Ellen Kuhl

List of Publications by Year
in descending order

287 papers	15,334 citations	14644 66 h-index	28275 105 g-index
318 all docs	318 docs citations	318 times ranked	10977 citing authors

#	Article	IF	Citations
1	Mechanical properties of gray and white matter brain tissue by indentation. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 46, 318-330.	1.5	499
2	Mechanical characterization of human brain tissue. Acta Biomaterialia, 2017, 48, 319-340.	4.1	423
3	Perspectives on biological growth and remodeling. Journal of the Mechanics and Physics of Solids, 2011, 59, 863-883.	2.3	371
4	Integrating machine learning and multiscale modelingâ€"perspectives, challenges, and opportunities in the biological, biomedical, and behavioral sciences. Npj Digital Medicine, 2019, 2, 115.	5.7	319
5	Mechanics of the brain: perspectives, challenges, and opportunities. Biomechanics and Modeling in Mechanobiology, 2015, 14, 931-965.	1.4	289
6	The Living Heart Project: A robust and integrative simulator for human heart function. European Journal of Mechanics, A/Solids, 2014, 48, 38-47.	2.1	260
7	Outbreak dynamics of COVID-19 in Europe and the effect of travel restrictions. Computer Methods in Biomechanics and Biomedical Engineering, 2020, 23, 710-717.	0.9	234
8	Fifty Shades of Brain: A Review on the Mechanical Testing and Modeling of Brain Tissue. Archives of Computational Methods in Engineering, 2020, 27, 1187-1230.	6.0	215
9	A finite element method for the computational modelling of cohesive cracks. International Journal for Numerical Methods in Engineering, 2005, 63, 276-289.	1.5	209
10	Physical biology of human brain development. Frontiers in Cellular Neuroscience, 2015, 9, 257.	1.8	204
11	The role of mechanics during brain development. Journal of the Mechanics and Physics of Solids, 2014, 72, 75-92.	2.3	197
12	Brain stiffness increases with myelin content. Acta Biomaterialia, 2016, 42, 265-272.	4.1	194
13	A multiscale model for eccentric and concentric cardiac growth through sarcomerogenesis. Journal of Theoretical Biology, 2010, 265, 433-442.	0.8	192
14	Electromechanics of the heart: a unified approach to the strongly coupled excitationâ€"contraction problem. Computational Mechanics, 2010, 45, 227-243.	2.2	178
15	Frontiers in growth and remodeling. Mechanics Research Communications, 2012, 42, 1-14.	1.0	178
16	Physics-Informed Neural Networks for Cardiac Activation Mapping. Frontiers in Physics, 2020, 8, .	1.0	174
17	A discontinuous Galerkin method for the Cahnâ€"Hilliard equation. Journal of Computational Physics, 2006, 218, 860-877.	1.9	167
18	Multiphysics and multiscale modelling, dataâ€"model fusion and integration of organ physiology in the clinic: ventricular cardiac mechanics. Interface Focus, 2016, 6, 20150083.	1.5	165

