Martin Diehl

List of Publications by Year
in descending order

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44 papers	3,515 citations	331670 21 h-index	315739 38 g-index
46 all docs	46 docs citations	46 times ranked	2149 citing authors

#	Article	IF	Citations
1	Determination and analysis of the constitutive parameters of temperature-dependent dislocation-density-based crystal plasticity models. Mechanics of Materials, 2022, 164, 104117.	3.2	24
2	Predicting grain boundary damage by machine learning. International Journal of Plasticity, 2022, 150, 103186.	8.8	21
3	Characterizing Localized Microstructural Deformation of Multiphase Steel by Crystal Plasticity Simulation with Multi-Constitutive Law. Journal of the Japan Society for Technology of Plasticity, 2022, 63, 1-8.	0.3	0
4	Modeling and simulation of microstructure in metallic systems based on multi-physics approaches. Npj Computational Materials, 2022, 8, .	8.7	10
5	Coupling crystal plasticity and cellular automaton models to study meta-dynamic recrystallization during hot rolling at high strain rates. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 849, 143471.	5.6	7
6	Crystal plasticity simulation of in-grain microstructural evolution during large deformation of IF-steel. Acta Materialia, 2022, 237, 118167.	7.9	15
7	Lath Martensite Microstructure Modeling: A High-Resolution Crystal Plasticity Simulation Study. Materials, 2021, 14, 691.	2.9	13
8	Large-deformation crystal plasticity simulation of microstructure and microtexture evolution through adaptive remeshing. International Journal of Plasticity, 2021, 146, 103078.	8.8	16
9	Using spectral-based representative volume element crystal plasticity simulations to predict yield surface evolution during large scale forming simulations. Journal of Materials Processing Technology, 2020, 277, 116449.	6.3	28
10	Coupled experimental-computational analysis of primary static recrystallization in low carbon steel. Modelling and Simulation in Materials Science and Engineering, 2020, 28, 014001.	2.0	5
11	Solving Material Mechanics and Multiphysics Problems of Metals with Complex Microstructures Using DAMASKâ€"The DÃ¼sseldorf Advanced Material Simulation Kit. Advanced Engineering Materials, 2020, 22, 1901044.	3.5	11
12	Current Challenges and Opportunities in Microstructure-Related Properties of Advanced High-Strength Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5517-5586.	2.2	115
13	An efficient and robust approach to determine material parameters of crystal plasticity constitutive laws from macro-scale stressâ€"strain curves. International Journal of Plasticity, 2020, 134, 102779.	8.8	66
14	On the interaction of precipitates and tensile twins in magnesium alloys. Acta Materialia, 2019, 178, 146-162.	7.9	80
15	The through-process texture analysis of plate rolling by coupling finite element and fast Fourier transform crystal plasticity analysis. Modelling and Simulation in Materials Science and Engineering, 2019, 27, 085005.	2.0	3
16	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-25.		0
17	Site-specific quasi in situ investigation of primary static recrystallization in a low carbon steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 755, 295-306.	5.6	14
18	DAMASK â€“ The DÃ¼sseldorf Advanced Material Simulation Kit for modeling multi-physics crystal plasticity, thermal, and damage phenomena from the single crystal up to the component scale. Computational Materials Science, 2019, 158, 420-478.	3.0	440

#	Article	IF	Citations
19	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-26.		2
20	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1347-1372.		7
21	Quantifying the Contribution of Crystallographic Texture and Grain Morphology on the Elastic and Plastic Anisotropy of bcc Steel. Metals, 2019, 9, 1252.	2.3	16
22	An integrated crystal plasticityâ€“phase field model for spatially resolved twin nucleation, propagation, and growth in hexagonal materials. International Journal of Plasticity, 2018, 106, 203-227.	8.8	125
23	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-27.		5
24	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-25.		1
25	Numerical Benchmark of Phase-Field Simulations with Elastic Strains: Precipitation in the Presence of Chemo-Mechanical Coupling. Computational Materials Science, 2018, 155, 541-553.	3.0	15
26	On the role of the collinear dislocation interaction in deformation patterning and laminate formation in single crystal plasticity. Mechanics of Materials, 2018, 125, 70-79.	3.2	12
27	Identifying Structureâ€“Property Relationships Through DREAM.3D Representative Volume Elements and DAMASK Crystal Plasticity Simulations: An Integrated Computational Materials Engineering Approach. Jom, 2017, 69, 848-855.	1.9	71
28	A Flexible and Efficient Output File Format for Grain-Scale Multiphysics Simulations. Integrating Materials and Manufacturing Innovation, 2017, 6, 83-91.	2.6	5
29	Coupled Crystal Plasticityâ€“Phase Field Fracture Simulation Study on Damage Evolution Around a Void: Pore Shape Versus Crystallographic Orientation. Jom, 2017, 69, 872-878.	1.9	46
30	Crystal plasticity study on stress and strain partitioning in a measured 3D dual phase steel microstructure. Physical Mesomechanics, 2017, 20, 311-323.	1.9	58
31	Review and outlook: mechanical, thermodynamic, and kinetic continuum modeling of metallic materials at the grain scale. MRS Communications, 2017, 7, 735-746.	1.8	16
32	Neighborhood influences on stress and strain partitioning in dual-phase microstructures. Meccanica, 2016, 51, 429-441.	2.0	45
33	A virtual laboratory using high resolution crystal plasticity simulations to determine the initial yield surface for sheet metal forming operations. International Journal of Plasticity, 2016, 80, 111-138.	8.8	147
34	Unraveling the temperature dependence of the yield strength in single-crystal tungsten using atomistically-informed crystal plasticity calculations. International Journal of Plasticity, 2016, 78, 242-265.	8.8	137
35	Crystal plasticity study of monocrystalline stochastic honeycombs under in-plane compression. Acta Materialia, 2016, 103, 796-808.	7.9	15
36	Linking atomistic, kinetic Monte Carlo and crystal plasticity simulations of singleâ€crystal tungsten strength. GAMM Mitteilungen, 2015, 38, 213-227.	5.5	13

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37	An Overview of Dual-Phase Steels: Advances in Microstructure-Oriented Processing and Micromechanically Guided Design. Annual Review of Materials Research, 2015, 45, 391-431.	9.3	469
38	Analytical bounds of in-plane Youngâ€™s modulus and full-field simulations of two-dimensional monocrystalline stochastic honeycomb structures. Computational Materials Science, 2015, 109, 323-329.	3.0	4
39	Numerically robust spectral methods for crystal plasticity simulations of heterogeneous materials. International Journal of Plasticity, 2015, 66, 31-45.	8.8	159
40	In situ observation of collective grain-scale mechanics in Mg and Mgâ€“rare earth alloys. Acta Materialia, 2014, 80, 77-93.	7.9	91
41	Integrated experimentalâ€“simulation analysis of stress and strain partitioning in multiphase alloys. Acta Materialia, 2014, 81, 386-400.	7.9	285
42	Strain localization and damage in dual phase steels investigated by coupled in-situ deformation experiments and crystal plasticity simulations. International Journal of Plasticity, 2014, 63, 198-210.	8.8	412
43	A spectral method solution to crystal elasto-viscoplasticity at finite strains. International Journal of Plasticity, 2013, 46, 37-53.	8.8	332
44	DAMASK: the DÃ¼sseldorf Advanced MAterial Simulation Kit for studying crystal plasticity using an FE based or a spectral numerical solver. Procedia IUTAM, 2012, 3, 3-10.	1.2	159