

Stefan Diebels

List of Publications by Year in descending order

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136
papers

2,018
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279798

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times ranked

1229
citing authors

#	ARTICLE	IF	CITATIONS
1	From particle ensembles to Cosserat continua: homogenization of contact forces towards stresses and couple stresses. <i>International Journal of Solids and Structures</i> , 2003, 40, 6681-6702.	2.7	132
2	DYNAMIC ANALYSIS OF A FULLY SATURATED POROUS MEDIUM ACCOUNTING FOR GEOMETRICAL AND MATERIAL NON-LINEARITIES. <i>International Journal for Numerical Methods in Engineering</i> , 1996, 39, 81-97.	2.8	102
3	The size effect in foams and its theoretical and numerical investigation. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2002, 458, 2869-2883.	2.1	88
4	A comparative study of Biot's theory and the linear Theory of Porous Media for wave propagation problems. <i>Acta Mechanica</i> , 2003, 161, 213-235.	2.1	82
5	A second-order homogenization procedure for multi-scale analysis based on micropolar kinematics. <i>International Journal for Numerical Methods in Engineering</i> , 2007, 69, 2485-2512.	2.8	81
6	From discrete element simulations to a continuum model. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2001, 191, 21-28.	6.6	61
7	Nanonickel Coated Aluminum Foam for Enhanced Impact Energy Absorption. <i>Advanced Engineering Materials</i> , 2011, 13, 23-28.	3.5	60
8	Characterisation of a polymer using biaxial tension tests. Part I: Hyperelasticity. <i>Archive of Applied Mechanics</i> , 2011, 81, 1333-1349.	2.2	59
9	Two-scale modelling of micromorphic continua. <i>Continuum Mechanics and Thermodynamics</i> , 2009, 21, 297-315.	2.2	57
10	New hybrid foam materials for impact protection. <i>International Journal of Impact Engineering</i> , 2014, 64, 30-38.	5.0	55
11	Stress and couple stress in foams. <i>Computational Materials Science</i> , 2003, 28, 714-722.	3.0	52
12	Microstructural characterisation and experimental determination of a multiaxial yield surface for open-cell aluminium foams. <i>Materials and Design</i> , 2017, 131, 252-264.	7.0	44
13	Experimental and theoretical investigation of nonlinear viscoelastic polyurethane systems. <i>Journal of Materials Science</i> , 2007, 42, 9894-9904.	3.7	40
14	A Micropolar Theory of Porous Media: Constitutive Modelling. <i>Transport in Porous Media</i> , 1999, 34, 193-208.	2.6	37
15	Micromechanical characterisation of Ni/Al hybrid foams by nano- and microindentation coupled with EBSD. <i>Acta Materialia</i> , 2016, 102, 38-48.	7.9	37
16	Macroindentation of a soft polymer: Identification of hyperelasticity and validation by uni/biaxial tensile tests. <i>Mechanics of Materials</i> , 2013, 64, 111-127.	3.2	36
17	A thermodynamic-consistent model describing growth and remodeling phenomena. <i>Computational Materials Science</i> , 2003, 28, 597-607.	3.0	30
18	Modeling macroscopic extended continua with the aid of numerical homogenization schemes. <i>Computational Materials Science</i> , 2005, 32, 337-347.	3.0	30

