

James G Berryman

List of Publications by Year in descending order

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142
papers

8,724
citations

53794

45
h-index

45317

90
g-index

142
all docs

142
docs citations

142
times ranked

4057
citing authors

#	ARTICLE	IF	CITATIONS
1	Long-wavelength propagation in composite elastic media I. Spherical inclusions. Journal of the Acoustical Society of America, 1980, 68, 1809-1819.	1.1	604
2	Random close packing of hard spheres and disks. Physical Review A, 1983, 27, 1053-1061.	2.5	580
3	Long-wavelength propagation in composite elastic media II. Ellipsoidal inclusions. Journal of the Acoustical Society of America, 1980, 68, 1820-1831.	1.1	463
4	Confirmation of Biot's theory. Applied Physics Letters, 1980, 37, 382-384.	3.3	420
5	Single-scattering approximations for coefficients in Biot's equations of poroelasticity. Journal of the Acoustical Society of America, 1992, 91, 551-571.	1.1	287
6	Effective stress for transport properties of inhomogeneous porous rock. Journal of Geophysical Research, 1992, 97, 17409-17424.	3.3	286
7	Use of digital image analysis to estimate fluid permeability of porous materials: Application of two-point correlation functions. Journal of Applied Physics, 1986, 60, 1930-1938.	2.5	261
8	Mixture Theories for Rock Properties. AGU Reference Shelf, 0, , 205-228.	0.6	243
9	Linear dynamics of double-porosity dual-permeability materials. I. Governing equations and acoustic attenuation. Physical Review E, 2003, 68, 036603.	2.1	242
10	Measurement of spatial correlation functions using image processing techniques. Journal of Applied Physics, 1985, 57, 2374-2384.	2.5	232
11	The elastic coefficients of double-porosity models for fluid transport in jointed rock. Journal of Geophysical Research, 1995, 100, 24611-24627.	3.3	219
12	Exact results for generalized Gassmann's equations in composite porous media with two constituents. Geophysics, 1991, 56, 1950-1960.	2.6	189
13	On the relationship between stress and elastic strain for porous and fractured rock. International Journal of Rock Mechanics and Minings Sciences, 2009, 46, 289-296.	5.8	189
14	Long-wave elastic anisotropy in transversely isotropic media. Geophysics, 1979, 44, 896-917.	2.6	187
15	Origin of Gassmann's equations. Geophysics, 1999, 64, 1627-1629.	2.6	166
16	Linear dynamics of double-porosity dual-permeability materials. II. Fluid transport equations. Physical Review E, 2003, 68, 036604.	2.1	156
17	Stability of the separable solution for fast diffusion. Archive for Rational Mechanics and Analysis, 1980, 74, 379-388.	2.4	141
18	Bulk elastic wave propagation in partially saturated porous solids. Journal of the Acoustical Society of America, 1988, 84, 360-373.	1.1	137

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19	Critique of two explicit schemes for estimating elastic properties of multiphase composites. <i>Mechanics of Materials</i> , 1996, 22, 149-164.	3.2	135
20	Elastic wave propagation in fluid-saturated porous media. <i>Journal of the Acoustical Society of America</i> , 1981, 69, 416-424.	1.1	132
21	A differential scheme for elastic properties of rocks with dry or saturated cracks. <i>Geophysical Journal International</i> , 2002, 151, 597-611.	2.4	124
22	Using two-point correlation functions to characterize microgeometry and estimate permeabilities of sandstones and porous glass. <i>Journal of Geophysical Research</i> , 1996, 101, 20359-20375.	3.3	118
23	Kozeny-Carman relations and image processing methods for estimating Darcy's constant. <i>Journal of Applied Physics</i> , 1987, 62, 2221-2228.	2.5	115
24	Bounds and self-consistent estimates for elastic constants of random polycrystals with hexagonal, trigonal, and tetragonal symmetries. <i>Journal of the Mechanics and Physics of Solids</i> , 2005, 53, 2141-2173.	4.8	106
25	Influence of microstructure on rock elastic properties. <i>Geophysical Research Letters</i> , 1993, 20, 2619-2622.	4.0	92
26	Permeability dependence of seismic amplitudes. <i>The Leading Edge</i> , 2003, 22, 518-525.	0.7	92
27	Nonlinear Diffusion Problem Arising in Plasma Physics. <i>Physical Review Letters</i> , 1978, 40, 1720-1722.	7.8	88
28	Scattering by a spherical inhomogeneity in a fluid-saturated porous medium. <i>Journal of Mathematical Physics</i> , 1985, 26, 1408-1419.	1.1	87
29	Extension of Poroelastic Analysis to Double-Porosity Materials: New Technique in Microgeomechanics. <i>Journal of Engineering Mechanics - ASCE</i> , 2002, 128, 840-847.	2.9	80
30	Normalization constraint for variational bounds on fluid permeability. <i>Journal of Chemical Physics</i> , 1985, 83, 754-760.	3.0	78
31	Ultrasonic velocity-porosity relationships for sandstone analogs made from fused glass beads. <i>Geophysics</i> , 1995, 60, 108-119.	2.6	73
32	Seismic velocity decrement ratios for regions of partial melt in the lower mantle. <i>Geophysical Research Letters</i> , 2000, 27, 421-424.	4.0	73
33	Estimating rock porosity and fluid saturation using only seismic velocities. <i>Geophysics</i> , 2002, 67, 391-404.	2.6	65
34	Analysis of Thomsen parameters for finely layered VTI media. <i>Geophysical Prospecting</i> , 1999, 47, 959-978.	1.9	64
35	Relationship between specific surface area and spatial correlation functions for anisotropic porous media. <i>Journal of Mathematical Physics</i> , 1987, 28, 244-245.	1.1	62
36	Connecting theory to experiment in poroelasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 1998, 46, 719-747.	4.8	61

