Markus Lazar

List of Publications by Year
in descending order

101 papers	2,285 citations	218677 26 h-index	254184 43 g-index
103 all docs	103 docs citations	103 times ranked	761 citing authors

#	Article	IF	Citations
1	Mathematical modeling of the elastic properties of cubic crystals at small scales based on the Toupinâ€"Mindlin anisotropic first strain gradient elasticity. Continuum Mechanics and Thermodynamics, 2022, 34, 107-136.	2.2	17
2	Incompatible strain gradient elasticity of Mindlin type: screw and edge dislocations. Acta Mechanica, 2021, 232, 3471-3494.	2.1	10
3	Displacements and Stress Functions of Straight Dislocations and Line Forces in Anisotropic Elasticity: A New Derivation and Its Relation to the Integral Formalism. Symmetry, 2021, 13, 1721.	2.2	2
4	Generalised plane strain embedded in three-dimensional anisotropic elasticity. Philosophical Magazine, 2021, 101, 2584-2598.	1.6	2
5	Three-dimensional nonlocal anisotropic elasticity: a generalized continuum theory of Ã…ngstrÃ¶m-mechanics. Acta Mechanica, 2020, 231, 743-781.	2.1	17
6	Second gradient electrodynamics: A non-singular relativistic field theory. Annals of Physics, 2020, 423, 168330.	2.8	4
7	Second Gradient Electromagnetostatics: Electric Point Charge, Electrostatic and Magnetostatic Dipoles. Symmetry, 2020, 12, 1104.	2.2	6
8	Gradient modification of Newtonian gravity. Physical Review D, 2020, 102, .	4.7	4
9	Electro-elastic dislocations in piezoelectric materials. Philosophical Magazine, 2020, 100, 1059-1101.	1.6	11
10	Second gradient electrodynamics: Green functions, wave propagation, regularization and self-force. Wave Motion, 2020, 95, 102531.	2.0	3
11	Dislocations and Cracks in Generalized Continua. , 2020, , 672-682.		0
12	Green functions and propagation in the Boppâ€"Podolsky electrodynamics. Wave Motion, 2019, 91, 102388.	2.0	10
13	The Green tensor of Mindlinâ€™s anisotropic first strain gradient elasticity. Materials Theory, 2019, 3, .	4.3	10
14	A non-singular continuum theory of point defects using gradient elasticity of bi-Helmholtz type. Philosophical Magazine, 2019, 99, 1563-1601.	1.6	8
15	Computational 3-dimensional dislocation elastodynamics. Journal of the Mechanics and Physics of Solids, 2019, 126, 20-51.	4.8	20
16	A non-singular theory of dislocations in anisotropic crystals. International Journal of Plasticity, 2018, 103, 1-22.	8.8	51
17	Eshelbian dislocation mechanics: -, M-, and -integrals of straight dislocations. Mechanics Research Communications, 2018, 93, 89-95.	1.8	9
18	A new insight into the J â€‹, M â€‹, and L â€‹integrals of dislocations. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800159.	0.2	1

