

Michael Ortiz

List of Publications by Year in descending order

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294
papers

23,749
citations

8755

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147
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all docs

301
docs citations

301
times ranked

9051
citing authors

#	ARTICLE	IF	CITATIONS
1	Computational modelling of impact damage in brittle materials. International Journal of Solids and Structures, 1996, 33, 2899-2938.	2.7	1,692
2	Quasicontinuum analysis of defects in solids. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1996, 73, 1529-1563.	0.6	1,231
3	Finite-deformation irreversible cohesive elements for three-dimensional crack-propagation analysis. International Journal for Numerical Methods in Engineering, 1999, 44, 1267-1282.	2.8	1,175
4	An analysis of a new class of integration algorithms for elastoplastic constitutive relations. International Journal for Numerical Methods in Engineering, 1986, 23, 353-366.	2.8	704
5	Accuracy and stability of integration algorithms for elastoplastic constitutive relations. International Journal for Numerical Methods in Engineering, 1985, 21, 1561-1576.	2.8	554
6	A constitutive theory for the inelastic behavior of concrete. Mechanics of Materials, 1985, 4, 67-93.	3.2	543
7	Subdivision surfaces: a new paradigm for thin-shell finite-element analysis. International Journal for Numerical Methods in Engineering, 2000, 47, 2039-2072.	2.8	530
8	A finite element method for localized failure analysis. Computer Methods in Applied Mechanics and Engineering, 1987, 61, 189-214.	6.6	510
9	Modelling and simulation of high-speed machining. International Journal for Numerical Methods in Engineering, 1995, 38, 3675-3694.	2.8	456
10	Data-driven computational mechanics. Computer Methods in Applied Mechanics and Engineering, 2016, 304, 81-101.	6.6	437
11	The variational formulation of viscoplastic constitutive updates. Computer Methods in Applied Mechanics and Engineering, 1999, 171, 419-444.	6.6	435
12	Nonconvex energy minimization and dislocation structures in ductile single crystals. Journal of the Mechanics and Physics of Solids, 1999, 47, 397-462.	4.8	429
13	An analysis of the quasicontinuum method. Journal of the Mechanics and Physics of Solids, 2001, 49, 1899-1923.	4.8	323
14	Localmaximum-entropy approximation schemes: a seamless bridge between finite elements and meshfree methods. International Journal for Numerical Methods in Engineering, 2006, 65, 2167-2202.	2.8	309
15	Computational modelling of single crystals. Modelling and Simulation in Materials Science and Engineering, 1993, 1, 225-263.	2.0	306
16	Variational integrators and the Newmark algorithm for conservative and dissipative mechanical systems. International Journal for Numerical Methods in Engineering, 2000, 49, 1295-1325.	2.8	300
17	Formulation of implicit finite element methods for multiplicative finite deformation plasticity. International Journal for Numerical Methods in Engineering, 1990, 29, 483-514.	2.8	289
18	Mixed Atomistic and Continuum Models of Deformation in Solids. Langmuir, 1996, 12, 4529-4534.	3.5	283