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19	A mechanical model predicts morphological abnormalities in the developing human brain. Scientific Reports, 2014, 4, 5644.	1.6	164
20	Multiscale Modeling Meets Machine Learning: What Can We Learn?. Archives of Computational Methods in Engineering, 2021, 28, 1017-1037.	6.0	164
21	Remodeling of biological tissue: Mechanically induced reorientation of a transversely isotropic chain network. Journal of the Mechanics and Physics of Solids, 2005, 53, 1552-1573.	2.3	163
22	Using 3D Printing to Create Personalized Brain Models for Neurosurgical Training and Preoperative Planning. World Neurosurgery, 2016, 90, 668-674.	0.7	145
23	The reproduction number of COVID-19 and its correlation with public health interventions. Computational Mechanics, 2020, 66, 1035-1050.	2.2	143
24	Growth and remodelling of living tissues: perspectives, challenges and opportunities. Journal of the Royal Society Interface, 2019, 16, 20190233.	1.5	142
25	Computational modeling of arterial wall growth. Biomechanics and Modeling in Mechanobiology, 2007, 6, 321-331.	1.4	139
26	A family of hyperelastic models for human brain tissue. Journal of the Mechanics and Physics of Solids, 2017, 106, 60-79.	2.3	130
27	Growing matter: A review of growth in living systems. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 29, 529-543.	1.5	128
28	A generic approach towards finite growth with examples of athlete's heart, cardiac dilation, and cardiac wall thickening. Journal of the Mechanics and Physics of Solids, 2010, 58, 1661-1680.	2.3	125
29	Viscoelastic parameter identification of human brain tissue. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 74, 463-476.	1.5	124
30	Rheological characterization of human brain tissue. Acta Biomaterialia, 2017, 60, 315-329.	4.1	124
31	Outbreak dynamics of COVID-19 in China and the United States. Biomechanics and Modeling in Mechanobiology, 2020, 19, 2179-2193.	1.4	122
32	An anisotropic gradient damage model for quasi-brittle materials. Computer Methods in Applied Mechanics and Engineering, 2000, 183, 87-103.	3.4	119
33	Use it or lose it: multiscale skeletal muscle adaptation to mechanical stimuli. Biomechanics and Modeling in Mechanobiology, 2015, 14, 195-215.	1.4	119
34	Computational modeling of passive myocardium. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 1-12.	1.0	117
35	Growing skin: A computational model for skin expansion in reconstructive surgery. Journal of the Mechanics and Physics of Solids, 2011, 59, 2177-2190.	2.3	113
36	Segmental Aortic Stiffening Contributes to Experimental Abdominal Aortic Aneurysm Development. Circulation, 2015, 131, 1783-1795.	1.6	113

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37	Passive Stretch Induces Structural and Functional Maturation of Engineered Heart Muscle as Predicted by Computational Modeling. Stem Cells, 2018, 36, 265-277.	1.4	111
38	Computational modeling of growth. Computational Mechanics, 2003, 32, 71-88.	2.2	97
39	Generating fibre orientation maps in human heart models using Poisson interpolation. Computer Methods in Biomechanics and Biomedical Engineering, 2014, 17, 1217-1226.	0.9	97
40	Constitutive Modeling of Brain Tissue: Current Perspectives. Applied Mechanics Reviews, 2016, 68, .	4.5	97
41	On the effect of prestrain and residual stress in thin biological membranes. Journal of the Mechanics and Physics of Solids, 2013, 61, 1955-1969.	2.3	95
42	Pattern Selection in Growing Tubular Tissues. Physical Review Letters, 2014, 113, 248101.	2.9	93
43	A hybrid discontinuous Galerkin/interface method for the computational modelling of failure. Communications in Numerical Methods in Engineering, 2004, 20, 511-519.	1.3	92
44	Stretching Skeletal Muscle: Chronic Muscle Lengthening through Sarcomerogenesis. PLoS ONE, 2012, 7, e45661.	1.1	92
45	Multiscale Computational Models for Optogenetic Control of Cardiac Function. Biophysical Journal, 2011, 101, 1326-1334.	0.2	91
46	On the biomechanics and mechanobiology of growing skin. Journal of Theoretical Biology, 2012, 297, 166-175.	0.8	91
47	Growth on demand: Reviewing the mechanobiology of stretched skin. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 28, 495-509.	1.5	91
48	An arbitrary Lagrangian Eulerian finite-element approach for fluid-structure interaction phenomena. International Journal for Numerical Methods in Engineering, 2003, 57, 117-142.	1.5	90
49	Isogeometric Kirchhoffâ€“Love shell formulations for biological membranes. Computer Methods in Applied Mechanics and Engineering, 2015, 293, 328-347.	3.4	89
50	A continuum model for remodeling in living structures. Journal of Materials Science, 2007, 42, 8811-8823.	1.7	88
51	Period-doubling and period-tripling in growing bilayered systems. Philosophical Magazine, 2015, 95, 3208-3224.	0.7	88
52	Precision medicine in human heart modeling. Biomechanics and Modeling in Mechanobiology, 2021, 20, 803-831.	1.4	88
53	Stress concentrations in fractured compact bone simulated with a special class of anisotropic gradient elasticity. International Journal of Solids and Structures, 2010, 47, 1099-1107.	1.3	86
54	Computational modeling of growth: systemic and pulmonary hypertension in the heart. Biomechanics and Modeling in Mechanobiology, 2011, 10, 799-811.	1.4	84