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19	The J-, M- and L-integrals of body charges and body forces: Maxwell meets Eshelby. Journal of Micromechanics and Molecular Physics, 2018, 03, 1840012.	1.2	4
20	On Mindlinâ€™s isotropic strain gradient elasticity: Green tensors, regularization, and operator-split. Journal of Micromechanics and Molecular Physics, 2018, 03, 1840008.	1.2	18
21	Singularityâ€free dislocation continuum theory for anisotropic crystals. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800095.	0.2	4
22	Dislocations and Cracks in Generalized Continua. , 2018, , 1-11.		0
23	Micromechanics of dislocations in solids: J -, M -, and L -integrals and their fundamental relations. International Journal of Engineering Science, 2017, 114, 16-40.	5.0	23
24	Micromechanics and theory of point defects in anisotropic elasticity: Eshelby factor meets Eshelby tensor. Journal of Micromechanics and Molecular Physics, 2017, 02, 1750005.	1.2	6
25	Non-singular dislocation continuum theories: strain gradient elasticity vs. Peierlsâ€“Nabarro model. Philosophical Magazine, 2017, 97, 3246-3275.	1.6	29
26	Irreducible decomposition of strain gradient tensor in isotropic strain gradient elasticity. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2016, 96, 1291-1305.	1.6	20
27	Eshelbian mechanics of novel materials: Quasicrystals. Journal of Micromechanics and Molecular Physics, 2016, 01, 1640008.	1.2	6
28	Distributional and regularized radiation fields of non-uniformly moving straight dislocations, and elastodynamic Tamm problem. Journal of the Mechanics and Physics of Solids, 2016, 96, 632-659.	4.8	16
29	Micromechanics and dislocation theory in anisotropic elasticity. Journal of Micromechanics and Molecular Physics, 2016, 01, 1650011.	1.2	6
30	Atomistically enabled nonsingular anisotropic elastic representation of near-core dislocation stress fields in α-iron. Physical Review B, 2015, 91, .	3.2	20
31	Distributed dislocation technique for cracks based on non-singular dislocations in nonlocal elasticity of Helmholtz type. Engineering Fracture Mechanics, 2015, 136, 79-95.	4.3	26
32	On the gradient of the Green tensor in two-dimensional elastodynamic problems, and related integrals: Distributional approach and regularization, with application to nonuniformly moving sources. Wave Motion, 2015, 57, 44-63.	2.0	10
33	The non-singular Green tensor of Mindlin's anisotropic gradient elasticity with separable weak non-locality. Physics Letters, Section A: General, Atomic and Solid State Physics, 2015, 379, 1538-1543.	2.1	42
34	The non-singular Green tensor of gradient anisotropic elasticity ofÂHelmholtz type. European Journal of Mechanics, A/Solids, 2015, 50, 152-162.	3.7	20
35	On non-singular crack fields in Helmholtz type enriched elasticity theories. International Journal of Solids and Structures, 2015, 62, 1-7.	2.7	31
36	Fundamentals in generalized elasticity and dislocation theory of quasicrystals: Green tensor, dislocation key-formulas and dislocation loops. Philosophical Magazine, 2014, 94, 4080-4101.	1.6	15

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37	The elastodynamic model of wave-telegraph type for quasicrystals. International Journal of Solids and Structures, 2014, 51, 923-929.	2.7	17
38	On the equations of motion of dislocations in quasicrystals. Mechanics Research Communications, 2014, 57, 27-33.	1.8	8
39	On gradient field theories: gradient magnetostatics and gradient elasticity. Philosophical Magazine, 2014, 94, 2840-2874.	1.6	35
40	The solid angle and the Burgers formula in the theory of gradient elasticity: Line integral representation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 597-601.	2.1	8
41	Singularity-free dislocation dynamics with strain gradient elasticity. Journal of the Mechanics and Physics of Solids, 2014, 68, 161-178.	4.8	79
42	Dislocation loops in anisotropic elasticity: displacement field, stress function tensor and interaction energy. Philosophical Magazine, 2013, 93, 174-185.	1.6	23
43	On retardation, radiation and Liénard–Wiechert type potentials in electrodynamics and elastodynamics. Wave Motion, 2013, 50, 1161-1174.	2.0	2
44	The fundamentals of non-singular dislocations in the theory of gradient elasticity: Dislocation loops and straight dislocations. International Journal of Solids and Structures, 2013, 50, 352-362.	2.7	62
45	The electromagnetic fields and the radiation of a spatio-temporally varying electric current loop. Wave Motion, 2013, 50, 995-1002.	2.0	0
46	Dislocation field theory in 2D: Application to graphene. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 423-429.	2.1	5
47	On the non-uniform motion of dislocations: the retarded elastic fields, the retarded dislocation tensor potentials and the Liénard–Wiechert tensor potentials. Philosophical Magazine, 2013, 93, 749-776.	1.6	8
48	The elastodynamic Liénard–Wiechert potentials and elastic fields of non-uniformly moving point and line forces. Wave Motion, 2012, 49, 710-718.	2.0	3
49	Non-singular dislocation loops in gradient elasticity. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 1757-1758.	2.1	23
50	Screw dislocation in nonlocal anisotropic elasticity. International Journal of Engineering Science, 2011, 49, 1404-1414.	5.0	36
51	A screw dislocation in a functionally graded material using the translation gauge theory of dislocations. International Journal of Solids and Structures, 2011, 48, 1630-1636.	2.7	6
52	On the elastic fields produced by non-uniformly moving dislocations: a revisit. Philosophical Magazine, 2011, 91, 3327-3342.	1.6	7
53	The gauge theory of dislocations: A nonuniformly moving screw dislocation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 3092-3098.	2.1	8
54	On the Nonlinear Continuum Theory of Dislocations: A Gauge Field Theoretical Approach. Journal of Elasticity, 2010, 99, 163-178.	1.9	12

