Lourenco Beirao Da Veiga

List of Publications by Year
in descending order

137 papers	9,252 citations	47 h-index	93 g-index
		47006	40979
146 all docs	146 docs citations	146 times ranked	1894 citing authors

#	Article	IF	Citations
1	BASIC PRINCIPLES OF VIRTUAL ELEMENT METHODS. Mathematical Models and Methods in Applied Sciences, 2013, 23, 199-214.	3.3	936
2	ISOGEOMETRIC ANALYSIS: APPROXIMATION, STABILITY AND ERROR ESTIMATES FOR h-REFINED MESHES. Mathematical Models and Methods in Applied Sciences, 2006, 16, 1031-1090.	3.3	556
3	The Hitchhiker's Guide to the Virtual Element Method. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1541-1573.	3.3	502
4	Virtual Elements for Linear Elasticity Problems. SIAM Journal on Numerical Analysis, 2013, 51, 794-812.	2.3	405
5	ISOGEOMETRIC COLLOCATION METHODS. Mathematical Models and Methods in Applied Sciences, 2010, 20, 2075-2107.	3.3	308
6	Virtual Element Method for general second-order elliptic problems on polygonal meshes. Mathematical Models and Methods in Applied Sciences, 2016, 26, 729-750.	3.3	260
7	Divergence free virtual elements for the stokes problem on polygonal meshes. ESAIM: Mathematical Modelling and Numerical Analysis, 2017, 51, 509-535.	1.9	221
8	Mathematical analysis of variational isogeometric methods. Acta Numerica, 2014, 23, 157-287.	10.7	210
9	Stability analysis for the virtual element method. Mathematical Models and Methods in Applied Sciences, 2017, 27, 2557-2594.	3.3	205
10	A fully â€œlocking-freeâ€•isogeometric approach for plane linear elasticity problems: A stream function formulation. Computer Methods in Applied Mechanics and Engineering, 2007, 197, 160-172.	6.6	199
11	A Virtual Element Method for elastic and inelastic problems on polytope meshes. Computer Methods in Applied Mechanics and Engineering, 2015, 295, 327-346.	6.6	198
12	A Stream Virtual Element Formulation of the Stokes Problem on Polygonal Meshes. SIAM Journal on Numerical Analysis, 2014, 52, 386-404.	2.3	195
13	Isogeometric collocation for elastostatics and explicit dynamics. Computer Methods in Applied Mechanics and Engineering, 2012, 249-252, 2-14.	6.6	171
14	A C^1 Virtual Element Method for the Cahn--Hilliard Equation with Polygonal Meshes. SIAM Journal on Numerical Analysis, 2016, 54, 34-56.	2.3	171
15	Virtual Elements for the Navier--Stokes Problem on Polygonal Meshes. SIAM Journal on Numerical Analysis, 2018, 56, 1210-1242.	2.3	160
16	Some estimates for hâ€“pâ€“k-refinement in Isogeometric Analysis. Numerische Mathematik, 2011, 118, 271-305.	1.9	159
17	Mixed virtual element methods for general second order elliptic problems on polygonal meshes. ESAIM: Mathematical Modelling and Numerical Analysis, 2016, 50, 727-747.	1.9	144
18	Virtual element methods for parabolic problems on polygonal meshes. Numerical Methods for Partial Differential Equations, 2015, 31, 2110-2134.	3.6	132

