

Matti Ristinmaa

List of Publications by Year in descending order

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118
papers

2,793
citations

159585

30
h-index

233421

45
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123
all docs

123
docs citations

123
times ranked

1986
citing authors

#	ARTICLE	IF	CITATIONS
1	Topology optimization of thermo-hyperelastic structures utilizing inverse motion based form finding. <i>Engineering Optimization</i> , 2023, 55, 110-124.	2.6	1
2	A full-range moisture sorption model for cellulose-based materials yielding consistent net isosteric heat of sorption. <i>Drying Technology</i> , 2023, 41, 61-76.	3.1	2
3	Nonlinear stiffness optimization with prescribed deformed geometry and loads. <i>Structural and Multidisciplinary Optimization</i> , 2022, 65, 1.	3.5	2
4	Experimental evaluation of normal and shear delamination in cellulose-based materials using a cohesive zone model. <i>International Journal of Solids and Structures</i> , 2022, 252, 111755.	2.7	7
5	Coupled heat, mass and momentum transport in swelling cellulose based materials with application to retorting of paperboard packages. <i>Applied Mathematical Modelling</i> , 2021, 92, 848-883.	4.2	3
6	A rate-dependent continuum model for rapid converting of paperboard. <i>Applied Mathematical Modelling</i> , 2021, 99, 497-513.	4.2	8
7	Multiscale eigenfrequency optimization of multimaterial lattice structures based on the asymptotic homogenization method. <i>Structural and Multidisciplinary Optimization</i> , 2020, 61, 983-998.	3.5	21
8	Modelling of the Mechanical Response in 304 Austenitic Steel during Laser Shock Peening and Conventional Shot Peening. <i>Procedia Manufacturing</i> , 2020, 47, 450-457.	1.9	6
9	Differences in phase transformation in laser peened and shot peened 304 austenitic steel. <i>International Journal of Mechanical Sciences</i> , 2020, 176, 105535.	6.7	14
10	Multiphase transport model of swelling cellulose based materials with variable hydrophobicity. <i>International Journal of Engineering Science</i> , 2019, 141, 112-140.	5.0	5
11	Long term evolution of microstructure and stress around tin whiskers investigated using scanning Laue microdiffraction. <i>Acta Materialia</i> , 2019, 168, 210-221.	7.9	10
12	Scanning 3DXRD Measurement of Grain Growth, Stress, and Formation of Cu ₆ Sn ₅ around a Tin Whisker during Heat Treatment. <i>Materials</i> , 2019, 12, 446.	2.9	38
13	A continuum based macroscopic unified low-and high cycle fatigue model. <i>MATEC Web of Conferences</i> , 2019, 300, 16008.	0.2	8
14	Diagonally implicit Runge-Kutta (DIRK) integration applied to finite strain crystal plasticity modeling. <i>Computational Mechanics</i> , 2018, 62, 1429-1441.	4.0	4
15	On damage modeling of material interfaces: Numerical implementation and computational homogenization. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 337, 1-27.	6.6	20
16	Aspects of interface elasticity theory. <i>Mathematics and Mechanics of Solids</i> , 2018, 23, 1004-1024.	2.4	32
17	Evidence of 3D strain gradients associated with tin whisker growth. <i>Scripta Materialia</i> , 2018, 144, 1-4.	5.2	21
18	Investigation of size effects due to material interfaces. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2018, 18, e201800072.	0.2	0

