Marco Scalerandi

List of Publications by Year
in descending order

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129 papers	2,201 citations	218592 26 h-index	265120 42 g-index
137 all docs	137 docs citations	137 times ranked	1180 citing authors

#	Article	IF	Citations
1	Material Grain Size Determines Relaxation-Time Distributions in Slow-Dynamics Experiments. Physical Review Applied, 2022, 17, .	1.5	4
2	Adhesion and plasticity in the dynamic response of rough surfaces in contact. International Journal of Solids and Structures, 2021, 216, 17-29.	1.3	3
3	Elastic Slow Dynamics in Polycrystalline Metal Alloys. Applied Sciences (Switzerland), 2021, 11, 8631.	1.3	5
4	Role of slow dynamics in fast dynamics ultrasonic measurements. Communications in Nonlinear Science and Numerical Simulation, 2020, 91, 105452.	1.7	1
5	Nonlinear elastic imaging with amplitude and frequency modulated low frequency sources. Applied Physics Letters, 2020, 117, 084101.	1.5	0
6	Exploiting Slow Dynamics Effects for Damage Detection in Concrete. Frontiers in Built Environment, 2020, 6, .	1.2	3
7	Proof of concept of a frequency-preserving and time-invariant metamaterial-based nonlinear acoustic diode. Scientific Reports, 2019, 9, 9560.	1.6	26
8	Experimental Evidence of Correlations Between Conditioning and Relaxation in Hysteretic Elastic Media. Physical Review Applied, 2019, 12, .	1.5	16
9	Separation of Damping and Velocity Strain Dependencies using an Ultrasonic Monochromatic Excitation. Physical Review Applied, 2019, 11, .	1.5	13
10	Time Domain Analysis of Elastic Nonlinearity in Concrete Using Continuous Waves. , 2019, , .		0
11	A comparison of scaling subtraction and pulse compression methods for the analysis of elastic nonlinearity. Proceedings of Meetings on Acoustics, 2019, , .	0.3	1
12	Analysis of Elastic Nonlinearity Using Continuous Waves: Validation and Applications. Applied Sciences (Switzerland), 2019, 9, 5332.	1.3	5
13	Nonlinear acoustics measurements of intact and damaged samples: fast and slow dynamics. , 2019, , .		0
14	Damping and velocity during conditioning and relaxation in diverse media: an experimental study. Proceedings of Meetings on Acoustics, 2019, , .	0.3	0
15	Effects of a dc bias on electrical impedance spectroscopy in electrolytic cells. Journal of Molecular Liquids, 2018, 272, 565-571.	2.3	4
16	Conditioning and elastic nonlinearity in concrete: Separation of damping and phase contributions. Construction and Building Materials, 2018, 161, 208-220.	3.2	24
17	Correlation of elastic and mechanical properties of consolidated granular media during microstructure evolution induced by damage and repair. Physical Review Materials, 2018, 2, .	0.9	17
18	Proof of Concept for an Ultrasensitive Technique to Detect and Localize Sources of Elastic Nonlinearity Using Phononic Crystals. Physical Review Letters, 2017, 118, 214301.	2.9	128