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19	Some basic formulations of the virtual element method (VEM) for finite deformations. Computer Methods in Applied Mechanics and Engineering, 2017, 318, 148-192.	6.6	132
20	Avoiding shear locking for the Timoshenko beam problem via isogeometric collocation methods. Computer Methods in Applied Mechanics and Engineering, 2012, 241-244, 38-51.	6.6	120
21	High-order Virtual Element Method on polyhedral meshes. Computers and Mathematics With Applications, 2017, 74, 1110-1122.	2.7	118
22	Locking-free isogeometric collocation methods for spatial Timoshenko rods. Computer Methods in Applied Mechanics and Engineering, 2013, 263, 113-126.	6.6	114
23	Arbitrary order 2D virtual elements for polygonal meshes: part I, elastic problem. Computational Mechanics, 2017, 60, 355-377.	4.0	111
24	$$H({ext {div}})$$ H (div) and $$H(mathbf{curl})$$ H (curl) -conforming virtual element methods. Numerische Mathematik, 2016, 133, 303-332.	1.9	106
25	A virtual element method with arbitrary regularity. IMA Journal of Numerical Analysis, 2014, 34, 759-781.	2.9	105
26	Arbitrary-Order Nodal Mimetic Discretizations of Elliptic Problems on Polygonal Meshes. SIAM Journal on Numerical Analysis, 2011, 49, 1737-1760.	2.3	95
27	The Mimetic Finite Difference Method for Elliptic Problems. , 2014, , .		91
28	The importance of the exact satisfaction of the incompressibility constraint in nonlinear elasticity: mixed FEMs versus NURBS-based approximations. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 314-323.	6.6	89
29	ANALYSIS-SUITABLE T-SPLINES OF ARBITRARY DEGREE: DEFINITION, LINEAR INDEPENDENCE AND APPROXIMATION PROPERTIES. Mathematical Models and Methods in Applied Sciences, 2013, 23, 1979-2003.	3.3	87
30	An isogeometric method for the Reissnerâ€“Mindlin plate bending problem. Computer Methods in Applied Mechanics and Engineering, 2012, 209-212, 45-53.	6.6	86
31	Residuala posteriorierror estimation for the Virtual Element Method for elliptic problems. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 577-599.	1.9	84
32	Mimetic finite difference method for the Stokes problem on polygonal meshes. Journal of Computational Physics, 2009, 228, 7215-7232.	3.8	77
33	Overlapping Schwarz Methods for Isogeometric Analysis. SIAM Journal on Numerical Analysis, 2012, 50, 1394-1416.	2.3	76
34	The Virtual Element Method with curved edges. ESAIM: Mathematical Modelling and Numerical Analysis, 2019, 53, 375-404.	1.9	76
35	Analysis-Suitable T-splines are Dual-Compatible. Computer Methods in Applied Mechanics and Engineering, 2012, 249-252, 42-51.	6.6	74
36	BDDC PRECONDITIONERS FOR ISOGEOMETRIC ANALYSIS. Mathematical Models and Methods in Applied Sciences, 2013, 23, 1099-1142.	3.3	74

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37	Arbitrary order 2D virtual elements for polygonal meshes: part II, inelastic problem. Computational Mechanics, 2017, 60, 643-657.	4.0	73
38	Serendipity Nodal VEM spaces. Computers and Fluids, 2016, 141, 2-12.	2.5	69
39	Isogeometric collocation methods for the Reissnerâ€“Mindlin plate problem. Computer Methods in Applied Mechanics and Engineering, 2015, 284, 489-507.	6.6	68
40	Isogeometric BDDC Preconditioners with Deluxe Scaling. SIAM Journal of Scientific Computing, 2014, 36, A1118-A1139.	2.8	66
41	A locking-free model for Reissnerâ€“Mindlin plates: Analysis and isogeometric implementation via NURBS and triangular NURPS. Mathematical Models and Methods in Applied Sciences, 2015, 25, 1519-1551.	3.3	64
42	A posteriori error estimates for the Morley plate bending element. Numerische Mathematik, 2007, 106, 165-179.	1.9	57
43	Approximation of incompressible large deformation elastic problems: some unresolved issues. Computational Mechanics, 2013, 52, 1153-1167.	4.0	55
44	Convergence analysis of the high-order mimetic finite difference method. Numerische Mathematik, 2009, 113, 325-356.	1.9	54
45	IsoGeometric analysis using T-splines on two-patch geometries. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1787-1803.	6.6	54
46	Anisotropic NURBS approximation in isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2012, 209-212, 1-11.	6.6	53
47	A virtual element method for the acoustic vibration problem. Numerische Mathematik, 2017, 136, 725-763.	1.9	51
48	On a new integration scheme for von-Mises plasticity with linear hardening. International Journal for Numerical Methods in Engineering, 2003, 56, 1375-1396.	2.8	49
49	A Higher-Order Formulation of the Mimetic Finite Difference Method. SIAM Journal of Scientific Computing, 2008, 31, 732-760.	2.8	49
50	A mimetic discretization method for linear elasticity. ESAIM: Mathematical Modelling and Numerical Analysis, 2010, 44, 231-250.	1.9	49
51	A stability study of some mixed finite elements for large deformation elasticity problems. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1075-1092.	6.6	47
52	Second-order accurate integration algorithms for von-Mises plasticity with a nonlinear kinematic hardening mechanism. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 1827-1846.	6.6	47
53	A Mimetic Discretization of the Stokes Problem with Selected Edge Bubbles. SIAM Journal of Scientific Computing, 2010, 32, 875-893.	2.8	47
54	The Stokes Complex for Virtual Elements with Application to Navierâ€“Stokes Flows. Journal of Scientific Computing, 2019, 81, 990-1018.	2.3	47

