Claude Fressengeas

List of Publications by Year
in descending order

103	2,996	136740	174990
papers	citations	32 h-index	52 g-index

105	105	105	1422
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	On the theory of dislocation and generalized disclination fields and its application to straight and stepped symmetrical tilt boundaries. Journal of the Mechanics and Physics of Solids, 2020, 143, 104092.	2.3	10
2	Revisiting the Application of Field Dislocation and Disclination Mechanics to Grain Boundaries. Metals, 2020, 10, 1517.	1.0	2
3	A continuum model for slip transfer at grain boundaries. Advanced Modeling and Simulation in Engineering Sciences, 2020, 7, .	0.7	7
4	Crystal plasticity modeling of the effects of crystal orientation and grain-to-grain interactions on DSA-induced strain localization in Alâ€“Li alloys. Materialia, 2019, 8, 100467.	1.3	10
5	Spatiotemporal correlations in the Portevin-Le Chatelier band dynamics during the type B - type C transition. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 756, 313-318.	2.6	17
6	Tangential continuity of the curvature tensor at grain boundaries underpins disclination density determination from spatially mapped orientation data. International Journal of Solids and Structures, 2019, 156-157, 210-215.	1.3	9
7	Curvature effects on boundary migration. Journal of the Mechanics and Physics of Solids, 2019, 124, 814-826.	2.3	2
8	Disconnections, dislocations and generalized disclinations in grain boundary ledges. International Journal of Plasticity, 2018, 104, 134-146.	4.1	21
9	Geometrically Nonlinear Field Fracture Mechanics and Crack Nucleation, Application to Strain Localization Fields in Al-Cu-Li Aerospace Alloys. Materials, 2018, 11, 498.	1.3	6
10	On the evaluation of dislocation densities in pure tantalum from EBSD orientation data. Materiaux Et Techniques, 2018, 106, 604.	0.3	17
11	Nonlocal elasticity tensors in dislocation and disclination cores. Journal of the Mechanics and Physics of Solids, 2017, 100, 62-84.	2.3	22
12	Continuous description of grain boundaries using crystal defectfields: the example of a {3 1 0}/[0 0 1] tilt boundary in MgO. European Journal of Mineralogy, 2017, 29, 155-165.	0.4	2
13	On the strain rate dependence of the critical strain for plastic instabilities in Al-Mg alloys. Scripta Materialia, 2017, 130, 252-255.	2.6	29
14	Influence of pressure on dislocation, disclination, and generalized-disclination structures of a {310}/[001] tilt grain boundary in MgO. Journal of Materials Research, 2016, 31, 3108-3114.	1.2	3
15	Continuous Modeling of Dislocation Cores Using a Mechanical Theory of Dislocation Fields. Materials Science Forum, 2016, 879, 2456-2462.	0.3	0
16	Building compact dislocation cores in an elasto-plastic model of dislocation fields. International Journal of Plasticity, 2016, 82, 241-259.	4.1	10
17	A Fast Fourier Transform-Based Approach for Generalized Disclination Mechanics Within a Couple Stress Theory. Advanced Structured Materials, 2016, , 47-75.	0.3	1
18	A higher order elasto-viscoplastic model using fast Fourier transforms: Effects of lattice curvatures on mechanical response of nanocrystalline metals. International Journal of Plasticity, 2016, 83, 126-152.	4.1	22

