Markus KÃ¤stner

List of Publications by Year
in descending order

103	1,580	257450	330143
papers	citations	24 h-index	37 g-index

109	109	109	1060
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Multiscale modeling and simulation of magneto-active elastomers based on experimental data. ChemistrySelect, 2023, 8, 1-31.	1.5	4
2	Thermoâ€mechanical modeling of the temperature dependent forming behavior of thermoplastic prepregs. Engineering Reports, 2022, 4, e12373.	1.7	3
3	Automated constitutive modeling of isotropic hyperelasticity based on artificial neural networks. Computational Mechanics, 2022, 69, 213-232.	4.0	25
4	Descriptor-based reconstruction of three-dimensional microstructures through gradient-based optimization. Acta Materialia, 2022, 227, 117667.	7.9	21
5	Phaseâ€field modeling of brittle fracture along the thickness direction of plates and shells. International Journal for Numerical Methods in Engineering, 2022, 123, 4094-4118.	2.8	7
6	Phase-field modeling of fatigue crack growth during tooth flank fracture in case-hardened spur gears. International Journal of Fatigue, 2022, 163, 107091.	5.7	12
7	A Selection of Benchmark Problems in Solid Mechanics and Applied Mathematics. Archives of Computational Methods in Engineering, 2021, 28, 713-751.	10.2	36
8	Phase-field modeling of fracture in heterogeneous materials: jump conditions, convergence and crack propagation. Archive of Applied Mechanics, 2021, 91, 579-596.	2.2	10
9	Analysis of the remote laser cutting process induced damage in carbon fibre reinforced polymers with cutting process simulations. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000098.	0.2	1
10	An Adaptive Isogeometric Phaseâ€Field Model for Topology Optimization. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000218.	0.2	0
11	Micromechanical analysis of failure in fiber reinforced polymerâ€metal structures. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000235.	0.2	1
12	Modeling and Simulation of the Thermoâ€Mechanically Induced Fracture Behavior of an Epoxy System in Electric Traction Machines. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000043.	0.2	0
13	A macroscopic model for magnetoâ€active elastomers based on microscopic simulations. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000208.	0.2	0
14	Phaseâ€Field Simulation of Crack Propagation at Adhesive Interfaces in Brittle Materials. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000211.	0.2	1
15	Particle Interactions in Magnetoâ€Active Elastomers: Experiments and Simulations. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000277.	0.2	0
16	Phase-field modelling for fatigue crack growth under laser shock peening-induced residual stresses. Archive of Applied Mechanics, 2021, 91, 3709-3723.	2.2	19
17	Benchmark for the Coupled Magneto-Mechanical Boundary Value Problem in Magneto-Active Elastomers. Materials, 2021, 14, 2380.	2.9	1
18	Consideration of cyclic hardening and residual stresses in fatigue life calculations with the local strain approach. Archive of Applied Mechanics, 2021, 91, 3693-3707.	2.2	4

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19	A unified phase-field model of fracture in viscoelastic materials. Continuum Mechanics and Thermodynamics, 2021, 33, 1907-1929.	2.2	21
20	Forming-induced residual stresses: experiment, modeling, simulation. Archive of Applied Mechanics, 2021, 91, 3463-3464.	2.2	4
21	Reconstructing random heterogeneous media through differentiable optimization. Computational Materials Science, 2021, 196, 110455.	3.0	16
22	Additive manufacturing applications of phaseâ€fieldâ€based topology optimization using adaptive isogeometric analysis. GAMM Mitteilungen, 2021, 44, e202100013.	5.5	13
23	Accessing pore microstructureâ€“property relationships forÂadditively manufactured materials. GAMM Mitteilungen, 2021, 44, e202100012.	5.5	8
24	Anisotropic and rate-dependent mechanical properties of 3D printed polyamide 12 - A comparison between selective laser sintering and multi jet fusion. Results in Materials, 2021, 11, 100213.	1.8	14
25	Modeling and simulation of interface failure in metal-composite hybrids. Composites Science and Technology, 2021, 214, 108965.	7.8	11
26	Preface on mechanics of additive manufacturingâ€”Part I. GAMM Mitteilungen, 2021, 44, e202100016.	5.5	0
27	Magneto-Mechanical Coupling in Magneto-Active Elastomers. Materials, 2021, 14, 434.	2.9	16
28	Extension of the local strain approach to transient material behavior and residual stresses. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000311.	0.2	0
29	Jump conditions in phaseâ€field modeling of interface fracture. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000055.	0.2	0
30	Parameter study on a phaseâ€field model for fatigue fracture. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000280.	0.2	0
31	Virtual Testing of Geometrically Imperfect Additively Manufactured Lattice Structures. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000090.	0.2	4
32	Preface on mechanics of additive manufacturingâ€”Part <scp>II</scp>. GAMM Mitteilungen, 2021, 44, e202100020.	5.5	0
33	Thermodynamically consistent constitutive modeling of isotropic hyperelasticity based on artificial neural networks. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	3
34	Phaseâ€field modelling and simulation of fracture in viscoelastic materials. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	4
35	Prediction of the anisotropic crack resistance of heterogeneous microstructures using a crack phaseâ€field model. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	0
36	Simulation of fatigue crack growth in residualâ€stressâ€afflicted specimen with a phaseâ€field model. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	0