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19	Enhancement of harmonics generation in hysteretic elastic media induced by conditioning. Communications in Nonlinear Science and Numerical Simulation, 2017, 45, 117-128.	1.7	11
20	Ultrasonic Monitoring of the Interaction between Cement Matrix and Alkaline Silicate Solution in Self-Healing Systems. Materials, 2017, 10, 46.	1.3	29
21	Continuous waves probing in dynamic acoustoelastic testing. Applied Physics Letters, 2016, 108, 214103.	1.5	8
22	Nonlinear coda wave analysis of hysteretic elastic behavior in strongly scattering media. Physical Review B, 2016, 94, .	1.1	12
23	Power laws and elastic nonlinearity in materials with complex microstructure. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 413-421.	0.9	18
24	Nonlinear acoustics and acoustic emission methods to monitor damage in mesoscopic elastic materials. , 2015, , 161-166.		0
25	Investigation of the validity of Dynamic AcoustoElastic Testing for measuring nonlinear elasticity. Journal of Applied Physics, 2015, 118, 124905.	1.1	3
26	Metamaterials-based sensor to detect and locate nonlinear elastic sources. Applied Physics Letters, 2015, 107, .	1.5	43
27	Evidence of microstructure evolution in solid elastic media based on a power law analysis. Communications in Nonlinear Science and Numerical Simulation, 2015, 22, 334-347.	1.7	25
28	Characterization of damage evolution in non linear media by means of power law exponent: Modeling and experiments. , 2014, , .		0
29	Evidence for frequency dependent diffusion in hydrogel. Journal of Applied Physics, 2014, 116, 094104.	1.1	4
30	Modeling dynamic acousto-elastic testing experiments: Validation and perspectives. Journal of the Acoustical Society of America, 2014, 136, 1530-1541.	0.5	11
31	Power laws behavior in multi-state elastic models with different constraints in the statistical distribution of elements. Communications in Nonlinear Science and Numerical Simulation, 2014, 19, 3628-3641.	1.7	6
32	Discrimination Between Cracks and Recrystallization in Steel Using Nonlinear Techniques. Journal of Nondestructive Evaluation, 2014, 33, 269-278.	1.1	14
33	Effects of experimental configuration on the detection threshold of hysteretic elastic nonlinearity. Ultrasonics, 2014, 54, 1861-1867.	2.1	5
34	Effects of corrosion on linear and nonlinear elastic properties of reinforced concrete. Cement and Concrete Research, 2013, 51, 96-103.	4.6	32
35	Nonlinear elastic response of thermally damaged consolidated granular media. Journal of Applied Physics, 2013, 113, 154902.	1.1	35
36	Diagnostic application of nonlinear ultrasonics to characterize degradation by expansive salts in masonry systems. NDT and E International, 2013, 55, 57-63.	1.7	12

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37	One-channel time reversal acoustics in highly attenuating media. Journal Physics D: Applied Physics, 2013, 46, 135502.	1.3	6
38	Influence of noise on the threshold for detection of elastic nonlinearity. Journal of Applied Physics, 2013, 113, 043516.	1.1	17
39	Nonequilibrium phenomena in damaged media and their effects on the elastic properties. Journal of the Acoustical Society of America, 2012, 131, 4304-4315.	0.5	9
40	Effects of transducer size on impedance spectroscopy measurements. Physical Review E, 2012, 85, 051505.	0.8	4
41	Detection and location of cracks using loss of reciprocity in ultrasonic waves propagation. Journal of the Acoustical Society of America, 2012, 131, EL81-EL85.	0.5	12
42	Similarities and differences among the models proposed for real electrodes in the Poisson-Nernst-Planck theory. Journal of Chemical Physics, 2012, 136, 084705.	1.2	38
43	Break of reciprocity principle due to localized nonlinearities in concrete. Ultrasonics, 2012, 52, 712-719.	2.1	15
44	Break of reciprocity principle induced by cracks in concrete: experimental evidence and applications to nonlinear tomography. Proceedings of Meetings on Acoustics, 2010, , .	0.3	2
45	Conditioning-induced elastic nonlinearity inÂhysteretic media. Applied Physics A: Materials Science and Processing, 2010, 100, 421-424.	1.1	4
46	Nonlinear ultrasonic evaluation of load effects on discontinuities in concrete. Cement and Concrete Research, 2010, 40, 340-346.	4.6	68
47	Monitoring evolution of compressive damage in concrete with linear and nonlinear ultrasonic methods. Cement and Concrete Research, 2010, 40, 1106-1113.	4.6	109
48	Evolution of damage-induced nonlinearity in proximity of discontinuities in concrete. International Journal of Solids and Structures, 2010, 47, 1603-1610.	1.3	24
49	Nonequilibrium and hysteresis in solids: Disentangling conditioning from nonlinear elasticity. Physical Review B, 2010, 81, .	1.1	45
50	Robustness of the SSM applied to damage assessment in concrete. Proceedings of Meetings on Acoustics, 2010, , .	0.3	1
51	Electrical behavior of nematic cells oriented by polypyrrole surface treatment. Applied Physics Letters, 2009, 95, 064101.	1.5	2
52	Analysis of elastic nonlinearity using the scaling subtraction method. Physical Review B, 2009, 79, .	1.1	78
53	Experimentally identifying masked sources applying time reversal with the selective source reduction method. Journal of Applied Physics, 2009, 105, 083506.	1.1	11
54	Behavior of an electrolytic cell containing two groups of ions submitted to a step-like external voltage. European Physical Journal E, 2009, 30, 245-56.	0.7	3