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19	Continuous description of a grain boundary in forsterite from atomic scale simulations: the role of disclinations. Philosophical Magazine, 2016, 96, 1757-1772.	0.7	14
20	Effects of grain-to-grain interactions on shear strain localization in Alâ€“Cuâ€“Li rolled sheets. International Journal of Solids and Structures, 2016, 99, 71-81.	1.3	12
21	A field theory of strain/curvature incompatibility for coupled fracture and plasticity. International Journal of Solids and Structures, 2016, 82, 16-38.	1.3	6
22	Continuous description of the atomic structure of grain boundaries using dislocation and generalized-disclination density fields. International Journal of Plasticity, 2016, 77, 75-89.	4.1	30
23	Analysis of Dynamic Recrystallization of Ice from EBSD Orientation Mapping. Frontiers in Earth Science, 2015, 3, .	0.8	33
24	On the effects of the Mg content on the critical strain for the jerky flow of Alâ€“Mg alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 631, 209-213.	2.6	31
25	A mesoscopic theory of dislocation and disclination fields for grain boundary-mediated crystal plasticity. International Journal of Solids and Structures, 2015, 71, 277-290.	1.3	20
26	A numerical spectral approach to solve the dislocation density transport equation. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 065008.	0.8	29
27	Continuum Mechanics of the Interaction of Phase Boundaries and Dislocations in Solids. Springer Proceedings in Mathematics and Statistics, 2015, , 123-165.	0.1	14
28	A field theory of piezoelectric media containing dislocations. Journal of Applied Physics, 2014, 115, 144902.	1.1	9
29	Continuous modeling of the structure of symmetric tilt boundaries. International Journal of Solids and Structures, 2014, 51, 1434-1441.	1.3	32
30	Disclinations provide the missing mechanism for deforming olivine-rich rocks in the mantle. Nature, 2014, 507, 51-56.	13.7	88
31	A field theory of distortion incompatibility for coupled fracture and plasticity. Journal of the Mechanics and Physics of Solids, 2014, 68, 45-65.	2.3	10
32	Disclination mediated plasticity in shear-coupled boundary migration. International Journal of Plasticity, 2014, 53, 179-192.	4.1	47
33	A numerical spectral approach for solving elasto-static field dislocation and g-disclination mechanics. International Journal of Solids and Structures, 2014, 51, 4157-4175.	1.3	71
34	Disclinations in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math>molecular layers on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">WO</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mo>/</mml:mo><mml:mi mathvariant="normal">W</mml:mi><mml:mo>(</mml:mo><mml:mn>110</mml:mn><mml:mo>)</mml:mo></mml:math>surfaces. Physical Review B, 2014, 90, .	1.1	10
35	Disclination densities from EBSD orientation mapping. International Journal of Solids and Structures, 2013, 50, 137-146.	1.3	54
36	A Theory of Disclination and Dislocation Fields for Grain Boundary Plasticity. Advanced Structured Materials, 2013, , 303-320.	0.3	1

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37	Elastic constitutive laws for incompatible crystalline media: the contributions of dislocations, disclinations and G-disclinations. Philosophical Magazine, 2013, 93, 794-832.	0.7	28
38	Grain boundary modeling using an elasto-plastic theory of dislocation and disclination fields. Journal of the Mechanics and Physics of Solids, 2013, 61, 370-384.	2.3	42
39	Effects of the impact of a low temperature nitrogen jet on metallic surfaces. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3601-3619.	1.0	10
40	Tangential continuity of elastic/plastic curvature and strain at interfaces. International Journal of Solids and Structures, 2012, 49, 2660-2667.	1.3	20
41	Coupled phase transformations and plasticity as a field theory of deformation incompatibility. International Journal of Fracture, 2012, 174, 87-94.	1.1	33
42	Size effects on the hardening of channel-type microstructures: A field dislocation mechanics-based approach. Acta Materialia, 2012, 60, 664-673.	3.8	12
43	On the similarity of plastic flow processes during smooth and jerky flow in dilute alloys. Acta Materialia, 2012, 60, 844-850.	3.8	39
44	On the similarity of plastic flow processes during smooth and jerky flow: Statistical analysis. Acta Materialia, 2012, 60, 3729-3740.	3.8	65
45	Relations between twin and slip in parent lattice due to kinematic compatibility at interfaces. International Journal of Solids and Structures, 2012, 49, 1355-1364.	1.3	6
46	Continuity constraints at interfaces and their consequences on the work hardening of metalâ€“matrix composites. Journal of the Mechanics and Physics of Solids, 2011, 59, 2023-2043.	2.3	29
47	Grain boundary and triple junction energies in crystalline media: A disclination based approach. International Journal of Solids and Structures, 2011, 48, 3176-3193.	1.3	29
48	An elasto-plastic theory of dislocation and disclination fields. International Journal of Solids and Structures, 2011, 48, 3499-3509.	1.3	81
49	Surface Damage and Treatment by Impact of a Low Temperature Nitrogen Jet. , 2011, , .		1
50	Dislocation Mediated Continuum Plasticity: Case Studies on Modeling Scale Dependence, Scale-Invariance, and Directionality of Sharp Yield-Point. , 2011, , 277-309.		4
51	Coupled phase transformations and plasticity as a field theory of deformation incompatibility. , 2011, , 87-94.		0
52	The intermittency of plasticity in an Al3%Mg alloy. Journal of Physics: Conference Series, 2010, 240, 012009.	0.3	10
53	Characterizing short-range vs. long-range spatial correlations in dislocation distributions. Acta Materialia, 2010, 58, 1837-1849.	3.8	16
54	On particle size effects: An internal length mean field approach using field dislocation mechanics. Acta Materialia, 2010, 58, 5532-5544.	3.8	24

