Robert A Guyer

List of Publications by Year
in descending order

163 papers	8,120 citations	53939 47 h-index	60403 85 g-index
176 all docs	176 docs citations	176 times ranked	3882 citing authors

#	Article	IF	Citations
1	A 3D Full Stress Tensor Model for Oklahoma. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB021113.	1.4	6
2	Probing the Damage Zone at Parkfield. Geophysical Research Letters, 2021, 48, e2021GL093518.	1.5	6
3	Attention Network Forecasts Timeâ€toâ€Failure in Laboratory Shear Experiments. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB022195.	1.4	9
4	Moisture-induced crossover in the thermodynamic and mechanical response of hydrophilic biopolymer. Cellulose, 2020, 27, 89-99.	2.4	13
5	Plate motion in sheared granular fault system. Earth and Planetary Science Letters, 2020, 548, 116481.	1.8	6
6	A Poromechanical Model for Sorption Hysteresis in Nanoporous Polymers. Journal of Physical Chemistry B, 2020, 124, 8690-8703.	1.2	8
7	The Spatiotemporal Evolution of Granular Microslip Precursors to Laboratory Earthquakes. Geophysical Research Letters, 2020, 47, e2020GL088404.	1.5	20
8	Disentangling Heat and Moisture Effects on Biopolymer Mechanics. Macromolecules, 2020, 53, 1527-1535.	2.2	8
9	From Stress Chains to Acoustic Emission. Physical Review Letters, 2019, 123, 048003.	2.9	32
10	Machine Learning Reveals the State of Intermittent Frictional Dynamics in a Sheared Granular Fault. Geophysical Research Letters, 2019, 46, 7395-7403.	1.5	27
11	Simulation of crack induced nonlinear elasticity using the combined finite-discrete element method. Ultrasonics, 2019, 98, 51-61.	2.1	18
12	Molecular Simulation of Sorption-Induced Deformation in Atomistic Nanoporous Materials. Langmuir, 2019, 35, 7751-7758.	1.6	14
13	Cohesionâ€Induced Stabilization in Stickâ€Slip Dynamics of Weakly Wet, Sheared Granular Fault Gouge. Journal of Geophysical Research: Solid Earth, 2018, 123, 2115-2126.	1.4	21
14	Estimating Fault Friction From Seismic Signals in the Laboratory. Geophysical Research Letters, 2018, 45, 1321-1329.	1.5	57
15	Role of hydrogen bonding in hysteresis observed in sorption-induced swelling of soft nanoporous polymers. Nature Communications, 2018, 9, 3507.	5.8	101
16	Modeling of Stickâ€Slip Behavior in Sheared Granular Fault Gouge Using the Combined Finiteâ€Discrete Element Method. Journal of Geophysical Research: Solid Earth, 2018, 123, 5774-5792.	1.4	56
17	Simulating stickâ€slip failure in a sheared granular layer using a physicsâ€based constitutive model. Journal of Geophysical Research: Solid Earth, 2017, 122, 295-307.	1.4	16
18	On the role of fluids in stickâ€slip dynamics of saturated granular fault gouge using a coupled computational fluid dynamicsâ€discrete element approach. Journal of Geophysical Research: Solid Earth, 2017, 122, 3689-3700.	1.4	33

