Olivier Castelnau

List of Publications by Year
in descending order

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101 papers	2,202 citations	201674 27 h-index	243625 44 g-index
103 all docs	103 docs citations	103 times ranked	1655 citing authors

#	Article	IF	Citations
1	Orientation image-based micromechanical modelling of subgrain texture evolution in polycrystalline copper. Acta Materialia, 2008, 56, 3914-3926.	7.9	201
2	Viscoplastic modeling of texture development in polycrystalline ice with a self-consistent approach: Comparison with bound estimates. Journal of Geophysical Research, 1996, 101, 13851-13868.	3.3	118
3	Additive layer manufacturing of titanium matrix composites using the direct metal deposition laser process. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 677, 171-181.	5.6	90
4	Grain to grain slip activity in plastically deformed Zr determined by X-ray micro-diffraction line profile analysis. Acta Materialia, 2007, 55, 1117-1127.	7.9	81
5	Elastic anisotropy and yield surface estimates of polycrystals. International Journal of Solids and Structures, 2009, 46, 3018-3026.	2.7	77
6	Experimental characterization of the intragranular strain field in columnar ice during transient creep. Acta Materialia, 2012, 60, 3655-3666.	7.9	67
7	Multiscale modeling of ice deformation behavior. Journal of Structural Geology, 2014, 61, 78-108.	2.3	64
8	A user-friendly anisotropic flow law for ice-sheet modeling. Journal of Glaciology, 2005, 51, 3-14.	2.2	57
9	Study of the antiplane deformation of linear 2-D polycrystals with different microstructures. International Journal of Solids and Structures, 2005, 42, 5441-5459.	2.7	56
10	Modeling the mechanical response of polycrystals deforming by climb and glide. Philosophical Magazine, 2010, 90, 567-583.	1.6	56
11	Micromechanical modeling of the viscoplastic behavior of olivine. Journal of Geophysical Research, 2008, 113, .	3.3	55
12	A â€œquasi-elasticâ€•affine formulation for the homogenised behaviour of nonlinear viscoelastic polycrystals and composites. European Journal of Mechanics, A/Solids, 2002, 21, 943-960.	3.7	52
13	Texture Evolution and Associated Nucleation and Growth Mechanisms during Annealing of a Zr Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2009, 40, 2423-2434.	2.2	52
14	Texture dependent plastic behavior of Zr 702 at large strain. Journal of Nuclear Materials, 2001, 297, 14-26.	2.7	50
15	Multi-scale modeling of the mechanical behavior of polycrystalline ice under transient creep. Procedia IUTAM, 2012, 3, 76-90.	1.2	46
16	Development of a synchrotron biaxial tensile device for in situ characterization of thin films mechanical response. Review of Scientific Instruments, 2010, 81, 103903.	1.3	45
17	Numerical simulations of texture development and associated rheological anisotropy in regions of complex mantle flow. Geophysical Research Letters, 2009, 36, .	4.0	42
18	In situdiffraction strain analysis of elastically deformed polycrystalline thin films, and micromechanical interpretation. Journal of Applied Crystallography, 2009, 42, 1073-1084.	4.5	41

