Pedro Ponte Castaeda

List of Publications by Year in Descending Order

138 papers	6,428 citations	39 h-index	77 g-index
142 ext. papers	6,828 ext. citations	3.6 avg, IF	6.44 L-index

#	Paper	IF	Citations
138	Statistics of the stress, strain-rate and spin fields in viscoplastic polycrystals. *International Journal of Solids and Structures*, **2021**, 217-218, 193-214	3.1	2
137	Differential variational estimates for the macroscopic response and field statistics of elasto-viscoplastic polycrystals. *Journal of the Mechanics and Physics of Solids*, **2021**, 147, 104202	5	1
136	Tangent second-order homogenisation estimates for incompressible hyperelastic composites with fibrous microstructures and anisotropic phases. *Journal of the Mechanics and Physics of Solids*, **2021**, 147, 104251	5	3
135	Macroscopic response and microstructure evolution in viscoplastic polycrystals with pressurized pores. *International Journal of Fracture*, **2021**, 230, 43	2.3	
134	Field statistics in linearized elastic and viscous composites and polycrystals. *International Journal of Solids and Structures*, **2021**, 224, 111030	3.1	1
133	Anisotropic Oldroyd-type models for non-colloidal suspensions of viscoelastic particles in Newtonian and yield-stress fluids via homogenization. *Journal of Non-Newtonian Fluid Mechanics*, **2021**, 295, 104625	2.7	0
132	Theoretical predictions for the rheology of dispersions of highly deformable particles under large amplitude oscillatory shear. *Journal of Fluid Mechanics*, **2020**, 897,	3.7	2
131	On the optimality of the variational linear comparison bounds for porous viscoplastic materials. *Journal of the Mechanics and Physics of Solids*, **2020**, 138, 103898	5	1
130	Modeling Sea Ice. *Notices of the American Mathematical Society*, **2020**, 67, 1	1.5	6
129	A differential homogenization method for estimating the macroscopic response and field statistics of particulate viscoelastic composites. *International Journal of Solids and Structures*, **2020**, 204-205, 199-219	3.1	11
128	Fiber-constrained dielectric elastomer composites: Finite deformation response and instabilities under non-aligned loadings. *International Journal of Solids and Structures*, **2020**, 184, 73-98	3.1	4
127	Reinforced elastomers: Homogenization, macroscopic stability and relaxation. *Journal of the Mechanics and Physics of Solids*, **2020**, 136, 103689	5	3
126	Exact results for weakly nonlinear composites and implications for homogenization methods. *Comptes Rendus - Mecanique*, **2020**, 348, 893-909	0.3	1
125	A microstructurally-based, multi-scale, continuum-mechanical model for the passive behaviour of skeletal muscle tissue. *Journal of the Mechanical Behavior of Biomedical Materials*, **2019**, 97, 171-186	4.1	26
124	Constitutive models for anisotropic dielectric elastomer composites: Finite deformation response and instabilities. *Mechanics Research Communications*, **2019**, 96, 75-86	2.2	5
123	A MULTIPHASE HOMOGENIZATION MODEL FOR THE VISCOPLASTIC RESPONSE OF INTACT SEA ICE: THE EFFECT OF POROSITY AND CRYSTALLOGRAPHIC TEXTURE. *International Journal for Multiscale Computational Engineering*, **2019**, 17, 121-150	2.4	2
122	A multi-scale homogenization model for fine-grained porous viscoplastic polycrystals: I Finite-strain theory. *Journal of the Mechanics and Physics of Solids*, **2018**, 115, 102-122	5	15

121	A multi-scale homogenization model for fine-grained porous viscoplastic polycrystals: II Applications to FCC and HCP materials. *Journal of the Mechanics and Physics of Solids*, **2018**, 115, 77-101	5	9
120	A symmetric fully optimized second-order method for nonlinear homogenization. *ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik*, **2018**, 98, 222-254	1	7
119	Fully optimized second-order homogenization estimates for the macroscopic response and texture evolution of low-symmetry viscoplastic polycrystals. *International Journal of Plasticity*, **2018**, 110, 272-293	7.6	10