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19	On the micromechanics of slip events in sheared, fluidâ€saturated fault gouge. Geophysical Research Letters, 2017, 44, 6101-6108.	1.5	41
20	Nonlinear softening of unconsolidated granular earth materials. Journal of Geophysical Research: Solid Earth, 2017, 122, 6998-7008.	1.4	5
21	Do Fluids Modify the Stick-Slip Behavior of Sheared Granular Media?. , 2017, , .		4
22	Dynamic induced softening in frictional granular materials investigated by discrete-element-method simulation. Physical Review E, 2017, 96, 062901.	0.8	20
23	Slow dynamics of consolidated granular systems: Multi-scale relaxation. Applied Physics Letters, 2017, 111, .	1.5	39
24	Linear and nonlinear elastic properties of dense granular packings: a DEM exploration. EPJ Web of Conferences, 2017, 140, 15033.	0.1	0
25	Quantification of Nanopore Networks: Application to Amorphous Polymers. Journal of Physical Chemistry C, 2016, 120, 28144-28151.	1.5	11
26	Decoupling Nonclassical Nonlinear Behavior of Elastic Wave Types. Physical Review Letters, 2016, 116, 115501.	2.9	46
27	Dynamically triggered slip leading to sustained fault gouge weakening under laboratory shear conditions. Geophysical Research Letters, 2016, 43, 1559-1565.	1.5	20
28	Modeling the Maximum Spreading of Liquid Droplets Impacting Wetting and Nonwetting Surfaces. Langmuir, 2016, 32, 1299-1308.	1.6	134
29	Poroelastic model for adsorption-induced deformation of biopolymers obtained from molecular simulations. Physical Review E, 2015, 92, 022605.	0.8	33
30	Acoustically induced slip in sheared granular layers: Application to dynamic earthquake triggering. Geophysical Research Letters, 2015, 42, 9750-9757.	1.5	28
31	A set of measures for the systematic classification of the nonlinear elastic behavior of disparate rocks. Journal of Geophysical Research: Solid Earth, 2015, 120, 1587-1604.	1.4	70
32	Spatial-temporal variation of low-frequency earthquake bursts near Parkfield, California. Geophysical Journal International, 2015, 202, 914-919.	1.0	13
33	Synchronous low frequency earthquakes and implications for deep San Andreas Fault slip. Earth and Planetary Science Letters, 2015, 424, 132-139.	1.8	11
34	Impact of Moisture Adsorption on Structure and Physical Properties of Amorphous Biopolymers. Macromolecules, 2015, 48, 2793-2800.	2.2	72
35	Water Diffusion in Amorphous Hydrophilic Systems: A Stop and Go Process. Langmuir, 2015, 31, 10843-10849.	1.6	35
36	Water Adsorption in Wood Microfibril-Hemicellulose System: Role of the Crystallineâ€“Amorphous Interface. Biomacromolecules, 2015, 16, 2972-2978.	2.6	107

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37	Three-dimensional discrete element modeling of triggered slip in sheared granular media. Physical Review E, 2014, 89, 042204.	0.8	40
38	Molecular Mechanism of Moisture-Induced Transition in Amorphous Cellulose. ACS Macro Letters, 2014, 3, 1037-1040.	2.3	71
39	Effect of boundary vibration on the frictional behavior of a dense sheared granular layer. Acta Mechanica, 2014, 225, 2227-2237.	1.1	19
40	Microslips as precursors of large slip events in the stickâ€slip dynamics of sheared granular layers: A discrete element model analysis. Geophysical Research Letters, 2013, 40, 4194-4198.	1.5	50
41	Swelling of cellular solids: From conventional to re-entrant honeycombs. Applied Physics Letters, 2013, 102, .	1.5	6
42	Modeling dynamic triggering of tectonic tremor using a brittleâ€ductile friction model. Geophysical Research Letters, 2013, 40, 5075-5079.	1.5	7
43	Acoustic emission and microslip precursors to stickâ€slip failure in sheared granular material. Geophysical Research Letters, 2013, 40, 5627-5631.	1.5	105
44	Hygromorphic behaviour of cellular material: hysteretic swelling and shrinkage of wood probed by phase contrast X-ray tomography. Philosophical Magazine, 2012, 92, 3680-3698.	0.7	43
45	Are megaquakes clustered?. Geophysical Research Letters, 2012, 39, .	1.5	26
46	Brittle and ductile friction and the physics of tectonic tremor. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	30
47	Vibration-induced slip in sheared granular layers and the micromechanics of dynamic earthquake triggering. Europhysics Letters, 2011, 96, 14001.	0.7	30
48	Probing the interior of a solid volume with time reversal and nonlinear elastic wave spectroscopy. Journal of the Acoustical Society of America, 2011, 130, EL258-EL263.	0.5	14
49	Time-reversal methods in geophysics. Physics Today, 2010, 63, 31-35.	0.3	71
50	Hysteretic Elastic Systems. Proceedings of Meetings on Acoustics, 2010, , .	0.3	0
51	Using time-reversal to locate non-volcanic tremor and to fulfill the monitoring objectives of the nuclear-test ban treaty. Proceedings of Meetings on Acoustics, 2010, , .	0.3	0
52	Time reversal of continuous-wave, steady-state signals in elastic media. Applied Physics Letters, 2009, 94, 111908.	1.5	17
53	Energy current imaging method for time reversal in elastic media. Applied Physics Letters, 2009, 95, 021907.	1.5	12
54	Three component time reversal: Focusing vector components using a scalar source. Journal of Applied Physics, 2009, 106, 113504.	1.1	22