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37	A Virtual Sensing approach for approximating nonlinear dynamical systems using LSTM networks. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	3
38	Virtual testing of asâ€designed additively manufactured lattice structures. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	0
39	Analysis of the remote laser cutting process induced damage in carbon fibre reinforced polymers. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	0
40	A diffuse modeling approach for embedded interfaces in linear elasticity. GAMM Mitteilungen, 2020, 43, e202000001.	5.5	7
41	An efficient phase-field model for fatigue fracture in ductile materials. Engineering Fracture Mechanics, 2020, 224, 106807.	4.3	75
42	Determination of the Entire Stent Surface Area by a New Analytical Method. Materials, 2020, 13, 5633.	2.9	3
43	Experimental characterization and modeling of the material behavior of an epoxy system. SN Applied Sciences, 2020, 2, 1.	2.9	1
44	Field-induced interactions in magneto-active elastomers - A comparison of experiments and simulations. Smart Materials and Structures, 2020, 29, 085026.	3.5	11
45	Phase-field modeling of crack branching and deflection in heterogeneous media. Engineering Fracture Mechanics, 2020, 232, 107004.	4.3	46
46	A macroscopic model for magnetorheological elastomers based on microscopic simulations. International Journal of Solids and Structures, 2020, 193-194, 200-212.	2.7	33
47	Two- and three-dimensional modeling approaches in magneto-mechanics: a quantitative comparison. Archive of Applied Mechanics, 2019, 89, 47-62.	2.2	26
48	Combined molecular dynamics and phase-field modelling of crack propagation in defective graphene. Computational Materials Science, 2019, 163, 117-126.	3.0	16
49	Application of ÂµCT for the Determination of Total Surface Area of Stents. , 2019, , .		1
50	Virtual testing of additively manufactured grid structures. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900330.	0.2	2
51	Adaptive isogeometric discretizations for diffuse modeling of discontinuities. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900421.	0.2	0
52	Thermoâ€Mechanical Modeling of Preâ€Consolidated Fiberâ€Reinforced Plastics for the Simulation of Thermoforming Processes. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900338.	0.2	0
53	Numerical analysis of the thermally induced damage in remote laser cut carbon fibre reinforced polymers. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900505.	0.2	2
54	Development of a Macroâ€Model for Magnetorheological Elastomers based on Microscopic Simulations. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900288.	0.2	2

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55	Efficient phaseâ€field modelling of fatigue crack propagation. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900229.	0.2	1
56	Phase-field modelling of interface failure in brittle materials. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 25-42.	6.6	90
57	Fatigue analysis of rolled components considering transient cyclic material behaviour and residual stresses. Production Engineering, 2019, 13, 189-200.	2.3	6
58	Elastic deformations in semi-dilute Ni nanorod/hydrogel composites. Archive of Applied Mechanics, 2019, 89, 119-132.	2.2	10
59	Multi-scale structuring for thermoplastic-metal contour joints of hollow profiles. Production Engineering, 2018, 12, 229-238.	2.3	9
60	Projection and transfer operators in adaptive isogeometric analysis with hierarchical B-splines. Computer Methods in Applied Mechanics and Engineering, 2018, 334, 313-336.	6.6	44
61	A quantitative comparison of twoâ€and threeâ€dimensional modeling approaches for magnetorheological elastomers. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800179.	0.2	2
62	Modeling and Simulation of Hysteresis Effects in Magnetorheological Elastomers. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800319.	0.2	3
63	Damage evolution in fiber reinforced polymerâ€metal joints â€“ modeling and simulation. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800449.	0.2	2
64	A numerically efficient phaseâ€field model for fatigue fracture â€“ 1D analysis. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800207.	0.2	14
65	Phaseâ€field modelling of fracture in heterogeneous materials. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800082.	0.2	4
66	Reversible magnetomechanical collapse: virtual touching and detachment of rigid inclusions in a soft elastic matrix. Soft Matter, 2018, 14, 6809-6821.	2.7	32
67	Theoretical models for magneto-sensitive elastomers: A comparison between continuum and dipole approaches. Physical Review E, 2017, 95, 042501.	2.1	46
68	Microscale simulation of adhesive and cohesive failure in rough interfaces. Engineering Fracture Mechanics, 2017, 178, 416-432.	4.3	31
69	A convergence study of phase-field models for brittle fracture. Engineering Fracture Mechanics, 2017, 184, 307-318.	4.3	58
70	Simulation of self-piercing rivetting processes in fibre reinforced polymers: Material modelling and parameter identification. Journal of Materials Processing Technology, 2017, 241, 164-177.	6.3	40
71	Adaptive mesh refinement strategies in isogeometric analysisâ€" A computational comparison. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 424-448.	6.6	34
72	On the Design, Characterization and Simulation of Hybrid Metal-Composite Interfaces. Applied Composite Materials, 2017, 24, 251-269.	2.5	19