118	Macroscopic instabilities and domain formation in neo-Hookean laminates. *Journal of the Mechanics and Physics of Solids*, **2018**, 118, 98-114	5	8
117	A finite-strain homogenization model for viscoplastic porous single crystals: I Theory. *Journal of the Mechanics and Physics of Solids*, **2017**, 107, 560-579	5	25
116	A finite-strain homogenization model for viscoplastic porous single crystals: II Applications. *Journal of the Mechanics and Physics of Solids*, **2017**, 107, 580-602	5	14
115	Macroscopic response of strongly anisotropic porous viscoplastic single crystals and applications to ice. *Extreme Mechanics Letters*, **2017**, 10, 41-49	3.9	7
114	A homogenisation method for the multiscale modelling of transversely isotropic skeletal muscle tissue. *Proceedings in Applied Mathematics and Mechanics*, **2017**, 17, 183-184	0.2	
113	Multiscale modelling of skeletal muscle tissue by incorporating microstructural effects. *Proceedings in Applied Mathematics and Mechanics*, **2016**, 16, 75-76	0.2	3
112	Macroscopic constitutive relations for elastomers reinforced with short aligned fibers: Instabilities and post-bifurcation response. *Journal of the Mechanics and Physics of Solids*, **2016**, 97, 37-67	5	12
111	Stationary variational estimates for the effective response and field fluctuations in nonlinear composites. *Journal of the Mechanics and Physics of Solids*, **2016**, 96, 660-682	5	22
110	Macroscopic rheological behavior of suspensions of soft solid particles in yield stress fluids. *Journal of Non-Newtonian Fluid Mechanics*, **2016**, 234, 139-161	2.7	10
109	Incremental variational procedure for elasto-viscoplastic composites and application to polymer- and metal-matrix composites reinforced by spheroidal elastic particles. *International Journal of Solids and Structures*, **2016**, 97-98, 668-686	3.1	24
108	Macroscopic response of particle-reinforced elastomers subjected to prescribed torques or rotations on the particles. *Journal of the Mechanics and Physics of Solids*, **2016**, 91, 240-264	5	8
107	The evolution of pore shape and orientation in plastically deforming metals: Implications for macroscopic response and shear localization. *Mechanics of Materials*, **2015**, 90, 47-68	3.3	19
106	Electromechanical instabilities in fiber-constrained, dielectric-elastomer composites subjected to all-around dead-loading. *Mathematics and Mechanics of Solids*, **2015**, 20, 729-759	2.3	14
105	Towards effective mechanical properties of skeletal muscle tissue via homogenisation. *Proceedings in Applied Mathematics and Mechanics*, **2015**, 15, 83-84	0.2	3
104	The rheology of non-dilute dispersions of highly deformable viscoelastic particles in Newtonian fluids. *Journal of Fluid Mechanics*, **2015**, 763, 386-432	3.7	11

103	Fully optimized second-order variational estimates for the macroscopic response and field statistics in viscoplastic crystalline composites. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2015**, 471, 20150665	2.4	15
102	On the macroscopic response, microstructure evolution, and macroscopic stability of short-fibre-reinforced elastomers at finite strains: I – Analytical results. *Philosophical Magazine*, **2014**, 94, 1031-1067	1.6	8
101	Anisotropic finite-strain models for porous viscoplastic materials with microstructure evolution. *International Journal of Solids and Structures*, **2014**, 51, 981-1002	3.1	18
100	Fiber-constrained, dielectric-elastomer composites: Finite-strain response and stability analysis. *Journal of the Mechanics and Physics of Solids*, **2014**, 68, 211-238	5	37
99	On the macroscopic response, microstructure evolution, and macroscopic stability of short-fiber-reinforced elastomers at finite strains: II – Representative examples. *Philosophical Magazine*, **2014**, 94, 1068-1094	1.6	6
98	Magnetoactive elastomers with periodic and random microstructures. *International Journal of Solids and Structures*, **2014**, 51, 3012-3024	3.1	56