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19	Adaptive Lagrangian modelling of ballistic penetration of metallic targets. Computer Methods in Applied Mechanics and Engineering, 1997, 142, 269-301.	6.6	263
20	A phase-field theory of dislocation dynamics, strain hardening and hysteresis in ductile single crystals. Journal of the Mechanics and Physics of Solids, 2002, 50, 2597-2635.	4.8	252
21	A quantum-mechanically informed continuum model of hydrogen embrittlement. Journal of the Mechanics and Physics of Solids, 2004, 52, 2403-2430.	4.8	246
22	A MATERIAL-INDEPENDENT METHOD FOR EXTENDING STRESS UPDATE ALGORITHMS FROM SMALL-TO STRAIN PLASTICITY TO FINITE PLASTICITY WITH MULTIPLICATIVE KINEMATICS. Engineering Computations, 1992, 9, 437-451.	1.4	244
23	Nanoindentation and incipient plasticity. Journal of Materials Research, 1999, 14, 2233-2250.	2.6	243
24	Fully C1-conforming subdivision elements for finite deformation thin-shell analysis. International Journal for Numerical Methods in Engineering, 2001, 51, 813-833.	2.8	219
25	Quasicontinuum simulation of fracture at the atomic scale. Modelling and Simulation in Materials Science and Engineering, 1998, 6, 607-638.	2.0	203
26	Asynchronous Variational Integrators. Archive for Rational Mechanics and Analysis, 2003, 167, 85-146.	2.4	194
27	Adaptive mesh refinement in strain localization problems. Computer Methods in Applied Mechanics and Engineering, 1991, 90, 781-804.	6.6	191
28	Three-dimensional cohesive modeling of dynamic mixed-mode fracture. International Journal for Numerical Methods in Engineering, 2001, 52, 97-120.	2.8	191
29	Symplectic-energy-momentum preserving variational integrators. Journal of Mathematical Physics, 1999, 40, 3353-3371.	1.1	188
30	Elastoplastic finite element analysis of three-dimensional fatigue crack growth in aluminum shafts subjected to axial loading. International Journal of Solids and Structures, 1999, 36, 2231-2258.	2.7	183
31	Variational time integrators. International Journal for Numerical Methods in Engineering, 2004, 60, 153-212.	2.8	183
32	Microcrack coalescence and macroscopic crack growth initiation in brittle solids. International Journal of Solids and Structures, 1988, 24, 231-250.	2.7	178
33	A variational formulation of the coupled thermo-mechanical boundary-value problem for general dissipative solids. Journal of the Mechanics and Physics of Solids, 2006, 54, 401-424.	4.8	166
34	A theory of subgrain dislocation structures. Journal of the Mechanics and Physics of Solids, 2000, 48, 2077-2114.	4.8	165
35	Model-Free Data-Driven inelasticity. Computer Methods in Applied Mechanics and Engineering, 2019, 350, 81-99.	6.6	162
36	An Efficient Adaptive Procedure for Three-Dimensional Fragmentation Simulations. Engineering With Computers, 2002, 18, 148-159.	6.1	160

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37	Error estimation and adaptive meshing in strongly nonlinear dynamic problems. Computer Methods in Applied Mechanics and Engineering, 1999, 172, 203-240.	6.6	157
38	Title is missing!. International Journal of Fracture, 1999, 95, 279-297.	2.2	156
39	Data Driven Computing with noisy material data sets. Computer Methods in Applied Mechanics and Engineering, 2017, 326, 622-641.	6.6	150
40	Effect of Indenter-Radius Size on Au(001) Nanoindentation. Physical Review Letters, 2003, 90, 226102.	7.8	144
41	Biomechanics of traumatic brain injury. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 4692-4701.	6.6	135
42	Ductile fracture by vacancy condensation in f.c.c. single crystals. Acta Materialia, 1996, 44, 427-436.	7.9	132
43	Data-driven computing in dynamics. International Journal for Numerical Methods in Engineering, 2018, 113, 1697-1710.	2.8	131
44	The morphology and folding patterns of buckling-driven thin-film blisters. Journal of the Mechanics and Physics of Solids, 1994, 42, 531-559.	4.8	128
45	Nucleation of dislocations from crack tips under mixed modes of loading: Implications for brittle against ductile behaviour of crystals. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1995, 72, 415-451.	0.6	128
46	Optimal transportation meshfree approximation schemes for fluid and plastic flows. International Journal for Numerical Methods in Engineering, 2010, 83, 1541-1579.	2.8	127
47	An eigenerosion approach to brittle fracture. International Journal for Numerical Methods in Engineering, 2012, 92, 694-714.	2.8	126
48	Three-dimensional finite-element simulation of the dynamic Brazilian tests on concrete cylinders. International Journal for Numerical Methods in Engineering, 2000, 48, 963-994.	2.8	123
49	Statistical Properties of Residual Stresses and Intergranular Fracture in Ceramic Materials. Journal of Applied Mechanics, Transactions ASME, 1993, 60, 77-84.	2.2	122
50	Eigenfracture: An Eigendeformation Approach to Variational Fracture. Multiscale Modeling and Simulation, 2009, 7, 1237-1266.	1.6	122
51	Effect of Strain Hardening and Rate Sensitivity on the Dynamic Growth of a Void in a Plastic Material. Journal of Applied Mechanics, Transactions ASME, 1992, 59, 48-53.	2.2	121
52	Finite element analysis of nonsmooth contact. Computer Methods in Applied Mechanics and Engineering, 1999, 180, 1-26.	6.6	117
53	Quasi-continuum orbital-free density-functional theory: A route to multi-million atom non-periodic DFT calculation. Journal of the Mechanics and Physics of Solids, 2007, 55, 697-718.	4.8	117
54	A Continuum Theory of Crack Shielding in Ceramics. Journal of Applied Mechanics, Transactions ASME, 1987, 54, 54-58.	2.2	116

