

Varvara G Kouznetsova

List of Publications by Year in descending order

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67
papers

5,230
citations

147801

31
h-index

110387

64
g-index

73
all docs

73
docs citations

73
times ranked

3040
citing authors

#	ARTICLE	IF	CITATIONS
1	Multi-scale computational homogenization: Trends and challenges. <i>Journal of Computational and Applied Mathematics</i> , 2010, 234, 2175-2182.	2.0	747
2	An approach to micro-macro modeling of heterogeneous materials. <i>Computational Mechanics</i> , 2001, 27, 37-48.	4.0	729
3	Multi-scale constitutive modelling of heterogeneous materials with a gradient-enhanced computational homogenization scheme. <i>International Journal for Numerical Methods in Engineering</i> , 2002, 54, 1235-1260.	2.8	658
4	Multi-scale second-order computational homogenization of multi-phase materials: a nested finite element solution strategy. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2004, 193, 5525-5550.	6.6	520
5	A review of predictive nonlinear theories for multiscale modeling of heterogeneous materials. <i>Journal of Computational Physics</i> , 2017, 330, 192-220.	3.8	348
6	Towards optimal design of locally resonant acoustic metamaterials. <i>Journal of the Mechanics and Physics of Solids</i> , 2014, 71, 179-196.	4.8	135
7	Visco-elastic effects on wave dispersion in three-phase acoustic metamaterials. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 96, 29-47.	4.8	115
8	Novel boundary conditions for strain localization analyses in microstructural volume elements. <i>International Journal for Numerical Methods in Engineering</i> , 2012, 90, 1-21.	2.8	113
9	Transient computational homogenization for heterogeneous materials under dynamic excitation. <i>Journal of the Mechanics and Physics of Solids</i> , 2013, 61, 2125-2146.	4.8	103
10	Computational homogenization for heterogeneous thin sheets. <i>International Journal for Numerical Methods in Engineering</i> , 2010, 83, 1180-1205.	2.8	91
11	Multi-scale computational homogenization of structured thin sheets. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2007, 15, S393-S404.	2.0	81
12	Size of a Representative Volume Element in a Second-Order Computational Homogenization Framework. <i>International Journal for Multiscale Computational Engineering</i> , 2004, 2, 575-598.	1.2	79
13	Homogenization of locally resonant acoustic metamaterials towards an emergent enriched continuum. <i>Computational Mechanics</i> , 2016, 57, 423-435.	4.0	70
14	MultiScale First-Order and Second-Order Computational Homogenization of Microstructures towards Continua. <i>International Journal for Multiscale Computational Engineering</i> , 2003, 1, 371-386.	1.2	69
15	A multi-scale approach to bridge microscale damage and macroscale failure: a nested computational homogenization-localization framework. <i>International Journal of Fracture</i> , 2012, 178, 157-178.	2.2	65
16	Multi-scale continuous/discontinuous framework for computational-homogenization/localization. <i>Journal of the Mechanics and Physics of Solids</i> , 2012, 60, 1486-1507.	4.8	63
17	A multi-scale model of martensitic transformation plasticity. <i>Mechanics of Materials</i> , 2008, 40, 641-657.	3.2	61
18	Grain boundary interface mechanics in strain gradient crystal plasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2013, 61, 2659-2679.	4.8	60

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19	A multiscale model of grain boundary structure and energy: From atomistics to a continuum description. <i>Acta Materialia</i> , 2015, 82, 513-529.	7.9	60
20	On the role of interlath retained austenite in the deformation of lath martensite. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014, 22, 045011.	2.0	59
21	Multi-scale computational homogenization-localization for propagating discontinuities using X-FEM. <i>International Journal for Numerical Methods in Engineering</i> , 2015, 102, 496-527.	2.8	57
22	A general multiscale framework for the emergent effective elastodynamics of metamaterials. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 111, 414-433.	4.8	55
23	The attenuation performance of locally resonant acoustic metamaterials based on generalised viscoelastic modelling. <i>International Journal of Solids and Structures</i> , 2017, 126-127, 163-174.	2.7	53
24	2D Phase field modeling of sintering of silver nanoparticles. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016, 312, 492-508.	6.6	52
25	Subgrain lath martensite mechanics: A numerical-experimental analysis. <i>Journal of the Mechanics and Physics of Solids</i> , 2014, 73, 69-83.	4.8	50
26	Retardation of plastic instability via damage-enabled microstrain delocalization. <i>Journal of Materials Science</i> , 2015, 50, 6882-6897.	3.7	45
27	Contribution of austenite-martensite transformation to deformability of advanced high strength steels: From atomistic mechanisms to microstructural response. <i>Acta Materialia</i> , 2018, 156, 463-478.	7.9	44
28	Homogenized enriched continuum analysis of acoustic metamaterials with negative stiffness and double negative effects. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 119, 104-117.	4.8	36
29	Measurement and modeling of the effective thermal conductivity of sintered silver pastes. <i>International Journal of Thermal Sciences</i> , 2016, 108, 185-194.	4.9	35
30	Gradient-enhanced computational homogenization for the micro-macro scale transition. <i>European Physical Journal Special Topics</i> , 2001, 11, Pr5-145-Pr5-152.	0.2	34
31	A multiscale framework for localizing microstructures towards the onset of macroscopic discontinuity. <i>Computational Mechanics</i> , 2014, 54, 299-319.	4.0	33
32	Multilayered Inclusions in Locally Resonant Metamaterials: Two-Dimensional Versus Three-Dimensional Modeling. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2017, 139, .	1.6	29
33	Deformation behaviour of lath martensite in multi-phase steels. <i>Scripta Materialia</i> , 2016, 110, 74-77.	5.2	28
34	Thermo-mechanical analyses of heterogeneous materials with a strongly anisotropic phase: the case of cast iron. <i>International Journal of Solids and Structures</i> , 2015, 63, 153-166.	2.7	24
35	Microstructural study of the mechanical response of compacted graphite iron: An experimental and numerical approach. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 658, 439-449.	5.6	22
36	Microstructure statistics-property relations of silver particle-based interconnects. <i>Materials and Design</i> , 2017, 118, 304-313.	7.0	21

