Massimo Ruzzene

List of Publications by Year
in descending order

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118 papers	6,830 citations	61984 43 h-index	60623 81 g-index
122 all docs	122 docs citations	122 times ranked	3140 citing authors

#	Article	IF	Citations
1	Acoustically manipulating internal structure of disk-in-sphere endoskeletal droplets. Nature Communications, 2022, 13, 987.	12.8	12
2	MoirÃ©â€Driven Topological Transitions and Extreme Anisotropy in Elastic Metasurfaces. Advanced Science, 2022, 9, e2200181.	11.2	7
3	Minimal Surfaceâ€Based Materials for Topological Elastic Wave Guiding. Advanced Functional Materials, 2022, 32, .	14.9	7
4	Small-world disordered lattices: spectral gaps and diffusive transport. New Journal of Physics, 2022, 24, 073020.	2.9	2
5	Experimental Observation of Temporal Pumping in Electromechanical Waveguides. Physical Review Letters, 2021, 126, 095501.	7.8	56
6	Experimental and Computational Investigation of Guided Waves in a Human Skull. Ultrasound in Medicine and Biology, 2021, 47, 787-798.	1.5	10
7	Exploring topology of 1D quasiperiodic metastructures through modulated LEGO resonators. Applied Physics Letters, 2021, 118, .	3.3	22
8	Exceptional points and enhanced sensitivity in PT-symmetric continuous elastic media. Journal of the Mechanics and Physics of Solids, 2021, 149, 104325.	4.8	30
9	Mechanics and dynamics of two-dimensional quasicrystalline composites. Extreme Mechanics Letters, 2021, 44, 101220.	4.1	9
10	Experimental identification of high order Lamb waves and estimation of the mechanical properties of a dry human skull. Ultrasonics, 2021, 113, 106343.	3.9	21
11	Phased Array Ultrasonic Testing of Inconel 625 Produced by Selective Laser Melting. Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, 2021, 4, .	0.9	1
12	Radiation Characteristics of Cranial Leaky Lamb Waves. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2129-2140.	3.0	10
13	Topological gaps by twisting. Communications Physics, 2021, 4, .	5.3	20
14	Vibration-based elastic parameter identification of the diploÃ« and cortical tables in dry cranial bones. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 123, 104747.	3.1	5
15	Dynamics of elastic hyperbolic lattices. Extreme Mechanics Letters, 2021, 49, 101491.	4.1	9
16	Skull microstructure and mode conversion in transcranial ultrasound imaging. , 2021, , .		4
17	Radiation Characterization of Leaky Guided Waves in Monolithic and Sutured Cranial Bones. , 2021, , .		0
18	Mechanical Characterization of Cranial Sutures Using Guided Ultrasonic Waves. , 2021, , .		0

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19	Bistable attachments for wideband nonlinear vibration attenuation in a metamaterial beam. Nonlinear Dynamics, 2020, 102, 1285-1296.	5.2	56
20	Bridging-Coupling Phenomenon in Linear Elastic Metamaterials by Exploiting Locally Resonant Metachain Isomers. Physical Review Applied, 2020, 14, .	3.8	7
21	Dynamics of Quasiperiodic Beams. Crystals, 2020, 10, 1144.	2.2	12
22	Digitally Programmable Resonant Elastic Metamaterials. Physical Review Applied, 2020, 13, .	3.8	44
23	Edge states and topological pumping in stiffness-modulated elastic plates. Physical Review B, 2020, 101, .	3.2	48
24	Experimental Observation of Nonreciprocal Band Gaps in a Space-Time-Modulated Beam Using a Shunted Piezoelectric Array. Physical Review Applied, 2020, 13, .	3.8	73
25	Nonreciprocity in acoustic and elastic materials. Nature Reviews Materials, 2020, 5, 667-685.	48.7	243
26	Topological Edge States in Quasiperiodic Locally Resonant Metastructures. Physical Review Applied, 2020, 13, .	3.8	41
27	Nonreciprocal piezoelectric metamaterial framework and circuit strategies. Physical Review B, 2020, 102, .	3.2	36
28	Valley-based splitting of topologically protected helical waves in elastic plates. Physical Review B, 2019, 100, .	3.2	85
29	Edge States and Topological Pumping in Spatially Modulated Elastic Lattices. Physical Review Letters, 2019, 123, 034301.	7.8	89
30	Topological bands and localized vibration modes in quasiperiodic beams. New Journal of Physics, 2019, 21, 093017.	2.9	40
31	Coherent virtual absorption of elastodynamic waves. Science Advances, 2019, 5, eaaw3255.	10.3	37
32	Topologically protected edge states in mechanical metamaterials. Advances in Applied Mechanics, 2019, 52, 147-181.	2.3	5
33	Nonlocal elasticity in shape memory alloys modeled using peridynamics for solving dynamic problems. Nonlinear Dynamics, 2019, 97, 1911-1935.	5.2	11
34	Dramatic bandwidth enhancement in nonlinear metastructures via bistable attachments. Applied Physics Letters, 2019, 114, .	3.3	49
35	Role of nonlinearities in topological protection: Testing magnetically coupled fidget spinners. Physical Review B, 2019, 99, .	3.2	20
36	Wave attenuation and trapping in 3D printed cantilever-in-mass metamaterials with spatially correlated variability. Scientific Reports, 2019, 9, 5617.	3.3	66