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55	Tremor source location using time reversal: Selecting the appropriate imaging field. Geophysical Research Letters, 2009, 36, .	1.5	41
56	Interaction Dynamics of Elastic Waves with a Complex Nonlinear Scatterer through the Use of a Time Reversal Mirror. Physical Review Letters, 2007, 98, 104301.	2.9	115
57	Imaging the Sublimation Dynamics of Colloidal Crystallites. Science, 2006, 314, 795-798.	6.0	91
58	Nonlinear resonant ultrasound spectroscopy (NRUS) applied to damage assessment in bone. Journal of the Acoustical Society of America, 2005, 118, 3946-3952.	0.5	117
59	Linear and nonlinear modulus surfaces in stress space, from stress-strain measurements on Berea sandstone. Nonlinear Processes in Geophysics, 2003, 10, 589-597.	0.6	15
60	Determination of elastic moduli of rock samples using resonant ultrasound spectroscopy. Journal of the Acoustical Society of America, 2002, 111, 1667-1674.	0.5	48
61	Universal Slow Dynamics in Granular Solids. Physical Review Letters, 2000, 85, 1020-1023.	2.9	206
62	Lattice Boltzmann description of magnetization in porous media. Physical Review B, 2000, 62, 3674-3688.	1.1	4
63	Hysteresis and the Dynamic Elasticity of Consolidated Granular Materials. Physical Review Letters, 1999, 82, 3280-3283.	2.9	114
64	Nonlinear Mesoscopic Elasticity: Evidence for a New Class of Materials. Physics Today, 1999, 52, 30-36.	0.3	496
65	Superfluid Avalanches. Journal of Low Temperature Physics, 1998, 111, 841-861.	0.6	3
66	Slow elastic dynamics in a resonant bar of rock. Geophysical Research Letters, 1998, 25, 1585-1588.	1.5	72
67	On the quasi-analytic treatment of hysteretic nonlinear response in elastic wave propagation. Journal of the Acoustical Society of America, 1997, 101, 1885-1898.	0.5	148
68	Quantitative implementation of Preisach-Mayergoyz space to find static and dynamic elastic moduli in rock. Journal of Geophysical Research, 1997, 102, 5281-5293.	3.3	82
69	A new theoretical paradigm to describe hysteresis, discrete memory and nonlinear elastic wave propagation in rock. Nonlinear Processes in Geophysics, 1996, 3, 89-101.	0.6	76
70	Earthquake-like behaviour of soft Î³-ray repeaters. Nature, 1996, 382, 518-520.	13.7	121
71	Capillary condensation, invasion percolation, hysteresis, and discrete memory. Physical Review B, 1996, 54, 18-21.	1.1	41
72	Distribution of large currents in finite-size random resistor networks. Physical Review B, 1995, 51, 6711-6714.	1.1	5

