## Pedro Ponte Castañeda

List of Publications by Year in descending order

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		61857	56606
138	7,310	43	83
papers	citations	h-index	g-index
142	142	142	2450
all docs	docs citations	times ranked	citing authors

#	Article	IF	CITATIONS
1	The effective mechanical properties of nonlinear isotropic composites. Journal of the Mechanics and Physics of Solids, 1991, 39, 45-71.	2.3	804
2	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.	2.3	637
3	Nonlinear Composites. Advances in Applied Mechanics, 1997, , 171-302.	1.4	471
4	Second-order homogenization estimates for nonlinear composites incorporating field fluctuations: l—theory. Journal of the Mechanics and Physics of Solids, 2002, 50, 737-757.	2.3	317
5	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.	2.3	295
6	Self-consistent modelling of the mechanical behaviour of viscoplastic polycrystals incorporating intragranular field fluctuations. Philosophical Magazine, 2007, 87, 4287-4322.	0.7	280
7	New variational principles in plasticity and their application to composite materials. Journal of the Mechanics and Physics of Solids, 1992, 40, 1757-1788.	2.3	212
8	Constitutive models for porous materials with evolving microstructure. Journal of the Mechanics and Physics of Solids, 1994, 42, 1459-1497.	2.3	165
9	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.	1.3	165
10	Homogenization-based constitutive models for magnetorheological elastomers at finite strain. Journal of the Mechanics and Physics of Solids, 2011, 59, 194-215.	2.3	157
11	On the accuracy of the self-consistent approximation for polycrystals: comparison with full-field numerical simulations. Acta Materialia, 2004, 52, 5347-5361.	3.8	140
12	Microscopic and macroscopic instabilities in finitely strained porous elastomers. Journal of the Mechanics and Physics of Solids, 2007, 55, 900-938.	2.3	111
13	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.	2.3	106
14	A finite-strain model for anisotropic viscoplastic porous media: I – Theory. European Journal of Mechanics, A/Solids, 2009, 28, 387-401.	2.1	106
15	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.	2.3	98
16	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.	2.3	94
17	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.	2.3	90
18	On the overall behavior, microstructure evolution, and macroscopic stability in reinforced rubbers at large deformations: l—Theory, Journal of the Mechanics and Physics of Solids, 2006, 54, 807-830	2.3	89

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19	Second-order homogenization estimates for nonlinear composites incorporating field fluctuations: Il—applications. Journal of the Mechanics and Physics of Solids, 2002, 50, 759-782.	2.3	87
20	A finite-strain constitutive theory for electro-active polymer composites via homogenization. International Journal of Non-Linear Mechanics, 2012, 47, 293-306.	1.4	73
21	Asymptotic fields in steady crack growth with linear strain-hardening. Journal of the Mechanics and Physics of Solids, 1987, 35, 227-268.	2.3	72
22	Numerical methods for porous metals with deformation-induced anisotropy. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 3767-3805.	3.4	72
23	The effect of particle shape and distribution on the macroscopic behavior of magnetoelastic composites. International Journal of Solids and Structures, 2012, 49, 1-17.	1.3	72
24	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.	2.3	71
25	Microscopic and macroscopic instabilities in finitely strained fiber-reinforced elastomers. Journal of the Mechanics and Physics of Solids, 2010, 58, 1776-1803.	2.3	70
26	On the overall behavior, microstructure evolution, and macroscopic stability in reinforced rubbers at large deformations: Il—Application to cylindrical fibers. Journal of the Mechanics and Physics of Solids, 2006, 54, 831-863.	2.3	67
27	A general hyperelastic model for incompressible fiber-reinforced elastomers. Journal of the Mechanics and Physics of Solids, 2009, 57, 268-286.	2.3	65
28	Dilatational viscoplasticity of polycrystalline solids with intergranular cavities. Philosophical Magazine, 2011, 91, 3038-3067.	0.7	65
29	Magnetoactive elastomers with periodic and random microstructures. International Journal of Solids and Structures, 2014, 51, 3012-3024.	1.3	60
30	A homogenization-based constitutive model for isotropic viscoplastic porous media. International Journal of Solids and Structures, 2008, 45, 3392-3409.	1.3	59
31	Effective properties of nonlinear inhomogeneous dielectrics. Physical Review B, 1992, 46, 4387-4394.	1.1	56
32	A finite-strain model for anisotropic viscoplastic porous media: II – Applications. European Journal of Mechanics, A/Solids, 2009, 28, 402-416.	2.1	56
33	Micromechanical modeling of the viscoplastic behavior of olivine. Journal of Geophysical Research, 2008, 113, .	3.3	55
34	Field statistics in nonlinear composites. I. Theory. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 183-202.	1.0	54
35	Second-Order Estimates for the Macroscopic Response and Loss of Ellipticity in Porous Rubbers at Large Deformations. Journal of Elasticity, 2004, 76, 247-287.	0.9	51
36	Fiber-constrained, dielectric-elastomer composites: Finite-strain response and stability analysis. Journal of the Mechanics and Physics of Solids, 2014, 68, 211-238.	2.3	50