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55	Cartan's Spiral Staircase in Physics and, in Particular, in the Gauge Theory of Dislocations. Foundations of Physics, 2010, 40, 1298-1325.	1.3	47
56	Generalized dynamics of moving dislocations in quasicrystals. Journal of Physics Condensed Matter, 2010, 22, 495401.	1.8	6
57	Dislocations in Generalized Continuum Mechanics. Advances in Mechanics and Mathematics, 2010, , 235-244.	0.7	5
58	The gauge theory of dislocations: a uniformly moving screw dislocation. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 2505-2520.	2.1	13
59	Conservation and Balance Laws in Linear Elasticity ofÂGrade Three. Journal of Elasticity, 2009, 94, 69-85.	1.9	28
60	On the Higgs mechanism and stress functions in the translational gauge theory of dislocations. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 1578-1582.	2.1	6
61	Anisotropic Elasticity of Grade Three: Conservation and Balance Laws. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 179-191.	0.2	2
62	Translational Conservation and Balance Laws in the Gauge Theory of Dislocations. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 215-227.	0.2	2
63	Is incompressible elasticity a conformal field theory?. Comptes Rendus - Mecanique, 2008, 336, 163-169.	2.1	3
64	The thermodynamic driving force for bone growth and remodelling: a hypothesis. Journal of the Royal Society Interface, 2008, 5, 183-193.	3.4	10
65	The gauge theory of dislocations: conservation and balance laws. Philosophical Magazine, 2008, 88, 1673-1699.	1.6	26
66	The Eshelby stress tensor, angular momentum tensor and dilatation flux in gradient elasticity. International Journal of Solids and Structures, 2007, 44, 2477-2486.	2.7	49
67	The Eshelby stress tensor, angular momentum tensor and scaling flux in micropolar elasticity. International Journal of Solids and Structures, 2007, 44, 4613-4620.	2.7	12
68	On the screw dislocation in a functionally graded material. Mechanics Research Communications, 2007, 34, 305-311.	1.8	21
69	Lie Point Symmetries, Conservation and Balance Laws in Linear Gradient Elastodynamics. Journal of Elasticity, 2007, 88, 5-25.	1.9	16
70	On Conservation and Balance Laws in Micromorphic Elastodynamics. Journal of Elasticity, 2007, 88, 63-78.	1.9	10
71	Dislocations in gradient elasticity revisited. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2006, 462, 3465-3480.	2.1	58
72	The Eshelby tensor in nonlocal elasticity and in nonlocal micropolar elasticity. Journal of Mechanics of Materials and Structures, 2006, 1, 325-337.	0.6	15

