

Markus Lazar

List of Publications by Year in descending order

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101
papers

2,285
citations

218677

26
h-index

254184

43
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103
all docs

103
docs citations

103
times ranked

761
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonsingular stress and strain fields of dislocations and disclinations in first strain gradient elasticity. <i>International Journal of Engineering Science</i> , 2005, 43, 1157-1184.	5.0	202
2	On a theory of nonlocal elasticity of bi-Helmholtz type and some applications. <i>International Journal of Solids and Structures</i> , 2006, 43, 1404-1421.	2.7	156
3	Dislocations in second strain gradient elasticity. <i>International Journal of Solids and Structures</i> , 2006, 43, 1787-1817.	2.7	154
4	On dislocations in a special class of generalized elasticity. <i>Physica Status Solidi (B): Basic Research</i> , 2005, 242, 2365-2390.	1.5	96
5	Singularity-free dislocation dynamics with strain gradient elasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2014, 68, 161-178.	4.8	79
6	The fundamentals of non-singular dislocations in the theory of gradient elasticity: Dislocation loops and straight dislocations. <i>International Journal of Solids and Structures</i> , 2013, 50, 352-362.	2.7	62
7	Dislocations in gradient elasticity revisited. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2006, 462, 3465-3480.	2.1	58
8	A note on line forces in gradient elasticity. <i>Mechanics Research Communications</i> , 2006, 33, 674-680.	1.8	55
9	An elastoplastic theory of dislocations as a physical field theory with torsion. <i>Journal of Physics A</i> , 2002, 35, 1983-2004.	1.6	53
10	A non-singular theory of dislocations in anisotropic crystals. <i>International Journal of Plasticity</i> , 2018, 103, 1-22.	8.8	51
11	Decomposition of non-local light-cone operators into harmonic operators of definite twist. <i>Nuclear Physics B</i> , 1999, 559, 339-377.	2.5	49
12	The Eshelby stress tensor, angular momentum tensor and dilatation flux in gradient elasticity. <i>International Journal of Solids and Structures</i> , 2007, 44, 2477-2486.	2.7	49
13	Cartan's Spiral Staircase in Physics and, in Particular, in the Gauge Theory of Dislocations. <i>Foundations of Physics</i> , 2010, 40, 1298-1325.	1.3	47
14	The non-singular Green tensor of Mindlin's anisotropic gradient elasticity with separable weak non-locality. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2015, 379, 1538-1543.	2.1	42
15	A nonsingular solution of the edge dislocation in the gauge theory of dislocations. <i>Journal of Physics A</i> , 2003, 36, 1415-1437.	1.6	38
16	Defects in gradient micropolar elasticity?: screw dislocation. <i>Journal of the Mechanics and Physics of Solids</i> , 2004, 52, 2263-2284.	4.8	37
17	Screw dislocation in nonlocal anisotropic elasticity. <i>International Journal of Engineering Science</i> , 2011, 49, 1404-1414.	5.0	36
18	On gradient field theories: gradient magnetostatics and gradient elasticity. <i>Philosophical Magazine</i> , 2014, 94, 2840-2874.	1.6	35