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37	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.	2.3	48
38	Homogenization-based constitutive models for porous elastomers and implications for macroscopic instabilities: l—Analysis. Journal of the Mechanics and Physics of Solids, 2007, 55, 1677-1701.	2.3	48
39	Rheology of a suspension of elastic particles in a viscous shear flow. Journal of Fluid Mechanics, 2011, 687, 209-237.	1.4	46
40	A New Variational Principle and Its Application to Nonlinear Heterogeneous Systems. SIAM Journal on Applied Mathematics, 1992, 52, 1321-1341.	0.8	45
41	Shape Dynamics and Rheology of Soft Elastic Particles in a Shear Flow. Physical Review Letters, 2012, 108, 058302.	2.9	44
42	Giant field-induced strains in magnetoactive elastomer composites. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130385.	1.0	44
43	Elastoplastic constitutive relations for fiber-reinforced solids. International Journal of Solids and Structures, 1993, 30, 1865-1890.	1.3	43
44	Homogenization estimates for fiber-reinforced elastomers with periodic microstructures. International Journal of Solids and Structures, 2007, 44, 5953-5979.	1.3	43
45	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.	1.5	40
46	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.	1.3	38
47	Homogenization-based constitutive models for porous elastomers and implications for macroscopic instabilities: II—Results. Journal of the Mechanics and Physics of Solids, 2007, 55, 1702-1728.	2.3	37
48	Onset of macroscopic instabilities in fiber-reinforced elastomers at finite strain. Journal of the Mechanics and Physics of Solids, 2009, 57, 1828-1850.	2.3	36
49	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.	2.3	36
50	Iterated linear comparison bounds for viscoplastic porous materials with "ellipsoidal― microstructures. Journal of the Mechanics and Physics of Solids, 2013, 61, 701-725.	2.3	35
51	Second-order estimates for the effective behaviour of viscoplastic polycrystalline materials. Journal of the Mechanics and Physics of Solids, 2001, 49, 2737-2764.	2.3	33
52	A finite-strain homogenization model for viscoplastic porous single crystals: I – Theory. Journal of the Mechanics and Physics of Solids, 2017, 107, 560-579.	2.3	33
53	Stable crack growth under mixed-mode conditions. Journal of the Mechanics and Physics of Solids, 1992, 40, 1053-1103.	2.3	32
54	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.	1.3	32

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55	On the ductility of laminated materials. International Journal of Solids and Structures, 1992, 29, 2329-2353.	1.3	31
56	Steady-state creep of fiber-reinforced composites: constitutive equations and computational issues. International Journal of Solids and Structures, 1995, 32, 2219-2244.	1.3	30
57	Second-Order Homogenization Estimates Incorporating Field Fluctuations in Finite Elasticity. Mathematics and Mechanics of Solids, 2004, 9, 243-270.	1.5	29
58	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.	2.3	29
59	Stable crack growth along a brittle/ductile interface—l. Near-tip fields. International Journal of Solids and Structures, 1991, 27, 105-133.	1.3	28
60	Bounds for nonlinear composites via iterated homogenization. Journal of the Mechanics and Physics of Solids, 2012, 60, 1583-1604.	2.3	28
61	Yield criteria for porous media in plane strain: second-order estimates versus numerical results. Comptes Rendus - Mecanique, 2002, 330, 741-747.	2.1	27
62	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.	1.0	27
63	The finite deformation of nonlinear composite materials—II. Evolution of the microstructure. International Journal of Solids and Structures, 1996, 33, 1287-1303.	1.3	26
64	Variational self-consistent estimates for texture evolution in viscoplastic polycrystals. Acta Materialia, 2003, 51, 5425-5437.	3.8	26
65	Microstructure evolution in hyperelastic laminates and implications for overall behavior and macroscopic stability. Mechanics of Materials, 2009, 41, 364-374.	1.7	26
66	Homogenization estimates for multi-scale nonlinear composites. European Journal of Mechanics, A/Solids, 2011, 30, 828-843.	2.1	26
67	Tangent Second-Order Estimates for the Large-Strain, Macroscopic Response of Particle-Reinforced Elastomers. Journal of Elasticity, 2013, 112, 139-183.	0.9	22
68	Constitutive models for ductile solids reinforced by rigid spheroidal inclusions. Mechanics of Materials, 1993, 15, 279-300.	1.7	21
69	Accurate estimates for the creep behavior of hexagonal polycrystals. Acta Materialia, 2001, 49, 329-337.	3.8	21
70	Second-order estimates for nonlinear isotropic composites with spherical pores and rigid particles. Comptes Rendus - Mecanique, 2005, 333, 147-154.	2.1	21
71	Anisotropic finite-strain models for porous viscoplastic materials with microstructure evolution. International Journal of Solids and Structures, 2014, 51, 981-1002.	1.3	21
72	Second-order theory for nonlinear composites and application to isotropic constituents. Comptes Rendus - Mecanique, 2006, 334, 575-581.	2.1	20