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73	On a theory of nonlocal elasticity of bi-Helmholtz type and some applications. International Journal of Solids and Structures, 2006, 43, 1404-1421.	2.7	156
74	Dislocations in second strain gradient elasticity. International Journal of Solids and Structures, 2006, 43, 1787-1817.	2.7	154
75	Lie point symmetries and conservation laws in microstretch and micromorphic elasticity. International Journal of Engineering Science, 2006, 44, 1571-1582.	5.0	18
76	A note on line forces in gradient elasticity. Mechanics Research Communications, 2006, 33, 674-680.	1.8	55
77	Nonsingular stress and strain fields of dislocations and disclinations in first strain gradient elasticity. International Journal of Engineering Science, 2005, 43, 1157-1184.	5.0	202
78	Cosserat (micropolar) elasticity in Stroh form. International Journal of Solids and Structures, 2005, 42, 5377-5398.	2.7	11
79	On dislocations in a special class of generalized elasticity. Physica Status Solidi (B): Basic Research, 2005, 242, 2365-2390.	1.5	96
80	Peach-Koehler Forces within the Theory of Nonlocal Elasticity. , 2005, , 149-158.		3
81	Geometric twist decomposition off the light cone for nonlocal QCD vector operators. Physical Review D, 2004, 69, .	4.7	8
82	Defects in gradient micropolar elasticity?II: edge dislocation and wedge disclination. Journal of the Mechanics and Physics of Solids, 2004, 52, 2285-2307.	4.8	27
83	Defects in gradient micropolar elasticity?I: screw dislocation. Journal of the Mechanics and Physics of Solids, 2004, 52, 2263-2284.	4.8	37
84	Wedge disclination in the field theory of elastoplasticity. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 311, 416-425.	2.1	12
85	Dislocations in the field theory of elastoplasticity. Computational Materials Science, 2003, 28, 419-428.	3.0	23
86	A nonsingular solution of the edge dislocation in the gauge theory of dislocations. Journal of Physics A, 2003, 36, 1415-1437.	1.6	38
87	Twist disclination in the field theory of elastoplasticity. Journal of Physics Condensed Matter, 2003, 15, 6781-6800.	1.8	7
88	An elastoplastic theory of dislocations as a physical field theory with torsion. Journal of Physics A, 2002, 35, 1983-2004.	1.6	53
89	Nonlocal operators and distribution amplitudes of definite twist, WWâ€"relations, ECâ€"sum rules and power corrections for hard QCD processes. Nuclear Physics, Section B, Proceedings Supplements, 2002, 108, 318-320.	0.4	0
90	Screw dislocations in the field theory of elastoplasticity. Annalen Der Physik, 2002, 11, 635-649.	2.4	16

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91	Power corrections of off-forward quark distributions and harmonic operators with definite geometric twist. Nuclear Physics B, 2001, 618, 99-137.	2.5	16
92	Ï•Meson wave functions from nonlocal light-cone operators with definite twist. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2001, 497, 62-72.	4.1	8
93	A note on Wandzuraâ€"Wilczek relations. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2001, 515, 131-136.	4.1	12
94	Wandzura-Wilczek-type relations of Ï•meson wave functions. Journal of High Energy Physics, 2001, 2001, 029-029.	4.7	9
95	Parton distribution functions from nonlocal light-cone operators with definite twist. Physical Review D, 2001, 63, .	4.7	16
96	Quantum field theoretic treatment of the non-forward compton amplitude in the generalized bjorken region. Nuclear Physics, Section B, Proceedings Supplements, 2000, 89, 155-161.	0.4	5
97	Nonlocal LC-operators of definite twist. Nuclear Physics, Section B, Proceedings Supplements, 2000, 90, 28-30.	0.4	0
98	Dislocation theory as a 3-dimensional translation gauge theory. Annalen Der Physik, 2000, 9, 461-473.	2.4	34
99	Twist decomposition of nonlocal light-cone operators II: general tensors of 2nd rank. Nuclear Physics B, 2000, 581, 341-390.	2.5	32
100	Decomposition of non-local light-cone operators into harmonic operators of definite twist. Nuclear Physics B, 1999, 559, 339-377.	2.5	49
101	Calculation of displacement fields and simulation of HRTEM images of dislocations in sphalerite type A(III)B(V) compound semiconductors. Crystal Research and Technology, 1997, 32, 111-124.	1.3	8