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19	A particle center based homogenization strategy for granular assemblies. <i>Engineering Computations</i> , 2004, 21, 360-383.	1.4	29
20	Modeling thin films applying an extended continuum theory based on a scalar-valued order parameter.. <i>International Journal of Solids and Structures</i> , 2004, 41, 5071-5085.	2.7	27
21	Microstructural Analysis of Electrochemical Coated Openâ€Cell Metal Foams by <scp>EBSD</scp> and Nanoindentation. <i>Advanced Engineering Materials</i> , 2014, 16, 15-20.	3.5	27
22	A time-discontinuous Galerkin method for the dynamical analysis of porous media. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2006, 30, 1113-1134.	3.3	26
23	Modelling and parameter re-identification of nanoindentation of soft polymers taking into account effects of surface roughness. <i>Computers and Mathematics With Applications</i> , 2012, 64, 2775-2786.	2.7	24
24	Identification of finite viscoelasticity and adhesion effects in nanoindentation of a soft polymer by inverse method. <i>Computational Materials Science</i> , 2013, 72, 127-139.	3.0	24
25	Parallel 3-d simulations for porous media models in soil mechanics. <i>Computational Mechanics</i> , 2002, 29, 75-87.	4.0	22
26	Size effects in polyurethane bonds: experiments, modelling and parameter identification. <i>Journal of Materials Science</i> , 2008, 43, 4768-4779.	3.7	22
27	CHARACTERIZING THE TIME DEPENDENCE OF FILLED EPDM. <i>Rubber Chemistry and Technology</i> , 2011, 84, 147-165.	1.2	22
28	Nanoindentation of hyperelastic polymer layers at finite deformation and parameter re-identification. <i>Archive of Applied Mechanics</i> , 2012, 82, 1041-1056.	2.2	22
29	3D connectivity of eutectic Si as a key property defining strength of Alâ€Si alloys. <i>Computational Materials Science</i> , 2016, 120, 99-107.	3.0	22
30	Numerical investigations of foam-like materials by nested high-order finite element methods. <i>Computational Mechanics</i> , 2009, 45, 45-59.	4.0	21
31	Electrodeposition of Nanocrystalline Metals on Open Cell Metal Foams: Improved Mechanical Properties. <i>ECS Transactions</i> , 2010, 25, 165-172.	0.5	20
32	Synthesis and Mechanical Properties of Novel Ni/PU Hybrid Foams: A New Economic Composite Material for Energy Absorbers. <i>Advanced Engineering Materials</i> , 2016, 18, 532-541.	3.5	20
33	Micromechanical Characterization of Metal Foams. <i>Advanced Engineering Materials</i> , 2019, 21, 1900237.	3.5	19
34	Correlative digital image correlation and infrared thermography measurements for the investigation of the mesoscopic deformation behaviour of foams. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 130, 165-180.	4.8	19
35	Nonlinear internal waves over variable topography. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 1994, 76, 165-192.	1.2	18
36	Modelling of a Cellular Rubber with Nonlinear Viscosity Functions. <i>Experimental Mechanics</i> , 2011, 51, 749-765.	2.0	18

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37	A numerical homogenisation method for sandwich plates based on a plate theory with thickness change. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2013, 93, 113-125.	1.6	18
38	h-Adaptive FE methods applied to single- and multiphase problems. International Journal for Numerical Methods in Engineering, 2002, 54, 219-239.	2.8	17
39	Modelling of thermo-viscoelastic material behaviour of polyurethane close to the glass transition temperature. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2010, 90, 387-398.	1.6	17
40	Computational homogenisation of composite plates: Consideration of the thickness change with a modified projection strategy. Computers and Mathematics With Applications, 2014, 67, 1116-1129.	2.7	15
41	Effects of the horizontal component of the Earth's rotation on wave propagation on an f-plane. Geophysical and Astrophysical Fluid Dynamics, 1994, 76, 95-119.	1.2	14
42	A space-time discontinuous Galerkin method applied to single-phase flow in porous media. Computational Geosciences, 2008, 12, 525-539.	2.4	13
43	Yield surfaces for solid foams: A review on experimental characterization and modeling. GAMM Mitteilungen, 2018, 41, e201800002.	5.5	13
44	A microsphere-based material model for open cell metal foams. Continuum Mechanics and Thermodynamics, 2020, 32, 255-267.	2.2	13
45	Micromechanical and macromechanical modelling of foams: Identification of Cosserat parameters. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2014, 94, 414-420.	1.6	12
46	An automated workflow for the biomechanical simulation of a tibia with implant using computed tomography and the finite element method. Computers and Mathematics With Applications, 2015, 70, 903-916.	2.7	12
47	A macroscopic description of the quasi-static behavior of granular materials based on the theory of porous media. Granular Matter, 2000, 2, 143-152.	2.2	11
48	Neglect of the Fluid Extra Stresses in Volumetrically Coupled Solid-Fluid Problems. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2001, 81, 521-522.	1.6	11
49	A new hybrid velocity integration method applied to elastic wave propagation. International Journal for Numerical Methods in Engineering, 2008, 74, 56-79.	2.8	11
50	Parameter re-identification in nanoindentation problems of viscoelastic polymer layers: small deformation. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2013, 93, 88-101.	1.6	11
51	Optimisation of a pretreatment method to reach the basic elasticity of filled rubber materials. Archive of Applied Mechanics, 2013, 83, 1659-1678.	2.2	11
52	Uniaxial and biaxial testing of 3D printed hyperelastic photopolymers. Journal of Applied Polymer Science, 2020, 137, 48400.	2.6	11
53	MICROMORPHIC TWO-SCALE MODELLING OF PERIODIC GRID STRUCTURES. International Journal for Multiscale Computational Engineering, 2013, 11, 161-176.	1.2	11
54	Investigation of the thermoviscoelastic material behaviour of adhesive bonds close to the glass transition temperature. Archive of Applied Mechanics, 2012, 82, 1089-1102.	2.2	10