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37	Solving partial differential equations in computational mechanics via nonlocal numerical approaches. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2019, 99, e201800342.	1.6	2
38	Topological edge modes and elastic wave pumping leveraging phononics waveguides. , 2019, , .		0
39	Edge States and Topological Pumping in Spatially Modulated Elastic Lattices. , 2019, , .		0
40	Wave propagation in elastic metamaterial beams and plates with interconnected resonators. International Journal of Solids and Structures, 2018, 139-140, 105-120.	2.7	118
41	Optical evaluation of the wave filtering properties of graded undulated lattices. Journal of Applied Physics, 2018, 123, 091706.	2.5	15
42	Amplitude-dependent topological edge states in nonlinear phononic lattices. Physical Review E, 2018, 97, 032209.	2.1	63
43	Experimental Observation of Topologically Protected Helical Edge Modes in Patterned Elastic Plates. Physical Review X, 2018, 8, .	8.9	136
44	A study of deformation localization in nonlinear elastic square lattices under compression. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170140.	3.4	3
45	Band transition and topological interface modes in 1D elastic phononic crystals. Scientific Reports, 2018, 8, 6806.	3.3	102
46	Propagation of solitons in a two-dimensional nonlinear square lattice. International Journal of Non-Linear Mechanics, 2018, 106, 188-204.	2.6	22
47	Design and Analysis of Piezoelectric Metamaterial Beams With Synthetic Impedance Shunt Circuits. IEEE/ASME Transactions on Mechatronics, 2018, 23, 2144-2155.	5.8	58
48	Self-bending elastic waves and obstacle circumventing in wireless power transfer. Applied Physics Letters, 2017, 110, .	3.3	16
49	A general theory for bandgap estimation in locally resonant metastructures. Journal of Sound and Vibration, 2017, 406, 104-123.	3.9	176
50	Optical Measurement of In-plane Waves in Mechanical Metamaterials Through Digital Image Correlation. Scientific Reports, 2017, 7, 42437.	3.3	10
51	Edge waves in plates with resonators: an elastic analogue of the quantum valley Hall effect. New Journal of Physics, 2017, 19, 025001.	2.9	271
52	Observation of topological valley modes in an elastic hexagonal lattice. Physical Review B, 2017, 96, .	3.2	218
53	A Bloch-based procedure for dispersion analysis of lattices with periodic time-varying properties. Journal of Sound and Vibration, 2017, 406, 363-377.	3.9	63
54	Optical measurement of guided waves. Journal of the Acoustical Society of America, 2017, 141, EL465-EL469.	1.1	2