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55	Multiphysics of Prionlike Diseases: Progression and Atrophy. Physical Review Letters, 2018, 121, 158101.	2.9	83
56	A physics-based model explains the prion-like features of neurodegeneration in Alzheimerâ€™s disease, Parkinsonâ€™s disease, and amyotrophic lateral sclerosis. Journal of the Mechanics and Physics of Solids, 2019, 124, 264-281.	2.3	83
57	A fully implicit finite element method for bidomain models of cardiac electromechanics. Computer Methods in Applied Mechanics and Engineering, 2013, 253, 323-336.	3.4	82
58	Computational modeling of cardiac electrophysiology: A novel finite element approach. International Journal for Numerical Methods in Engineering, 2009, 79, 156-178.	1.5	81
59	Emerging Brain Morphologies from Axonal Elongation. Annals of Biomedical Engineering, 2015, 43, 1640-1653.	1.3	81
60	Generating Purkinje networks in the human heart. Journal of Biomechanics, 2016, 49, 2455-2465.	0.9	81
61	Stretching skin: The physiological limit and beyond. International Journal of Non-Linear Mechanics, 2012, 47, 938-949.	1.4	79
62	The Shrinking Brain: Cerebral Atrophy Following Traumatic Brain Injury. Annals of Biomedical Engineering, 2019, 47, 1941-1959.	1.3	79
63	Modeling threeâ€dimensional crack propagationâ€"A comparison of crack path tracking strategies. International Journal for Numerical Methods in Engineering, 2008, 76, 1328-1352.	1.5	78
64	Material properties of the ovine mitral valve anterior leaflet in vivo from inverse finite element analysis. American Journal of Physiology - Heart and Circulatory Physiology, 2008, 295, H1141-H1149.	1.5	78
65	Systems-based approaches toward wound healing. Pediatric Research, 2013, 73, 553-563.	1.1	76
66	Machine learning in drug development: Characterizing the effect of 30 drugs on the QT interval using Gaussian process regression, sensitivity analysis, and uncertainty quantification. Computer Methods in Applied Mechanics and Engineering, 2019, 348, 313-333.	3.4	76
67	Heterogeneous growth-induced prestrain in the heart. Journal of Biomechanics, 2015, 48, 2080-2089.	0.9	75
68	Modeling Pathologies of Diastolic and Systolic Heart Failure. Annals of Biomedical Engineering, 2016, 44, 112-127.	1.3	73
69	Prion-like spreading of Alzheimerâ€™s disease within the brainâ€™s connectome. Journal of the Royal Society Interface, 2019, 16, 20190356.	1.5	71
70	Massâ€" and volumeâ€"specific views on thermodynamics for open systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2003, 459, 2547-2568.	1.0	70
71	Mechanics of the mitral valve. Biomechanics and Modeling in Mechanobiology, 2013, 12, 1053-1071.	1.4	70
72	Brain stiffens post mortem. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 84, 88-98.	1.5	70

