Antoine JÃ©rusalem

List of Publications by Year
in descending order

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Version: 2024-02-01

61 papers	2,440 citations	236612 25 h-index	205818 48 g-index
62 all docs	62 docs citations	62 times ranked	2850 citing authors

#	Article	IF	Citations
1	White matter tract transcranial ultrasound stimulation, a computational study. Computers in Biology and Medicine, 2022, 140, 105094.	3.9	3
2	Voltage-Driven Alterations to Neuron Viscoelasticity. Bioelectricity, 2022, 4, 31-38.	0.6	3
3	A modular nonlinear stochastic finite element formulation for uncertainty estimation. Computer Methods in Applied Mechanics and Engineering, 2022, 396, 115044.	3.4	1
4	Single cell electrophysiological alterations under dynamic loading at ultrasonic frequencies. Brain Multiphysics, 2021, 2, 100031.	0.8	2
5	A Machine Learning Enhanced Mechanistic Simulation Framework for Functional Deficit Prediction in TBI. Frontiers in Bioengineering and Biotechnology, 2021, 9, 587082.	2.0	6
6	Machine learning based multiscale calibration of mesoscopic constitutive models for composite materials: application to brain white matter. Computational Mechanics, 2021, 67, 1629-1643.	2.2	8
7	A Framework for Low-Intensity Low-Frequency Ultrasound Neuromodulation Sonication Parameter Identification from Micromechanical Flexoelectricity Modelling. Ultrasound in Medicine and Biology, 2021, 47, 1985-1991.	0.7	2
8	Action potential alterations induced by single F11 neuronal cell loading. Progress in Biophysics and Molecular Biology, 2021, 162, 141-153.	1.4	12
9	Medical imaging based in silico head model for ischaemic stroke simulation. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 101, 103442.	1.5	9
10	Design of FDM 3D printed polymers: An experimental-modelling methodology for the prediction of mechanical properties. Materials and Design, 2020, 188, 108414.	3.3	183
11	Model calibration using a parallel differential evolution algorithm in computational neuroscience: Simulation of stretch induced nerve deficit. Journal of Computational Science, 2020, 39, 101053.	1.5	5
12	Electrophysiological-mechanical coupling in the neuronal membrane and its role in ultrasound neuromodulation and general anaesthesia. Acta Biomaterialia, 2019, 97, 116-140.	4.1	50
13	Molecular dynamics simulation of cell membrane pore sealing. Extreme Mechanics Letters, 2019, 27, 83-93.	2.0	11
14	Datasets for multi-scale diffraction analysis (synchrotron XRD and EBSD) of twinning-detwinning during tensile-compressive deformation of AZ31B magnesium alloy samples. Data in Brief, 2019, 26, 104423.	0.5	4
15	Ionic current enhancement through localised membrane geometrical deformation. Extreme Mechanics Letters, 2019, 29, 100469.	2.0	1
16	Engineering a uniaxial substrate-stretching device for simultaneous electrophysiological measurements and imaging of strained peripheral neurons. Medical Engineering and Physics, 2019, 67, 1-10.	0.8	8
17	Computational model of the mechanoelectrophysiological coupling in axons with application to neuromodulation. Physical Review E, 2019, 99, 032406.	0.8	46
18	SoftFEM: The Soft Finite Element Method. International Journal for Numerical Methods in Engineering, 2019, 118, 606-630.	1.5	7

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19	Ion current and action potential alterations in peripheral neurons subject to uniaxial strain. Journal of Neuroscience Research, 2019, 97, 744-751.	1.3	12
20	Multi-scale mechanisms of twinning-detwinning in magnesium alloy AZ31B simulated by crystal plasticity modeling and validated via in situ synchrotron XRD and in situ SEM-EBSD. International Journal of Plasticity, 2019, 119, 43-56.	4.1	64
21	Energy based mechano-electrophysiological model of CNS damage at the tissue scale. Journal of the Mechanics and Physics of Solids, 2019, 125, 22-37.	2.3	18
22	3D finite element formulation for mechanicalâ€“electrophysiological coupling in axonopathy. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 1025-1050.	3.4	21
23	Two mechanisms regulate directional cell growth in Arabidopsis lateral roots. ELife, 2019, 8, .	2.8	29
24	A thermodynamically consistent constitutive model for diffusion-assisted plasticity in Ni-based superalloys. International Journal of Plasticity, 2018, 105, 74-98.	4.1	28
25	Response of Single Cells to Shock Waves and Numerically Optimized Waveforms for Cancer Therapy. Biophysical Journal, 2018, 114, 1433-1439.	0.2	22
26	A continuum mechanics constitutive framework for transverse isotropic soft tissues. Journal of the Mechanics and Physics of Solids, 2018, 112, 209-224.	2.3	44
27	Rapid and efficient differentiation of functional motor neurons from human iPSC for neural injury modelling. Stem Cell Research, 2018, 32, 126-134.	0.3	65
28	Mechanistic models versus machine learning, a fight worth fighting for the biological community?. Biology Letters, 2018, 14, 20170660.	1.0	221
29	Cognition based bTBI mechanistic criteria; a tool for preventive and therapeutic innovations. Scientific Reports, 2018, 8, 10273.	1.6	25
30	3D multicellular model of shock wave-cell interaction. Acta Biomaterialia, 2018, 77, 282-291.	4.1	6
31	On the mechanical behaviour of PEEK and HA cranial implants under impact loading. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 69, 342-354.	1.5	70
32	On the microtwinning mechanism in a single crystal superalloy. Acta Materialia, 2017, 135, 314-329.	3.8	102
33	Molecular dynamics simulations of heterogeneous cell membranes in response to uniaxial membrane stretches at high loading rates. Scientific Reports, 2017, 7, 8316.	1.6	14
34	Continuum mechanical modeling of axonal growth. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 147-163.	3.4	21
35	On the composition of microtwins in a single crystal nickel-basedÂsuperalloy. Scripta Materialia, 2017, 127, 37-40.	2.6	59
36	Growth, collapse, and stalling in a mechanical model for neurite motility. Physical Review E, 2016, 93, 032410.	0.8	28