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55	An investigation of electroelastic bandgap formation in locally resonant piezoelectric metastructures. Smart Materials and Structures, 2017, 26, 055029.	3.5	98
56	Helical edge states and topological phase transitions in phononic systems using bi-layered lattices. Journal of Applied Physics, 2016, 119, .	2.5	103
57	Guided wavefield reconstruction from sparse measurements. AIP Conference Proceedings, 2016, , .	0.4	0
58	Phase congruency for damage mapping in composites. AIP Conference Proceedings, 2016, , .	0.4	0
59	Effect of large deformation pre-loads on the wave properties of hexagonal lattices. Smart Materials and Structures, 2016, 25, 054010.	3.5	31
60	Wave propagation in undulated structural lattices. International Journal of Solids and Structures, 2016, 97-98, 431-444.	2.7	85
61	A continuum model for nonlinear lattices under large deformations. International Journal of Solids and Structures, 2016, 96, 300-319.	2.7	34
62	Fast wavenumber measurement for accurate and automatic location and quantification of defect in composite. Structural Health Monitoring, 2016, 15, 223-234.	7.5	23
63	Sparse wavefield reconstruction and source detection using Compressed Sensing. Ultrasonics, 2016, 67, 94-104.	3.9	71
64	Hybrid dispersive media with controllable wave propagation: A new take on smart materials. Journal of Applied Physics, 2015, 118, .	2.5	45
65	Out-of-Plane Elastic Waves in 2D Models of Solids: A Case Study for a Nonlocal Discretization Scheme with Reduced Numerical Dispersion. Mathematical Problems in Engineering, 2015, 2015, 1-15.	1.1	5
66	Instantaneous and local wavenumber estimations for damage quantification in composites. Structural Health Monitoring, 2015, 14, 193-204.	7.5	62
67	Peridynamics as an analysis tool for wave propagation in graphene nanoribbons. Proceedings of SPIE, 2015, , .	0.8	11
68	Dynamic reconfiguration of magneto-elastic lattices. Comptes Rendus - Mecanique, 2015, 343, 670-679.	2.1	7
69	Structural Health and Strain Monitoring Sensing through Fourier-Based Transducers. Mechanics of Advanced Materials and Structures, 2015, 22, 67-76.	2.6	2
70	A nonlocal finite difference scheme for simulation of wave propagation in 2D models with reduced numerical dispersion. Proceedings of SPIE, 2014, , .	0.8	3
71	Closure to â€œDiscussion of â€˜Dynamics of Phononic Materials and Structures: Historical Origins, Recent Progress, and Future Outlookâ€™â€•(Hussein, M. I., Leamy, M. J., and Ruzzene, M., 2014, ASME Appl.) Tj ETQq1 1 0.784314 rgB		
72	Non-local modeling and simulation of wave propagation and crack growth. AIP Conference Proceedings, 2014, , .	0.4	8

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73	Orthogonal wideband (DC-10 GHz) microstrip-to-microstrip transition using flexible LCP interconnects. , 2014, , .		0
74	Orthogonal wideband (DC-10 GHz) microstrip-to-microstrip transition using flexible LCP interconnects. , 2014, , .		0
75	Dynamics of Phononic Materials and Structures: Historical Origins, Recent Progress, and Future Outlook. Applied Mechanics Reviews, 2014, 66, .	10.1	1,141
76	Phononic Crystals: Phononic Crystal with Adaptive Connectivity (Adv. Mater. 9/2014). Advanced Materials, 2014, 26, 1472-1472.	21.0	2
77	Weakly nonlinear wave interactions in multi-degree of freedom periodic structures. Wave Motion, 2014, 51, 886-904.	2.0	45
78	Prediction of UH-60A Blade Loads: Insight on Load Confluence Algorithm. AIAA Journal, 2014, 52, 2007-2018.	2.6	3
79	Fabrication and Characterization of a Wavenumber-Spiral Frequency-Steerable Acoustic Transducer for Source Localization in Plate Structures. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 2197-2204.	4.7	17
80	Internally resonating lattices for bandgap generation and low-frequency vibration control. Journal of Sound and Vibration, 2013, 332, 6562-6579.	3.9	193
81	Metamaterial-inspired structures and concepts for elastoacoustic wave energy harvesting. Smart Materials and Structures, 2013, 22, 065004.	3.5	179
82	Bulk wave FSAT for 2D optic fiber endoscopic echography. , 2013, , .		0
83	Baseline-free guided wave imaging via adaptive source removal. Structural Health Monitoring, 2012, 11, 472-481.	7.5	24
84	Experimental demonstration of directional GW generation through wavenumber-spiral Frequency Steerable Acoustic Actuators. , 2012, , .		7
85	Vibration control of plates through hybrid configurations of periodic piezoelectric shunts. Journal of Intelligent Material Systems and Structures, 2012, 23, 1169-1177.	2.5	82
86	Piezoelectric resonator arrays for tunable acoustic waveguides and metamaterials. Journal of Applied Physics, 2012, 112, .	2.5	252
87	Broadband plate-type acoustic metamaterial for low-frequency sound attenuation. Applied Physics Letters, 2012, 101, .	3.3	119
88	Photolithography-based realization of frequency steerable acoustic sensors on PVDF substrate. , 2012, , .		3
89	Unusual behaviour of wave propagation in auxetic structures: Pâ€waves on free surface and Sâ€waves in chiral lattices with piezoelectrics. Physica Status Solidi (B): Basic Research, 2012, 249, 1339-1346.	1.5	27
90	Wave Propagation Control in Beams Through Periodic Multi-Branch Shunts. Journal of Intelligent Material Systems and Structures, 2011, 22, 1567-1579.	2.5	76