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55	Micro-structural motivated phenomenological modelling of metal foams: experiments and modelling. <i>Archive of Applied Mechanics</i> , 2015, 85, 1147-1160.	2.2	10
56	Modelling of metal foams by a modified elastic law. <i>Mechanics of Materials</i> , 2016, 101, 61-70.	3.2	10
57	Mechanical characterization of a short fiber-reinforced polymer at room temperature: experimental setups evaluated by an optical measurement system. <i>Continuum Mechanics and Thermodynamics</i> , 2017, 29, 1093-1111.	2.2	10
58	Moisture transport in PA6 and its influence on the mechanical properties. <i>Continuum Mechanics and Thermodynamics</i> , 2020, 32, 307-325.	2.2	10
59	An optimization algorithm for individualized biomechanical analysis and simulation of tibia fractures. <i>Journal of Biomechanics</i> , 2015, 48, 1119-1124.	2.1	9
60	Modelling and numerical investigations of the mechanical behavior of polyurethane under the influence of moisture. <i>Archive of Applied Mechanics</i> , 2015, 85, 1035-1042.	2.2	9
61	Multiscale microsphere modelling of open-cell metal foams enriched by statistical analysis of geometric parameters. <i>Mechanics of Materials</i> , 2020, 142, 103295.	3.2	9
62	Individualized Determination of the Mechanical Fracture Environment After Tibial Exchange Nailing – A Simulation-Based Feasibility Study. <i>Frontiers in Surgery</i> , 2021, 8, 749209.	1.4	9
63	An anisotropic damage model of foams on the basis of a micromechanical description. <i>Journal of Materials Science</i> , 2005, 40, 5919-5924.	3.7	8
64	A continuum-based model capturing size effects in polymer bonds. <i>Journal of Physics: Conference Series</i> , 2007, 62, 34-42.	0.4	8
65	Numerical Homogenization Techniques Applied to Growth and Remodelling Phenomena. <i>Computational Mechanics</i> , 2007, 39, 815-830.	4.0	8
66	Modelling Inhomogeneous Mechanical Properties in Adhesive Bonds. <i>Journal of Adhesion</i> , 2012, 88, 924-940.	3.0	8
67	Numerical simulation and comparison of a real Al–Si alloy with virtually generated alloys. <i>Archive of Applied Mechanics</i> , 2015, 85, 1161-1171.	2.2	8
68	Thermomechanical characterisation of cellular rubber. <i>Continuum Mechanics and Thermodynamics</i> , 2016, 28, 1495-1509.	2.2	8
69	Numerical and experimental investigations of the electrodeposition process on open porous foams, determination of the parameter influence on the coating homogeneity. <i>International Journal of Heat and Mass Transfer</i> , 2021, 180, 121791.	4.8	8
70	Flexible Beam-Like Structures - Experimental Investigation and Modeling of Cables. <i>Advanced Structured Materials</i> , 2018, , 27-46.	0.5	7
71	Nonlinear internal waves in ideal rotating basins. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 1994, 78, 21-46.	1.2	6
72	A EVI-space-time Galerkin method for dynamics at finite deformation in porous media. <i>Computational Mechanics</i> , 2009, 43, 585-601.	4.0	6

