

# 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	Coupling between elastic strains and phase transition in dense pure zirconia polycrystals. <i>Physical Review Materials</i> , 2022, 6, .	2.4	2
2	Development and optimization of Laser Shock Repeated Dense Peening (LSRDP) using most advanced laser architectures. <i>Optics Express</i> , 2022, 30, 10528.	3.4	1
3	Development and optimization of fast laser shock peening (FLSP) using most advanced laser architectures. , 2022, , .		0
4	LaueNN: neural-network-based <i>hkl</i> recognition of Laue spots and its application to polycrystalline materials. <i>Journal of Applied Crystallography</i> , 2022, 55, 737-750.	4.5	5
5	Beam size dependency of a laser-induced plasma in confined regime: Shortening of the plasma release. Influence on pressure and thermal loading. <i>Optics and Laser Technology</i> , 2021, 135, 106689.	4.6	21
6	Application of electron tomography of dislocations in beam-sensitive quartz to the determination of strain components. <i>Tectonophysics</i> , 2021, 803, 228754.	2.2	5
7	Huge local elastic strains in bulk nanostructured pure zirconia materials. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 806, 140817.	5.6	6
8	Estimating single-crystal elastic constants of polycrystalline $\hat{\Gamma}^2$ metastable titanium alloy: A Bayesian inference analysis based on high energy X-ray diffraction and micromechanical modeling. <i>Acta Materialia</i> , 2021, 208, 116762.	7.9	5
9	Analysis of As-Built Microstructures and Recrystallization Phenomena on Inconel 625 Alloy Obtained via Laser Powder Bed Fusion (L-PBF). <i>Metals</i> , 2021, 11, 619.	2.3	18
10	Laser interaction in a water tank configuration: Higher confinement breakdown threshold and greater generated pressures for laser shock peening. <i>Journal of Laser Applications</i> , 2021, 33, .	1.7	5
11	Development of Laser Shock Repeated Dense Peening (LSRDP) at High Repetition Rate. , 2021, , .		0
12	Influence of beam diameter on Laser Powder Bed Fusion (L-PBF) process. <i>Additive Manufacturing</i> , 2020, 36, 101532.	3.0	39
13	Modelling capsizing icebergs in the open ocean. <i>Geophysical Journal International</i> , 2020, 223, 1265-1287.	2.4	5
14	Full reciprocal-space mapping up to 2000 K under controlled atmosphere: the multipurpose QMAX furnace. <i>Journal of Applied Crystallography</i> , 2020, 53, 650-661.	4.5	5
15	Stress partitioning in a near- $\hat{\Gamma}^2$ Titanium alloy induced by elastic and plastic phase anisotropies: experimental and modeling. <i>MATEC Web of Conferences</i> , 2020, 321, 11090.	0.2	0
16	Validity of Crystal Plasticity Models Near Grain Boundaries: Contribution of Elastic Strain Measurements at Micron Scale. <i>Jom</i> , 2019, 71, 3543-3551.	1.9	5
17	Multiscale modeling of the elasto-plastic behavior of architected and nanostructured Cu-Nb composite wires and comparison with neutron diffraction experiments. <i>International Journal of Plasticity</i> , 2019, 122, 1-30.	8.8	21
18	Monitoring Greenland ice sheet buoyancy-driven calving discharge using glacial earthquakes. <i>Annals of Glaciology</i> , 2019, 60, 75-95.	1.4	17

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19	An analytical finite-strain parametrization for texture evolution in deforming olivine polycrystals. <i>Geophysical Journal International</i> , 2019, 216, 486-514.	2.4	1
20	Microsecond time-resolved X-ray diffraction for the investigation of fatigue behavior during ultrasonic fatigue loading. <i>Journal of Synchrotron Radiation</i> , 2019, 26, 1660-1670.	2.4	6
21	Evidence of 3D strain gradients associated with tin whisker growth. <i>Scripta Materialia</i> , 2018, 144, 1-4.	5.2	21
22	EBSD-assisted Laue microdiffraction for microstrain analysis. <i>Journal of Applied Crystallography</i> , 2018, 51, 55-67.	4.5	8
23	Numerical Modeling of Iceberg Capsizing Responsible for Glacial Earthquakes. <i>Journal of Geophysical Research F: Earth Surface</i> , 2018, 123, 3013-3033.	2.8	7