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73	Are college campuses superspreaders? A data-driven modeling study. Computer Methods in Biomechanics and Biomedical Engineering, 2021, 24, 1136-1145.	0.9	67
74	An ALE formulation based on spatial and material settings of continuum mechanics. Part 1: Generic hyperelastic formulation. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 4207-4222.	3.4	66
75	Mitral Valve Annuloplasty. Annals of Biomedical Engineering, 2012, 40, 750-761.	1.3	66
76	A Novel Method for Quantifying the In-Vivo Mechanical Effect of Material Injected Into a Myocardial Infarction. Annals of Thoracic Surgery, 2011, 92, 935-941.	0.7	64
77	In vivo dynamic strains of the ovine anterior mitral valve leaflet. Journal of Biomechanics, 2011, 44, 1149-1157.	0.9	64
78	Characterization of indentation response and stiffness reduction of bone using a continuum damage model. Journal of the Mechanical Behavior of Biomedical Materials, 2010, 3, 189-202.	1.5	63
79	The emergence of extracellular matrix mechanics and cell traction forces as important regulators of cellular self-organization. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1-13.	1.4	63
80	Stressâ€“strain behavior of mitral valve leaflets in the beating ovine heart. Journal of Biomechanics, 2009, 42, 1909-1916.	0.9	62
81	Characterization of Mitral Valve Annular Dynamics in the Beating Heart. Annals of Biomedical Engineering, 2011, 39, 1690-1702.	1.3	60
82	Growing skin: tissue expansion in pediatric forehead reconstruction. Biomechanics and Modeling in Mechanobiology, 2012, 11, 855-867.	1.4	60
83	Instabilities of soft films on compliant substrates. Journal of the Mechanics and Physics of Solids, 2017, 98, 350-365.	2.3	58
84	Visualizing the invisible: The effect of asymptomatic transmission on the outbreak dynamics of COVID-19. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113410.	3.4	58
85	The mechanical importance of myelination in the central nervous system. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 76, 119-124.	1.5	57
86	Towards microstructure-informed material models for human brain tissue. Acta Biomaterialia, 2020, 104, 53-65.	4.1	57
87	On the mechanics of continua with boundary energies and growing surfaces. Journal of the Mechanics and Physics of Solids, 2013, 61, 1446-1463.	2.3	56
88	Neuromechanics. Advances in Applied Mechanics, 2015, , 79-139.	1.4	56
89	Theory and numerics of geometrically non-linear open system mechanics. International Journal for Numerical Methods in Engineering, 2003, 58, 1593-1615.	1.5	55
90	The importance of mechano-electrical feedback and inertia in cardiac electromechanics. Computer Methods in Applied Mechanics and Engineering, 2017, 320, 352-368.	3.4	55

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91	Evidence of adaptive mitral leaflet growth. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 15, 208-217.	1.5	54
92	Human Cardiac Function Simulator for the Optimal Design of a Novel Annuloplasty Ring with a Sub-valvular Element for Correction of Ischemic Mitral Regurgitation. Cardiovascular Engineering and Technology, 2015, 6, 105-116.	0.7	54
93	Is it safe to lift COVID-19 travel bans? The Newfoundland story. Computational Mechanics, 2020, 66, 1081-1092.	2.2	54
94	Growth and remodeling of the left ventricle: A case study of myocardial infarction and surgical ventricular restoration. Mechanics Research Communications, 2012, 42, 134-141.	1.0	53
95	Magnetic resonance elastography of the brain: A comparison between pigs and humans. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 77, 702-710.	1.5	53
96	Using machine learning to characterize heart failure across the scales. Biomechanics and Modeling in Mechanobiology, 2019, 18, 1987-2001.	1.4	53
97	A thermodynamically consistent approach to microplane theory. Part II. Dissipation and inelastic constitutive modeling. International Journal of Solids and Structures, 2001, 38, 2933-2952.	1.3	50
98	An ALE formulation based on spatial and material settings of continuum mechanics. Part 2: Classification and applications. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 4223-4245.	3.4	50
99	Morphoelastic control of gastro-intestinal organogenesis: Theoretical predictions and numerical insights. Journal of the Mechanics and Physics of Solids, 2015, 78, 493-510.	2.3	50
100	Size and curvature regulate pattern selection in the mammalian brain. Extreme Mechanics Letters, 2015, 4, 193-198.	2.0	50
101	Sex Matters: A Comprehensive Comparison of Female and Male Hearts. Frontiers in Physiology, 2022, 13, 831179.	1.3	50
102	On deformational and configurational mechanics of micromorphic hyperelasticity â€“ Theory and computation. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 4027-4044.	3.4	49
103	Data-driven modeling of COVID-19â€"Lessons learned. Extreme Mechanics Letters, 2020, 40, 100921.	2.0	49
104	Rigid, Complete Annuloplasty Rings Increase Anterior Mitral Leaflet Strains in the Normal Beating Ovine Heart. Circulation, 2011, 124, S81-96.	1.6	48
105	The generalized Hill model: A kinematic approach towards active muscle contraction. Journal of the Mechanics and Physics of Solids, 2014, 72, 20-39.	2.3	48
106	Modeling and simulation of viscous electro-active polymers. European Journal of Mechanics, A/Solids, 2014, 48, 112-128.	2.1	48
107	Tri-layer wrinkling as a mechanism for anchoring center initiation in the developing cerebellum. Soft Matter, 2016, 12, 5613-5620.	1.2	48
108	Active stiffening of mitral valve leaflets in the beating heart. American Journal of Physiology - Heart and Circulatory Physiology, 2009, 296, H1766-H1773.	1.5	47

