John E Dolbow

List of Publications by Year
in descending order

72 papers	10,954 citations	87843 38 h-index	102432 66 g-index
76 all docs	76 docs citations	76 times ranked	5662 citing authors

#	Article	IF	Citations
1	A finite element method for crack growth without remeshing. International Journal for Numerical Methods in Engineering, 1999, 46, 131-150.	1.5	5,036
2	Arbitrary branched and intersecting cracks with the extended finite element method. International Journal for Numerical Methods in Engineering, 2000, 48, 1741-1760.	1.5	792
3	An extended finite element method for modeling crack growth with frictional contact. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 6825-6846.	3.4	457
4	Discontinuous enrichment in finite elements with a partition of unity method. Finite Elements in Analysis and Design, 2000, 36, 235-260.	1.7	344
5	Numerical integration of the Galerkin weak form in meshfree methods. Computational Mechanics, 1999, 23, 219-230.	2.2	340
6	On the computation of mixed-mode stress intensity factors in functionally graded materials. International Journal of Solids and Structures, 2002, 39, 2557-2574.	1.3	239
7	Modeling fracture in Mindlinâ€"Reissner plates with the extended finite element method. International Journal of Solids and Structures, 2000, 37, 7161-7183.	1.3	229
8	Imposing Dirichlet boundary conditions with Nitsche's method and splineâ€based finite elements. International Journal for Numerical Methods in Engineering, 2010, 83, 877-898.	1.5	222
9	An efficient finite element method for embedded interface problems. International Journal for Numerical Methods in Engineering, 2009, 78, 229-252.	1.5	200
10	Phase Separation in Biological Membranes: Integration of Theory and Experiment. Annual Review of Biophysics, 2010, 39, 207-226.	4.5	188
11	Design of stiff, tough and stretchy hydrogel composites via nanoscale hybrid crosslinking and macroscale fiber reinforcement. Soft Matter, 2014, 10, 7519-7527.	1.2	155
12	Domain integral formulation for stress intensity factor computation along curved three-dimensional interface cracks. International Journal of Solids and Structures, 1998, 35, 1763-1783.	1.3	151
13	On strategies for enforcing interfacial constraints and evaluating jump conditions with the extended finite element method. International Journal for Numerical Methods in Engineering, 2004, 61, 2508-2535.	1.5	148
14	A phase-field formulation for dynamic cohesive fracture. Computer Methods in Applied Mechanics and Engineering, 2019, 348, 680-711.	3.4	146
15	A robust Nitscheâ€™s formulation for interface problems. Computer Methods in Applied Mechanics and Engineering, 2012, 225-228, 44-54.	3.4	144
16	A hybrid extended finite element/level set method for modeling phase transformations. International Journal for Numerical Methods in Engineering, 2002, 54, 1209-1233.	1.5	139
17	Chemically induced swelling of hydrogels. Journal of the Mechanics and Physics of Solids, 2004, 52, 51-84.	2.3	139
18	Volumetric locking in the element free Galerkin method. International Journal for Numerical Methods in Engineering, 1999, 46, 925-942.	1.5	132

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19	Effect of out-of-plane properties of a polyimide film on the stress fields in microelectronic structures. Mechanics of Materials, 1996, 23, 311-321.	1.7	116
20	Solving thermal and phase change problems with the eXtended finite element method. Computational Mechanics, 2002, 28, 339-350.	2.2	109
21	Extended finite element method in computational fracture mechanics: a retrospective examination. International Journal of Fracture, 2015, 196, 189-206.	1.1	106
22	A bubble-stabilized finite element method for Dirichlet constraints on embedded interfaces. International Journal for Numerical Methods in Engineering, 2007, 69, 772-793.	1.5	88
23	Switchable Friction of Stimulus-Responsive Hydrogels. Langmuir, 2007, 23, 250-257.	1.6	74
24	A finite element method for crack growth without remeshing. International Journal for Numerical Methods in Engineering, 1999, 46, 131-150.	1.5	73
25	Robust imposition of Dirichlet boundary conditions on embedded surfaces. International Journal for Numerical Methods in Engineering, 2012, 90, 40-64.	1.5	70
26	A numerical strategy for investigating the kinetic response of stimulus-responsive hydrogels. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 4447-4480.	3.4	65
27	Kinetics of thermally induced swelling of hydrogels. International Journal of Solids and Structures, 2006, 43, 1878-1907.	1.3	65
28	A mortared finite element method for frictional contact on arbitrary interfaces. Computational Mechanics, 2006, 39, 223-235.	2.2	63
29	Enrichment of enhanced assumed strain approximations for representing strong discontinuities: addressing volumetric incompressibility and the discontinuous patch test. International Journal for Numerical Methods in Engineering, 2004, 59, 47-67.	1.5	62
30	A robust Nitsche's formulation for interface problems with spline-based finite elements. International Journal for Numerical Methods in Engineering, 2015, 104, 676-696.	1.5	61
31	On methods for stabilizing constraints over enriched interfaces in elasticity. International Journal for Numerical Methods in Engineering, 2009, 78, 1009-1036.	1.5	58
32	A Nitsche stabilized finite element method for frictional sliding on embedded interfaces. Part I: Single interface. Computer Methods in Applied Mechanics and Engineering, 2014, 268, 417-436.	3.4	57
33	Ceramic nuclear fuel fracture modeling with the extended finite element method. Engineering Fracture Mechanics, 2020, 223, 106713.	2.0	47
34	Numerical study of the grain-size dependent Young's modulus and Poisson's ratio of bulk nanocrystalline materials. International Journal of Solids and Structures, 2012, 49, 3942-3952.	1.3	46
35	An optimization-based phase-field method for continuous-discontinuous crack propagation. International Journal for Numerical Methods in Engineering, 2018, 116, 1-20.	1.5	44
36	A phase-field model of fracture with frictionless contact and random fracture properties: Application to thin-film fracture and soil desiccation. Computer Methods in Applied Mechanics and Engineering, 2020, 368, 113106.	3.4	44