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55	Variational integrators for constrained dynamical systems. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2008, 88, 677-708.	1.6	115
56	Nonsmooth Lagrangian Mechanics and Variational Collision Integrators. SIAM Journal on Applied Dynamical Systems, 2003, 2, 381-416.	1.6	114
57	Discrete mechanics and optimal control for constrained systems. Optimal Control Applications and Methods, 2010, 31, 505-528.	2.1	113
58	Three dimensional cohesive-element analysis and experiments of dynamic fracture in C300 steel. International Journal of Solids and Structures, 2000, 37, 3733-3760.	2.7	109
59	Dislocation Microstructures and the Effective Behavior of Single Crystals. Archive for Rational Mechanics and Analysis, 2005, 176, 103-147.	2.4	109
60	Finite element analysis of strain localization in frictional materials. International Journal for Numerical and Analytical Methods in Geomechanics, 1989, 13, 53-74.	3.3	106
61	Lagrangian finite element analysis of Newtonian fluid flows. International Journal for Numerical Methods in Engineering, 1998, 43, 607-619.	2.8	102
62	The computation of the exponential and logarithmic mappings and their first and second linearizations. International Journal for Numerical Methods in Engineering, 2001, 52, 1431.	2.8	102
63	Non-periodic finite-element formulation of Kohn-Sham density functional theory. Journal of the Mechanics and Physics of Solids, 2010, 58, 256-280.	4.8	101
64	A variational approach to coarse graining of equilibrium and non-equilibrium atomistic description at finite temperature. Journal of the Mechanics and Physics of Solids, 2008, 56, 1417-1449.	4.8	97
65	Symmetry-preserving return mapping algorithms and incrementally extremal paths: A unification of concepts. International Journal for Numerical Methods in Engineering, 1989, 28, 1839-1853.	2.8	93
66	Nanovoid Cavitation by Dislocation Emission in Aluminum. Physical Review Letters, 2004, 93, 165503.	7.8	93
67	A continuum model of kinetic roughening and coarsening in thin films. Journal of the Mechanics and Physics of Solids, 1999, 47, 697-730.	4.8	90
68	A Finite-Deformation Constitutive Model of Bulk Metallic Glass Plasticity. Computational Mechanics, 2006, 37, 194-204.	4.0	88
69	A cohesive approach to thin-shell fracture and fragmentation. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 2604-2618.	6.6	87
70	A variational boundary integral method for the analysis of 3-D cracks of arbitrary geometry modelled as continuous distributions of dislocation loops. International Journal for Numerical Methods in Engineering, 1993, 36, 3675-3701.	2.8	85
71	Data-Driven multiscale modeling in mechanics. Journal of the Mechanics and Physics of Solids, 2021, 147, 104239.	4.8	84
72	Study and validation of a variational theory of thermo-mechanical coupling in finite visco-plasticity. International Journal of Solids and Structures, 2010, 47, 705-715.	2.7	82