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73	Hysteresis, Discrete Memory, and Nonlinear Wave Propagation in Rock: A New Paradigm. Physical Review Letters, 1995, 74, 3491-3494.	2.9	287
74	Phonon gas: A lattice Boltzmann description. Physical Review E, 1994, 50, 4596-4608.	0.8	21
75	Magnetization isotherms and pore-space geometry. Physical Review B, 1993, 48, 3683-3688.	1.1	43
76	Capillary condensation refrigerator. Physical Review B, 1993, 47, 11591-11594.	1.1	3
77	Magnetization evolution in connected pore systems. III. Fluid flow. Physical Review B, 1993, 48, 6007-6013.	1.1	3
78	Observations of nonlinear elastic wave behavior in sandstone. Journal of the Acoustical Society of America, 1993, 94, 3387-3391.	0.5	117
79	Magnetization evolution in connected pore systems. II. Pulsed-field-gradient NMR and pore-space geometry. Physical Review B, 1993, 48, 5997-6006.	1.1	13
80	Magnetization evolution in connected pore systems. Physical Review B, 1991, 44, 7344-7355.	1.1	54
81	Fluid configurations in partially saturated porous media. Physical Review B, 1991, 43, 808-815.	1.1	8
82	He3films and the Ruderman-Kittel-Kasuya-Yosida interaction. Physical Review Letters, 1990, 64, 1919-1923.	2.9	21
83	Comment on â€˜â€˜Exact solution for diffusion in a random potentialâ€™â€™. Physical Review Letters, 1990, 64, 494-494.	2.9	9
84	Density-functional theory of thin films of self-bound fermions. Physical Review B, 1989, 40, 7417-7420.	1.1	22
85	Large currents in random resistor networks. Physical Review B, 1989, 39, 9236-9239.	1.1	15
86	Superfluid films on a cylindrical surface. Journal of Low Temperature Physics, 1989, 74, 231-261.	0.6	36
87	Superfluid Films in Porous Media. Physical Review Letters, 1988, 60, 2054-2057.	2.9	64
88	Third Sound on Substrates Patterned with Periodic and Random Disorder: Evidence for Classical Wave Localization. Physical Review Letters, 1988, 61, 1286-1289.	2.9	31
89	Porosity fluctuations, tortuosity fluctuations, and other types of fluctuations: Long-time tails and localization in porous media. Physical Review B, 1988, 37, 5713-5722.	1.1	6
90	Largest current in a random resistor network. Physical Review B, 1987, 36, 2142-2146.	1.1	29

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91	The structure and modes of a compressible superfluid film. Journal of Low Temperature Physics, 1986, 64, 409-428.	0.6	3
92	Conductivity fluctuations and the amplitude of the long-time tail. Physical Review B, 1986, 34, 7816-7822.	1.1	6
93	Hydrodynamic modes of superfluid helium adsorbed on Nuclepore. Physical Review B, 1986, 33, 4664-4668.	1.1	25
94	Third sound and capillary condensation on a fractal surface. Physical Review B, 1986, 34, 6522-6524.	1.1	11
95	Self-Avoiding Walks on a Crumpled Fractal. Physical Review Letters, 1986, 57, 3121-3121.	2.9	1
96	Conductivity in percolation networks with broad distributions of resistances. Physical Review B, 1986, 33, 4818-4825.	1.1	54
97	Damping in coupled, layered helium films. Physical Review B, 1985, 31, 2713-2718.	1.1	5
98	Diffusive motion on a fractal;Gnm(t). Physical Review A, 1985, 32, 2324-2335.	1.0	55
99	Equations of state of a single polymer chain. Physical Review A, 1985, 32, 3661-3664.	1.0	9
100	Diffusion on the SierpiÅ„ski gaskets: A random walker on a fractally structured object. Physical Review A, 1984, 29, 2751-2755.	1.0	58
101	Diffusion on a one-dimensional disordered lattice: A renormalization-group approach. Physical Review A, 1984, 29, 2114-2124.	1.0	8
102	Phase Separation in Two-DimensionalHe3-He4Mixtures. Physical Review Letters, 1984, 53, 795-797.	2.9	13
103	Random walking on a fractal. Physical Review A, 1984, 30, 1112-1114.	1.0	13
104	Structure and Modes of a Superfluid Atmosphere. Physical Review Letters, 1983, 51, 1765-1767.	2.9	6
105	Double sine-Gordon chain. Physical Review B, 1983, 27, 474-494.	1.1	108
106	Sticking of Hâ†“ to helium surfaces. Physical Review B, 1983, 27, 1629-1634.	1.1	5
107	Spin-polarized hydrogen-helium film system: A surface "polaron". Physical Review B, 1982, 25, 4570-4582.	1.1	17
108	Third sound in layered superfluids: Hâ†“ onHe4. Physical Review B, 1982, 25, 5749-5755.	1.1	58