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55	Crossover from continuous to discontinuous propagation in the Portevinâ€“Le Chatelier effect. Acta Materialia, 2010, 58, 1342-1349.	3.8	70
56	Intrinsic structure of acoustic emission events during jerky flow in an Al alloy. Physical Review B, 2009, 79, .	1.1	34
57	Dislocation transport and intermittency in the plasticity of crystalline solids. Physical Review B, 2009, 79, .	1.1	66
58	Spatial correlation in grain misorientation distribution. Acta Materialia, 2009, 57, 5382-5395.	3.8	37
59	Lattice incompatibility and strain-aging in single crystals. Journal of the Mechanics and Physics of Solids, 2009, 57, 1733-1748.	2.3	17
60	Rearrangement of dislocation structures in the aging of ice single crystals. Acta Materialia, 2008, 56, 1555-1563.	3.8	12
61	Directionality of yield point in strain-aged steels: The role of polar dislocations. Acta Materialia, 2008, 56, 3002-3010.	3.8	33
62	The dynamics of Portevinâ€“Le Chatelier bands in an Alâ€“Mg alloy from infrared thermography. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 488, 540-546.	2.6	71
63	Effects of Size on the Dynamics of Dislocations in Ice Single Crystals. Physical Review Letters, 2007, 99, 155507.	2.9	36
64	Evidence for universal intermittent crystal plasticity from acoustic emission and high-resolution extensometry experiments. Physical Review B, 2007, 76, .	1.1	113
65	Dislocation transport using an explicit Galerkin/least-squares formulation. Modelling and Simulation in Materials Science and Engineering, 2006, 14, 1245-1270.	0.8	60
66	Spatiotemporal aspects of jerky flow in Alâ€“Mg alloys, in relation with the Mg content. Scripta Materialia, 2006, 54, 2113-2118.	2.6	48
67	Effects of liner grain size on shaped â€“ charge jet performance: A combined experimental/numerical/analytical approach. European Physical Journal Special Topics, 2006, 134, 379-384.	0.2	5
68	Coupling the dynamical behavior of compatible/incompatible dislocation distributions. , 2006, , .		0
69	Dynamic strain aging: A coupled dislocationâ€”Solute dynamic model. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 400-401, 226-230.	2.6	104
70	Comment on: Dislocation dynamics is chaotic. Scripta Materialia, 2005, 52, 425-428.	2.6	7
71	Breakup of Copper shaped-charge jets: Experiment, numerical simulations, and analytical modeling. Journal of Applied Physics, 2005, 98, 123521.	1.1	35
72	Portevinâ€“Le Chatelier effect in biaxially strained Alâ€“Feâ€“Si foils. Scripta Materialia, 2003, 48, 1105-1110.	2.6	17