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37	Evolution of a stable profile for a class of nonlinear diffusion equations with fixed boundaries. Journal of Mathematical Physics, 1977, 18, 2108-2115.	1.1	58
38	Statistically stable ultrasonic imaging in random media. Journal of the Acoustical Society of America, 2002, 112, 1509-1522.	1.1	58
39	Seismic waves in rocks with fluids and fractures. Geophysical Journal International, 2007, 171, 954-974.	2.4	56
40	Evolution of a stable profile for a class of nonlinear diffusion equations. III. Slow diffusion on the line. Journal of Mathematical Physics, 1980, 21, 1326-1331.	1.1	55
41	Biot slow-wave effects in stratified rock. Geophysics, 2002, 67, 271-281.	2.6	55
42	Exact seismic velocities for transversely isotropic media and extended Thomsen formulas for stronger anisotropies. Geophysics, 2008, 73, D1-D10.	2.6	55
43	Theory of elastic properties of composite materials. Applied Physics Letters, 1979, 35, 856-858.	3.3	53
44	Fermat's principle and nonlinear travelttime tomography. Physical Review Letters, 1989, 62, 2953-2956.	7.8	53
45	Asymptotic behavior of the nonlinear diffusion equation $nt = (\hat{n}^{-1}nx)x$. Journal of Mathematical Physics, 1982, 23, 983-987.	1.1	51
46	Analysis of the growth of strike-slip faults using effective medium theory. Journal of Structural Geology, 2010, 32, 1629-1642.	2.3	50
47	FDFD: A 3D Finite-Difference Frequency-Domain Code for Electromagnetic Induction Tomography. Journal of Computational Physics, 2001, 170, 830-848.	3.8	48
48	Field relations among coseismic ground motion, water level change and liquefaction for the 1999 Chi-Chi (Mw= 7.5) earthquake, Taiwan. Geophysical Research Letters, 2003, 30, n/a-n/a.	4.0	48
49	Models for computing geomechanical constants of double-porosity materials from the constituents' properties. Journal of Geophysical Research, 2002, 107, ECV 2-1.	3.3	45
50	Effective Medium Theories for Multicomponent Poroelastic Composites. Journal of Engineering Mechanics - ASCE, 2006, 132, 519-531.	2.9	44
51	High-contrast impedance tomography. Inverse Problems, 1996, 12, 835-858.	2.0	43
52	Stability of solitary waves in shallow water. Physics of Fluids, 1976, 19, 771.	1.4	41
53	Effective medium approximation for elastic constants of porous solids with microscopic heterogeneity. Journal of Applied Physics, 1986, 59, 1136-1140.	2.5	41
54	Thermal conductivity of porous media. Applied Physics Letters, 2005, 86, 032905.	3.3	41