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73	A numerical analysis of the fracture toughness in phaseâ€field modelling of adhesive fracture. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 249-250.	0.2	11
74	Numerical study of adhesive and cohesive failure of structured interfaces. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 597-598.	0.2	0
75	Microscale Modeling and Simulation of Magnetorheological Elastomers. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 27-30.	0.2	2
76	Modeling and simulation of magnetorheological elastomers: A comparison of continuum and dipole approaches. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 527-528.	0.2	1
77	Modeling of failure in rough interfaces. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 525-526.	0.2	1
78	Phase-Field Modelling of Damage and Fractureâ€"Convergence and Local Mesh Refinement. Advanced Structured Materials, 2016, , 307-324.	0.5	7
79	A numerical study on magnetostrictive phenomena in magnetorheological elastomers. Computational Materials Science, 2016, 124, 364-374.	3.0	105
80	Experimental characterisation and numerical modelling of cutting processes in viscoelastic solids. Journal of Food Engineering, 2016, 191, 1-9.	5.2	28
81	Microscale modeling and simulation of magnetorheological elastomers at finite strains: A study on the influence of mechanical preloads. International Journal of Solids and Structures, 2016, 102-103, 286-296.	2.7	55
82	XFEM Modeling of Interface Failure in Adhesively Bonded Fiberâ€Reinforced Polymers. Advanced Engineering Materials, 2016, 18, 417-426.	3.5	12
83	BÃ©zier extraction and adaptive refinement of truncated hierarchical NURBS. Computer Methods in Applied Mechanics and Engineering, 2016, 305, 316-339.	6.6	74
84	Isogeometric analysis of the Cahnâ€“Hilliard equation â€“ a convergence study. Journal of Computational Physics, 2016, 305, 360-371.	3.8	48
85	Analytic and numeric solution of a magneto-mechanical inclusion problem. Archive of Applied Mechanics, 2015, 85, 1483-1497.	2.2	2
86	Modeling of microscopic failure in heterogeneous materials. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 1035-1036.	0.2	0
87	Advancing Towards Polyurethaneâ€Based Magnetorheological Composites. Advanced Engineering Materials, 2014, 16, 1270-1275.	3.5	14
88	A hybrid IGAFEM/IGABEM formulation for two-dimensional stationary magnetic and magneto-mechanical field problems. Computer Methods in Applied Mechanics and Engineering, 2014, 273, 161-180.	6.6	14
89	On the numerical handling of fractional viscoelastic material models in a FE analysis. Computational Mechanics, 2013, 51, 999-1012.	4.0	35
90	XFEM modeling and homogenization of magnetoactive composites. Acta Mechanica, 2013, 224, 2453-2469.	2.1	46

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91	Experimental Characterization and Simulation of the Mechanical Behavior of an Epoxy Adhesive. , 2013, 2, 234-242.		5
92	XFEM Modelling of Inelastic Material Behaviour and Interface Failure in Textile-Reinforced Composites. , 2013, 2, 43-51.		8
93	Higherâ€order extended FEM for weak discontinuities â€“ level set representation, quadrature and application to magnetoâ€mechanical problems. International Journal for Numerical Methods in Engineering, 2013, 93, 1403-1424.	2.8	25
94	XFEM modeling of inelastic material behavior of composite. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 149-150.	0.2	0
95	XFEM-modelling of stationary magnetic and coupled magneto-mechanical boundary value problems. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 405-406.	0.2	0
96	Inelastic material behavior of polymers â€“ Experimental characterization, formulation and implementation of a material model. Mechanics of Materials, 2012, 52, 40-57.	3.2	55
97	A nonlinear fractional viscoelastic material model for polymers. Computational Materials Science, 2011, 50, 2938-2949.	3.0	84
98	A material model of nonlinear fractional viscoelasticity. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 411-412.	0.2	2
99	Modelling the material behaviour of magnetorheological fluids under shear deformation. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 415-416.	0.2	3
100	Multiscale Modelling of the Effective Viscoplastic Material Behaviour of Textile-Reinforced Polymers Using XFEM. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 297-298.	0.2	2
101	Influence of the nonlinear matrix material behaviour on the effective properties of textile-reinforced thermoplastics. Proceedings in Applied Mathematics and Mechanics, 2009, 9, 341-342.	0.2	2
102	Computation of the effective nonlinear material behaviour of composites using X-FEM - Analysis of the matrix material behaviour. Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10429-10430.	0.2	1
103	Influence of CT image processing on the predicted impact ofÂpores on fatigue of additively manufactured Ti6Al4V and AlSi10Mg. GAMM Mitteilungen, 0, , .	5.5	2