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19	Influence of beam diameter on Laser Powder Bed Fusion (L-PBF) process. Additive Manufacturing, 2020, 36, 101532.	3.0	39
20	Elastic anisotropy of polycrystalline Au films: Modeling and respective contributions of X-ray diffraction, nanoindentation and Brillouin light scattering. Acta Materialia, 2010, 58, 4998-5008.	7.9	36
21	Mechanical field fluctuations in polycrystals estimated by homogenization techniques. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 3589-3612.	2.1	34
22	Synchrotron X-ray diffraction experiments with a prototype hybrid pixel detector. Journal of Applied Crystallography, 2012, 45, 38-47.	4.5	34
23	Thermal creep of Zrâ€“Nb1%â€“O alloys: experimental analysis and micromechanical modelling. Journal of Nuclear Materials, 2002, 305, 175-186.	2.7	33
24	Incremental homogenization approach for ageing viscoelastic polycrystals. Comptes Rendus - Mecanique, 2012, 340, 378-386.	2.1	33
25	Elastic-strain distribution in metallic film-polymer substrate composites. Applied Physics Letters, 2010, 96, 041905.	3.3	31
26	On the Accuracy of Elastic Strain Field Measurements by Laue Microdiffraction and High-Resolution EBSD: a Cross-Validation Experiment. Experimental Mechanics, 2016, 56, 483-492.	2.0	31
27	Simulation of the orientation dependence of stored energy during rolling deformation of low carbon steels. Modelling and Simulation in Materials Science and Engineering, 1999, 7, 851-864.	2.0	30
28	Elastoviscoplastic micromechanical modeling of the transient creep of ice. Journal of Geophysical Research, 2008, 113, .	3.3	29
29	Multiscale modeling of the anisotropic electrical conductivity of architectured and nanostructured Cu-Nb composite wires and experimental comparison. Acta Materialia, 2017, 141, 131-141.	7.9	29
30	Residual strain distribution in Zircaloy-4 measured by neutron diffraction and estimated by homogenization techniques. Scripta Materialia, 2002, 47, 595-599.	5.2	27
31	Microstructures and rheology of the Earth's upper mantle inferred from a multiscale approach. Comptes Rendus Physique, 2010, 11, 304-315.	0.9	26
32	The evolution with strain of the stored energy in different texture components of cold-rolled IF steel revealed by high resolution X-ray diffraction. Materials Characterization, 2015, 104, 31-41.	4.4	26
33	Multiscale modeling of the elastic behavior of architectured and nanostructured Cuâ€“Nb composite wires. International Journal of Solids and Structures, 2017, 121, 148-162.	2.7	25
34	The effect of strain heterogeneity on the work hardening of polycrystals predicted by mean-field approaches. Acta Materialia, 2006, 54, 2745-2756.	7.9	24
35	Complex force history of a calvingâ€generated glacial earthquake derived from broadband seismic inversion. Geophysical Research Letters, 2016, 43, 1055-1065.	4.0	24
36	Laue-DIC: a new method for improved stress field measurements at the micrometer scale. Journal of Synchrotron Radiation, 2015, 22, 980-994.	2.4	23

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37	Simplified numerical model for the laser metal deposition additive manufacturing process. Journal of Laser Applications, 2017, 29, .	1.7	23
38	Elastic behavior of polycrystalline thin films inferred from in situ micromechanical testing and modeling. Applied Physics Letters, 2006, 89, 061911.	3.3	21
39	Evidence of 3D strain gradients associated with tin whisker growth. Scripta Materialia, 2018, 144, 1-4.	5.2	21
40	Multiscale modeling of the elasto-plastic behavior of architectured and nanostructured Cu-Nb composite wires and comparison with neutron diffraction experiments. International Journal of Plasticity, 2019, 122, 1-30.	8.8	21
41	Beam size dependency of a laser-induced plasma in confined regime: Shortening of the plasma release. Influence on pressure and thermal loading. Optics and Laser Technology, 2021, 135, 106689.	4.6	21
42	Analysis of As-Built Microstructures and Recrystallization Phenomena on Inconel 625 Alloy Obtained via Laser Powder Bed Fusion (L-PBF). Metals, 2021, 11, 619.	2.3	18
43	Effective viscoplastic behavior of polycrystalline aggregates lacking four independent slip systems inferred from homogenization methods; application to olivine. Journal of the Mechanics and Physics of Solids, 2015, 83, 199-220.	4.8	17
44	Monitoring Greenland ice sheet buoyancy-driven calving discharge using glacial earthquakes. Annals of Glaciology, 2019, 60, 75-95.	1.4	17
45	Dislocation density analysis in single grains of steel by X-ray scanning microdiffraction. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 467-468, 1245-1248.	1.6	15
46	Multiscale modeling of upper mantle plasticity: From single-crystal rheology to multiphase aggregate deformation. Physics of the Earth and Planetary Interiors, 2014, 228, 232-243.	1.9	15
47	Effects of crystal preferred orientation on upper-mantle flow near plate boundaries: rheologic feedbacks and seismic anisotropy. Geophysical Journal International, 2017, 210, 1481-1493.	2.4	14
48	Accuracy of stress measurement by Laue microdiffraction (Laue-DIC method): the influence of image noise, calibration errors and spot number. Journal of Synchrotron Radiation, 2017, 24, 802-817.	2.4	12
49	Determination of deviatoric elastic strain and lattice orientation by applying digital image correlation to Laue microdiffraction images: the enhanced Laue-DIC method. Journal of Applied Crystallography, 2015, 48, 1805-1817.	4.5	12
50	Combining Laue Microdiffraction and Digital Image Correlation for Improved Measurements of the Elastic Strain Field with Micrometer Spatial Resolution. Procedia IUTAM, 2012, 4, 133-143.	1.2	11
51	Characterization and modelling of the elastic properties of nano-structured W/Cu multilayers. Thin Solid Films, 2007, 516, 320-324.	1.8	10
52	Elastic properties of polycrystalline gold thin films: Simulation and X-ray diffraction experiments. Surface and Coatings Technology, 2006, 201, 4300-4304.	4.8	8
53	Controlled biaxial deformation of nanostructured W/Cu thin films studied by X-ray diffraction. Surface and Coatings Technology, 2010, 205, 1420-1425.	4.8	8
54	EBSD-assisted Laue microdiffraction for microstrain analysis. Journal of Applied Crystallography, 2018, 51, 55-67.	4.5	8