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73	Compressible rubber materials: experiments and simulations. <i>Archive of Applied Mechanics</i> , 2012, 82, 1117-1132.	2.2	6
74	Simulation of the abrasive flow machining process. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2013, 93, 147-153.	1.6	6
75	Thermal shock resistivity of hybrid carbon foam materials: Experiments and model predictions. <i>Mechanics of Materials</i> , 2015, 82, 13-27.	3.2	6
76	Multiaxial failure surface of PVC foams and monitoring of deformation bands by three-dimensional digital image correlation. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 130, 195-215.	4.8	6
77	Effective properties and size effects in filled polymers. <i>GAMM Mitteilungen</i> , 2008, 31, 210-224.	5.5	5
78	Effective Mechanical Behavior of Filled Polymers. <i>Mechanics of Advanced Materials and Structures</i> , 2011, 18, 106-114.	2.6	5
79	NUMERICAL SIMULATION OF AL-SI ALLOYS WITH AND WITHOUT A DIRECTIONAL SOLIDIFICATION. <i>Image Analysis and Stereology</i> , 2014, 33, 29.	0.9	5
80	Indentation of PU at different scales and computational modeling: identification of viscoelasticity and quantification of adhesion effects. <i>Archive of Applied Mechanics</i> , 2015, 85, 1225-1243.	2.2	5
81	An individualized simulation model based on continuous, independent, ground force measurements after intramedullary stabilization of a tibia fracture. <i>Archive of Applied Mechanics</i> , 2019, 89, 2351-2360.	2.2	5
82	From Lattice Models to Extended Continua. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2011, , 19-45.	2.2	5
83	Concepts and clinical aspects of active implants for the treatment of bone fractures. <i>Acta Biomaterialia</i> , 2022, 146, 1-9.	8.3	5
84	Improved Process Control and Model of Axial Forces of One-way Abrasive Flow Machining. <i>Procedia CIRP</i> , 2014, 14, 19-24.	1.9	4
85	High-resolution simulation of microstructures in dual-phase steel. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2016, 16, 391-392.	0.2	4
86	Experimental investigation of initial yield surfaces of solid foams and their evolution under subsequent loading. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 791, 139762.	5.6	4
87	Blast wave mitigation with galvanised polyurethane foam in a sandwich cladding. <i>Shock Waves</i> , 2021, 31, 525-540.	1.9	4
88	Microscopic and macroscopic modelling of foams. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2003, 2, 156-157.	0.2	3
89	A numerical homogenisation strategy for micromorphic continua. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2009, 9, 437-438.	0.2	3
90	Numerical investigation of nanoindentation of viscoelastic polymer layers and parameters re-identification. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2011, 11, 765-766.	0.2	3

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91	Surface Roughness Effects in Nanoindentation of Soft Polymers. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 297-298.	0.2	3
92	Pressure Dependent Properties of a Compressible Polymer. Experimental Mechanics, 2012, 52, 257-264.	2.0	3
93	Investigation of elastoplastic effects of cables under large spatial deformation. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 185-186.	0.2	3
94	Identifying Elastic and Viscoelastic Material Parameters by Means of a Tikhonov Regularization. Mathematical Problems in Engineering, 2018, 2018, 1-11.	1.1	3
95	Hammer blows to the head. Forensic Science International, 2019, 301, 358-370.	2.2	3
96	Numerical simulation of dual-phase steel based on real and virtual three-dimensional microstructures. Continuum Mechanics and Thermodynamics, 2021, 33, 1989-2006.	2.2	3
97	A mixture theory for the moisture transport in polyamide. Continuum Mechanics and Thermodynamics, 2021, 33, 1891-1905.	2.2	3
98	Dynamic Deformations in the Theory of Fluid-Saturated Porous Solid Materials. Solid Mechanics and Its Applications, 1995, , 241-246.	0.2	3
99	Galerkin-type space-time finite elements for volumetrically coupled problems. Proceedings in Applied Mathematics and Mechanics, 2003, 2, 264-265.	0.2	2
100	Dynamic analysis of porous materials: Numerical modeling with a space-time FEM. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 4070011-4070012.	0.2	2
101	Modeling the moisture and temperature dependent material behavior of adhesive bonds. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 295-296.	0.2	2
102	Characterisation of filled rubber with a pronounced non-linear viscoelasticity. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 353-354.	0.2	2
103	Modelling and Simulation of the Coating Process on Open Porous Metal Foams. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800254.	0.2	2
104	Investigation of the Electrodeposition Parameters on the Coating Process on Open Porous Media. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900106.	0.2	2
105	Experimental Studies. Mathematical Engineering, 2019, , 143-175.	0.2	2
106	A method for determining the parameters in a rheological model for viscoelastic materials by minimizing Tikhonov functionals. , 2022, 30, 141-165.		2
107	Numerical analysis of Ni/Al hybrid metal foams using the finite cell method. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 299-300.	0.2	1
108	Characterization of short fiber reinforced polymers. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 349-350.	0.2	1