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37	Analysis of an efficient finite element method for embedded interface problems. Computational Mechanics, 2010, 46, 205-211.	2.2	43
38	Residual-free bubbles for embedded Dirichlet problems. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 3751-3759.	3.4	41
39	Stable imposition of stiff constraints in explicit dynamics for embedded finite element methods. International Journal for Numerical Methods in Engineering, 2012, 92, 206-228.	1.5	34
40	On the use of effective properties for the fracture analysis of microstructured materials. Engineering Fracture Mechanics, 2002, 69, 1607-1634.	2.0	30
41	An extended/generalized phaseâ€field finite element method for crack growth with globalâ€local enrichment. International Journal for Numerical Methods in Engineering, 2020, 121, 2534-2557.	1.5	27
42	Data-driven enhancement of fracture paths in random composites. Mechanics Research Communications, 2020, 103, 103443.	1.0	25
43	A variational phase-field model For ductile fracture with coalescence dissipation. Computational Mechanics, 2021, 68, 311-335.	2.2	24
44	A finite element method for crack growth without remeshing. , 1999, 46, 131.		22
45	A new method for simulating rigid body motion in incompressible twoâ€phase flow. International Journal for Numerical Methods in Fluids, 2011, 67, 713-732.	0.9	21
46	A narrow-band gradient-augmented level set method for multiphase incompressible flow. Journal of Computational Physics, 2014, 273, 12-37.	1.9	21
47	A Nitsche stabilized finite element method for frictional sliding on embedded interfaces. Part II: Intersecting interfaces. Computer Methods in Applied Mechanics and Engineering, 2013, 267, 318-341.	3.4	20
48	A numerical method for a second-gradient theory of incompressible fluid flow. Journal of Computational Physics, 2007, 223, 551-570.	1.9	19
49	An assumed-gradient finite element method for the level set equation. International Journal for Numerical Methods in Engineering, 2005, 64, 1009-1032.	1.5	18
50	Influence of surface tension in the surfactant-driven fracture of closely-packed particulate monolayers. Soft Matter, 2017, 13, 5832-5841.	1.2	18
51	A theory of amorphous viscoelastic solids undergoing finite deformations with application to hydrogels. International Journal of Solids and Structures, 2007, 44, 3973-3997.	1.3	17
52	Adaptive refinement of hierarchical Bâ€spline finite elements with an efficient data transfer algorithm. International Journal for Numerical Methods in Engineering, 2015, 102, 233-256.	1.5	17
53	Microdomain evolution on giant unilamellar vesicles. Biomechanics and Modeling in Mechanobiology, 2013, 12, 597-615.	1.4	15
54	A modified moment-fitted integration scheme for X-FEM applications with history-dependent material data. Computational Mechanics, 2018, 62, 233-252.	2.2	12

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55	Attaining regularization length insensitivity in phase-field models of ductile failure. Computer Methods in Applied Mechanics and Engineering, 2021, 384, 113936.	3.4	12
56	An edge-bubble stabilized finite element method for fourth-order parabolic problems. Finite Elements in Analysis and Design, 2009, 45, 485-494.	1.7	11
57	Impact of the inherent separation of scales in the Navier–Stokes-$\alpha\beta$ equations. Physical Review E, 2009, 79, 045307.	0.8	9
58	Coupling volume-of-fluid based interface reconstructions with the extended finite element method. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 439-447.	3.4	7
59	A fully coupled mixed finite element method for surfactants spreading on thin liquid films. Computer Methods in Applied Mechanics and Engineering, 2019, 345, 429-453.	3.4	7
60	Arbitrary branched and intersecting cracks with the extended finite element method. , 2000, 48, 1741.		6
61	Point Defects in Nematic Gels: The Case for Hedgehogs. Archive for Rational Mechanics and Analysis, 2005, 177, 21-51.	1.1	5
62	The Thick Level-Set model for dynamic fragmentation. Engineering Fracture Mechanics, 2017, 172, 39-60.	2.0	5
63	Remeshing strategies for large deformation problems with frictional contact and nearly incompressible materials. International Journal for Numerical Methods in Engineering, 2017, 109, 1289-1314.	1.5	4
64	Scale-bridging with the extended/generalized finite element method for linear elastodynamics. Computational Mechanics, 2021, 68, 295.	2.2	4
65	Toward robust and accurate contact solvers for large deformation applications: a remapping/adaptivity framework for mortar-based methods. Computational Mechanics, 2014, 54, 53-70.	2.2	3
66	Modeling dendritic solidification with the extended finite element method. , 2001, , 1135-1138.		3
67	Computational modeling of surface phenomena in soft-wet materials. International Journal of Solids and Structures, 2009, 46, 1334-1344.	1.3	1
68	The Navier–Stokes-$\alpha\beta$ equations as a platform for a spectral multigrid method to solve the Navier–Stokes equations. Computers and Fluids, 2011, 44, 102-110.	1.3	1
69	The Melosh Competition. Finite Elements in Analysis and Design, 2007, 43, 345.	1.7	0
70	The Melosh Competition. Finite Elements in Analysis and Design, 2008, 44, 227.	1.7	0
71	The Melosh competition. Finite Elements in Analysis and Design, 2009, 45, 237.	1.7	0
72	Going to new lengths: Studying the Navier--Stokes-$\alpha\eta$ equations using the strained spiral vortex model. Discrete and Continuous Dynamical Systems - Series B, 2014, 19, 2207-2225.	0.5	0