements, exact sequences and perfectly matched layers. Computational Mechanics, 2013, 51, 35-45.	4.0	32
20	A DPG method for steady viscous compressible flow. Computers and Fluids, 2014, 98, 69-90.	2.5	32
21	NÃ©dÃ©lec spaces in affine coordinates. Computers and Mathematics With Applications, 2005, 49, 1285-1294.	2.7	31
22	Locally conservative discontinuous Petrovâ€“Galerkin finite elements for fluid problems. Computers and Mathematics With Applications, 2014, 68, 1530-1549.	2.7	31
23	An infinite element for Maxwell's equations. Computer Methods in Applied Mechanics and Engineering, 1998, 164, 77-94.	6.6	30
24	The DPG methodology applied to different variational formulations of linear elasticity. Computer Methods in Applied Mechanics and Engineering, 2016, 309, 579-609.	6.6	30
25	A Unified Discontinuous Petrov--Galerkin Method and Its Analysis for Friedrichs' Systems. SIAM Journal on Numerical Analysis, 2013, 51, 1933-1958.	2.3	29
26	Solution of coupled poroelastic/acoustic/elastic wave propagation problems using automatic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si24.gif" display="inline" overflow="scroll"><mml:mi>h</mml:mi><mml:mi>p</mml:mi></mml:math>-adaptivity. Computer Methods in Applied Mechanics and Engineering, 2014, 281, 54-80.	6.6	29
27	Polynomial Extension Operators. Part I. SIAM Journal on Numerical Analysis, 2008, 46, 3006-3031.	2.3	28
28	Construction of DPG Fortin operators for second order problems. Computers and Mathematics With Applications, 2017, 74, 1964-1980.	2.7	28
29	An Overview of the Discontinuous Petrov Galerkin Method. The IMA Volumes in Mathematics and Its Applications, 2014, , 149-180.	0.5	28
30	An adaptive DPG method for high frequency time-harmonic wave propagation problems. Computers and Mathematics With Applications, 2017, 74, 1999-2017.	2.7	27
31	Polynomial Exact Sequences and Projection-Based Interpolation with Application to Maxwell Equations. Lecture Notes in Mathematics, 2008, , 101-158.	0.2	27
32	High-order polygonal discontinuous Petrovâ€“Galerkin (PolyDPG) methods using ultraweak formulations. Computer Methods in Applied Mechanics and Engineering, 2018, 332, 686-711.	6.6	26
33	A posteriori error estimation for acoustic wave propagation problems. Archives of Computational Methods in Engineering, 2005, 12, 343-389.	10.2	25
34	Feasibility study for 2D frequency-dependent electromagnetic sensing through casing. Geophysics, 2007, 72, F111-F118.	2.6	25
35	Boundary element modeling of the external human auditory system. Journal of the Acoustical Society of America, 2004, 115, 1033-1043.	1.1	24
36	Analysis of the equilibrated residual method for a posteriori error estimation on meshes with hanging nodes. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 3493-3507.	6.6	24

#	Article	IF	Citations
37	Polynomial Extension Operators. Part II. SIAM Journal on Numerical Analysis, 2009, 47, 3293-3324.	2.3	23
38	Discontinuous Petrovâ€“Galerkin method with optimal test functions for thin-body problems in solid mechanics. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1291-1300.	6.6	22
39	Discrete least-squares finite element methods. Computer Methods in Applied Mechanics and Engineering, 2017, 327, 226-255.	6.6	22
40	Mixed hp-Finite Element Method for Linear Elasticity with Weakly Imposed Symmetry: Stability Analysis. SIAM Journal on Numerical Analysis, 2011, 49, 619-641.	2.3	20
41	Coupled variational formulations of linear elasticity and the DPG methodology. Journal of Computational Physics, 2017, 348, 715-731.	3.8	19
42	Quasioptimality of some spectral mixed methods. Journal of Computational and Applied Mathematics, 2004, 167, 163-182.	2.0	17
43	Multiscale modeling using goal-oriented adaptivity and numerical homogenization. Part I: Mathematical formulation and numerical results. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 399-417.	6.6	17
44	Energy-Norm-Based and Goal-Oriented Automatic hp Adaptivity for Electromagnetics: Application to Waveguide Discontinuities. IEEE Transactions on Microwave Theory and Techniques, 2008, 56, 3039-3049.	4.6	14
45	Finite element analysis of the Girkmann problem using the modern hp-version and the classical h-version. Engineering With Computers, 2012, 28, 123-134.	6.1	14
46	Explicit polynomial preserving trace liftings on a triangle. Mathematische Nachrichten, 2009, 282, 640-658.	0.8	12
47	The DPG-star method. Computers and Mathematics With Applications, 2020, 79, 3092-3116.	2.7	12
48	Using a DPG method to validate DMA experimental calibration of viscoelastic materials. Computer Methods in Applied Mechanics and Engineering, 2017, 325, 748-765.	6.6	11
49	Goal-Oriented Adaptive Mesh Refinement for Discontinuous Petrov--Galerkin Methods. SIAM Journal on Numerical Analysis, 2019, 57, 1649-1676.	2.3	11
50	Multiscale modeling using goal-oriented adaptivity and numerical homogenization. Part II: Algorithms for the Mooreâ€“Penrose pseudoinverse. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 418-426.	6.6	10
51	Construction of DPG Fortin operators revisited. Computers and Mathematics With Applications, 2020, 80, 2261-2271.	2.7	10
52	A DPG-based time-marching scheme for linear hyperbolic problems. Computer Methods in Applied Mechanics and Engineering, 2021, 373, 113539.	6.6	9
53	The double adaptivity paradigm. Computers and Mathematics With Applications, 2021, 95, 41-66.	2.7	9
54	On some results concerning the reciprocal formulation for the Signorini's problem. Computers and Mathematics With Applications, 1982, 8, 57-74.	2.7	8