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37	Model reduction in computational homogenization for transient heat conduction. <i>Computational Mechanics</i> , 2020, 65, 249-266.	4.0	21
38	Analysis of the correlation between micro-mechanical fields and fatigue crack propagation path in nodular cast iron. <i>Acta Materialia</i> , 2020, 188, 302-314.	7.9	21
39	Reduced crystal plasticity for materials with constrained slip activity. <i>Mechanics of Materials</i> , 2016, 92, 198-210.	3.2	20
40	Revisiting the martensite/ferrite interface damage initiation mechanism: The key role of substructure boundary sliding. <i>Acta Materialia</i> , 2021, 205, 116533.	7.9	20
41	Enabling microstructure-based damage and localization analyses and upscaling. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2011, 19, 074008.	2.0	18
42	Contactless and Frictionless Pure Bending. <i>Experimental Mechanics</i> , 2010, 50, 683-693.	2.0	17
43	A semi-analytical approach towards plane wave analysis of local resonance metamaterials using a multiscale enriched continuum description. <i>International Journal of Mechanical Sciences</i> , 2017, 133, 188-198.	6.7	17
44	Defect redistribution within a continuum grain boundary plasticity model. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 83, 243-262.	4.8	15
45	Grain boundary interfacial plasticity with incorporation of internal structure and energy. <i>Mechanics of Materials</i> , 2015, 90, 69-82.	3.2	15
46	Computational homogenization of locally resonant acoustic metamaterial panels towards enriched continuum beam/shell structures. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 387, 114161.	6.6	14
47	Towards acoustic metafoams: The enhanced performance of a poroelastic material with local resonators. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 124, 189-205.	4.8	13
48	Data-driven reduced homogenization for transient diffusion problems with emergent history effects. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 380, 113773.	6.6	12
49	Broadening the attenuation range of acoustic metafoams through graded microstructures. <i>Journal of Sound and Vibration</i> , 2020, 483, 115472.	3.9	11
50	The mechanical behaviour of metastable austenitic steels in pure bending. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 528, 7207-7213.	5.6	9
51	Computational homogenization. <i>CISM International Centre for Mechanical Sciences, Courses and Lectures</i> , 2010, , 327-394.	0.6	9
52	Enriched continuum for multi-scale transient diffusion coupled to mechanics. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2020, 7, .	1.7	9
53	Multiscale modeling of residual stresses in isotropic conductive adhesives with nano-particles. <i>Computational Materials Science</i> , 2013, 66, 50-64.	3.0	8
54	Elevated temperature creep of pearlitic steels: an experimentalâ€“numerical approach. <i>Mechanics of Time-Dependent Materials</i> , 2014, 18, 611-631.	4.4	8

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55	Transient analysis of nonlinear locally resonant metamaterials via computational homogenization. <i>Mathematics and Mechanics of Solids</i> , 2019, 24, 3136-3155.	2.4	8
56	Frequency domain boundary value problem analyses of acoustic metamaterials described by an emergent generalized continuum. <i>Computational Mechanics</i> , 2020, 65, 789-805.	4.0	8
57	A multi-scale computational strategy for structured thin sheets. <i>International Journal of Material Forming</i> , 2008, 1, 61-64.	2.0	7
58	Predictive modeling of interfacial damage in substructured steels: application to martensitic microstructures. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2016, 24, 025006.	2.0	7
59	Two-scale analysis of transient diffusion problems through a homogenized enriched continuum. <i>European Journal of Mechanics, A/Solids</i> , 2021, 87, 104212.	3.7	6
60	COMPUTATIONAL HOMOGENISATION FOR NON-LINEAR HETEROGENEOUS SOLIDS. <i>Computational and Experimental Methods in Structures</i> , 2009, , 1-42.	0.3	5
61	Modeling the Interaction between Plasticity and the Austenite-Martensite Transformation. <i>International Journal for Multiscale Computational Engineering</i> , 2007, 5, 129-140.	1.2	5
62	Multiscale Mechanics in Microelectronics: A Paradigm in Miniaturization. <i>Journal of Electronic Packaging, Transactions of the ASME</i> , 2005, 127, 255-261.	1.8	4
63	A simplified formula to estimate the size of the cyclic plastic zone in metals containing elastic particles. <i>Engineering Fracture Mechanics</i> , 2021, 241, 107428.	4.3	4
64	A multi-scale model for structure-property relations of materials exhibiting martensite transformation plasticity. <i>International Journal of Material Forming</i> , 2009, 2, 491-494.	2.0	2
65	Modeling of the effective thermal conductivity of sintered porous pastes. , 2014, , .		1
66	Microstructural model for the time-dependent thermomechanical analysis of cast irons. <i>GAMM Mitteilungen</i> , 2015, 38, 248-267.	5.5	1
67	Two-scale continuous-discontinuous modelling of damaging materials. , 2004, , 161-170.		0