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55	A residual based error estimator for the Mimetic Finite Difference method. Numerische Mathematik, 2008, 108, 387-406.	1.9	44
56	An a posteriori error estimator for the mimetic finite difference approximation of elliptic problems. International Journal for Numerical Methods in Engineering, 2008, 76, 1696-1723.	2.8	44
57	An analysis of some mixed-enhanced finite element for plane linear elasticity. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 2947-2968.	6.6	43
58	A Family of Three-Dimensional Virtual Elements with Applications to Magnetostatics. SIAM Journal on Numerical Analysis, 2018, 56, 2940-2962.	2.3	42
59	The Stokes complex for Virtual Elements in three dimensions. Mathematical Models and Methods in Applied Sciences, 2020, 30, 477-512.	3.3	42
60	Error Analysis for a Mimetic Discretization of the Steady Stokes Problem on Polyhedral Meshes. SIAM Journal on Numerical Analysis, 2010, 48, 1419-1443.	2.3	41
61	A novel â€˜optimalâ€™ exponential-based integration algorithm for von-Mises plasticity with linear hardening: Theoretical analysis on yield consistency, accuracy, convergence and numerical investigations. International Journal for Numerical Methods in Engineering, 2006, 67, 449-498.	2.8	40
62	Isogeometric Schwarz preconditioners for linear elasticity systems. Computer Methods in Applied Mechanics and Engineering, 2013, 253, 439-454.	6.6	40
63	Lowest order Virtual Element approximation of magnetostatic problems. Computer Methods in Applied Mechanics and Engineering, 2018, 332, 343-362.	6.6	40
64	Virtual Element approximation of 2D magnetostatic problems. Computer Methods in Applied Mechanics and Engineering, 2017, 327, 173-195.	6.6	38
65	Virtual elements for a shear-deflection formulation of Reissnerâ€“Mindlin plates. Mathematics of Computation, 2018, 88, 149-178.	2.1	36
66	Adaptive Selection of Primal Constraints for Isogeometric BDDC Deluxe Preconditioners. SIAM Journal of Scientific Computing, 2017, 39, A281-A302.	2.8	35
67	Exponential convergence of the hp virtual element method in presence of corner singularities. Numerische Mathematik, 2018, 138, 581-613.	1.9	35
68	A simple and effective gradient recovery scheme and a posteriori error estimator for the Virtual Element Method (VEM). Computer Methods in Applied Mechanics and Engineering, 2019, 347, 21-58.	6.6	35
69	Curvilinear Virtual Elements for 2D solid mechanics applications. Computer Methods in Applied Mechanics and Engineering, 2020, 359, 112667.	6.6	34
70	Curvilinear virtual elements for contact mechanics. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113394.	6.6	31
71	A Family of ${C}^0$ Finite Elements For Kirchhoff Plates I: Error Analysis. SIAM Journal on Numerical Analysis, 2007, 45, 2047-2071.	2.3	30
72	A posteriori error estimation and adaptivity in hp virtual elements. Numerische Mathematik, 2019, 143, 139-175.	1.9	30