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73	Coarse-graining and renormalization of atomistic binding relations and universal macroscopic cohesive behavior. Journal of the Mechanics and Physics of Solids, 2002, 50, 1727-1741.	4.8	80
74	Discrete Crystal Elasticity and Discrete Dislocations in Crystals. Archive for Rational Mechanics and Analysis, 2005, 178, 149-226.	2.4	80
75	Optimal Uncertainty Quantification. SIAM Review, 2013, 55, 271-345.	9.5	79
76	Nanovoid deformation in aluminum under simple shear. Acta Materialia, 2005, 53, 2893-2900.	7.9	78
77	Nanomechanics of Defects in Solids. Advances in Applied Mechanics, 1998, 36, 1-79.	2.3	74
78	Computational micromechanics. Computational Mechanics, 1996, 18, 321-338.	4.0	73
79	Time-discretized variational formulation of non-smooth frictional contact. International Journal for Numerical Methods in Engineering, 2002, 53, 1801-1829.	2.8	73
80	A variationalr-adaption and shape-optimization method for finite-deformation elasticity. International Journal for Numerical Methods in Engineering, 2004, 61, 1-21.	2.8	72
81	On spatial and material covariant balance laws in elasticity. Journal of Mathematical Physics, 2006, 47, 042903.	1.1	72
82	Data-Driven Problems in Elasticity. Archive for Rational Mechanics and Analysis, 2018, 229, 79-123.	2.4	72
83	Selective ablation of cancer cells with low intensity pulsed ultrasound. Applied Physics Letters, 2020, 116, .	3.3	71
84	A variational constitutive model for porous metal plasticity. Computational Mechanics, 2006, 37, 142-152.	4.0	70
85	A variational constitutive model for soft biological tissues. Journal of Biomechanics, 2008, 41, 1458-1466.	2.1	70
86	Data-driven fracture mechanics. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113390.	6.6	69
87	Computational assessment of ballistic impact on a high strength structural steel/polyurea composite plate. Computational Mechanics, 2009, 43, 525-534.	4.0	67
88	A study of solid-particle erosion of metallic targets. International Journal of Impact Engineering, 2002, 27, 347-358.	5.0	65
89	A constrained sequential-lamination algorithm for the simulation of sub-grid microstructure in martensitic materials. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 2823-2843.	6.6	65
90	Solid modeling aspects of three-dimensional fragmentation. Engineering With Computers, 1998, 14, 287-308.	6.1	64

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91	Finite element simulation of dynamic fracture and fragmentation of glass rods. Computer Methods in Applied Mechanics and Engineering, 2000, 183, 3-14.	6.6	64
92	Density-functional-theory-based local quasicontinuum method: Prediction of dislocation nucleation. Physical Review B, 2004, 70, .	3.2	64
93	Universal binding-energy relation for crystals that accounts for surface relaxation. Physical Review B, 2004, 69, .	3.2	64
94	Model-free data-driven methods in mechanics: material data identification and solvers. Computational Mechanics, 2019, 64, 381-393.	4.0	64
95	A class of minimum principles for characterizing the trajectories and the relaxation of dissipative systems. ESAIM - Control, Optimisation and Calculus of Variations, 2008, 14, 494-516.	1.3	62
96	Smooth, second order, non-negative meshfree approximants selected by maximum entropy. International Journal for Numerical Methods in Engineering, 2009, 79, 1605-1632.	2.8	61
97	Effective Cohesive Behavior of Layers of Interatomic Planes. Archive for Rational Mechanics and Analysis, 2006, 180, 151-182.	2.4	59
98	Three-dimensional modeling of intersonic shear-crack growth in asymmetrically loaded unidirectional composite plates. International Journal of Solids and Structures, 2002, 39, 6135-6157.	2.7	58
99	Non-periodic finite-element formulation of orbital-free density functional theory. Journal of the Mechanics and Physics of Solids, 2007, 55, 669-696.	4.8	57
100	Mixed Atomistic-Continuum Models of Material Behavior: The Art of Transcending Atomistics and Informing Continua. MRS Bulletin, 2001, 26, 216-221.	3.5	56
101	Discrete dislocations in graphene. Journal of the Mechanics and Physics of Solids, 2010, 58, 710-734.	4.8	54
102	An analysis of non-planar crack growth under mixed mode loading. International Journal of Solids and Structures, 1994, 31, 2167-2193.	2.7	53
103	Rigorous verification, validation, uncertainty quantification and certification through concentration-of-measure inequalities. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 4591-4609.	6.6	50
104	Effect of atomic scale plasticity on hydrogen diffusion in iron: Quantum mechanically informed and on-the-fly kinetic Monte Carlo simulations. Journal of Materials Research, 2008, 23, 2757-2773.	2.6	50
105	A discrete mechanics approach to the Cosserat rod theory-Part 1: static equilibria. International Journal for Numerical Methods in Engineering, 2011, 85, 31-60.	2.8	50
106	Nanovoid nucleation by vacancy aggregation and vacancy-cluster coarsening in high-purity metallic single crystals. Physical Review B, 2011, 84, .	3.2	50
107	On the numerical implementation of variational arbitrary Lagrangian-Eulerian (VALE) formulations. International Journal for Numerical Methods in Engineering, 2006, 67, 1272-1289.	2.8	48
108	Tetrahedral composite finite elements. International Journal for Numerical Methods in Engineering, 2002, 53, 1337-1351.	2.8	47