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109	Korteweg-de Vries solitons and helium films. Physical Review B, 1982, 25, 3117-3122.	1.1	11
110	One-dimensional harmonic liquid: A Fokker-Planck description of fluctuations from the nonequilibrium steady state. Physical Review A, 1982, 26, 1062-1077.	1.0	5
111	Hydrodynamic modes of Hâ†“. Physical Review B, 1982, 25, 5707-5710.	1.1	1
112	A model for the solid3He magnet?. Journal of Low Temperature Physics, 1982, 47, 321-328.	0.6	4
113	Phase Separation in Films ofHe3-He4Mixtures. Physical Review Letters, 1981, 46, 1461-1464.	2.9	111
114	Third Sound in Layered Films: Hâ†“ -He4andHe3-He4. Physical Review Letters, 1981, 47, 349-352.	2.9	23
115	Structure of a compressible superfluid. Physical Review B, 1981, 24, 2874-2877.	1.1	14
116	Conductivity of the randomly disordered sine-Gordon chain. Physical Review B, 1981, 23, 3573-3576.	1.1	2
117	Overdamped soliton motion. Physical Review B, 1981, 23, 5880-5889.	1.1	3
118	Spin-lattice models for the solid 3He magnet. Journal of Low Temperature Physics, 1980, 39, 63-78.	0.6	0
119	Magnetic ordering in a normal Fermi liquid. II. Strongly polarized systems and the melting curve ofHe3. Physical Review B, 1980, 21, 3917-3928.	1.1	2
120	Dynamics of nonlinear systems: The heavy damping limit. Physical Review B, 1980, 21, 4484-4499.	1.1	11
121	Ground state of isotopic fermion-boson mixtures. Physical Review B, 1980, 22, 142-153.	1.1	15
122	Commensurability in one dimension atTâ‰0: The role of kinks. Physical Review B, 1979, 20, 4748-4755.	1.1	6
123	Critical Superflow in a Random Network. Physical Review Letters, 1979, 43, 1163-1167.	2.9	8
124	Interaction of Atomic Hydrogen with the Surface of LiquidHe4. Physical Review Letters, 1979, 42, 1754-1757.	2.9	44
125	Commensurability in One Dimension atTâ‰0. Physical Review Letters, 1979, 42, 718-722.	2.9	29
126	Sine-Gordon chain as a model for a two-dimensional interface. Physical Review B, 1979, 20, 4375-4381.	1.1	3