24	Neutron diffraction measurements of residual stress distribution in large zirconia based refractory bricks produced by electro-fusion and casting. <i>Journal of the European Ceramic Society</i> , 2017, 37, 2295-2302.	5.7	7
25	Effects of crystal preferred orientation on upper-mantle flow near plate boundaries: rheologic feedbacks and seismic anisotropy. <i>Geophysical Journal International</i> , 2017, 210, 1481-1493.	2.4	14
26	Direct measurement of local constitutive relations, at the micrometre scale, in bulk metallic alloys. <i>Journal of Applied Crystallography</i> , 2017, 50, 940-948.	4.5	7
27	Multiscale modeling of the elastic behavior of architected and nanostructured Cu-Nb composite wires. <i>International Journal of Solids and Structures</i> , 2017, 121, 148-162.	2.7	25
28	Multiscale modeling of the anisotropic electrical conductivity of architected and nanostructured Cu-Nb composite wires and experimental comparison. <i>Acta Materialia</i> , 2017, 141, 131-141.	7.9	29
29	Microstructure and Property Modifications of Cold Rolled IF Steel by Local Laser Annealing. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2017, 48, 4786-4802.	2.2	5
30	Simplified numerical model for the laser metal deposition additive manufacturing process. <i>Journal of Laser Applications</i> , 2017, 29, .	1.7	23
31	Accuracy of stress measurement by Laue microdiffraction (Laue-DIC method): the influence of image noise, calibration errors and spot number. <i>Journal of Synchrotron Radiation</i> , 2017, 24, 802-817.	2.4	12
32	Complex force history of a calving-generated glacial earthquake derived from broadband seismic inversion. <i>Geophysical Research Letters</i> , 2016, 43, 1055-1065.	4.0	24
33	Additive layer manufacturing of titanium matrix composites using the direct metal deposition laser process. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 677, 171-181.	5.6	90
34	Textures in deforming forsterite aggregates up to 8 GPa and 1673 K. <i>Physics and Chemistry of Minerals</i> , 2016, 43, 409-417.	0.8	2
35	On the Accuracy of Elastic Strain Field Measurements by Laue Microdiffraction and High-Resolution EBSD: a Cross-Validation Experiment. <i>Experimental Mechanics</i> , 2016, 56, 483-492.	2.0	31
36	Peculiar effective elastic anisotropy of nanometric multilayers studied by surface Brillouin scattering. <i>Superlattices and Microstructures</i> , 2015, 88, 551-560.	3.1	0

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37	Laue-DIC: a new method for improved stress field measurements at the micrometer scale. <i>Journal of Synchrotron Radiation</i> , 2015, 22, 980-994.	2.4	23
38	Effective viscoplastic behavior of polycrystalline aggregates lacking four independent slip systems inferred from homogenization methods; application to olivine. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 83, 199-220.	4.8	17
39	The evolution with strain of the stored energy in different texture components of cold-rolled IF steel revealed by high resolution X-ray diffraction. <i>Materials Characterization</i> , 2015, 104, 31-41.	4.4	26
40	Analytical parametrization of self-consistent polycrystal mechanics: Fast calculation of upper mantle anisotropy. <i>Geophysical Journal International</i> , 2015, 203, 334-350.	2.4	4
41	Determination of deviatoric elastic strain and lattice orientation by applying digital image correlation to Laue microdiffraction images: the enhanced Laue-DIC method. <i>Journal of Applied Crystallography</i> , 2015, 48, 1805-1817.	4.5	12
42	Multiscale modeling of ice deformation behavior. <i>Journal of Structural Geology</i> , 2014, 61, 78-108.	2.3	64
43	Multiscale modeling of upper mantle plasticity: From single-crystal rheology to multiphase aggregate deformation. <i>Physics of the Earth and Planetary Interiors</i> , 2014, 228, 232-243.	1.9	15
44	Incremental homogenization approach for ageing viscoelastic polycrystals. <i>Comptes Rendus - Mecanique</i> , 2012, 340, 378-386.	2.1	33
45	Combining Laue Microdiffraction and Digital Image Correlation for Improved Measurements of the Elastic Strain Field with Micrometer Spatial Resolution. <i>Procedia IUTAM</i> , 2012, 4, 133-143.	1.2	11