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91	Piezoelectric superlattices as multi-field internally resonating metamaterials. AIP Advances, 2011, 1, .	1.3	15
92	Multiple scales analysis of waveâ€“wave interactions inÂaÂcubically nonlinear monoatomic chain. Nonlinear Dynamics, 2011, 63, 193-203.	5.2	97
93	Frequencyâ€“wavenumber domain analysis of guided wavefields. Ultrasonics, 2011, 51, 452-466.	3.9	238
94	Spectrogram remapping based imaging for spiral shaped frequency steerable acoustic transducers. , 2011, , .		0
95	Combined analytical and experimental approaches to rotor components stress predictions. Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics, 2011, 225, 322-330.	0.8	9
96	Design of tunable acoustic metamaterials through periodic arrays of resonant shunted piezos. New Journal of Physics, 2011, 13, 113010.	2.9	221
97	Configuration Optimization of Supercavitating Underwater Vehicles With Maneuvering Constraints. IEEE Journal of Oceanic Engineering, 2010, 35, 647-662.	3.8	16
98	Wave Propagation in Auxetic Tetrachiral Honeycombs. Journal of Vibration and Acoustics, Transactions of the ASME, 2010, 132, .	1.6	116
99	STRUCTURAL DIAGNOSTICS OF BALLISTIC-LIKE DAMAGE VARIATION VIA WAVE PROPAGATION-BASED FILTERING TECHNIQUES. , 2010, , .		1
100	BEAMFORMING OF WAVEFIELD DATA FROM EMBEDDED SOURCES FOR RAPID FOLLOW-UP INSPECTION OF INACCESSIBLE AREAS. , 2010, , .		4
101	A Perturbation Approach for Predicting Wave Propagation in One-Dimensional Nonlinear Periodic Structures. Journal of Vibration and Acoustics, Transactions of the ASME, 2010, 132, .	1.6	187
102	An improved beamforming technique for increased imaging resolution in GW-based SHM. , 2010, , .		1
103	COMPARISON OF MODELING AND EXPERIMENTS OF LAMB WAVES AS APPLIED TO STRUCTURAL HEALTH MONITORING. , 2009, , .		0
104	DIFFUSE FIELD INTERFEROMETRY FOR EXPERIMENTAL GREENâ€™S FUNCTION ESTIMATION AND DAMAGE DETECTION. , 2009, , .		0
105	INCIDENT WAVE REMOVAL THROUGH FREQUENCY-WAVENUMBER FILTERING OF FULL WAVEFIELD DATA. , 2009, , .		13
106	The hexachiral prismatic wingbox concept. Physica Status Solidi (B): Basic Research, 2008, 245, 570-577.	1.5	75
107	Mechanical properties of auxetic tubular trussâ€like structures. Physica Status Solidi (B): Basic Research, 2008, 245, 584-590.	1.5	53
108	Tensile properties of shape memory alloy chiral honeycombs. Physica Status Solidi (B): Basic Research, 2008, 245, 2440-2444.	1.5	20

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109	Structural-Acoustic Optimization of Sandwich Panels. Journal of Vibration and Acoustics, Transactions of the ASME, 2007, 129, 330-340.	1.6	44
110	Strain rate dependence of stiffness and Poisson's ratio of auxetic open cell PU foams. Physica Status Solidi (B): Basic Research, 2007, 244, 955-965.	1.5	35
111	FREQUENCY-WAVENUMBER DOMAIN FILTERING FOR IMPROVED DAMAGE VISUALIZATION. , 2007, , 591-611.		8
112	Structural and Acoustic Behavior of Chiral Truss-Core Beams. Journal of Vibration and Acoustics, Transactions of the ASME, 2006, 128, 616-626.	1.6	51
113	Response of Periodically Stiffened Shells to a Moving Projectile Propelled by an Internal Pressure Wave. Mechanics of Advanced Materials and Structures, 2006, 13, 267-284.	2.6	8
114	Simulation and Measurement of Ultrasonic Waves in Elastic Plates Using Laser Vibrometry. AIP Conference Proceedings, 2005, , .	0.4	38
115	Directional and band-gap behavior of periodic auxetic lattices. Physica Status Solidi (B): Basic Research, 2005, 242, 665-680.	1.5	94
116	Auxetic compliant flexible PU foams: static and dynamic properties. Physica Status Solidi (B): Basic Research, 2005, 242, 681-694.	1.5	146
117	Analysis of Vibration and Wave Propagation in Cylindrical Grid-Like Structures. Shock and Vibration, 2004, 11, 311-331.	0.6	16
118	A Theoretical Framework for Core Material Properties Identification in Cellular Solids using Novelty Detection. Strain, 2004, 40, 5-12.	2.4	0