97	Tangent Second-Order Estimates for the Large-Strain, Macroscopic Response of Particle-Reinforced Elastomers. *Journal of Elasticity*, **2013**, 112, 139-183	1.5	20
96	Iterated linear comparison bounds for viscoplastic porous materials with "ellipsoidal" microstructures. *Journal of the Mechanics and Physics of Solids*, **2013**, 61, 701-725	5	31
95	Giant field-induced strains in magnetoactive elastomer composites. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2013**, 469, 20130385	2.4	39
94	A finite-strain constitutive model for magnetorheological elastomers: Magnetic torques and fiber rotations. *Journal of the Mechanics and Physics of Solids*, **2013**, 61, 1065-1090	5	76
93	Dynamics and rheology of elastic particles in an extensional flow. *Journal of Fluid Mechanics*, **2013**, 715, 573-596	3.7	10
92	Dielectric elastomer composites: small-deformation theory and applications. *Philosophical Magazine*, **2013**, 93, 2769-2801	1.6	13
91	Estimates for two-phase nonlinear conductors via iterated homogenization. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2013**, 469, 20120626	2.4	7
90	A finite-strain constitutive theory for electro-active polymer composites via homogenization. *International Journal of Non-Linear Mechanics*, **2012**, 47, 293-306	2.8	66
89	The effect of particle shape and distribution on the macroscopic behavior of magnetoelastic composites. *International Journal of Solids and Structures*, **2012**, 49, 1-17	3.1	61
88	Influence of the Lode parameter and the stress triaxiality on the failure of elasto-plastic porous materials. *International Journal of Solids and Structures*, **2012**, 49, 1325-1342	3.1	134
87	Modeling microstructural effects in dilatational plasticity of polycrystalline materials. *Procedia IUTAM*, **2012**, 3, 314-330		5
86	Effects of internal pore pressure on closed-cell elastomeric foams. *International Journal of Solids and Structures*, **2012**, 49, 2793-2798	3.1	12

85	Response to the comments by Hucthinson and Tvergaard. *International Journal of Solids and Structures*, **2012**, 49, 3486	3.1	
84	Multi-scale homogenization-based modeling of semi-crystalline polymers. *Philosophical Magazine*, **2012**, 92, 925-958	1.6	5
83	Bounds for nonlinear composites via iterated homogenization. *Journal of the Mechanics and Physics of Solids*, **2012**, 60, 1583-1604	5	24
82	A magnetically anisotropic, ellipsoidal inclusion subjected to a non-aligned magnetic field in an elastic medium. *Comptes Rendus - Mecanique*, **2012**, 340, 205-218	2.1	15
81	Shape dynamics and rheology of soft elastic particles in a shear flow. *Physical Review Letters*, **2012**, 108, 058302	7.4	37
80	Homogenization estimates for multi-scale nonlinear composites. *European Journal of Mechanics, A/Solids*, **2011**, 30, 828-843	3.7	23
79	Homogenization-based constitutive models for magnetorheological elastomers at finite strain. *Journal of the Mechanics and Physics of Solids*, **2011**, 59, 194-215	5	127
78	Dilatational viscoplasticity of polycrystalline solids with intergranular cavities. *Philosophical Magazine*, **2011**, 91, 3038-3067	1.6	58
77	Variational estimates for the effective response and field statistics in thermoelastic composites with intra-phase property fluctuations. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2011**, 467, 2224-2246	2.4	17
76	Rheology of a suspension of elastic particles in a viscous shear flow. *Journal of Fluid Mechanics*, **2011**, 687, 209-237	3.7	36
75	Macroscopic response and stability in lamellar nanostructured elastomers with oriented and unoriented polydomain microstructures. *Mechanics of Materials*, **2010**, 42, 451-468	3.3	13
74	Microscopic and macroscopic instabilities in finitely strained fiber-reinforced elastomers. *Journal of the Mechanics and Physics of Solids*, **2010**, 58, 1776-1803	5	61
73	Microstructure evolution in hyperelastic laminates and implications for overall behavior and macroscopic stability. *Mechanics of Materials*, **2009**, 41, 364-374	3.3	23