#	Article	IF	Citations
55	Constructively well-posed approximation methods with unity infâ€“sup and continuity constants for partial differential equations. Mathematics of Computation, 2013, 82, 1923-1952.	2.1	8
56	On perfectly matched layers for discontinuous Petrovâ€“Galerkin methods. Computational Mechanics, 2019, 63, 1131-1145.	4.0	8
57	Equivalence between the DPG method and the exponential integrators for linear parabolic problems. Journal of Computational Physics, 2021, 429, 110016.	3.8	8
58	Recent Advances in Least-Squares and Discontinuous Petrovâ€“Galerkin Finite Element Methods. Computational Methods in Applied Mathematics, 2019, 19, 395-397.	0.8	7
59	A 3D DPG Maxwell approach to nonlinear Raman gain in fiber laser amplifiers. Journal of Computational Physics: X, 2019, 2, 100002.	0.7	7
60	Fast Integration of DPG Matrices Based on Sum Factorization for all the Energy Spaces. Computational Methods in Applied Mathematics, 2019, 19, 523-555.	0.8	7
61	An <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e68" altimg="si1.svg"><mml:msup><mml:mrow><mml:mi>L</mml:mi></mml:mrow><mml:mrow><mml:mi>p</mml:mi></mml:mrow></mml method for the convectionâ€“diffusion problem. Computers and Mathematics With Applications, 2021, 95, 172-185.	2.7	6
62	Alternative Enriched Test Spaces in the DPG Method for Singular Perturbation Problems. Computational Methods in Applied Mathematics, 2019, 19, 603-630.	0.8	5
63	Model and computational advancements to full vectorial Maxwell model for studying fiber amplifiers. Computers and Mathematics With Applications, 2021, 85, 30-41.	2.7	5
64	Mixed variable order h-finite element method for linear elasticity with weakly imposed symmetry. Curvilinear elements in 2D. Computational Methods in Applied Mathematics, 2011, 11, 510-539.	0.8	4
65	Sum factorization for fast integration of DPG matrices on prismatic elements. Finite Elements in Analysis and Design, 2020, 172, 103385.	3.2	4
66	An ?[?]-DPG Method with Application to 2D Convection-Diffusion Problems. Computational Methods in Applied Mathematics, 2022, 22, 649-662.	0.8	4
67	A Comparison Between Several Mesh Truncation Methods for hp-Adaptivity in Electromagnetics. , 2007, , .		3
68	A Petrov-Galerkin method for nonlocal convection-dominated diffusion problems. Journal of Computational Physics, 2022, 452, 110919.	3.8	3
69	Fast Parallel Integration for three Dimensional Discontinuous Petrov Galerkin Method. Procedia Computer Science, 2016, 101, 8-17.	2.0	2
70	Error representation of the time-marching DPG scheme. Computer Methods in Applied Mechanics and Engineering, 2022, 391, 114480.	6.6	2
71	The DPG Method for the Convection-Reaction Problem, Revisited. Computational Methods in Applied Mathematics, 2022, .	0.8	2
72	Recent Advances in Least-Squares and Discontinuous Petrovâ€“Galerkin Finite Element Methods. Computers and Mathematics With Applications, 2021, 95, 1-3.	2.7	1

#	Article	IF	Citations
73	Computational Engineering. Oberwolfach Reports, 2015, 12, 2533-2592.	0.0	0
74	Electromagnetics-Maxwell Equations. , 2015, , 417-423.		0