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19	Efficient and accurate simulation of the packaging forming process. <i>Packaging Technology and Science</i> , 2018, 31, 557-566.	2.8	14
20	Modelling multiphase transport in deformable cellulose based materials exhibiting internal mass exchange and swelling. <i>International Journal of Engineering Science</i> , 2018, 128, 101-126.	5.0	11
21	Enhanced multi-axial fatigue criterion that considers stress gradient effects. <i>International Journal of Fatigue</i> , 2018, 116, 128-139.	5.7	21
22	A non-affine electro-viscoelastic microsphere model for dielectric elastomers: Application to VHB 4910 based actuators. <i>Journal of Intelligent Material Systems and Structures</i> , 2017, 28, 627-639.	2.5	12
23	Experimental and numerical analysis of adhesion failure in moist packaging material during excessive heating. <i>International Journal of Heat and Mass Transfer</i> , 2017, 108, 2566-2580.	4.8	5
24	Prediction of femoral strength using 3D finite element models reconstructed from DXA images: validation against experiments. <i>Biomechanics and Modeling in Mechanobiology</i> , 2017, 16, 989-1000.	2.8	33
25	Normalization of cohesive laws for quasi-brittle materials. <i>Engineering Fracture Mechanics</i> , 2017, 178, 333-345.	4.3	10
26	Electro-viscoelastic response of an acrylic elastomer analysed by digital image correlation. <i>Smart Materials and Structures</i> , 2017, 26, 085021.	3.5	5
27	An extended vertex and crystal plasticity framework for efficient multiscale modeling of polycrystalline materials. <i>International Journal of Solids and Structures</i> , 2017, 125, 150-160.	2.7	11
28	Consistent elastoplastic cohesive zone model at finite deformations – Variational formulation. <i>International Journal of Solids and Structures</i> , 2017, 106-107, 284-293.	2.7	23
29	Response of moist paperboard during rapid compression and heating. <i>Applied Mathematical Modelling</i> , 2017, 42, 114-132.	4.2	6
30	Localized Deformation in Compression and Folding of Paperboard. <i>Packaging Technology and Science</i> , 2016, 29, 397-414.	2.8	26
31	Prediction of the residual state in 304 austenitic steel after laser shock peening – Effects of plastic deformation and martensitic phase transformation. <i>International Journal of Mechanical Sciences</i> , 2016, 111-112, 24-34.	6.7	24
32	Enhanced fictitious crack model accounting for material drawn into the cohesive zone: physically based crack closure criterion. <i>International Journal of Fracture</i> , 2016, 199, 199-211.	2.2	4
33	Recrystallization and texture evolution during hot rolling of copper, studied by a multiscale model combining crystal plasticity and vertex models. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2016, 24, 075004.	2.0	24
34	Modelling multi-scale deformation of amorphous glassy polymers with experimentally motivated evolution of the microstructure. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 96, 497-510.	4.8	11
35	Towards control of viscous effects in acrylic-based actuator applications. <i>Smart Materials and Structures</i> , 2016, 25, 095034.	3.5	4
36	Transient transport of heat, mass, and momentum in paperboard including dynamic phase change of water. <i>International Journal of Engineering Science</i> , 2016, 109, 54-72.	5.0	9