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55	Robustness of computational time reversal imaging in media with elastic constant uncertainties. Journal of Applied Physics, 2009, 106, .	1.1	15
56	Selective source reduction to identify masked sources using time reversal acoustics. Journal Physics D: Applied Physics, 2008, 41, 155504.	1.3	9
57	Anomalous Dependence on the Diffusion Coefficients of the Ionic Relaxation Time in Electrolytes. Journal of Physical Chemistry B, 2008, 112, 7273-7279.	1.2	3
58	On the Concept of Electrical Impedance for an Electrolytic Cell. Molecular Crystals and Liquid Crystals, 2008, 480, 151-159.	0.4	0
59	The Role of an Insulating Surface Layer on the Relaxation Time of the Ionic Redistribution in an Electrolytic Cell. Molecular Crystals and Liquid Crystals, 2008, 480, 93-102.	0.4	1
60	Nonlinear acoustic time reversal imaging using the scaling subtraction method. Journal Physics D: Applied Physics, 2008, 41, 215404.	1.3	39
61	SELECTIVE SOURCE REDUCTION TO IDENTIFY MASKED SMALLER SOURCES USING TIME REVERSED ACOUSTICS (TRA). AIP Conference Proceedings, 2008, , .	0.3	1
62	A scaling method to enhance detection of a nonlinear elastic response. Applied Physics Letters, 2008, 92, .	1.5	96
63	Generalization of Berremanâ€™s model to the case of large amplitude of the grooves. Physical Review E, 2008, 77, 051703.	0.8	18
64	Effects of weak anchoring on the equivalent anchoring energy in a nematic cell with large amplitude of the grooves. Journal of Applied Physics, 2008, 104, .	1.1	5
65	A Novel Ultrasonic Technique to Detect Damage Evolution in Quasi-Brittle Materials. Key Engineering Materials, 2007, 347, 633-638.	0.4	2
66	Relaxation Times of an Electrolytic Cell Subject to an External Electric Field:â€‰ Role of Ambipolar and Free Diffusion Phenomena. Journal of Physical Chemistry B, 2007, 111, 13287-13293.	1.2	11
67	Voltage decay time of a liquid crystal cell submitted to a large difference of potential. Applied Physics Letters, 2006, 89, 214101.	1.5	8
68	Transient effects in electrolytic cells submitted to an external electric field. Liquid Crystals, 2006, 33, 1177-1187.	0.9	8
69	Hysteretic elasticity in damaged concrete: Quantitative analysis of slow and fast dynamics. Physical Review B, 2006, 73, .	1.1	88
70	Preisach-Mayergoyz approach to fatigue-induced irreversibility. Physical Review B, 2006, 73, .	1.1	8
71	Frequency dependence of the electrical impedance of electrolytic cells: The role of the ionic adsorption/desorption phenomena and the Stern layer. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 360, 179-182.	0.9	9
72	Role of the Adsorption Phenomenon on the Ionic Equilibrium Distribution and on the Transient Effects in Electrolytic Cells. Journal of Physical Chemistry B, 2006, 110, 17889-17897.	1.2	10