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109	Computational aspects of growth-induced instabilities through eigenvalue analysis. Computational Mechanics, 2015, 56, 405-420.	2.2	47
110	Symmetry Breaking in Wrinkling Patterns: Gyri Are Universally Thicker than Sulci. Physical Review Letters, 2018, 121, 228002.	2.9	47
111	Parameter identification of gradient enhanced damage models with the finite element method. European Journal of Mechanics, A/Solids, 1999, 18, 819-835.	2.1	46
112	On skin microrelief and the emergence of expression micro-wrinkles. Soft Matter, 2018, 14, 1292-1300.	1.2	44
113	On spatial and material settings of thermo-hyperelastodynamics for open systems. Acta Mechanica, 2003, 160, 179-217.	1.1	42
114	Global and local mobility as a barometer for COVID-19 dynamics. Biomechanics and Modeling in Mechanobiology, 2021, 20, 651-669.	1.4	42
115	Atrial and ventricular fibrillation: computational simulation of spiral waves in cardiac tissue. Archive of Applied Mechanics, 2010, 80, 569-580.	1.2	41
116	On the Role of Mechanics in Chronic Lung Disease. Materials, 2013, 6, 5639-5658.	1.3	41
117	Computational modeling of hypertensive growth in the human carotid artery. Computational Mechanics, 2014, 53, 1183-1196.	2.2	41
118	Characterization of living skin using multi-view stereo and isogeometric analysis. Acta Biomaterialia, 2014, 10, 4822-4831.	4.1	41
119	Secondary instabilities modulate cortical complexity in the mammalian brain. Philosophical Magazine, 2015, 95, 3244-3256.	0.7	41
120	On the implementation of finite deformation gradient-enhanced damage models. Computational Mechanics, 2019, 64, 847-877.	2.2	41
121	Computational modeling of electrochemical coupling: A novel finite element approach towards ionic models for cardiac electrophysiology. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 3139-3158.	3.4	40
122	Computational modeling of chemo-bio-mechanical coupling: a systems-biology approach toward wound healing. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 13-30.	0.9	40
123	Computational modeling of muscular thin films for cardiac repair. Computational Mechanics, 2009, 43, 535-544.	2.2	39
124	A three-constituent damage model for arterial clamping in computer-assisted surgery. Biomechanics and Modeling in Mechanobiology, 2013, 12, 123-136.	1.4	39
125	Computational modeling of skin: Using stress profiles as predictor for tissue necrosis in reconstructive surgery. Computers and Structures, 2014, 143, 32-39.	2.4	39
126	A computational model that predicts reverse growth in response to mechanical unloading. Biomechanics and Modeling in Mechanobiology, 2015, 14, 217-229.	1.4	39