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109	Thermo-mechanical modelling of cellular ceramic composites by a multiphase approach of porous media. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 393-394.	0.2	1
110	An algorithmic strategy for the simulation of bone healing directly on computed tomography data. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 105-106.	0.2	1
111	Characterization of Ni/Al hybrid foam from atomic to microscale. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 283-284.	0.2	1
112	Experimental and numerical investigation of metal foams undergoing large deformations. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 345-346.	0.2	1
113	Comparison of two different modeling approaches to describe the non-linear viscoelastic behavior of filled rubber material. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 389-390.	0.2	1
114	Bending of Viscoplastic Cables. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 293-294.	0.2	1
115	Combination of experimental and numerical methods for mechanical characterization of Al-Si alloys. IOP Conference Series: Materials Science and Engineering, 2017, 258, 012004.	0.6	1
116	Noise reduction for DIC measurements. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900077.	0.2	1
117	Micromechanical Characterisation of Ni/PU Hybrid Foams. Materials, 2020, 13, 3746.	2.9	1
118	New Investigations of Adhesives for Tear Repair of Canvas Paintings. Studies in Conservation, 2021, 66, 321-341.	1.1	1
119	Thread-by-thread tear mendings in conservation of canvas paintings: a problem of reproducibility in bonding qualities. Journal of Adhesion, 2021, 97, 1336-1357.	3.0	1
120	Dynamic analysis of porous materials: Numerical simulation with an adaptive space-time FEM. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 4070035-4070036.	0.2	0
121	Generalized EVI-space-time Galerkin method for dynamical modeling in porous media. Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10491-10492.	0.2	0
122	Investigations on an elastic micropolar continuum model for large deformations. Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10549-10550.	0.2	0
123	FE2 Modelling of Hybrid Sandwich Composites. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 505-506.	0.2	0
124	Zur Abtragssimulation beim StrÄ¶mungsschleifen. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 301-302.	0.2	0
125	Modeling the moisture dependent material behavior of adhesive bonds close to the glass transition temperature. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 339-340.	0.2	0
126	Material modelling of a filled rubber material with different approaches in the representation of a statical hysteresis. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 345-346.	0.2	0

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127	Thermo-mechanically coupled modelling of cellular MgO refractories under thermal shock. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 429-430.	0.2	0
128	Personalized simulation of a bone-implant-system during a step forward. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 217-218.	0.2	0
129	Influence of the material parameter mapping from computed tomography data on the simulation of a bone-implant system. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800386.	0.2	0
130	Preface to Special Issue on Experimental Solid Mechanics. GAMM Mitteilungen, 2018, 41, e201800005.	5.5	0
131	Development of a simulation model for the automatic optimization of tools for multi-dimensional tube forming. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900185.	0.2	0
132	Modelling of cellular materials by a microsphere-based material model. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900081.	0.2	0
133	Effect of crystallographic orientation in modelling of anisotropic plasticity with an analytical yield function. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900349.	0.2	0
134	A multiphase model for the cross-linking of ultra-high viscous alginate hydrogels. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000254.	0.2	0
135	Macroscopic Modeling of Size Effects in Foams Using an Order-Parameter Approach. Advanced Structured Materials, 2013, , 237-254.	0.5	0
136	A GPU-based caching strategy for multi-material linear elastic FEM on regular grids. PLoS ONE, 2020, 15, e0240813.	2.5	0