72	A general hyperelastic model for incompressible fiber-reinforced elastomers. *Journal of the Mechanics and Physics of Solids*, **2009**, 57, 268-286	5	58
71	Onset of macroscopic instabilities in fiber-reinforced elastomers at finite strain. *Journal of the Mechanics and Physics of Solids*, **2009**, 57, 1828-1850	5	33
70	A finite-strain model for anisotropic viscoplastic porous media: I Theory. *European Journal of Mechanics, A/Solids*, **2009**, 28, 387-401	3.7	91
69	A finite-strain model for anisotropic viscoplastic porous media: II Applications. *European Journal of Mechanics, A/Solids*, **2009**, 28, 402-416	3.7	51
68	Infinite-contrast periodic composites with strongly nonlinear behavior: Effective-medium theory versus full-field simulations. *International Journal of Solids and Structures*, **2009**, 46, 3365-3382	3.1	36

67	Micromechanical modeling of the viscoplastic behavior of olivine. *Journal of Geophysical Research*, **2008**, 113,		46
66	Linear comparison estimates for the effective resistivity of three-dimensional nonlinear polycrystals. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2008**, 464, 2391-2410	2.4	
65	Effective-medium theory for infinite-contrast two-dimensionally periodic linear composites with strongly anisotropic matrix behavior: Dilute limit and crossover behavior. *Physical Review B*, **2008**, 78,	3.3	15
64	Localization of elastic deformation in strongly anisotropic, porous, linear materials with periodic microstructures: Exact solutions and dilute expansions. *Journal of the Mechanics and Physics of Solids*, **2008**, 56, 1245-1268	5	14
63	Multiscale modeling of oriented thermoplastic elastomers with lamellar morphology. *Journal of the Mechanics and Physics of Solids*, **2008**, 56, 3206-3223	5	10
62	A homogenization-based constitutive model for two-dimensional viscoplastic porous media. *Comptes Rendus - Mecanique*, **2008**, 336, 79-90	2.1	19
61	A homogenization-based constitutive model for isotropic viscoplastic porous media. *International Journal of Solids and Structures*, **2008**, 45, 3392-3409	3.1	57
60	Field statistics in nonlinear composites. I. Theory. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 183-202	2.4	48
59	Field statistics in nonlinear composites. II. Applications. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 203-222	2.4	10
58	Variational linear comparison bounds for nonlinear composites with anisotropic phases. I. General results. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 907-924	2.4	27
57	Variational linear comparison bounds for nonlinear composites with anisotropic phases. II. Crystalline materials. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 925-943	2.4	18
56	Homogenization estimates for fiber-reinforced elastomers with periodic microstructures. *International Journal of Solids and Structures*, **2007**, 44, 5953-5979	3.1	37
55	Microscopic and macroscopic instabilities in finitely strained porous elastomers. *Journal of the Mechanics and Physics of Solids*, **2007**, 55, 900-938	5	98
54	Homogenization-based constitutive models for porous elastomers and implications for macroscopic instabilities: IAnalysis. *Journal of the Mechanics and Physics of Solids*, **2007**, 55, 1677-1701	5	42
53	Homogenization-based constitutive models for porous elastomers and implications for macroscopic instabilities: IIResults. *Journal of the Mechanics and Physics of Solids*, **2007**, 55, 1702-1728	5	34
52	Self-consistent modelling of the mechanical behaviour of viscoplastic polycrystals incorporating intragranular field fluctuations. *Philosophical Magazine*, **2007**, 87, 4287-4322	1.6	243
51	Second-order theory for nonlinear composites and application to isotropic constituents. *Comptes Rendus - Mecanique*, **2006**, 334, 575-581	2.1	17
50	On the overall behavior, microstructure evolution, and macroscopic stability in reinforced rubbers at large deformations: ITheory. *Journal of the Mechanics and Physics of Solids*, **2006**, 54, 807-830	5	84