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19	Dislocation theory as a 3-dimensional translation gauge theory. <i>Annalen Der Physik</i> , 2000, 9, 461-473.	2.4	34
20	Twist decomposition of nonlocal light-cone operators II: general tensors of 2nd rank. <i>Nuclear Physics B</i> , 2000, 581, 341-390.	2.5	32
21	On non-singular crack fields in Helmholtz type enriched elasticity theories. <i>International Journal of Solids and Structures</i> , 2015, 62, 1-7.	2.7	31
22	Non-singular dislocation continuum theories: strain gradient elasticity vs. Peierls's Nabarro model. <i>Philosophical Magazine</i> , 2017, 97, 3246-3275.	1.6	29
23	Conservation and Balance Laws in Linear Elasticity of Grade Three. <i>Journal of Elasticity</i> , 2009, 94, 69-85.	1.9	28
24	Defects in gradient micropolar elasticity II: edge dislocation and wedge disclination. <i>Journal of the Mechanics and Physics of Solids</i> , 2004, 52, 2285-2307.	4.8	27
25	The gauge theory of dislocations: conservation and balance laws. <i>Philosophical Magazine</i> , 2008, 88, 1673-1699.	1.6	26
26	Distributed dislocation technique for cracks based on non-singular dislocations in nonlocal elasticity of Helmholtz type. <i>Engineering Fracture Mechanics</i> , 2015, 136, 79-95.	4.3	26
27	Dislocations in the field theory of elastoplasticity. <i>Computational Materials Science</i> , 2003, 28, 419-428.	3.0	23
28	Non-singular dislocation loops in gradient elasticity. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2012, 376, 1757-1758.	2.1	23
29	Dislocation loops in anisotropic elasticity: displacement field, stress function tensor and interaction energy. <i>Philosophical Magazine</i> , 2013, 93, 174-185.	1.6	23
30	Micromechanics of dislocations in solids: J-, M-, and L-integrals and their fundamental relations. <i>International Journal of Engineering Science</i> , 2017, 114, 16-40.	5.0	23
31	On the screw dislocation in a functionally graded material. <i>Mechanics Research Communications</i> , 2007, 34, 305-311.	1.8	21
32	Atomistically enabled nonsingular anisotropic elastic representation of near-core dislocation stress fields in ϵ -iron. <i>Physical Review B</i> , 2015, 91, .	3.2	20
33	The non-singular Green tensor of gradient anisotropic elasticity of Helmholtz type. <i>European Journal of Mechanics, A/Solids</i> , 2015, 50, 152-162.	3.7	20
34	Irreducible decomposition of strain gradient tensor in isotropic strain gradient elasticity. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2016, 96, 1291-1305.	1.6	20
35	Computational 3-dimensional dislocation elastodynamics. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 126, 20-51.	4.8	20
36	Lie point symmetries and conservation laws in microstretch and micromorphic elasticity. <i>International Journal of Engineering Science</i> , 2006, 44, 1571-1582.	5.0	18

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37	On Mindlin's isotropic strain gradient elasticity: Green tensors, regularization, and operator-split. <i>Journal of Micromechanics and Molecular Physics</i> , 2018, 03, 1840008.	1.2	18
38	The elastodynamic model of wave-telegraph type for quasicrystals. <i>International Journal of Solids and Structures</i> , 2014, 51, 923-929.	2.7	17
39	Three-dimensional nonlocal anisotropic elasticity: a generalized continuum theory of Ångström-mechanics. <i>Acta Mechanica</i> , 2020, 231, 743-781.	2.1	17
40	Mathematical modeling of the elastic properties of cubic crystals at small scales based on the Toupin-Mindlin anisotropic first strain gradient elasticity. <i>Continuum Mechanics and Thermodynamics</i> , 2022, 34, 107-136.	2.2	17
41	Power corrections of off-forward quark distributions and harmonic operators with definite geometric twist. <i>Nuclear Physics B</i> , 2001, 618, 99-137.	2.5	16
42	Parton distribution functions from nonlocal light-cone operators with definite twist. <i>Physical Review D</i> , 2001, 63, .	4.7	16
43	Screw dislocations in the field theory of elastoplasticity. <i>Annalen Der Physik</i> , 2002, 11, 635-649.	2.4	16
44	Lie Point Symmetries, Conservation and Balance Laws in Linear Gradient Elastodynamics. <i>Journal of Elasticity</i> , 2007, 88, 5-25.	1.9	16
45	Distributional and regularized radiation fields of non-uniformly moving straight dislocations, and elastodynamic Tamm problem. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 96, 632-659.	4.8	16
46	The Eshelby tensor in nonlocal elasticity and in nonlocal micropolar elasticity. <i>Journal of Mechanics of Materials and Structures</i> , 2006, 1, 325-337.	0.6	15
47	Fundamentals in generalized elasticity and dislocation theory of quasicrystals: Green tensor, dislocation key-formulas and dislocation loops. <i>Philosophical Magazine</i> , 2014, 94, 4080-4101.	1.6	15
48	The gauge theory of dislocations: a uniformly moving screw dislocation. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2009, 465, 2505-2520.	2.1	13
49	A note on Wandzura-Wilczek relations. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2001, 515, 131-136.	4.1	12
50	Wedge disclination in the field theory of elastoplasticity. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2003, 311, 416-425.	2.1	12
51	The Eshelby stress tensor, angular momentum tensor and scaling flux in micropolar elasticity. <i>International Journal of Solids and Structures</i> , 2007, 44, 4613-4620.	2.7	12
52	On the Nonlinear Continuum Theory of Dislocations: Gauge Field Theoretical Approach. <i>Journal of Elasticity</i> , 2010, 99, 163-178.	1.9	12
53	Cosserat (micropolar) elasticity in Stroh form. <i>International Journal of Solids and Structures</i> , 2005, 42, 5377-5398.	2.7	11
54	Electro-elastic dislocations in piezoelectric materials. <i>Philosophical Magazine</i> , 2020, 100, 1059-1101.	1.6	11