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73	Time distribution of stress drops, critical strain and crossover in the dynamics of jerky flow. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 356, 102-107.	2.6	31
74	Spatial coupling in jerky flow using polycrystal plasticity. Acta Materialia, 2003, 51, 3651-3662.	3.8	119
75	Simulation of the Portevin-Le Chatelier effect using polycrystal plasticity. European Physical Journal Special Topics, 2003, 105, 191-197.	0.2	2
76	Comment on â€œPortevinâ€“Le Chatelier effectâ€• Physical Review E, 2002, 65, 053501; discussion 053502.	0.8	9
77	Chapter 57 Collective behaviour of dislocations in plasticity. Dislocations in Solids, 2002, , 101-192.	1.6	69
78	The hidden order behind jerky flow. Acta Materialia, 2002, 50, 2813-2824.	3.8	83
79	Scale transitions in the dynamic analysis of jerky flow. European Physical Journal Special Topics, 2001, 11, Pr5-135-Pr5-142.	0.2	2
80	Crossover in the dynamics of Portevinâ€“Le Chatelier effect from chaos to SOC. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 309-310, 316-319.	2.6	4
81	Statistical and multifractal analysis of the Portevinâ€“Le Chatelier effect. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 319-321, 170-175.	2.6	7
82	Multifractal Burst in the Spatiotemporal Dynamics of Jerky Flow. Physical Review Letters, 2001, 87, 165508.	2.9	104
83	Crossover in the dynamics of jerky flow in Alï£¿Mg polycrystals. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2000, 80, 415-416.	0.9	0
84	Crossover from chaotic to self-organized critical dynamics in jerky flow of single crystals. Physical Review E, 1999, 60, 5455-5462.	0.8	114
85	Chaos in the Portevinâ€“Le ChÃ¢telier Effect. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1997, 07, 2577-2586.	0.7	49
86	Chaos in jerky flow â€” Experimental verification of a theoretical prediction. Pramana - Journal of Physics, 1997, 48, 705-718.	0.9	7
87	Chaos and the jerky flow in Al-Mg polycrystals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1997, 234-236, 314-317.	2.6	7
88	Dynamic Necking of Rods at High Strain Rates. European Physical Journal Special Topics, 1997, 07, C3-699-C3-704.	0.2	1
89	On the Critical Nominal Strain in Adiabatic Shear Banding. European Physical Journal Special Topics, 1997, 07, C3-785-C3-790.	0.2	1
90	Dynamical Analysis of the Portevin - Le ChÃ¢telier Effect. Solid State Phenomena, 1995, 42-43, 293-302.	0.3	2

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91	On the existence of chaos in jerky flow. Scripta Metallurgica Et Materialia, 1995, 32, 1731-1737.	1.0	55
92	The catastrophic development of shear localization in thermoviscoplastic materials. European Physical Journal Special Topics, 1994, 04, C8-435-C8-440.	0.2	1
93	KINEMATICS OF PLASTICITY RELATED TO THE STATE AND EVOLUTION OF THE MATERIAL MICROSTRUCTURE. Journal of the Mechanical Behavior of Materials, 1994, 5, 107-128.	0.7	4
94	Propagating pattern selection in the Portevin-Le Chatelier effect. Scripta Metallurgica Et Materialia, 1993, 29, 1177-1182.	1.0	19
95	The time development of eulerian/lagrangian perturbations to simple shear and its applications to shear banding. Journal of the Mechanics and Physics of Solids, 1992, 40, 1735-1756.	2.3	7
96	Adiabatic shear morphology at very high strain rates. International Journal of Impact Engineering, 1989, 8, 141-157.	2.4	15
97	Effect of rate sensitivity on slip system activity and lattice rotation. Acta Metallurgica, 1988, 36, 1961-1970.	2.1	91
98	Instability and localization of plastic flow in shear at high strain rates. Journal of the Mechanics and Physics of Solids, 1987, 35, 185-211.	2.3	144
99	Inertia and thermal effects on the localization of plastic flow. Acta Metallurgica, 1985, 33, 387-396.	2.1	120
100	SUR LES CRITÃˆRES DE LOCALISATION DE LA DÃ‰FORMATION PLASTIQUE DE TRACTION SIMPLE. Journal De Physique Colloque, 1985, 46, C5-121-C5-125.	0.2	1
101	FORMATION DES BANDES DE CISAILLEMENT : UNE ANALYSE DE STABILITÃ‰ RELATIVE. Journal De Physique Colloque, 1985, 46, C5-283-C5-289.	0.2	0
102	TRANSIENT STRESS INDUCED BY THERMAL SHOCK. Journal of Thermal Stresses, 1980, 3, 379-390.	1.1	4
103	The Propagation of the Portevin-Le Chatelier Deformation Bands. Solid State Phenomena, 0, 23-24, 403-415.	0.3	8