46	Synchrotron X-ray diffraction experiments with a prototype hybrid pixel detector. <i>Journal of Applied Crystallography</i> , 2012, 45, 38-47.	4.5	34
47	Experimental characterization of the intragranular strain field in columnar ice during transient creep. <i>Acta Materialia</i> , 2012, 60, 3655-3666.	7.9	67
48	Multi-scale modeling of the mechanical behavior of polycrystalline ice under transient creep. <i>Procedia IUTAM</i> , 2012, 3, 76-90.	1.2	46
49	X-ray elastic response of metallic thin film supported by polyimide substrates. <i>Journal of Strain Analysis for Engineering Design</i> , 2011, 46, 639-649.	1.8	3
50	X-ray strain analysis of {111} fiber-textured thin films independent of grain-interaction models. <i>Journal of Applied Crystallography</i> , 2011, 44, 409-413.	4.5	5
51	Effective behaviour of viscoelastic polycrystals and associated local fields inferred from homogenization: Incremental collocation approach. <i>Procedia Engineering</i> , 2011, 10, 177-182.	1.2	3
52	Intragranular strain field in columnar ice during transient creep regime and relation with the local microstructure. <i>EPJ Web of Conferences</i> , 2010, 6, 31001.	0.3	1
53	Controlled biaxial deformation of nanostructured W/Cu thin films studied by X-ray diffraction. <i>Surface and Coatings Technology</i> , 2010, 205, 1420-1425.	4.8	8
54	Elastic anisotropy of polycrystalline Au films: Modeling and respective contributions of X-ray diffraction, nanoindentation and Brillouin light scattering. <i>Acta Materialia</i> , 2010, 58, 4998-5008.	7.9	36

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55	Microstructures and rheology of the Earth's upper mantle inferred from a multiscale approach. Comptes Rendus Physique, 2010, 11, 304-315.	0.9	26
56	Mechanical characterization of nanostructured thin films at different scales. EPJ Web of Conferences, 2010, 6, 26003.	0.3	0
57	X-ray strain analysis in thin films enhanced by 2D detection. EPJ Web of Conferences, 2010, 6, 26008.	0.3	0
58	Stress field in deformed polycrystals at the micron scale. EPJ Web of Conferences, 2010, 6, 35005.	0.3	0
59	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
60	Elastic-strain distribution in metallic film-polymer substrate composites. Applied Physics Letters, 2010, 96, 041905.	3.3	31
61	Modeling the mechanical response of polycrystals deforming by climb and glide. Philosophical Magazine, 2010, 90, 567-583.	1.6	56
62	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
63	In situ diffraction strain analysis of elastically deformed polycrystalline thin films, and micromechanical interpretation. Journal of Applied Crystallography, 2009, 42, 1073-1084.	4.5	41
64	Elastic anisotropy and yield surface estimates of polycrystals. International Journal of Solids and Structures, 2009, 46, 3018-3026.	2.7	77
65	Numerical simulations of texture development and associated rheological anisotropy in regions of complex mantle flow. Geophysical Research Letters, 2009, 36, .	4.0	42
66	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
67	Orientation image-based micromechanical modelling of subgrain texture evolution in polycrystalline copper. Acta Materialia, 2008, 56, 3914-3926.	7.9	201
68	Micromechanical modeling of the viscoplastic behavior of olivine. Journal of Geophysical Research, 2008, 113, .	3.3	55
69	Elastoviscoplastic micromechanical modeling of the transient creep of ice. Journal of Geophysical Research, 2008, 113, .	3.3	29
70	Full-field Model and Experimental Validation of Subgrain Texture and Microstructure Evolution of Polycrystalline Copper. AIP Conference Proceedings, 2007, , .	0.4	0
71	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
72	Relation between Initial Texture and Microstructure and Nucleation and Growth Mechanisms in Metals. Materials Science Forum, 2007, 558-559, 45-52.	0.3	2

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73	Characterization and modelling of the elastic properties of nano-structured W/Cu multilayers. <i>Thin Solid Films</i> , 2007, 516, 320-324.	1.8	10