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73	Hierarchical A Posteriori Error Estimators for the Mimetic Discretization of Elliptic Problems. SIAM Journal on Numerical Analysis, 2013, 51, 654-675.	2.3	29
74	Serendipity Virtual Elements for General Elliptic Equations in Three Dimensions. Chinese Annals of Mathematics Series B, 2018, 39, 315-334.	0.4	28
75	A mimetic discretization of elliptic obstacle problems. Mathematics of Computation, 2013, 82, 1379-1400.	2.1	27
76	Robust BDDC Preconditioners for Reissnerâ€“Mindlin Plate Bending Problems and MITC Elements. SIAM Journal on Numerical Analysis, 2010, 47, 4214-4238.	2.3	25
77	Integration schemes for von-Mises plasticity models based on exponential maps: numerical investigations and theoretical considerations. International Journal for Numerical Methods in Engineering, 2005, 64, 1133-1165.	2.8	24
78	A <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e744" altimg="si615.svg"><mml:msup><mml:mrow><mml:mi>C</mml:mi></mml:mrow><mml:mrow><mml:mn>1</mml:mn></mml:mrow></ Virtual Element Method on polyhedral meshes. Computers and Mathematics With Applications, 2020, 79, 1936-1955.	2.7	24
79	Towards improving the MITC6 triangular shell element. Computers and Structures, 2007, 85, 1589-1610.	4.4	23
80	Polynomial preserving virtual elements with curved edges. Mathematical Models and Methods in Applied Sciences, 2020, 30, 1555-1590.	3.3	23
81	Mimetic finite difference methods for Hamiltonian wave equations in 2D. Computers and Mathematics With Applications, 2017, 74, 1123-1141.	2.7	23
82	A posteriori error analysis for the Morley plate element with general boundary conditions. International Journal for Numerical Methods in Engineering, 2010, 83, 1-26.	2.8	22
83	A mimetic discretization of the Reissnerâ€“Mindlin plate bending problem. Numerische Mathematik, 2011, 117, 425-462.	1.9	22
84	Finite Element Methods for a Modified Reissner--Mindlin Free Plate Model. SIAM Journal on Numerical Analysis, 2004, 42, 1572-1591.	2.3	20
85	A family of C0 finite elements for Kirchhoff plates II: Numerical results. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1850-1864.	6.6	20
86	Mixed isogeometric analysis of strongly coupled diffusion in porous materials. International Journal for Numerical Methods in Engineering, 2018, 114, 28-46.	2.8	20
87	Virtual elements for Maxwell's equations. Computers and Mathematics With Applications, 2022, 116, 82-99.	2.7	20
88	Mimetic finite differences for nonlinear and control problems. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1457-1493.	3.3	19
89	Approximation estimates for isogeometric spaces in multipatch geometries. Numerical Methods for Partial Differential Equations, 2015, 31, 422-438.	3.6	19
90	Positive definite balancing Neumannâ€“Neumann preconditioners for nearly incompressible elasticity. Numerische Mathematik, 2006, 104, 271-296.	1.9	17

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91	On the asymptotic behaviour of shells of revolution in free vibration. Computational Mechanics, 2009, 44, 45-60.	4.0	17
92	Generalized midpoint integration algorithms forJ2 plasticity with linear hardening. International Journal for Numerical Methods in Engineering, 2007, 72, 422-463.	2.8	16
93	Overlapping Schwarz preconditioners for isogeometric collocation methods. Computer Methods in Applied Mechanics and Engineering, 2014, 278, 239-253.	6.6	16
94	Post processing of solution and flux for the nodal mimetic finite difference method. Numerical Methods for Partial Differential Equations, 2015, 31, 336-363.	3.6	16
95	Virtual Element Implementation for General Elliptic Equations. Lecture Notes in Computational Science and Engineering, 2016, , 39-71.	0.3	16
96	A virtual element method for the miscible displacement of incompressible fluids in porous media. Computer Methods in Applied Mechanics and Engineering, 2021, 375, 113649.	6.6	16
97	ASYMPTOTIC AND NUMERICAL ANALYSIS OF THE EIGENVALUE PROBLEM FOR A CLAMPED CYLINDRICAL SHELL. Mathematical Models and Methods in Applied Sciences, 2008, 18, 1983-2002.	3.3	14
98	An adaptive curved virtual element method for the statistical homogenization of random fibre-reinforced composites. Finite Elements in Analysis and Design, 2020, 177, 103418.	3.2	14
99	A-priori and a-posteriori error analysis for a family of Reissnerâ€“Mindlin plate elements. BIT Numerical Mathematics, 2008, 48, 189-213.	2.0	12
100	Numerical analysis of a lockingâ€free mixed finite element method for a bending moment formulation of Reissnerâ€Mindlin plate model. Numerical Methods for Partial Differential Equations, 2013, 29, 40-63.	3.6	12
101	Vorticity-stabilized virtual elements for the Oseen equation. Mathematical Models and Methods in Applied Sciences, 2021, 31, 3009-3052.	3.3	12
102	Arbitrary-order pressure-robust DDR and VEM methods for the Stokes problem on polyhedral meshes. Computer Methods in Applied Mechanics and Engineering, 2022, 397, 115061.	6.6	12
103	Remarks on the asymptotic behaviour of Koiter shells. Computers and Structures, 2002, 80, 735-745.	4.4	11
104	AN INTERPOLATION THEORY APPROACH TO SHELL EIGENVALUE PROBLEMS. Mathematical Models and Methods in Applied Sciences, 2008, 18, 2003-2018.	3.3	11
105	Free vibrations for some Koiter shells of revolution. Applied Mathematics Letters, 2008, 21, 1245-1248.	2.7	10
106	A Posteriori Error Analysis for the Postprocessed MITC Plate Elements. SIAM Journal on Numerical Analysis, 2013, 51, 1-23.	2.3	10
107	Asymptotic Energy Behavior of Two Classical Intermediate Benchmark Shell Problems. Mathematical Models and Methods in Applied Sciences, 2003, 13, 1279-1302.	3.3	9
108	Equilibrium analysis of an immersed rigid leaflet by the virtual element method. Mathematical Models and Methods in Applied Sciences, 2021, 31, 1323-1372.	3.3	9