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55	Experimental and Predicted Texture Evolutions in Zirconium Alloys Deformed in Channel Die Compression. Materials Science Forum, 1998, 273-275, 523-528.	0.3	7
56	Neutron diffraction measurements of residual stress distribution in large zirconia based refractory bricks produced by electro-fusion and casting. Journal of the European Ceramic Society, 2017, 37, 2295-2302.	5.7	7
57	Direct measurement of local constitutive relations, at the micrometre scale, in bulk metallic alloys. Journal of Applied Crystallography, 2017, 50, 940-948.	4.5	7
58	Numerical Modeling of Iceberg Capsizing Responsible for Glacial Earthquakes. Journal of Geophysical Research F: Earth Surface, 2018, 123, 3013-3033.	2.8	7
59	A modified affine theory for the overall properties of nonlinear composites. Comptes Rendus Mecanique, 2001, 329, 649-654.	0.2	6
60	Huge local elastic strains in bulk nanostructured pure zirconia materials. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 806, 140817.	5.6	6
61	Microsecond time-resolved X-ray diffraction for the investigation of fatigue behavior during ultrasonic fatigue loading. Journal of Synchrotron Radiation, 2019, 26, 1660-1670.	2.4	6
62	Orientation Dependent Intragranular Stored Energy in Polycrystalline Ti-IF Steel. Materials Science Forum, 2000, 321-324, 720-725.	0.3	5
63	X-ray strain analysis of {111} fiber-textured thin films independent of grain-interaction models. Journal of Applied Crystallography, 2011, 44, 409-413.	4.5	5
64	Microstructure and Property Modifications of Cold Rolled IF Steel by Local Laser Annealing. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 4786-4802.	2.2	5
65	Validity of Crystal Plasticity Models Near Grain Boundaries: Contribution of Elastic Strain Measurements at Micron Scale. Jom, 2019, 71, 3543-3551.	1.9	5
66	Modelling capsizing icebergs in the open ocean. Geophysical Journal International, 2020, 223, 1265-1287.	2.4	5
67	Full reciprocal-space mapping up to 2000â€…K under controlled atmosphere: the multipurpose QMAX furnace. Journal of Applied Crystallography, 2020, 53, 650-661.	4.5	5
68	Application of electron tomography of dislocations in beam-sensitive quartz to the determination of strain components. Tectonophysics, 2021, 803, 228754.	2.2	5
69	Estimating single-crystal elastic constants of polycrystalline Î² metastable titanium alloy: A Bayesian inference analysis based on high energy X-ray diffraction and micromechanical modeling. Acta Materialia, 2021, 208, 116762.	7.9	5
70	Laser interaction in a water tank configuration: Higher confinement breakdown threshold and greater generated pressures for laser shock peening. Journal of Laser Applications, 2021, 33, .	1.7	5
71	LaueNN: neural-network-based hkl recognition of Laue spots and its application to polycrystalline materials. Journal of Applied Crystallography, 2022, 55, 737-750.	4.5	5
72	Single Grain Analysis of Dislocation Density in Cold Rolled IF-Ti Steel with a New High-Resolution Microdiffraction Technique. Materials Science Forum, 2000, 347-349, 297-302.	0.3	4