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73	Modelling localized nonlinear damage and analysis of its influence on resonance frequencies. Journal Physics D: Applied Physics, 2006, 39, 3895-3903.	1.3	20
74	Electrical impedance for an electrolytic cell. Physical Review E, 2006, 73, 051202.	0.8	42
75	Efficiency of time-reversed acoustics for nonlinear damage detection in solids. Journal of the Acoustical Society of America, 2006, 120, 2506-2517.	0.5	54
76	Numerical Analysis of the Anomalous Elastic Behavior of Hysteretic Media: Quasistatic, Dynamic, and Relaxation Experiments. , 2006, , 269-285.		0
77	A LISA Model of the Nonlinear and Hysteretic Response of Interstitial Regions to Applied Stresses. , 2006, , 251-267.		0
78	Environmental Physical Modulation of Intrinsic Tendency to Growth of Multicellular Tumour Spheroids: In Silico Experiments. Physica Scripta, 2005, , 183.	1.2	1
79	Temperature Dependence of the Elastic Properties of Hysteretic Materials. Materials Science Forum, 2005, 480-481, 573-578.	0.3	2
80	Influence of the medium rigidity on the growth of multicellular tumor spheroids. EPJ Applied Physics, 2005, 30, 65-73.	0.3	1
81	Physical Modelling and Simulations of Tumour Growth and Angiogenesis: Predictions and New Hypotheses. Physica Scripta, 2005, , 179.	1.2	1
82	Influence of the ions on the dynamical response of a nematic cell submitted to a dc voltage. Physical Review E, 2004, 69, 051708.	0.8	39
83	Temperature effects on the elastic properties of hysteretic elastic media: Modeling and simulations. Physical Review B, 2004, 69, .	1.1	34
84	Markovian model of growth and histologic progression in prostate cancer. Physical Review E, 2004, 70, 011902.	0.8	4
85	Transformation threshold and time-dependent TAF generation in an angiogenesis model. EPJ Applied Physics, 2004, 25, 133-140.	0.3	1
86	Avascular and vascular phases in tumor cords growth. Mathematical and Computer Modelling, 2003, 37, 1191-1200.	2.0	2
87	Modeling nonclassical nonlinearity, conditioning, and slow dynamics effects in mesoscopic elastic materials. Physical Review B, 2003, 68, .	1.1	68
88	Local interaction simulation approach to modelling nonclassical, nonlinear elastic behavior in solids. Journal of the Acoustical Society of America, 2003, 113, 3049.	0.5	68
89	Stress induced conditioning and thermal relaxation in the simulation of quasi-static compression experiments. Journal Physics D: Applied Physics, 2003, 36, 288-293.	1.3	30
90	Competition effects in the dynamics of tumor cords. Physical Review E, 2002, 65, 051918.	0.8	15

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91	Properties of a â€œphase transitionâ€•induced by antiangiogenetic therapeutical protocols. Physical Review E, 2002, 66, 031903.	0.8	7
92	SIMULATION OF THE PROPAGATION OF ULTRASONIC PULSES IN NONLINEAR AND/OR ATTENUATIVE MEDIA. Journal of Computational Acoustics, 2002, 10, 275-294.	1.0	6
93	LISA simulations of time-reversed acoustic and elastic wave experiments. Journal Physics D: Applied Physics, 2002, 35, 3145-3152.	1.3	13
94	Inhibition of Vascularization in Tumor Growth. Physical Review Letters, 2002, 89, 218101.	2.9	43
95	Emergence of Taxis and Synergy in Angiogenesis. Physical Review Letters, 2001, 87, 128102.	2.9	28
96	PROPAGATION OF ULTRASONIC WAVES IN NONLINEAR MULTILAYERED MEDIA. Journal of Computational Acoustics, 2001, 09, 1633-1645.	1.0	1
97	Subharmonic generation in piezoelectrics with Cantor-like structure. Journal Physics D: Applied Physics, 2001, 34, 1579-1586.	1.3	12
98	Diffusion with evolving sources and competing sinks: Development of angiogenesis. Physical Review E, 2001, 65, 011902.	0.8	24
99	Effects of anatomical constraints on tumor growth. Physical Review E, 2001, 64, 021903.	0.8	26
100	A local interaction simulation approach to the analysis of thin-film growth. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2000, 80, 507-514.	0.6	1
101	A physical-based model for the simulation of neoplastic growth and metastasis. Journal of Surgical Oncology, 2000, 74, 122-129.	0.8	5
102	Acoustoelastic Effects in Elastic Media with Nonuniform Initial Stress. Research in Nondestructive Evaluation, 2000, 12, 105-118.	0.5	3
103	Local interaction simulation approach for the response of the vascular system to metabolic changes of cell behavior. Physical Review E, 2000, 63, 011901.	0.8	17
104	Analysis of a â€œphase transitionâ€•from tumor growth to latency. Physical Review E, 2000, 62, 2547-2554.	0.8	51
105	A genetic algorithm for determination of the elastic constants of a monoclinic crystal. Inverse Problems, 2000, 16, 121-132.	1.0	12
106	Nutrient competition as a determinant for cancer growth. Physical Review E, 1999, 59, 2206-2217.	0.8	52
107	Non-linear model of cancer growth and metastasis: a limiting nutrient as a major determinant of tumor shape and diffusion. Medical Hypotheses, 1999, 53, 497-503.	0.8	17
108	Numerical simulation of pulse propagation in nonlinear 1-D media. Journal of the Acoustical Society of America, 1999, 106, 2424-2430.	0.5	14