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55	On Conservation and Balance Laws in Micromorphic Elastodynamics. <i>Journal of Elasticity</i> , 2007, 88, 63-78.	1.9	10
56	The thermodynamic driving force for bone growth and remodelling: a hypothesis. <i>Journal of the Royal Society Interface</i> , 2008, 5, 183-193.	3.4	10
57	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. <i>Wave Motion</i> , 2015, 57, 44-63.	2.0	10
58	Green functions and propagation in the Bopp-Podolsky electrodynamics. <i>Wave Motion</i> , 2019, 91, 102388.	2.0	10
59	The Green tensor of Mindlin's anisotropic first strain gradient elasticity. <i>Materials Theory</i> , 2019, 3, .	4.3	10
60	Incompatible strain gradient elasticity of Mindlin type: screw and edge dislocations. <i>Acta Mechanica</i> , 2021, 232, 3471-3494.	2.1	10
61	Wandzura-Wilczek-type relations of $\tilde{\rho}$ -meson wave functions. <i>Journal of High Energy Physics</i> , 2001, 2001, 029-029.	4.7	9
62	Eshelbian dislocation mechanics: $\tilde{\rho}$ -, M -, and $\tilde{\rho}$ -integrals of straight dislocations. <i>Mechanics Research Communications</i> , 2018, 93, 89-95.	1.8	9
63	Calculation of displacement fields and simulation of HRTEM images of dislocations in sphalerite type A(III)B(V) compound semiconductors. <i>Crystal Research and Technology</i> , 1997, 32, 111-124.	1.3	8
64	$\tilde{\rho}$ -Meson wave functions from nonlocal light-cone operators with definite twist. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2001, 497, 62-72.	4.1	8
65	Geometric twist decomposition off the light cone for nonlocal QCD vector operators. <i>Physical Review D</i> , 2004, 69, .	4.7	8
66	The gauge theory of dislocations: A nonuniformly moving screw dislocation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2010, 374, 3092-3098.	2.1	8
67	On the non-uniform motion of dislocations: the retarded elastic fields, the retarded dislocation tensor potentials and the LiÅ©nard-Wiechert tensor potentials. <i>Philosophical Magazine</i> , 2013, 93, 749-776.	1.6	8
68	On the equations of motion of dislocations in quasicrystals. <i>Mechanics Research Communications</i> , 2014, 57, 27-33.	1.8	8
69	The solid angle and the Burgers formula in the theory of gradient elasticity: Line integral representation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2014, 378, 597-601.	2.1	8
70	A non-singular continuum theory of point defects using gradient elasticity of bi-Helmholtz type. <i>Philosophical Magazine</i> , 2019, 99, 1563-1601.	1.6	8
71	Twist disclination in the field theory of elastoplasticity. <i>Journal of Physics Condensed Matter</i> , 2003, 15, 6781-6800.	1.8	7
72	On the elastic fields produced by non-uniformly moving dislocations: a revisit. <i>Philosophical Magazine</i> , 2011, 91, 3327-3342.	1.6	7