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109	A variational Cam-clay theory of plasticity. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 2645-2666.	6.6	47
110	Vacancy clustering and prismatic dislocation loop formation in aluminum. Physical Review B, 2007, 76, .	3.2	47
111	Coarse-graining Kohn-Sham Density Functional Theory. Journal of the Mechanics and Physics of Solids, 2013, 61, 38-60.	4.8	46
112	Effect of prestress on the stability of electrode-electrolyte interfaces during charging in lithium batteries. Journal of the Mechanics and Physics of Solids, 2016, 95, 92-111.	4.8	45
113	Finite-temperature extension of the quasicontinuum method using Langevin dynamics: entropy losses and analysis of errors. Modelling and Simulation in Materials Science and Engineering, 2010, 18, 015003.	2.0	43
114	Verification and validation of the Optimal Transportation Meshfree (OTM) simulation of terminal ballistics. International Journal of Impact Engineering, 2012, 42, 25-36.	5.0	43
115	Maximal Crack Tip Shielding by Microcracking. Journal of Applied Mechanics, Transactions ASME, 1989, 56, 279-283.	2.2	42
116	A finite element method for analyzing localization in rate dependent solids at finite strains. Computer Methods in Applied Mechanics and Engineering, 1989, 73, 235-258.	6.6	42
117	Triangular composite finite elements. International Journal for Numerical Methods in Engineering, 2000, 47, 287-316.	2.8	42
118	The mechanics of deformation-induced subgrain-dislocation structures in metallic crystals at large strains. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2003, 459, 3131-3158.	2.1	42
119	A three-dimensional multiscale model of intergranular hydrogen-assisted cracking. Philosophical Magazine, 2010, 90, 2939-2963.	1.6	42
120	Surface effects and the size-dependent hardening and strengthening of nickel micropillars. Journal of the Mechanics and Physics of Solids, 2012, 60, 1432-1446.	4.8	42
121	The two-dimensional structure of dynamic boundary layers and shear bands in thermoviscoplastic solids. Journal of the Mechanics and Physics of Solids, 1996, 44, 251-292.	4.8	41
122	Variationalh-adaption in finite deformation elasticity and plasticity. International Journal for Numerical Methods in Engineering, 2007, 72, 505-523.	2.8	41
123	HotQC simulation of nanovoid growth under tension in copper. International Journal of Fracture, 2012, 174, 75-85.	2.2	41
124	Effect of Brittle Fracture in a Metaconcrete Slab under Shock Loading. Journal of Engineering Mechanics - ASCE, 2016, 142, .	2.9	40
125	Finite-element simulation of firearm injury to the human cranium. Computational Mechanics, 2003, 31, 115-121.	4.0	39
126	A director-field model of DNA packaging in viral capsids. Journal of the Mechanics and Physics of Solids, 2003, 51, 1815-1847.	4.8	39

