Matti Schneider

List of Publications by Year in descending order

63 papers	1,683 citations	279701 23 h-index	302012 39 g-index
64 all docs	64 docs citations	64 times ranked	528 citing authors

#	Article	IF	Citations
1	A convex anisotropic damage model based on the compliance tensor. International Journal of Damage Mechanics, 2022, 31, 43-86.	2.4	10
2	Identifying material parameters in crystal plasticity by Bayesian optimization. Optimization and Engineering, 2022, 23, 1489-1523.	1.3	21
3	Computing the effective crack energy of heterogeneous and anisotropic microstructures via anisotropic minimal surfaces. Computational Mechanics, 2022, 69, 45-57.	2.2	8
4	Representative volume elements for matrix-inclusion composites - a computational study on the effects of an improper treatment of particles intersecting the boundary and the benefits of periodizing the ensemble. Journal of the Mechanics and Physics of Solids, 2022, 158, 104652.	2.3	19
5	A multiscale high-cycle fatigue-damage model for the stiffness degradation of fiber-reinforced materials based on a mixed variational framework. Computer Methods in Applied Mechanics and Engineering, 2022, 388, 114198.	3.4	13
6	On the impact of the mesostructure on the creep response of cellular NiAl-Mo eutectics. Acta Materialia, 2022, 226, 117626.	3.8	4
7	An FE-DMN method for the multiscale analysis of thermomechanical composites. Computational Mechanics, 2022, 69, 1087-1113.	2.2	24
8	Solving phase-field models in the tensor train format to generate microstructures of bicontinuous composites. Applied Numerical Mathematics, 2022, 178, 262-279.	1.2	2
9	A space-time upscaling technique for modeling high-cycle fatigue-damage of short-fiber reinforced composites. Composites Science and Technology, 2022, 222, 109340.	3.8	11
10	A computational multiscale model for anisotropic failure of sheet molding compound composites. Composite Structures, 2022, 288, 115322.	3.1	2
11	Superaccurate effective elastic moduli via postprocessing in computational homogenization. International Journal for Numerical Methods in Engineering, 2022, 123, 4119-4135.	1.5	6
12	A sequential addition and migration method for generating microstructures of short fibers with prescribed length distribution. Computational Mechanics, 2022, 70, 829-851.	2.2	11
13	Computing the effective response of heterogeneous materials with thermomechanically coupled constituents by an implicit fast Fourier transformâ€based approach. International Journal for Numerical Methods in Engineering, 2021, 122, 1307-1332.	1.5	9
14	A computational multi-scale model for the stiffness degradation of short-fiber reinforced plastics subjected to fatigue loading. Computer Methods in Applied Mechanics and Engineering, 2021, 373, 113522.	3.4	27
15	Andersonâ€accelerated polarization schemes for fast Fourier transformâ€based computational homogenization. International Journal for Numerical Methods in Engineering, 2021, 122, 2287-2311.	1.5	14
16	A review of nonlinear FFT-based computational homogenization methods. Acta Mechanica, 2021, 232, 2051-2100.	1.1	87
17	A fast Fourier transform based method for computing the effective crack energy of a heterogeneous material on a combinatorially consistent grid. International Journal for Numerical Methods in Engineering, 2021, 122, 6283-6307.	1.5	12
18	On nonâ€stationary polarization methods in FFTâ€based computational micromechanics. International Journal for Numerical Methods in Engineering, 2021, 122, 6800-6821.	1.5	13

#	Article	IF	Citations
19	An FEâ€“DMN method for the multiscale analysis of short fiber reinforced plastic components. Computer Methods in Applied Mechanics and Engineering, 2021, 384, 113952.	3.4	37
20	A computational investigation of the effective viscosity of short-fiber reinforced thermoplastics by an FFT-based method. European Journal of Mechanics, B/Fluids, 2021, 90, 99-113.	1.2	8
21	A multiâ€scale fatigueâ€damage model for fiberâ€reinforced polymers. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000091.	0.2	0
22	Efficient twoâ€scale simulations of microstructured materials using deep material networks. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	3
23	Computing the effective crack energy of microstructures via quadratic cone solvers. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	2
24	An efficient solution scheme for small-strain crystal-elasto-viscoplasticity in a dual framework. Computer Methods in Applied Mechanics and Engineering, 2020, 358, 112611.	3.4	29
25	Digital sand core physics: Predicting physical properties of sand cores by simulations on digital microstructures. International Journal of Solids and Structures, 2020, 188-189, 155-168.	1.3	16
26	An FFTâ€based method for computing weighted minimal surfaces in microstructures with applications to the computational homogenization of brittle fracture. International Journal for Numerical Methods in Engineering, 2020, 121, 1367-1387.	1.5	26
27	On Quasiâ€Newton methods in fast Fourier transformâ€based micromechanics. International Journal for Numerical Methods in Engineering, 2020, 121, 1665-1694.	1.5	31
28	Lippmannâ€Schwinger solvers for the computational homogenization of materials with pores. International Journal for Numerical Methods in Engineering, 2020, 121, 5017-5041.	1.5	22
29	A dynamical view of nonlinear conjugate gradient methods with applications to FFT-based computational micromechanics. Computational Mechanics, 2020, 66, 239-257.	2.2	28
30	Fast implicit solvers for phase-field fracture problems on heterogeneous microstructures. Computer Methods in Applied Mechanics and Engineering, 2020, 363, 112793.	3.4	41
31	Fast methods for computing centroidal Laguerre tessellations for prescribed volume fractions with applications to microstructure generation of polycrystalline materials. Computer Methods in Applied Mechanics and Engineering, 2020, 369, 113175.	3.4	17
32	Computational homogenization of sheet molding compound composites based on high fidelity representative volume elements. Computational Materials Science, 2020, 174, 109456.	1.4	30
33	On the micromechanics of deep material networks. Journal of the Mechanics and Physics of Solids, 2020, 142, 103984.	2.3	46
34	On the mathematical foundations of the self-consistent clustering analysis for non-linear materials at small strains. Computer Methods in Applied Mechanics and Engineering, 2019, 354, 783-801.	3.4	20
35	Lippmannâ€Schwinger solvers for the explicit jump discretization for thermal computational homogenization problems. International Journal for Numerical Methods in Engineering, 2019, 118, 631-653.	1.5	24
36	On polarization-based schemes for the FFT-based computational homogenization of inelastic materials. Computational Mechanics, 2019, 64, 1073-1095.	2.2	29