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73	A homogenization-based constitutive model for two-dimensional viscoplastic porous media. Comptes Rendus - Mecanique, 2008, 336, 79-90.	2.1	20
74	The rheology of non-dilute dispersions of highly deformable viscoelastic particles in Newtonian fluids. Journal of Fluid Mechanics, 2015, 763, 386-432.	1.4	20
75	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.	1.7	20
76	Homogenization estimates for texture evolution in halite. Tectonophysics, 2005, 406, 179-195.	0.9	19
77	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.	1.0	19
78	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.	2.3	19
79	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.	2.3	19
80	Effects of internal pore pressure on closed-cell elastomeric foams. International Journal of Solids and Structures, 2012, 49, 2793-2798.	1.3	18
81	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.	1.0	17
82	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.	1.0	17
83	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, .	1.1	16
84	Electromechanical instabilities in fiber-constrained, dielectric-elastomer composites subjected to all-around dead-loading. Mathematics and Mechanics of Solids, 2015, 20, 729-759.	1.5	16
85	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.	4.1	16
86	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.	1.3	16
87	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.	2.3	15
88	Macroscopic response and stability in lamellar nanostructured elastomers with "oriented―and "unoriented―polydomain microstructures. Mechanics of Materials, 2010, 42, 451-468.	1.7	15
89	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
90	Dielectric elastomer composites: small-deformation theory and applications. Philosophical Magazine, 2013, 93, 2769-2801.	0.7	15

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91	A finite-strain homogenization model for viscoplastic porous single crystals: II – Applications. Journal of the Mechanics and Physics of Solids, 2017, 107, 580-602.	2.3	15
92	Three-point bounds and other estimates for strongly nonlinear composites. Physical Review B, 1998, 57, 12077-12083.	1.1	14
93	Stable crack growth along a brittleductile interface—II. Small scale yielding solutions and interfacial toughness predictions. International Journal of Solids and Structures, 1999, 36, 1-34.	1.3	14
94	Macroscopic rheological behavior of suspensions of soft solid particles in yield stress fluids. Journal of Non-Newtonian Fluid Mechanics, 2016, 234, 139-161.	1.0	14
95	Second-order estimates for the large-deformation response of particle-reinforced rubbers. Comptes Rendus - Mecanique, 2003, 331, 1-8.	2.1	13
96	Field statistics in nonlinear composites. II. Applications. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 203-222.	1.0	13
97	Dynamics and rheology of elastic particles in an extensional flow. Journal of Fluid Mechanics, 2013, 715, 573-596.	1.4	13
98	Modeling Sea Ice. Notices of the American Mathematical Society, 2020, 67, 1.	0.1	13
99	Field fluctuations and macroscopic properties for nonlinear composites. International Journal of Solids and Structures, 2003, 40, 7015-7033.	1.3	12
100	Macroscopic instabilities and domain formation in neo-Hookean laminates. Journal of the Mechanics and Physics of Solids, 2018, 118, 98-114.	2.3	12
101	Multiscale modeling of oriented thermoplastic elastomers with lamellar morphology. Journal of the Mechanics and Physics of Solids, 2008, 56, 3206-3223.	2.3	11
102	A symmetric fully optimized secondâ€order method for nonlinear homogenization. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 222-254.	0.9	11
103	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.	2.3	10
104	Multi-scale homogenization-based modeling of semi-crystalline polymers. Philosophical Magazine, 2012, 92, 925-958.	0.7	9
105	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.	0.7	9
106	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.	2.3	9
107	Estimates for two-phase nonlinear conductors via iterated homogenization. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120626.	1.0	8
108	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.	0.7	7