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127	Atomistic long-term simulation of heat and mass transport. Journal of the Mechanics and Physics of Solids, 2014, 73, 242-268.	4.8	39
128	Model-free data-driven computational mechanics enhanced by tensor voting. Computer Methods in Applied Mechanics and Engineering, 2021, 373, 113499.	6.6	39
129	The influence of crack trapping on the toughness of fiber reinforced composites. Journal of the Mechanics and Physics of Solids, 1998, 46, 1815-1833.	4.8	37
130	Tetrahedral mesh generation based on node insertion in crystal lattice arrangements and advancing-front-Delaunay triangulation. Computer Methods in Applied Mechanics and Engineering, 2000, 187, 543-569.	6.6	37
131	Three-dimensional adaptive meshing by subdivision and edge-collapse in finite-deformation dynamic-plasticity problems with application to adiabatic shear banding. International Journal for Numerical Methods in Engineering, 2002, 53, 1101-1126.	2.8	37
132	The Line-Tension Approximation as the Dilute Limit of Linear-Elastic Dislocations. Archive for Rational Mechanics and Analysis, 2015, 218, 699-755.	2.4	37
133	A multi-phase field model of planar dislocation networks. Modelling and Simulation in Materials Science and Engineering, 2004, 12, 1087-1097.	2.0	36
134	A class of variational strain-localization finite elements. International Journal for Numerical Methods in Engineering, 2005, 62, 1013-1037.	2.8	36
135	A recursive-faulting model of distributed damage in confined brittle materials. Journal of the Mechanics and Physics of Solids, 2006, 54, 1972-2003.	4.8	36
136	Minimum principles for the trajectories of systems governed by rate problems. Journal of the Mechanics and Physics of Solids, 2008, 56, 1885-1904.	4.8	35
137	Modeling fracture by material-point erosion. International Journal of Fracture, 2013, 184, 3-16.	2.2	35
138	Shock-induced subgrain microstructures as possible homogenous sources of hot spots and initiation sites in energetic polycrystals. Physical Review B, 2010, 81, .	3.2	34
139	Finite-temperature non-equilibrium quasi-continuum analysis of nanovoid growth in copper at low and high strain rates. Mechanics of Materials, 2015, 90, 253-267.	3.2	34
140	Data-Driven Finite Elasticity. Archive for Rational Mechanics and Analysis, 2020, 237, 1-33.	2.4	34
141	Efficient data structures for model-free data-driven computational mechanics. Computer Methods in Applied Mechanics and Engineering, 2021, 382, 113855.	6.6	34
142	Material-point erosion simulation of dynamic fragmentation of metals. Mechanics of Materials, 2015, 80, 288-297.	3.2	33
143	Finite element analysis of transient strain localization phenomena in frictional solids. International Journal for Numerical and Analytical Methods in Geomechanics, 1990, 14, 93-124.	3.3	32
144	A computational study of the influence of thermal softening on ballistic penetration in metals. International Journal of Impact Engineering, 2001, 25, 787-803.	5.0	32

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145	On the Γ -convergence of discrete dynamics and variational integrators. Journal of Nonlinear Science, 2004, 14, 279-296.	2.1	32
146	Relaxed incremental variational formulation for damage at large strains with application to fiber-reinforced materials and materials with truss-like microstructures. International Journal for Numerical Methods in Engineering, 2012, 92, 551-570.	2.8	32
147	Diamond elements: a finite element/discrete-mechanics approximation scheme with guaranteed optimal convergence in incompressible elasticity. International Journal for Numerical Methods in Engineering, 2007, 72, 253-294.	2.8	31
148	Fracture and fragmentation of simplicial finite element meshes using graphs. International Journal for Numerical Methods in Engineering, 2008, 73, 1547-1570.	2.8	31
149	Numerical modelling and experimental validation of dynamic fracture events along weak planes. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 3833-3840.	6.6	30
150	Fracture Paths from Front Kinetics: Relaxation and Rate Independence. Archive for Rational Mechanics and Analysis, 2009, 193, 539-583.	2.4	30
151	The Influence of Grain Size on the Toughness of Monolithic Ceramics. Journal of Engineering Materials and Technology, Transactions of the ASME, 1993, 115, 228-236.	1.4	29
152	Finite element solver for data-driven finite strain elasticity. Computer Methods in Applied Mechanics and Engineering, 2021, 379, 113756.	6.6	29
153	Concurrent Multiscale Computing of Deformation Microstructure by Relaxation and Local Enrichment with Application to Single-Crystal Plasticity. Multiscale Modeling and Simulation, 2007, 6, 135-157.	1.6	27
154	A mesh-free convex approximation scheme for Kohn-Sham density functional theory. Journal of Computational Physics, 2011, 230, 5226-5238.	3.8	27
155	Oncotripsy: Targeting cancer cells selectively via resonant harmonic excitation. Journal of the Mechanics and Physics of Solids, 2016, 92, 164-175.	4.8	27
156	Investigation of the influence of viscoelasticity on oncotripsy. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 314-322.	6.6	27
157	Proliferation of twinning in hexagonal close-packed metals: Application to magnesium. Journal of the Mechanics and Physics of Solids, 2018, 112, 368-384.	4.8	27
158	Modeling fracture by material-point erosion. , 2014, , 3-16.		27
159	Three-dimensional director-field predictions of viral DNA packing arrangements. Computational Mechanics, 2005, 35, 146-152.	4.0	26
160	An analytical model of interfacial energy based on a lattice-matching interatomic energy. Journal of the Mechanics and Physics of Solids, 2016, 89, 174-193.	4.8	26
161	Rigorous model-based uncertainty quantification with application to terminal ballistics, part I: Systems with controllable inputs and small scatter. Journal of the Mechanics and Physics of Solids, 2012, 60, 983-1001.	4.8	24
162	Finite element analysis of geometrically necessary dislocations in crystal plasticity. International Journal for Numerical Methods in Engineering, 2013, 93, 66-79.	2.8	24