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37	The Specification of Geometric Edges by a Plant Rab GTPase Is an Essential Cell-Patterning Principle During Organogenesis in Arabidopsis. Developmental Cell, 2016, 36, 386-400.	3.1	67
38	A new strain rate dependent continuum framework for Mg alloys. Computational Materials Science, 2016, 115, 41-50.	1.4	14
39	Neurite, a Finite Difference Large Scale Parallel Program for the Simulation of Electrical Signal Propagation in Neurites under Mechanical Loading. PLoS ONE, 2015, 10, e0116532.	1.1	19
40	An XFEM/CZM implementation for massively parallel simulations of composites fracture. Composite Structures, 2015, 125, 542-557.	3.1	36
41	Alya: Computational Solid Mechanics for Supercomputers. Archives of Computational Methods in Engineering, 2015, 22, 557-576.	6.0	28
42	Mechanics of the brain: perspectives, challenges, and opportunities. Biomechanics and Modeling in Mechanobiology, 2015, 14, 931-965.	1.4	289
43	Effect of Hydrostatic Pressure on the 3D Porosity Distribution and Mechanical Behavior of a High Pressure Die Cast Mg AZ91 Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 4056-4069.	1.1	3
44	Extracting continuum-like deformation and stress from molecular dynamics simulations. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1010-1031.	3.4	27
45	A computational model coupling mechanics and electrophysiology in spinal cord injury. Biomechanics and Modeling in Mechanobiology, 2014, 13, 883-896.	1.4	44
46	Multiscale computational modeling of deformation mechanics and intergranular fracture in nanocrystalline copper. Computational Materials Science, 2014, 90, 253-264.	1.4	6
47	A microâ€“meso-model of intra-laminar fracture in fiber-reinforced composites based on a discontinuous Galerkin/cohesive zone method. Engineering Fracture Mechanics, 2013, 104, 162-183.	2.0	54
48	Grain size gradient length scale in ballistic properties optimization of functionally graded nanocrystalline steel plates. Scripta Materialia, 2013, 69, 773-776.	2.6	16
49	A two-scale model predicting the mechanical behavior of nanocrystalline solids. Journal of the Mechanics and Physics of Solids, 2013, 61, 1895-1914.	2.3	12
50	Three-dimensional investigation of grain boundaryâ€“twin interactions in a Mg AZ31 alloy by electron backscatter diffraction and continuum modeling. Acta Materialia, 2013, 61, 7679-7692.	3.8	101
51	Continuum modeling of a neuronal cell under blast loading. Acta Biomaterialia, 2012, 8, 3360-3371.	4.1	37
52	Ballistic performance of nanocrystalline and nanotwinned ultrafine crystal steel. Acta Materialia, 2012, 60, 1353-1367.	3.8	66
53	Shock attenuation of PMMA sandwich panels filled with soda-lime glass beads: AÂfluid-structure interaction continuum model simulation. International Journal of Impact Engineering, 2012, 47, 48-59.	2.4	16
54	Continuum modeling of dislocation starvation and subsequent nucleation in nano-pillar compressions. Scripta Materialia, 2012, 66, 93-96.	2.6	23

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55	Continuum modeling of the response of a Mg alloy AZ31 rolled sheet during uniaxial deformation. International Journal of Plasticity, 2011, 27, 1739-1757.	4.1	93
56	Continuum modeling of the reverse Hallâ€“Petch effect in nanocrystalline metals under uniaxial tension: how many grains in a finite element model?. Philosophical Magazine Letters, 2011, 91, 599-609.	0.5	2
57	Continuum modeling of {10á¿™2} twinning in a Mg-3%Al-1%Zn rolled sheet. Revista De Metalurgia, 2010, 46, 133-137.	0.1	4
58	A continuum model of nanocrystalline metals under shock loading. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 025001.	0.8	12
59	Computational biology â€" Modeling of primary blast effects on the central nervous system. NeuroImage, 2009, 47, T10-T20.	2.1	182
60	Three-dimensional model of strength and ductility of polycrystalline copper containing nanoscale twins. Acta Materialia, 2008, 56, 4647-4657.	3.8	65
61	A continuum model describing the reverse grain-size dependence of the strength of nanocrystalline metals. Philosophical Magazine, 2007, 87, 2541-2559.	0.7	14