#	Article	IF	Citations
37	An FFTâ€based solver for brittle fracture on heterogeneous microstructures. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900151.	0.2	0
38	The explicit jump discretization with Lippmannâ€Schwinger solvers for thermal computational homogenization problems. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900172.	0.2	0
39	Efficient Multiscale Methods for Viscoelasticity and Fatigue of Short Fiber-Reinforced Polymers. Key Engineering Materials, 2019, 809, 473-479.	0.4	2
40	On the Barzilaiâ€Borwein basic scheme in FFTâ€based computational homogenization. International Journal for Numerical Methods in Engineering, 2019, 118, 482-494.	1.5	40
41	Fiber orientation interpolation for the multiscale analysis of short fiber reinforced composite parts. Computational Mechanics, 2018, 61, 729-750.	2.2	56
42	Modelling the microstructure and computing effective elastic properties of sand core materials. International Journal of Solids and Structures, 2018, 143, 1-17.	1.3	27
43	The composite voxel technique for inelastic problems. Computer Methods in Applied Mechanics and Engineering, 2017, 322, 396-418.	3.4	33
44	A fiber orientation-adapted integration scheme for computing the hyperelastic Tucker average for short fiber reinforced composites. Computational Mechanics, 2017, 60, 595-611.	2.2	18
45	An FFT-based fast gradient method for elastic and inelastic unit cell homogenization problems. Computer Methods in Applied Mechanics and Engineering, 2017, 315, 846-866.	3.4	42
46	Beyond polyconvexity: an existence result for a class of quasiconvex hyperelastic materials. Mathematical Methods in the Applied Sciences, 2017, 40, 2084-2089.	1.2	1
47	The sequential addition and migration method to generate representative volume elements for the homogenization of short fiber reinforced plastics. Computational Mechanics, 2017, 59, 247-263.	2.2	89
48	FFTâ€based homogenization for microstructures discretized by linear hexahedral elements. International Journal for Numerical Methods in Engineering, 2017, 109, 1461-1489.	1.5	94
49	Evaluating the factors influencing the friction behavior of paperboard during the deep drawing process. BioResources, 2017, 12, 8340-8358.	0.5	7
50	Thermal fiber orientation tensors for digital paper physics. International Journal of Solids and Structures, 2016, 100-101, 234-244.	1.3	8
51	A model order reduction method for computational homogenization at finite strains on regular grids using hyperelastic laminates to approximate interfaces. Computer Methods in Applied Mechanics and Engineering, 2016, 309, 476-496.	3.4	17
52	On the effective viscosity of a periodic suspension â€“ analysis of primal and dual formulations for Newtonian and nonâ€Newtonian solvents. Mathematical Methods in the Applied Sciences, 2016, 39, 3309-3327.	1.2	6
53	Computational homogenization of elasticity on a staggered grid. International Journal for Numerical Methods in Engineering, 2016, 105, 693-720.	1.5	156
54	Mixed boundary conditions for FFT-based homogenization at finite strains. Computational Mechanics, 2016, 57, 193-210.	2.2	73

#	Article	IF	Citations
55	NONLINEAR COMPOSITE VOXELS AND FFT-BASED HOMOGENIZATION. , 2016, , .		3
56	Convergence of FFTâ€based homogenization for strongly heterogeneous media. Mathematical Methods in the Applied Sciences, 2015, 38, 2761-2778.	1.2	42
57	Use of composite voxels in FFT-based homogenization. Computer Methods in Applied Mechanics and Engineering, 2015, 294, 168-188.	3.4	97
58	An Efficient Algorithm to Include Sub-Voxel Data in FFT-Based Homogenization for Heat Conductivity. Lecture Notes in Computational Science and Engineering, 2015, , 267-279.	0.1	3
59	Efficient fixed point and Newtonâ€“Krylov solvers for FFT-based homogenization of elasticity at large deformations. Computational Mechanics, 2014, 54, 1497-1514.	2.2	148
60	The topological gradient in anisotropic elasticity with an eye towards lightweight design. Mathematical Methods in the Applied Sciences, 2014, 37, 1624-1641.	1.2	5
61	Voxel-based fast solution of the Lippmann-Schwinger equation with smooth material interfaces. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 579-580.	0.2	6
62	Material Characterization and Compression Molding Simulation of CF-SMC Materials in a Press Rheometry Test. Key Engineering Materials, 0, 809, 467-472.	0.4	4
63	Generating polycrystalline microstructures with prescribed tensorial texture coefficients. Computational Mechanics, 0, , .	2.2	4