74	Grain to grain slip activity in plastically deformed Zr determined by X-ray micro-diffraction line profile analysis. <i>Acta Materialia</i> , 2007, 55, 1117-1127.	7.9	81
75	The effect of strain heterogeneity on the work hardening of polycrystals predicted by mean-field approaches. <i>Acta Materialia</i> , 2006, 54, 2745-2756.	7.9	24
76	Elastic properties of polycrystalline gold thin films: Simulation and X-ray diffraction experiments. <i>Surface and Coatings Technology</i> , 2006, 201, 4300-4304.	4.8	8
77	Strains, Stresses and Elastic Properties in Polycrystalline Metallic Thin Films: In Situ Deformation Combined with X-Ray Diffraction and Simulation Experiments. <i>Materials Science Forum</i> , 2006, 524-525, 735-740.	0.3	2
78	White Beam Microdiffraction Experiments for the Determination of the Local Plastic Behaviour of Polycrystals. <i>Materials Science Forum</i> , 2006, 524-525, 103-108.	0.3	3
79	Elastic behavior of polycrystalline thin films inferred from in situ micromechanical testing and modeling. <i>Applied Physics Letters</i> , 2006, 89, 061911.	3.3	21
80	A user-friendly anisotropic flow law for ice-sheet modeling. <i>Journal of Glaciology</i> , 2005, 51, 3-14.	2.2	57
81	Study of the antiplane deformation of linear 2-D polycrystals with different microstructures. <i>International Journal of Solids and Structures</i> , 2005, 42, 5441-5459.	2.7	56
82	Mechanical field fluctuations in polycrystals estimated by homogenization techniques. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2004, 460, 3589-3612.	2.1	34
83	Intra-phase heterogeneity of stresses in micro-macro models: link with X-ray diffraction measurements. <i>Revue De Metallurgie</i> , 2003, 100, 1173-1177.	0.3	1
84	Distribution of Residual Strain In Polycrystals : Analysis by Diffraction and Homogenisation Techniques. <i>Materials Science Forum</i> , 2002, 404-407, 735-740.	0.3	0
85	Analyse par diffraction des neutrons des déformations résiduelles dans un alliage de zirconium après un chargement thermomécanique. <i>European Physical Journal Special Topics</i> , 2002, 12, 125-136.	0.2	0
86	Residual strain distribution in Zircaloy-4 measured by neutron diffraction and estimated by homogenization techniques. <i>Scripta Materialia</i> , 2002, 47, 595-599.	5.2	27
87	A "quasi-elastic" affine formulation for the homogenised behaviour of nonlinear viscoelastic polycrystals and composites. <i>European Journal of Mechanics, A/Solids</i> , 2002, 21, 943-960.	3.7	52
88	Thermal creep of Zr-Nb-O alloys: experimental analysis and micromechanical modelling. <i>Journal of Nuclear Materials</i> , 2002, 305, 175-186.	2.7	33
89	Dislocation density analysis in single grains of steel by X-ray scanning microdiffraction. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2001, 467-468, 1245-1248.	1.6	15
90	Texture dependent plastic behavior of Zr 702 at large strain. <i>Journal of Nuclear Materials</i> , 2001, 297, 14-26.	2.7	50

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91	A similarity between the classical and modified secant extensions of the self-consistent model. Comptes Rendus Mecanique, 2001, 329, 523-527.	0.2	1
92	A modified affine theory for the overall properties of nonlinear composites. Comptes Rendus Mecanique, 2001, 329, 649-654.	0.2	6
93	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
94	Orientation Dependent Intragranular Stored Energy in Polycrystalline Ti-IF Steel. Materials Science Forum, 2000, 321-324, 720-725.	0.3	5
95	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
96	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
97	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
98	Experimental and Predicted Texture Evolutions in Zirconium Alloys Deformed in Channel Die Compression. Materials Science Forum, 1998, 273-275, 523-528.	0.3	7
99	Etude des mécanismes de déformation et des évolutions de textures du zirconium 702 ± déformé en compression plane à la température ambiante. Revue De Metallurgie, 1997, 94, 1071-1080.	0.3	1
100	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
101	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