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37	Modelling and experiments of glassy polymers using biaxial loading and digital image correlation. <i>International Journal of Solids and Structures</i> , 2016, 102-103, 100-111.	2.7	7
38	Framework for non-coherent interface models at finite displacement jumps and finite strains. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 90, 124-141.	4.8	31
39	Measurement of multi-scale deformation of polycarbonate using X-ray scattering with in-situ loading and digital image correlation. <i>Polymer</i> , 2016, 82, 190-197.	3.8	7
40	Triphasic Model of Heat and Moisture Transport with Internal Mass Exchange in Paperboard. <i>Transport in Porous Media</i> , 2016, 112, 381-408.	2.6	26
41	How accurately can subject-specific finite element models predict strains and strength of human femora? Investigation using full-field measurements. <i>Journal of Biomechanics</i> , 2016, 49, 802-806.	2.1	51
42	Coupled diffusion-deformation multiphase field model for elastoplastic materials applied to the growth of Cu ₆ Sn ₅ . <i>Acta Materialia</i> , 2016, 108, 98-109.	7.9	30
43	A Coupled Reactive-Transport Model for Electrokinetic Remediation. , 2016, , 251-278.		3
44	Large strain phase-field based multi-material topology optimization. <i>International Journal for Numerical Methods in Engineering</i> , 2015, 104, 887-904.	2.8	26
45	Topology optimization utilizing inverse motion based form finding. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 289, 316-331.	6.6	12
46	An anisotropic in-plane and out-of-plane elasto-plastic continuum model for paperboard. <i>Composite Structures</i> , 2015, 126, 184-195.	5.8	54
47	Modelling of Viscoelastic Dielectric Elastomers with Deformation Dependent Electric Properties. <i>Procedia IUTAM</i> , 2015, 12, 134-144.	1.2	30
48	A combined crystal plasticity and graph-based vertex model of dynamic recrystallization at large deformations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2015, 23, 045011.	2.0	26
49	Fundamental physical principles and cohesive zone models at finite displacements – Limitations and possibilities. <i>International Journal of Solids and Structures</i> , 2015, 53, 70-79.	2.7	43
50	Finite strain topology optimization based on phase-field regularization. <i>Structural and Multidisciplinary Optimization</i> , 2015, 51, 305-317.	3.5	10
51	Analytical prediction of package collapse – consideration of windows in the package. <i>Nordic Pulp and Paper Research Journal</i> , 2014, 29, 717-724.	0.7	3
52	Full-Field Strain Measurement During Mechanical Testing of the Human Femur at Physiologically Relevant Strain Rates. <i>Journal of Biomechanical Engineering</i> , 2014, 136, .	1.3	37
53	Accelerating crystal plasticity simulations using GPU multiprocessors. <i>International Journal for Numerical Methods in Engineering</i> , 2014, 100, 111-135.	2.8	22
54	Microstructure evolution during dynamic discontinuous recrystallization in particle-containing Cu. <i>Computational Materials Science</i> , 2014, 84, 327-338.	3.0	33

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55	Distortional hardening plasticity model for paperboard. International Journal of Solids and Structures, 2014, 51, 2411-2423.	2.7	40
56	Multi-scale Measurement of (Amorphous) Polymer Deformation: Simultaneous X-ray Scattering, Digital Image Correlation and In-situ Loading. Experimental Mechanics, 2014, 54, 1373-1383.	2.0	14
57	Boundary effects in a phase-field approach to topology optimization. Computer Methods in Applied Mechanics and Engineering, 2014, 278, 145-159.	6.6	15
58	A non-affine micro-sphere formulation for electroactive polymers. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 581-582.	0.2	0
59	Thermodynamically based fictitious crack/interface model for general normal and shear loading. International Journal of Solids and Structures, 2013, 50, 3555-3561.	2.7	24
60	Howard's algorithm in a phase-field topology optimization approach. International Journal for Numerical Methods in Engineering, 2013, 94, 43-59.	2.8	14
61	Microstructure evolution influenced by dislocation density gradients modeled in a reaction-diffusion system. Computational Materials Science, 2013, 67, 373-383.	3.0	17
62	Inverse-motion-based form finding for quasi-incompressible finite electroelasticity. International Journal for Numerical Methods in Engineering, 2013, 94, 554-572.	2.8	24
63	Structural Dynamics Teaching Example: A Linear Test Analysis Case Using Open Software. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 143-154.	0.5	4
64	An electromechanically coupled micro-sphere framework: application to the finite element analysis of electrostrictive polymers. Smart Materials and Structures, 2012, 21, 094008.	3.5	19
65	Inverse-Motion-Based Modeling for Electromechanics With Application to Electrostrictive Polyurethane. , 2012, , .		0
66	PAPER PHYSICS. Analytical Prediction of Package Collapse Loads-Basic considerations. Nordic Pulp and Paper Research Journal, 2012, 27, 806-813.	0.7	18
67	Phenomenological modeling of viscous electrostrictive polymers. International Journal of Non-Linear Mechanics, 2012, 47, 156-165.	2.6	68
68	Crack tip transformation zones in austenitic stainless steel. Engineering Fracture Mechanics, 2012, 79, 266-280.	4.3	21
69	Electrostriction in electro-viscoelastic polymers. Mechanics of Materials, 2012, 50, 9-21.	3.2	73
70	Optimal topologies derived from a phase-field method. Structural and Multidisciplinary Optimization, 2012, 45, 171-183.	3.5	48
71	Micromechanical modeling of smart composites considering debonding of reinforcements. International Journal of Solids and Structures, 2011, 48, 3209-3216.	2.7	6
72	Mixture theory for a thermoelasto-plastic porous solid considering fluid flow and internal mass exchange. International Journal of Engineering Science, 2011, 49, 1185-1203.	5.0	13