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109	Treatment of Attenuation and Dispersion in the Propagation of Ultrasonic Pulses. , 1999, , 103-109.		2
110	Efficiency of Different Ultrasonic Surface Waves for Subsurface Flaws Detection. , 1999, , 127-133.		3
111	A stable finite-difference scheme for the Boussinesq equation. Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics, 1998, 20, 1-17.	0.4	2
112	Application of genetic algorithms to ultrasonic tomography. Journal of the Acoustical Society of America, 1998, 104, 1374-1381.	0.5	17
113	Kortewegâ€“de Vries solitons under additive stochastic perturbations. Physical Review E, 1998, 58, 4166-4173.	0.8	35
114	A spring model for the simulation of the propagation of ultrasonic pulses through imperfect contact interfaces. Journal of the Acoustical Society of America, 1998, 104, 2584-2591.	0.5	87
115	Ultrasonic pulse propagation in inhomogeneous one-dimensional media. Journal of the Acoustical Society of America, 1998, 104, 57-63.	0.5	13
116	Determination of the second- and third-order elastic constants in Al from the natural frequencies. Journal of the Acoustical Society of America, 1997, 102, 193-198.	0.5	5
117	A Model For Diffusion and Competition in Cancer Growth and Metastasis. Materials Research Society Symposia Proceedings, 1997, 489, 217.	0.1	0
118	Pulse distortions in the FD simulation of elastic wave propagation. Mathematical and Computer Modelling, 1997, 25, 31-43.	2.0	8
119	Time evolution of growth phenomena in the KPZ model. Computer Physics Communications, 1996, 97, 195-198.	3.0	8
120	Exploiting massively parallel architectures for the solution of diffusion and propagation problems. Lecture Notes in Computer Science, 1995, , 1-6.	1.0	0
121	ANALYTICAL AND NUMERICAL SOLUTIONS OF THE FORCED BURGERS EQUATION. , 1995, , .		0
122	A renormalization group approach to the simulation of diffusion processes by parallel computers. Mathematical and Computer Modelling, 1994, 19, 1-8.	2.0	1
123	Time scaling in the parallel processing simulation of diffusion processes. Computers and Mathematics With Applications, 1994, 27, 51-61.	1.4	3
124	Characterization of adhesively bonded laminates using non-linear acoustics. , 0, , .		0
125	Parallel processing simulations of the propagation of ultrasonic waves through material interfaces. , 0, , .		3
126	Linking Elastic Nonlinearity and Cracks Growth in Mortar Samples. Key Engineering Materials, 0, 417-418, 293-296.	0.4	0

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127	Non Destructive Characterization of Concrete Joints Using the Scaling Subtraction Method. Key Engineering Materials, 0, 417-418, 41-44.	0.4	2
128	Elastic Conditioning, Memory and Relaxation Induced by the Presence of Cracks in Concrete. Key Engineering Materials, 0, 417-418, 253-256.	0.4	0
129	A Novel Ultrasonic Technique to Detect Damage Evolution in Quasi-Brittle Materials. Key Engineering Materials, 0, , 633-638.	0.4	1