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109	Macroscopic response of strongly anisotropic porous viscoplastic single crystals and applications to ice. Extreme Mechanics Letters, 2017, 10, 41-49.	2.0	7
110	Constitutive models for anisotropic dielectric elastomer composites: Finite deformation response and instabilities. Mechanics Research Communications, 2019, 96, 75-86.	1.0	7
111	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.	2.3	7
112	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.	1.0	7
113	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.	2.3	6
114	Improving the Self-Consistent Predictions of Texture Development of Polycrystals Incorporating Intragranular Field Fluctuations. Materials Science Forum, 2005, 495-497, 955-964.	0.3	6
115	Fiber-constrained dielectric elastomer composites: Finite deformation response and instabilities under non-aligned loadings. International Journal of Solids and Structures, 2020, 184, 73-98.	1.3	6
116	Theoretical predictions for the rheology of dispersions of highly deformable particles under large amplitude oscillatory shear. Journal of Fluid Mechanics, 2020, 897, .	1.4	6
117	Variational estimates for the effective properties and field statistics of composites with variable particle interaction strengths. Journal of the Mechanics and Physics of Solids, 2022, 167, 104996.	2.3	6
118	The Effective Behavior of Nonlinear Composites: A Comparison between Two Methods. Materials Science Forum, 1993, 123-125, 351-360.	0.3	5
119	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.	0.9	5
120	Bounds on the self-consistent approximation for nonlinear media and implications for the second-order method. Comptes Rendus Mecanique, 2001, 329, 571-577.	0.2	5
121	Void growth in power-law creeping solids: Effect of surface diffusion and surface energy. International Journal of Solids and Structures, 2005, 42, 6202-6225.	1.3	5
122	Modeling microstructural effects in dilatational plasticity of polycrystalline materials. Procedia IUTAM, 2012, 3, 314-330.	1.2	5
123	Reinforced elastomers: Homogenization, macroscopic stability and relaxation. Journal of the Mechanics and Physics of Solids, 2020, 136, 103689.	2.3	5
124	Field statistics in linearized elastic and viscous composites and polycrystals. International Journal of Solids and Structures, 2021, 224, 111030.	1.3	5
125	Exact second-order estimates of the self-consistent type for nonlinear composite materials. Mechanics of Materials, 1998, 28, 9-22.	1.7	4
126	Variational self-consistent estimates for viscoplastic polycrystals with highly anisotropic grains. Comptes Rendus De L'Academie De Sciences - Serie IIb: Mecanique, Physique, Chimie, Astronomie, 2000, 328, 11-17.	0.1	4

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127	Towards effective mechanical properties of skeletal muscle tissue via homogenisation. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 83-84.	0.2	3
128	Multiscale modelling of skeletal muscle tissue by incorporating microstructural effects. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 75-76.	0.2	3
129	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.	2.3	3
130	Statistics of the stress, strain-rate and spin fields in viscoplastic polycrystals. International Journal of Solids and Structures, 2021, 217-218, 193-214.	1.3	3
131	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.	0.8	2
132	On the optimality of the variational linear comparison bounds for porous viscoplastic materials. Journal of the Mechanics and Physics of Solids, 2020, 138, 103898.	2.3	1
133	Exact results for weakly nonlinear composites and implications for homogenization methods. Comptes Rendus - Mecanique, 2020, 348, 893-909.	0.3	1
134	Estimations homogénéisées pour les composites hyperélastiques et applications aux élastomères renforcés. Comptes Rendus De L'Academie De Sciences - Serie IIb: Mecanique, Physique, Chimie, Astronomie, 1999, 327, 1297-1304.	0.1	0
135	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.	1.0	Ο
136	Response to the comments by Hucthinson and Tvergaard. International Journal of Solids and Structures, 2012, 49, 3486.	1.3	0
137	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	Ο
138	Macroscopic response and microstructure evolution in viscoplastic polycrystals with pressurized pores. International Journal of Fracture, 2021, 230, 43.	1.1	0