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73	Modeling of continuous dynamic recrystallization in commercial-purity aluminum. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2010, 527, 1126-1134.	5.6	85
74	Framework for deformation induced anisotropy in glassy polymers. <i>Acta Mechanica</i> , 2010, 211, 195-213.	2.1	9
75	Thermo-mechanically coupled model of diffusionless phase transformation in austenitic steel. <i>International Journal of Solids and Structures</i> , 2010, 47, 1580-1591.	2.7	21
76	On the modelling of electro-viscoelastic response of electrostrictive polyurethane elastomers. <i>IOP Conference Series: Materials Science and Engineering</i> , 2010, 10, 012101.	0.6	8
77	Simulation of discontinuous dynamic recrystallization in pure Cu using a probabilistic cellular automaton. <i>Computational Materials Science</i> , 2010, 49, 25-34.	3.0	117
78	Model Describing Material-Dependent Deformation Behavior in High-Velocity Metal Forming Processes. <i>Journal of Engineering Mechanics - ASCE</i> , 2009, 135, 345-357.	2.9	8
79	Two different approaches to model evolving directional properties at finite deformations. <i>Acta Mechanica</i> , 2008, 199, 97-116.	2.1	4
80	Simulation model for anisotropic fibrous materials. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2008, 8, 10399-10400.	0.2	2
81	Multi-scale plasticity modeling: Coupled discrete dislocation and continuum crystal plasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2008, 56, 3167-3180.	4.8	32
82	Prediction of stored energy in polycrystalline materials during cyclic loading. <i>International Journal of Solids and Structures</i> , 2008, 45, 1570-1586.	2.7	23
83	Large strain elasto-plastic model of paper and corrugated board. <i>International Journal of Solids and Structures</i> , 2008, 45, 3334-3352.	2.7	58
84	Continuum approach to high-cycle fatigue modeling. <i>International Journal of Fatigue</i> , 2008, 30, 996-1006.	5.7	77
85	Towards an orientation-distribution-based multi-scale approach for remodelling biological tissues. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2008, 11, 505-524.	1.6	32
86	Modeling of the Degradation of Elastic Properties due to the Evolution of Ductile Damage. <i>International Journal of Damage Mechanics</i> , 2008, 17, 149-172.	4.2	7
87	Spatial representation of evolving anisotropy at large strains. <i>International Journal of Solids and Structures</i> , 2007, 44, 3514-3532.	2.7	11
88	A constitutive model for the formation of martensite in austenitic steels under large strain plasticity. <i>International Journal of Plasticity</i> , 2007, 23, 1213-1239.	8.8	100
89	Thermodynamic format and heat generation of isotropic hardening plasticity. <i>Acta Mechanica</i> , 2007, 194, 103-121.	2.1	44
90	An alternative method for the integration of continuum damage evolution laws. <i>Computational Mechanics</i> , 2007, 41, 347-359.	4.0	12