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127	Wrinkling instabilities in soft bilayered systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160163.	1.6	39
128	The mechanics of decompressive craniectomy: Personalized simulations. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 180-195.	3.4	39
129	Simulation of strain localization with gradient enhanced damage models. Computational Materials Science, 1999, 16, 176-185.	1.4	38
130	Towards the algorithmic treatment of 3D strong discontinuities. Communications in Numerical Methods in Engineering, 2006, 23, 97-108.	1.3	38
131	Timeâ€dependent fibre reorientation of transversely isotropic continuaâ€"Finite element formulation and consistent linearization. International Journal for Numerical Methods in Engineering, 2008, 73, 1413-1433.	1.5	38
132	Patient-Specific Airway Wall Remodeling in Chronic Lung Disease. Annals of Biomedical Engineering, 2015, 43, 2538-2551.	1.3	38
133	Natural element analysis of the Cahnâ€"Hilliard phase-field model. Computational Mechanics, 2010, 46, 471-493.	2.2	37
134	Microtubule Polymerization and Cross-Link Dynamics Explain Axonal Stiffness and Damage. Biophysical Journal, 2018, 114, 201-212.	0.2	37
135	Bayesian Physics Informed Neural Networks for real-world nonlinear dynamical systems. Computer Methods in Applied Mechanics and Engineering, 2022, 402, 115346.	3.4	37
136	On the mechanics of growing thin biological membranes. Journal of the Mechanics and Physics of Solids, 2014, 63, 128-140.	2.3	36
137	Regional stiffening of the mitral valve anterior leaflet in the beating ovine heart. Journal of Biomechanics, 2009, 42, 2697-2701.	0.9	35
138	Elastosis during airway wall remodeling explains multiple co-existing instability patterns. Journal of Theoretical Biology, 2016, 403, 209-218.	0.8	35
139	Spatially-extended nucleation-aggregation-fragmentation models for the dynamics of prion-like neurodegenerative protein-spreading in the brain and its connectome. Journal of Theoretical Biology, 2020, 486, 110102.	0.8	35
140	Protein-protein interactions in neurodegenerative diseases: A conspiracy theory. PLoS Computational Biology, 2020, 16, e1008267.	1.5	35
141	On high heels and short muscles: A multiscale model for sarcomere loss in the gastrocnemius muscle. Journal of Theoretical Biology, 2015, 365, 301-310.	0.8	34
142	A virtual sizing tool for mitral valve annuloplasty. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e02788.	1.0	34
143	Aspects of non-associated single crystal plasticity: Influence of non-schmid effects and localization analysis. International Journal of Solids and Structures, 1998, 35, 4437-4456.	1.3	33
144	Computational optogenetics: A novel continuum framework for the photoelectrochemistry of living systems. Journal of the Mechanics and Physics of Solids, 2012, 60, 1158-1178.	2.3	33

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145	Computational modelling of electrocardiograms: repolarisation and T-wave polarity in the human heart. Computer Methods in Biomechanics and Biomedical Engineering, 2014, 17, 986-996.	0.9	33
146	Material forces in open system mechanics. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 2357-2381.	3.4	32
147	Systems biology and mechanics of growth. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2015, 7, 401-412.	6.6	32
148	Partial LVAD Restores Ventricular Outputs and Normalizes LV but not RV Stress Distributions in the Acutely Failing Heart in Silico. International Journal of Artificial Organs, 2016, 39, 421-430.	0.7	32
149	COVID-19 dynamics across the US: A deep learning study of human mobility and social behavior. Computer Methods in Applied Mechanics and Engineering, 2021, 382, 113891.	3.4	32
150	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.	1.5	31
151	The phenomenon of twisted growth: humeral torsion in dominant arms of high performance tennis players. Computer Methods in Biomechanics and Biomedical Engineering, 2009, 12, 83-93.	0.9	31
152	Multi-fidelity classification using Gaussian processes: Accelerating the prediction of large-scale computational models. Computer Methods in Applied Mechanics and Engineering, 2019, 357, 112602.	3.4	31
153	A fully implicit finite element method for bidomain models of cardiac electrophysiology. Computer Methods in Biomechanics and Biomedical Engineering, 2012, 15, 645-656.	0.9	30
154	On the mechanics of thin films and growing surfaces. Mathematics and Mechanics of Solids, 2013, 18, 561-575.	1.5	30
155	Multi-view stereo analysis reveals anisotropy of prestrain, deformation, and growth in living skin. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1007-1019.	1.4	30
156	Modeling molecular mechanisms in the axon. Computational Mechanics, 2017, 59, 523-537.	2.2	30
157	A comparison of discrete granular material models with continuous microplane formulations. Granular Matter, 2000, 2, 113-121.	1.1	29
158	How Do Annuloplasty Rings Affect Mitral Annular Strains in the Normal Beating Ovine Heart?. Circulation, 2012, 126, S231-8.	1.6	29
159	Multiscale characterization of heart failure. Acta Biomaterialia, 2019, 86, 66-76.	4.1	29
160	Anterior Mitral Leaflet Curvature During the Cardiac Cycle in the Normal Ovine Heart. Circulation, 2010, 122, 1683-1689.	1.6	28
161	Predicting drugâ€induced arrhythmias by multiscale modeling. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2964.	1.0	28
162	Neuronal Oscillations on Evolving Networks: Dynamics, Damage, Degradation, Decline, Dementia, and Death. Physical Review Letters, 2020, 125, 128102.	2.9	28