49	On the overall behavior, microstructure evolution, and macroscopic stability in reinforced rubbers at large deformations: II. Application to cylindrical fibers. *Journal of the Mechanics and Physics of Solids*, **2006**, 54, 831-863	5	62
48	Macroscopic behavior and field fluctuations in viscoplastic composites: Second-order estimates versus full-field simulations. *Journal of the Mechanics and Physics of Solids*, **2006**, 54, 1029-1063	5	91
47	Homogenization estimates for texture evolution in halite. *Tectonophysics*, **2005**, 406, 179-195	3.1	17
46	Void growth in power-law creeping solids: Effect of surface diffusion and surface energy. *International Journal of Solids and Structures*, **2005**, 42, 6202-6225	3.1	5
45	Second-order estimates for nonlinear isotropic composites with spherical pores and rigid particles. *Comptes Rendus - Mecanique*, **2005**, 333, 147-154	2.1	18
44	Improving the Self-Consistent Predictions of Texture Development of Polycrystals Incorporating Intragranular Field Fluctuations. *Materials Science Forum*, **2005**, 495-497, 955-964	0.4	5
43	Second-Order Homogenization Estimates Incorporating Field Fluctuations in Finite Elasticity. *Mathematics and Mechanics of Solids*, **2004**, 9, 243-270	2.3	25
42	Second-Order Estimates for the Macroscopic Response and Loss of Ellipticity in Porous Rubbers at Large Deformations. *Journal of Elasticity*, **2004**, 76, 247-287	1.5	46
41	Second-order theory for the effective behavior and field fluctuations in viscoplastic polycrystals. *Journal of the Mechanics and Physics of Solids*, **2004**, 52, 467-495	5	63
40	Homogenization estimates for the average behavior and field fluctuations in cubic and hexagonal viscoplastic polycrystals. *Journal of the Mechanics and Physics of Solids*, **2004**, 52, 1175-1211	5	28
39	Numerical methods for porous metals with deformation-induced anisotropy. *Computer Methods in Applied Mechanics and Engineering*, **2004**, 193, 3767-3805	5.7	67
38	On the accuracy of the self-consistent approximation for polycrystals: comparison with full-field numerical simulations. *Acta Materialia*, **2004**, 52, 5347-5361	8.4	128
37	Field fluctuations and macroscopic properties for nonlinear composites. *International Journal of Solids and Structures*, **2003**, 40, 7015-7033	3.1	10
36	Second-order estimates for the large-deformation response of particle-reinforced rubbers. *Comptes Rendus - Mecanique*, **2003**, 331, 1-8	2.1	12
35	Variational self-consistent estimates for texture evolution in viscoplastic polycrystals. *Acta Materialia*, **2003**, 51, 5425-5437	8.4	23
34	Yield criteria for porous media in plane strain: second-order estimates versus numerical results. *Comptes Rendus - Mecanique*, **2002**, 330, 741-747	2.1	26
33	Second-order homogenization estimates for nonlinear composites incorporating field fluctuations: II. Applications. *Journal of the Mechanics and Physics of Solids*, **2002**, 50, 759-782	5	81
32	Second-order homogenization estimates for nonlinear composites incorporating field fluctuations: I. Theory. *Journal of the Mechanics and Physics of Solids*, **2002**, 50, 737-757	5	286

31	Variational self-consistent estimates for cubic viscoplastic polycrystals: the effects of grain anisotropy and shape. *Journal of the Mechanics and Physics of Solids*, **2001**, 49, 313-340	5	43
30	Second-order estimates for the effective behaviour of viscoplastic polycrystalline materials. *Journal of the Mechanics and Physics of Solids*, **2001**, 49, 2737-2764	5	31
29	Accurate estimates for the creep behavior of hexagonal polycrystals. *Acta Materialia*, **2001**, 49, 329-337	8.4	19
28	Bounds on the self-consistent approximation for nonlinear media and implications for the second-order method. *Comptes Rendus Mecanique*, **2001**, 329, 571-577		2
27	A second-order homogenization method in finite elasticity and applications to black-filled elastomers. *Journal of the Mechanics and Physics of Solids*, **2000**, 48, 1389-1411	5	83