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163	Dynamic behavior of nano-voids in magnesium under hydrostatic tensile stress. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 065003.	2.0	24
164	Topology and polarity of dislocation cores dictate the mechanical strength of monolayer MoS ₂ . Applied Materials Today, 2019, 15, 34-42.	4.3	24
165	Transcranial focused ultrasound generates skull-conducted shear waves: Computational model and implications for neuromodulation. Applied Physics Letters, 2020, 117, 033702.	3.3	24
166	Performance of the star-shaped flyer in the study of brittle materials: Three dimensional computer simulations and experimental observations. Journal of Applied Physics, 1992, 72, 3451-3457.	2.5	23
167	An Analysis of Crack Trapping by Residual Stresses in Brittle Solids. Journal of Applied Mechanics, Transactions ASME, 1993, 60, 175-182.	2.2	23
168	A Theory of Anharmonic Lattice Statics for Analysis of Defective Crystals. Journal of Elasticity, 2006, 86, 41-83.	1.9	23
169	A discrete mechanics approach to dislocation dynamics in BCC crystals. Journal of the Mechanics and Physics of Solids, 2007, 55, 615-647.	4.8	23
170	Hydrogen-induced transgranular to intergranular fracture transition in bi-crystalline nickel. Scripta Materialia, 2021, 204, 114122.	5.2	23
171	Crack propagation in monolithic ceramics under mixed mode loading. International Journal of Fracture, 1990, 44, 233-258.	2.2	23
172	Convergent meshfree approximation schemes of arbitrary order and smoothness. Computer Methods in Applied Mechanics and Engineering, 2012, 221-222, 83-103.	6.6	22
173	A linearized porous brittle damage material model with distributed frictional-cohesive faults. Engineering Geology, 2016, 215, 10-24.	6.3	22
174	Rigorous model-based uncertainty quantification with application to terminal ballistics—Part II. Systems with uncontrollable inputs and large scatter. Journal of the Mechanics and Physics of Solids, 2012, 60, 1002-1019.	4.8	21
175	A sublinear-scaling approach to density-functional-theory analysis of crystal defects. Journal of the Mechanics and Physics of Solids, 2016, 95, 530-556.	4.8	21
176	Diffusive molecular dynamics simulations of lithiation of silicon nanopillars. Journal of the Mechanics and Physics of Solids, 2018, 115, 123-141.	4.8	21
177	Microstructure evolution in the equal channel angular extrusion process. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 5177-5194.	6.6	20
178	A micromechanical damage and fracture model for polymers based on fractional strain-gradient elasticity. Journal of the Mechanics and Physics of Solids, 2015, 74, 175-195.	4.8	20
179	Multiscale modeling of materials: Computing, data science, uncertainty and goal-oriented optimization. Mechanics of Materials, 2022, 165, 104156.	3.2	20
180	Efficiency of group implicit concurrent algorithms for transient finite element analysis. International Journal for Numerical Methods in Engineering, 1989, 28, 2761-2776.	2.8	19

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181	Stacking faults and partial dislocations in graphene. Philosophical Magazine, 2012, 92, 2004-2021.	1.6	19
182	Elastic response of water-filled fiber composite tubes under shock wave loading. International Journal of Solids and Structures, 2013, 50, 473-486.	2.7	19
183	A massively parallel implementation of the Optimal Transportation Meshfree method for explicit solid dynamics. International Journal for Numerical Methods in Engineering, 2014, 100, 40-61.	2.8	19
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