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163	Mechanics of the Mitral Annulus in Chronic Ischemic Cardiomyopathy. Annals of Biomedical Engineering, 2013, 41, 2171-2180.	1.3	27
164	On the convexity of transversely isotropic chain network modelsâ€. Philosophical Magazine, 2006, 86, 3241-3258.	0.7	26
165	A note on the generation of periodic granular microstructures based on grain size distributions. International Journal for Numerical and Analytical Methods in Geomechanics, 2008, 32, 509-522.	1.7	26
166	Computational modeling of chemoâ€electroâ€mechanical coupling: A novel implicit monolithic finite element approach. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 1104-1133.	1.0	26
167	Dimensional, Geometrical, and Physical Constraints in Skull Growth. Physical Review Letters, 2017, 118, 248101.	2.9	26
168	A physical multifield model predicts the development of volume and structure in the human brain. Journal of the Mechanics and Physics of Solids, 2018, 112, 563-576.	2.3	26
169	Application of the material force method to thermo-hyperelasticity. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 3303-3325.	3.4	25
170	Computational Modeling of Mineral Unmixing and Growth. Computational Mechanics, 2007, 39, 439-451.	2.2	25
171	Kinematics of cardiac growth: In vivo characterization of growth tensors and strains. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 8, 165-177.	1.5	25
172	Tau-ism: The Yin and Yang of Microtubule Sliding, Detachment, and Rupture. Biophysical Journal, 2015, 109, 2215-2217.	0.2	25
173	Unfolding the brain. Nature Physics, 2016, 12, 533-534.	6.5	25
174	Predicting the cardiac toxicity of drugs using a novel multiscale exposureâ€"response simulator. Computer Methods in Biomechanics and Biomedical Engineering, 2018, 21, 232-246.	0.9	25
175	Revisiting the wrinkling of elastic bilayersÂI: linear analysis. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180076.	1.6	25
176	On local tracking algorithms for the simulation of three-dimensional discontinuities. Computational Mechanics, 2008, 42, 395-406.	2.2	24
177	Active contraction of cardiac muscle: In vivo characterization of mechanical activation sequences in the beating heart. Journal of the Mechanical Behavior of Biomedical Materials, 2011, 4, 1167-1176.	1.5	24
178	Mathematical modeling of collagen turnover in biological tissue. Journal of Mathematical Biology, 2013, 67, 1765-1793.	0.8	24
179	Application of Finite Element Modeling to Optimize Flap Design with Tissue Expansion. Plastic and Reconstructive Surgery, 2014, 134, 785-792.	0.7	24
180	Stress Singularities in Swelling Soft Solids. Physical Review Letters, 2016, 117, 138001.	2.9	24

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181	Computational modeling of acute myocardial infarction. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 1107-1115.	0.9	24
182	Bulging Brains. Journal of Elasticity, 2017, 129, 197-212.	0.9	24
183	On the linearization of the microplane model. International Journal for Numerical and Analytical Methods in Geomechanics, 1998, 3, 343-364.	1.0	23
184	Anterior mitral leaflet curvature in the beating ovine heart: a case study using videofluoroscopic markers and subdivision surfaces. Biomechanics and Modeling in Mechanobiology, 2010, 9, 281-293.	1.4	23
185	Consistent formulation of the growth process at the kinematic and constitutive level for soft tissues composed of multiple constituents. Computer Methods in Biomechanics and Biomedical Engineering, 2012, 15, 547-561.	0.9	23
186	Modeling the Axon as an Active Partner with the Growth Cone in Axonal Elongation. Biophysical Journal, 2018, 115, 1783-1795.	0.2	23
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