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109	Serendipity face and edge VEM spaces. Atti Della Accademia Nazionale Dei Lincei, Classe Di Scienze Fisiche, Matematiche E Naturali, Rendiconti Lincei Matematica E Applicazioni, 2017, 28, 143-180.	0.6	8
110	Numerical evaluation of the asymptotic energy behavior of intermediate shells with application to two classical benchmark tests. Computers and Structures, 2004, 82, 525-534.	4.4	7
111	Asymptotic study of the solution for pinched cylindrical shells. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1113-1139.	6.6	7
112	Numerical results for mimetic discretization of Reissnerâ€“Mindlin plate problems. Calcolo, 2013, 50, 209-237.	1.1	7
113	Interpolation and stability properties of low-order face and edge virtual element spaces. IMA Journal of Numerical Analysis, 2023, 43, 828-851.	2.9	7
114	Uniform error estimates for a class of intermediate cylindrical shell problems. Numerische Mathematik, 2004, 96, 661-689.	1.9	6
115	Optimal error bounds for the MITC4 plate bending element. Calcolo, 2004, 41, 227-245.	1.1	4
116	SUPG-stabilized virtual elements for diffusion-convection problems: a robustness analysis. ESAIM: Mathematical Modelling and Numerical Analysis, 2021, 55, 2233-2258.	1.9	4
117	Isogeometric collocation mixed methods for rods. Discrete and Continuous Dynamical Systems - Series S, 2016, 9, 33-42.	1.1	4
118	BDDC preconditioners for Naghdi shell problems and MITC9 elements. Computers and Structures, 2012, 102-103, 28-41.	4.4	3
119	A posteriori boundary control for FEM approximation of elliptic eigenvalue problems. Numerical Methods for Partial Differential Equations, 2012, 28, 369-388.	3.6	2
120	An Introduction to the Numerical Analysis of Isogeometric Methods. SEMA SIMAI Springer Series, 2016, , 3-69.	0.7	2
121	Parallel Sum Primal Spaces for Isogeometric Deluxe BDDC Preconditioners. Lecture Notes in Computational Science and Engineering, 2017, , 17-29.	0.3	2
122	Recent results and perspectives for virtual element methods. Mathematical Models and Methods in Applied Sciences, 2021, 31, 2819-2824.	3.3	2
123	Stability of Some Finite Element Methods for Finite Elasticity Problems. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2009, , 179-206.	0.6	1
124	Numerical Testing on Return Map Algorithms for von-Mises Plasticity with Nonlinear Hardening based on a Generalized Midpoint Integration Scheme. , 2006, , 55-55.		0
125	A New Integration Algorithm for the von-Mises Elasto-Plastic Model. Lecture Notes in Applied and Computational Mechanics, 2012, , 233-258.	2.2	0
126	Quasi-optimality of BDDC Methods for MITC Reissner-Mindlin Problems. Lecture Notes in Computational Science and Engineering, 2013, , 639-646.	0.3	0

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127	Diffusion problem on generalized polyhedral meshes. , 2014, , 339-370.		0
128	The diffusion problem in primal form. , 2014, , 155-195.		0
129	Mimetic inner products and reconstruction operators. , 2014, , 67-89.		0
130	The diffusion problem in mixed form. , 2014, , 117-154.		0
131	Dual Compatible Splines on Nontensor Product Meshes. Springer Proceedings in Mathematics and Statistics, 2014, , 15-26.	0.2	0
132	Mimetic discretization of bilinear forms. , 2014, , 91-113.		0
133	Elasticity and plates. , 2014, , 263-287.		0
134	The Stokes problem. , 2014, , 221-260.		0
135	Foundations of mimetic finite difference method. , 2014, , 41-65.		0
136	BDDC Deluxe for Isogeometric Analysis. Lecture Notes in Computational Science and Engineering, 2016, , 15-28.	0.3	0
137	An Introduction to the Numerical Analysis of Isogeometric Methods. Lecture Notes in Mathematics, 2016, , 87-154.	0.2	0