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55	Seismic wave attenuation in fluid-saturated porous media. Pure and Applied Geophysics, 1988, 128, 423-432.	1.9	40
56	Dispersion of extensional waves in fluid-saturated porous cylinders at ultrasonic frequencies. Journal of the Acoustical Society of America, 1983, 74, 1805-1812.	1.1	38
57	Comparison of Upscaling Methods in Poroelasticity and Its Generalizations. Journal of Engineering Mechanics - ASCE, 2005, 131, 928-936.	2.9	36
58	Interpolating and integrating three-point correlation functions on a lattice. Journal of Computational Physics, 1988, 75, 86-102.	3.8	35
59	Generalization of Eshelby's Formula for a Single Ellipsoidal Elastic Inclusion to Poroelasticity and Thermoelasticity. Physical Review Letters, 1997, 79, 1142-1145.	7.8	35
60	Variational constraints for electrical-impedance tomography. Physical Review Letters, 1990, 65, 325-328.	7.8	34
61	Dispersion in poroelastic systems. Physical Review E, 2001, 64, 011303.	2.1	34
62	Iterative resolution estimation in least-squares Kirchhoff migration. Geophysical Prospecting, 2002, 50, 577-588.	1.9	34
63	Matching pursuit for imaging high-contrast conductivity. Inverse Problems, 1999, 15, 811-849.	2.0	32
64	Time-Reversal Analysis for Scatterer Characterization. Physical Review Letters, 2004, 92, 023902.	7.8	31
65	Modelling electrical conductivity for earth media with macroscopic fluid-filled fractures. Geophysical Prospecting, 2013, 61, 471-493.	1.9	31
66	Mechanics of porous elastic materials containing multiphase fluid. International Journal of Engineering Science, 1985, 23, 1203-1214.	5.0	30
67	On the effective viscoelastic moduli of two-phase media. III. Rigorous bounds on the complex shear modulus in two dimensions. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 1999, 455, 2117-2149.	2.1	30
68	Poroelastic shear modulus dependence on pore-fluid properties arising in a model of thin isotropic layers. Geophysical Journal International, 2004, 157, 415-425.	2.4	30
69	Bounds and estimates for transport coefficients of random and porous media with high contrasts. Journal of Applied Physics, 2005, 97, 063504.	2.5	28
70	Analysis of Approximate Inverses in Tomography I. Resolution Analysis of Common Inverses. Optimization and Engineering, 2000, 1, 87-115.	2.4	27
71	Analysis of Approximate Inverses in Tomography II. Iterative Inverses. Optimization and Engineering, 2000, 1, 437-473.	2.4	27
72	Elastic wave attenuation in rocks containing fluids. Applied Physics Letters, 1986, 49, 552-554.	3.3	26

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73	Transformation of seismic velocity data to extract porosity and saturation values for rocks. <i>Journal of the Acoustical Society of America</i> , 2000, 107, 3018-3027.	1.1	26
74	Effective conductivity by fluid analogy for a porous insulator filled with a conductor. <i>Physical Review B</i> , 1983, 27, 7789-7792.	3.2	25
75	Bounds and self-consistent estimates for elastic constants of polycrystals composed of orthorhombics or crystals with higher symmetries. <i>Physical Review E</i> , 2011, 83, 046130.	2.1	25
76	Volume averaging, effective stress rules, and inversion for microstructural response of multicomponent porous media. <i>International Journal of Solids and Structures</i> , 1998, 35, 4811-4843.	2.7	23
77	Estimates and Rigorous Bounds on Pore-fluid Enhanced Shear Modulus in Poroelastic Media with Hard and Soft Anisotropy. <i>International Journal of Damage Mechanics</i> , 2006, 15, 133-167.	4.2	22
78	Effective constants for wave propagation through partially saturated porous media. <i>Applied Physics Letters</i> , 1985, 46, 722-724.	3.3	20
79	Computing variational bounds for flow through random aggregates of spheres. <i>Journal of Computational Physics</i> , 1983, 52, 142-162.	3.8	19
80	Bounds on fluid permeability for viscous flow through porous media. <i>Journal of Chemical Physics</i> , 1985, 82, 1459-1467.	3.0	19
81	Exact effective-stress rules in rock mechanics. <i>Physical Review A</i> , 1992, 46, 3307-3311.	2.5	19
82	Random polycrystals of grains containing cracks: Model of quasistatic elastic behavior for fractured systems. <i>Journal of Applied Physics</i> , 2006, 100, 113527.	2.5	19
83	Fluid effects on shear waves in finely layered porous media. <i>Geophysics</i> , 2005, 70, N1-N15.	2.6	17
84	Poroelastic Response of Orthotropic Fractured Porous Media. <i>Transport in Porous Media</i> , 2012, 93, 293-307.	2.6	17
85	Bounds on elastic constants for random polycrystals of laminates. <i>Journal of Applied Physics</i> , 2004, 96, 4281-4287.	2.5	16
86	Changes in geophysical properties caused by fluid injection into porous rocks: analytical models. <i>Geophysical Prospecting</i> , 2017, 65, 766-790.	1.9	16
87	Evolution of a stable profile for a class of nonlinear diffusion equations. II. <i>Journal of Mathematical Physics</i> , 1978, 19, 2476-2480.	1.1	15
88	On Constitutive Equations and Effective Stress Principles for Deformable, Double-Porosity Media. <i>Water Resources Research</i> , 1996, 32, 3621-3622.	4.2	15
89	Goddard rattler-jamming mechanism for quantifying pressure dependence of elastic moduli of grain packs. <i>Acta Mechanica</i> , 2009, 205, 185-196.	2.1	15
90	Mechanics of layered anisotropic poroelastic media with applications to effective stress for fluid permeability. <i>International Journal of Engineering Science</i> , 2011, 49, 122-139.	5.0	15