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127	Review paper: Solid 3He: A magnet in search of a Hamiltonian. Journal of Low Temperature Physics, 1978, 30, 1-50.	0.6	74
128	The sine-Gordon chain. II. Nonequilibrium statistical mechanics. Physical Review A, 1978, 17, 1774-1791.	1.0	54
129	The sine-Gordon chain: Equilibrium statistical mechanics. Physical Review A, 1978, 17, 1205-1217.	1.0	55
130	Brownian Motion of Coupled Nonlinear Oscillators: Thermalized Solitons and Nonlinear Response to External Forces. Physical Review Letters, 1978, 40, 206-210.	2.9	103
131	Kirkwood-Monroe approximation for quantum solids. Physical Review B, 1978, 18, 3189-3196.	1.1	5
132	Magnetic ordering in a normal Fermi liquid at absolute zero. Physical Review B, 1978, 18, 3521-3529.	1.1	4
133	Superfluidity in neutron stars. III - Relaxation processes between the superfluid and the crust. Astrophysical Journal, 1978, 222, 991.	1.6	16
134	Vacancy-Induced Ferromagnetism: The Registered Phase ofHe3on Grafoil. Physical Review Letters, 1977, 39, 1091-1094.	2.9	23
135	Vacancy motion in solid helium. Journal of Low Temperature Physics, 1977, 28, 449-472.	0.6	17
136	Theory of exchange via double-occupation states in crystallineHe3. Physical Review B, 1975, 11, 1045-1052.	1.1	7
137	Solid neutron matter. Physical Review D, 1975, 11, 2696-2723.	1.6	14
138	(He3)2Molecules in SolidHe4. Physical Review Letters, 1975, 35, 1007-1010.	2.9	15
139	Quantum-crystal alloys I: Mass-fluctuation waves. Physical Review B, 1975, 11, 3374-3392.	1.1	24
140	Electrical conductivity and magnetic field decay in neutron stars. Astrophysical Journal, 1975, 202, 238.	1.6	29
141	SolidHe3magnetism: A review of experiments. Physical Review A, 1974, 9, 1452-1455.	1.0	58
142	Mass-Fluctuation Waves in SolidHe3-He4Mixtures. Physical Review Letters, 1974, 33, 283-287.	2.9	11
143	Exchange operator. Physical Review A, 1974, 10, 1785-1799.	1.0	10
144	3He-CMN boundary resistance. Journal of Low Temperature Physics, 1973, 10, 157-165.	0.6	29

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145	Multiple Exchange in the Quantum Crystals. Physical Review A, 1973, 7, 1105-1130.	1.0	34
146	NMR in Nondilute SolidHe3-He4Mixtures. Physical Review A, 1972, 5, 2541-2544.	1.0	8
147	Vacancy waves. Journal of Low Temperature Physics, 1972, 8, 427-447.	0.6	52
148	On the specific heat of solid3He. Journal of Low Temperature Physics, 1972, 6, 251-256.	0.6	13
149	Excitations in Quantum Crystals (A Survey of NMR Experiments in Solid Helium). Reviews of Modern Physics, 1971, 43, 532-600.	16.4	260
150	Superfluidity in Quantum Crystals. Physical Review Letters, 1971, 26, 174-177.	2.9	40
151	Specific Heat Anomaly in SolidHe3. Physical Review Letters, 1970, 24, 810-811.	2.9	6
152	Mass Fluctuation Waves. Physical Review Letters, 1970, 24, 660-663.	2.9	52
153	Thermal Conductivity of Oriented Single Crystals of Hexagonal Close-Packed Helium 4. Physical Review, 1969, 185, 356-373.	2.7	70
154	Comment on the Article by H. D. Weymann. American Journal of Physics, 1969, 37, 231-231.	0.3	0
155	Tunneling and Exchange in Quantum Solids. Physical Review, 1969, 188, 445-468.	2.7	86
156	Nuclear Relaxation in SolidHe3at Low Temperatures. Physical Review, 1967, 163, 181-185.	2.7	22
157	Solid Helium. Scientific American, 1967, 217, 84-95.	1.0	3
158	Solution of the Linearized Phonon Boltzmann Equation. Physical Review, 1966, 148, 766-778.	2.7	707
159	Thermal Conductivity, Second Sound, and Phonon Hydrodynamic Phenomena in Nonmetallic Crystals. Physical Review, 1966, 148, 778-788.	2.7	465
160	Second Sound in Solid Helium. Physical Review Letters, 1966, 16, 789-791.	2.9	345
161	Thermal Conductivity in Isotopic Mixtures of Solid Helium. Physical Review, 1966, 142, 79-85.	2.7	48
162	Acoustic Attenuation in Dielectric Solids. Physical Review, 1966, 148, 789-797.	2.7	45

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163	Dispersion Relation for Second Sound in Solids. Physical Review, 1964, 133, A1411-A1417.	2.7	123