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73	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
74	Generalized dynamics of moving dislocations in quasicrystals. Journal of Physics Condensed Matter, 2010, 22, 495401.	1.8	6
75	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
76	Eshelbian mechanics of novel materials: Quasicrystals. Journal of Micromechanics and Molecular Physics, 2016, 01, 1640008.	1.2	6
77	Micromechanics and dislocation theory in anisotropic elasticity. Journal of Micromechanics and Molecular Physics, 2016, 01, 1650011.	1.2	6
78	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
79	Second Gradient Electromagnetostatics: Electric Point Charge, Electrostatic and Magnetostatic Dipoles. Symmetry, 2020, 12, 1104.	2.2	6
80	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
81	Dislocations in Generalized Continuum Mechanics. Advances in Mechanics and Mathematics, 2010, , 235-244.	0.7	5
82	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
83	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
84	Singularity-free dislocation continuum theory for anisotropic crystals. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800095.	0.2	4
85	Second gradient electrodynamics: A non-singular relativistic field theory. Annals of Physics, 2020, 423, 168330.	2.8	4
86	Gradient modification of Newtonian gravity. Physical Review D, 2020, 102, .	4.7	4
87	Peach-Koehler Forces within the Theory of Nonlocal Elasticity. , 2005, , 149-158.		3
88	Is incompressible elasticity a conformal field theory?. Comptes Rendus - Mecanique, 2008, 336, 163-169.	2.1	3
89	The elastodynamic LiÅ©nardâ€™Wiechert potentials and elastic fields of non-uniformly moving point and line forces. Wave Motion, 2012, 49, 710-718.	2.0	3
90	Second gradient electrodynamics: Green functions, wave propagation, regularization and self-force. Wave Motion, 2020, 95, 102531.	2.0	3

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91	On retardation, radiation and LiÅ©nardâ€™Wiechert type potentials in electrodynamics and elastodynamics. <i>Wave Motion</i> , 2013, 50, 1161-1174.	2.0	2
92	Displacements and Stress Functions of Straight Dislocations and Line Forces in Anisotropic Elasticity: A New Derivation and Its Relation to the Integral Formalism. <i>Symmetry</i> , 2021, 13, 1721.	2.2	2
93	Anisotropic Elasticity of Grade Three: Conservation and Balance Laws. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2009, , 179-191.	0.2	2
94	Translational Conservation and Balance Laws in the Gauge Theory of Dislocations. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2009, , 215-227.	0.2	2
95	Generalised plane strain embedded in three-dimensional anisotropic elasticity. <i>Philosophical Magazine</i> , 2021, 101, 2584-2598.	1.6	2
96	A new insight into the J â€• M â€•, and L â€•integrals of dislocations. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2018, 18, e201800159.	0.2	1
97	Nonlocal LC-operators of definite twist. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 2000, 90, 28-30.	0.4	0
98	Nonlocal operators and distribution amplitudes of definite twist, WWâ€™relations, ECâ€™sum rules and power corrections for hard QCD processes. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 2002, 108, 318-320.	0.4	0
99	The electromagnetic fields and the radiation of a spatio-temporally varying electric current loop. <i>Wave Motion</i> , 2013, 50, 995-1002.	2.0	0
100	Dislocations and Cracks in Generalized Continua. , 2018, , 1-11.		0
101	Dislocations and Cracks in Generalized Continua. , 2020, , 672-682.		0