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91	Description of evolving anisotropy at large strains. <i>Mechanics of Materials</i> , 2007, 39, 267-282.	3.2	33
92	Thermomechanical response of non-local porous material. <i>International Journal of Plasticity</i> , 2006, 22, 2066-2090.	8.8	21
93	Comparison of isotropic hardening and kinematic hardening in thermoplasticity. <i>International Journal of Plasticity</i> , 2005, 21, 1435-1460.	8.8	57
94	Deformation gradient based kinematic hardening model. <i>International Journal of Plasticity</i> , 2005, 21, 2025-2050.	8.8	42
95	A Physically Motivated Modification of the Strain Equivalence Approach. <i>International Journal of Damage Mechanics</i> , 2005, 14, 25-50.	4.2	9
96	Theoretical Interpretation of Impulse Response Tests of Embedded Concrete Structures. <i>Journal of Engineering Mechanics - ASCE</i> , 2004, 130, 1062-1071.	2.9	31
97	The influence of non-dissipative quantities in kinematic hardening plasticity. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2004, 218, 615-622.	2.1	2
98	Kinematic hardening in large strain plasticity. <i>European Journal of Mechanics, A/Solids</i> , 2003, 22, 341-356.	3.7	42
99	The Influence of Non-Dissipative Quantities in Kinematic Hardening Plasticity. <i>Key Engineering Materials</i> , 2003, 233-236, 773-778.	0.4	0
100	Accurate stress updating algorithm based on constant strain rate assumption. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2001, 190, 5583-5601.	6.6	23
101	Behaviour of the extensible elastica solution. <i>International Journal of Solids and Structures</i> , 2001, 38, 8441-8457.	2.7	85
102	Consequences of dynamic yield surface in viscoplasticity. <i>International Journal of Solids and Structures</i> , 2000, 37, 4601-4622.	2.7	37
103	Rayleigh waves obtained by the indeterminate couple-stress theory. <i>European Journal of Mechanics, A/Solids</i> , 2000, 19, 929-947.	3.7	42
104	Thermodynamic Formulation of Plastic Work Hardening Materials. <i>Journal of Engineering Mechanics - ASCE</i> , 1999, 125, 152-155.	2.9	4
105	A comparison of viscoplasticity formats and algorithms. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 1999, 4, 75-98.	0.8	18
106	Viscoplasticity based on an additive split of the conjugated forces. <i>European Journal of Mechanics, A/Solids</i> , 1998, 17, 207-235.	3.7	16
107	Void growth in cyclic loaded porous plastic solid. <i>Mechanics of Materials</i> , 1997, 26, 227-245.	3.2	36
108	Corners in plasticity—Koiter's theory revisited. <i>International Journal of Solids and Structures</i> , 1996, 33, 3697-3721.	2.7	19

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109	Use of couple-stress theory in elasto-plasticity. Computer Methods in Applied Mechanics and Engineering, 1996, 136, 205-224.	6.6	38
110	FE-formulation of a nonlocal plasticity theory. Computer Methods in Applied Mechanics and Engineering, 1996, 136, 127-144.	6.6	144
111	Modelling of plasticity and damage in a polycrystalline microstructure. International Journal of Plasticity, 1995, 11, 949-970.	8.8	13
112	Cyclic plasticity model using one yield surface only. International Journal of Plasticity, 1995, 11, 163-181.	8.8	25
113	Consistent stiffness matrix in FE calculations of elasto-plastic bodies. Computers and Structures, 1994, 53, 93-103.	4.4	3
114	Exact integration of constitutive equations in elasto-plasticity. International Journal for Numerical Methods in Engineering, 1993, 36, 2525-2544.	2.8	34
115	$\hat{\gamma}$ -Hydride Habit Plane Determination in $\hat{\gamma}$ -Zirconium at 298 K by Strain Energy Minimization Technique. Defect and Diffusion Forum, 0, 279, 105-110.	0.4	15
116	Modeling of Crack Behavior in Austenitic Steel Influenced by Martensitic Phase Transformation. Key Engineering Materials, 0, 452-453, 637-640.	0.4	0
117	A Constitutive Model for Ductile Damage Evolution. Key Engineering Materials, 0, 452-453, 621-624.	0.4	0
118	$\hat{\gamma}$ -Hydride Habit Plane Determination in $\hat{\gamma}$ -Zirconium at 298 K by Strain Energy Minimization Technique. Defect and Diffusion Forum, 0, , 105-110.	0.4	2