26	Variational self-consistent estimates for viscoplastic polycrystals with highly anisotropic grains. *Comptes Rendus De LAcademie De Sciences - Serie IIb: Mecanique, Physique, Chimie, Astronomie*, **2000**, 328, 11-17		1
25	Estimations homog□□s pour les composites hyper□astiques et applications aux □astom□es renforc□. *Comptes Rendus De LAcademie De Sciences - Serie IIb: Mecanique, Physique, Chimie, Astronomie*, **1999**, 327, 1297-1304		
24	The second-order procedure: exact vs approximate results for isotropic, two-phase composites. *Journal of the Mechanics and Physics of Solids*, **1999**, 47, 2171-2185	5	6
23	Stable crack growth along a brittleductile interface□. Small scale yielding solutions and interfacial toughness predictions. *International Journal of Solids and Structures*, **1999**, 36, 1-34	3.1	12
22	A general constitutive theory for linear and nonlinear particulate media with microstructure evolution. *Journal of the Mechanics and Physics of Solids*, **1998**, 46, 427-465	5	98
21	Exact second-order estimates of the self-consistent type for nonlinear composite materials. *Mechanics of Materials*, **1998**, 28, 9-22	3.3	4
20	Three-point bounds and other estimates for strongly nonlinear composites. *Physical Review B*, **1998**, 57, 12077-12083	3.3	14
19	Nonlinear Composites. *Advances in Applied Mechanics*, **1997**, 171-302	10	423
18	Strongly nonlinear composites: A second-order theory for estimating transport properties. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1997**, 224, 163-168	2.3	5
17	The finite deformation of nonlinear composite materials□. Evolution of the microstructure. *International Journal of Solids and Structures*, **1996**, 33, 1287-1303	3.1	25
16	Exact second-order estimates for the effective mechanical properties of nonlinear composite materials. *Journal of the Mechanics and Physics of Solids*, **1996**, 44, 827-862	5	271
15	Steady-state creep of fiber-reinforced composites: constitutive equations and computational issues. *International Journal of Solids and Structures*, **1995**, 32, 2219-2244	3.1	22
14	The effect of spatial distribution on the effective behavior of composite materials and cracked media. *Journal of the Mechanics and Physics of Solids*, **1995**, 43, 1919-1951	5	562

13	Constitutive models for porous materials with evolving microstructure. *Journal of the Mechanics and Physics of Solids*, **1994**, 42, 1459-1497	5	152
12	The Effective Behavior of Nonlinear Composites: A Comparison between Two Methods. *Materials Science Forum*, **1993**, 123-125, 351-360	0.4	3
11	Constitutive models for ductile solids reinforced by rigid spheroidal inclusions. *Mechanics of Materials*, **1993**, 15, 279-300	3.3	20
10	Elastoplastic constitutive relations for fiber-reinforced solids. *International Journal of Solids and Structures*, **1993**, 30, 1865-1890	3.1	42
9	Effective properties of nonlinear inhomogeneous dielectrics. *Physical Review B*, **1992**, 46, 4387-4394	3.3	50
8	A New Variational Principle and Its Application to Nonlinear Heterogeneous Systems. *SIAM Journal on Applied Mathematics*, **1992**, 52, 1321-1341	1.8	42
7	New variational principles in plasticity and their application to composite materials. *Journal of the Mechanics and Physics of Solids*, **1992**, 40, 1757-1788	5	192
6	Stable crack growth under mixed-mode conditions. *Journal of the Mechanics and Physics of Solids*, **1992**, 40, 1053-1103	5	31
5	On the ductility of laminated materials. *International Journal of Solids and Structures*, **1992**, 29, 2329-2353	3.1	29
4	Stable crack growth along a brittle/ductile interface□ Near-tip fields. *International Journal of Solids and Structures*, **1991**, 27, 105-133	3.1	27
3	The effective mechanical properties of nonlinear isotropic composites. *Journal of the Mechanics and Physics of Solids*, **1991**, 39, 45-71	5	723
2	Asymptotic fields in steady crack growth with linear strain-hardening. *Journal of the Mechanics and Physics of Solids*, **1987**, 35, 227-268	5	65
1	Earth Mantle Rheology Inferred from Homogenization Theories55-70		8