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73	Mechanism of Texture Evolution during Primary Recrystallisation and Grain Growth in a Zr-2Hf Alloy. Materials Science Forum, 2007, 550, 545-550.	0.3	4
74	Analytical parametrization of self-consistent polycrystal mechanics: Fast calculation of upper mantle anisotropy. Geophysical Journal International, 2015, 203, 334-350.	2.4	4
75	Single Grain Analysis of Strain Hardening and Internal Stresses in Cold Rolled IF-Ti Steel with a new High-Resolution Microdiffraction Technique. Key Engineering Materials, 2000, 177-180, 147-152.	0.4	3
76	White Beam Microdiffraction Experiments for the Determination of the Local Plastic Behaviour of Polycrystals. Materials Science Forum, 2006, 524-525, 103-108.	0.3	3
77	Micromechanical Modeling of the Elastic Behavior of Multilayer Thin Films; Comparison with In Situ Data from X-Ray Diffraction. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 99-108.	0.2	3
78	X-ray elastic response of metallic thin film supported by polyimide substrates. Journal of Strain Analysis for Engineering Design, 2011, 46, 639-649.	1.8	3
79	Effective behaviour of viscoelastic polycrystals and associated local fields inferred from homogenization: Incremental collocation approach. Procedia Engineering, 2011, 10, 177-182.	1.2	3
80	Strains, Stresses and Elastic Properties in Polycrystalline Metallic Thin Films: In Situ Deformation Combined with X-Ray Diffraction and Simulation Experiments. Materials Science Forum, 2006, 524-525, 735-740.	0.3	2
81	Relation between Initial Texture and Microstructure and Nucleation and Growth Mechanisms in Metals. Materials Science Forum, 2007, 558-559, 45-52.	0.3	2
82	Textures in deforming forsterite aggregates up to 8ÂGPa and 1673ÂK. Physics and Chemistry of Minerals, 2016, 43, 409-417.	0.8	2
83	Coupling between elastic strains and phase transition in dense pure zirconia polycrystals. Physical Review Materials, 2022, 6, .	2.4	2
84	Etude des mÃ©canismes de dÃ©formation et des Ã©volutions de textures du zirconium 702 Î± dÃ©formÃ© en compression plane Ã la tempÃ©rature ambiante. Revue De Metallurgie, 1997, 94, 1071-1080.	0.3	1
85	A similarity between the classical and modified secant extensions of the self-consistent model. Comptes Rendus Mecanique, 2001, 329, 523-527.	0.2	1
86	Intra-phase heterogeneity of stresses in micro-macro models: link with X-ray diffraction measurements. Revue De Metallurgie, 2003, 100, 1173-1177.	0.3	1
87	Intragranular strain ï¬eld in columnar ice during transient creep regime and relation with the local microstucture. EPJ Web of Conferences, 2010, 6, 31001.	0.3	1
88	Macroscopic and Microscopic Determinations of Residual Stresses in Thin Oxide Dispersion Strengthened Steel Tubes. Materials Science Forum, 0, 768-769, 296-303.	0.3	1
89	An analytical finite-strain parametrization for texture evolution in deforming olivine polycrystals. Geophysical Journal International, 2019, 216, 486-514.	2.4	1
90	Development and optimization of Laser Shock Repeated Dense Peening (LSRDP) using most advanced laser architectures. Optics Express, 2022, 30, 10528.	3.4	1

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91	Self-consistent Estimates for Nonlinear Viscoelastic Polycrystals: a Simplified Resolution of the Affine Formulation Adapted to Monotonic Loading Paths. Key Engineering Materials, 2000, 177-180, 153-158.	0.4	0
92	Distribution of Residual Strain In Polycrystals : Analysis by Diffraction and Homogenisation Techniques. Materials Science Forum, 2002, 404-407, 735-740.	0.3	0
93	Analyse par diffraction des neutrons des dÃ©formations rÃ©siduelles dans un alliage de zirconium aprÃ¨s un chargement thermomÃ©canique. European Physical Journal Special Topics, 2002, 12, 125-136.	0.2	0
94	Full-field Model and Experimental Validation of Subgrain Texture and Microstructure Evolution of Polycrystalline Copper. AIP Conference Proceedings, 2007, , .	0.4	0
95	Mechanical characterization of nanostructured thin films at different scales. EPJ Web of Conferences, 2010, 6, 26003.	0.3	0
96	X-ray strain analysis in thin films enhanced by 2D detection. EPJ Web of Conferences, 2010, 6, 26008.	0.3	0
97	Stress field in deformed polycrystals at the micron scale. EPJ Web of Conferences, 2010, 6, 35005.	0.3	0
98	Peculiar effective elastic anisotropy of nanometric multilayers studied by surface Brillouin scattering. Superlattices and Microstructures, 2015, 88, 551-560.	3.1	0
99	Stress partitioning in a near-Î² Titanium alloy induced by elastic and plastic phase anisotropies: experimental and modeling. MATEC Web of Conferences, 2020, 321, 11090.	0.2	0
100	Development of Laser Shock Repeated Dense Peening (LSRDP) at High Repetition Rate. , 2021, , .		0
101	Development and optimization of fast laser shock peening (FLSP) using most advanced laser architectures. , 2022, , .		0