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91	Theory of nonlinear diffusion of plasma across the magnetic field of a toroidal multipole. <i>Physics of Fluids</i> , 1977, 20, 851.	1.4	14
92	Poroelastic measurement schemes resulting in complete data sets for granular and other anisotropic porous media. <i>International Journal of Engineering Science</i> , 2010, 48, 446-459.	5.0	14
93	Inverse methods for elastic waves in stratified media. <i>Journal of Applied Physics</i> , 1979, 50, 6742-6744.	2.5	12
94	Planar spatial correlations, anisotropy, and specific surface area of stationary random porous media. <i>Journal of Applied Physics</i> , 1998, 83, 1685-1693.	2.5	12
95	Transversely Isotropic Poroelasticity Arising from Thin Isotropic Layers. <i>The IMA Volumes in Mathematics and Its Applications</i> , 1998, , 37-50.	0.5	12
96	Exact results in linear thermomechanics of fluid-saturated porous media. <i>Applied Physics Letters</i> , 1992, 61, 2030-2032.	3.3	11
97	Stress-induced transverse isotropy in rocks. , 1994, , .		11
98	Measures of microstructure to improve estimates and bounds on elastic constants and transport coefficients in heterogeneous media. <i>Mechanics of Materials</i> , 2006, 38, 732-747.	3.2	11
99	Convexity properties of inverse problems with variational constraints. <i>Journal of the Franklin Institute</i> , 1991, 328, 1-13.	3.4	10
100	Inverse problem in anisotropic poroelasticity: Drained constants from undrained ultrasound measurements. <i>Journal of the Acoustical Society of America</i> , 2010, 127, 720-729.	1.1	10
101	Seismic Wave Attenuation in Fluid-Saturated Porous Media. , 1988, , 423-432.		10
102	Elastic waves in fluid-saturated porous media. , 1982, , 38-50.		9
103	Poroelastic fluid effects on shear for rocks with soft anisotropy. <i>Geophysical Journal International</i> , 2005, 161, 881-890.	2.4	9
104	Inverse scattering, seismic travelttime tomography, and neural networks. <i>International Journal of Imaging Systems and Technology</i> , 1990, 2, 112-118.	4.1	8
105	Bounds and estimates for elastic constants of random polycrystals of laminates. <i>International Journal of Solids and Structures</i> , 2005, 42, 3730-3743.	2.7	8
106	Dispersion of waves in porous cylinders with patchy saturation: Formulation and torsional waves. <i>Journal of the Acoustical Society of America</i> , 2005, 117, 1785-1795.	1.1	8
107	Pore fluid effects on shear modulus in a model of heterogeneous rocks, reservoirs, and granular media. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	8
108	Discrete inverse scattering theory and the continuum limit. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1978, 65, 13-15.	2.1	7

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109	Role of fluid injection in the evolution of fractured reservoirs. International Journal of Engineering Science, 2016, 103, 45-58.	5.0	7
110	Modeling High-Frequency Acoustic Velocities in Patchy and Partially Saturated Porous Rock using Differential Effective Medium Theory. International Journal for Multiscale Computational Engineering, 2004, 2, 17.	1.2	7
111	<title>Double-porosity modeling in elastic wave propagation for reservoir characterization</title> . , 1998, , .		5
112	Elastic and transport properties in polycrystals of cracked grains: Cross-property relations and microstructure. International Journal of Engineering Science, 2008, 46, 500-512.	5.0	5
113	Aligned vertical fractures, HTI reservoir symmetry and Thomsen seismic anisotropy parameters for polar media. Geophysical Prospecting, 2009, 57, 193-208.	1.9	5
114	Exponential convergence for nonlinear diffusion problems with positive lateral boundary conditions. Journal of Mathematical Physics, 1985, 26, 660-663.	1.1	4
115	Quasi-static analysis of elastic behavior for some systems having higher fracture densities. International Journal for Numerical and Analytical Methods in Geomechanics, 2010, 34, 1687-1724.	3.3	4
116	Combining analysis of random elastic polycrystals with poroelasticity for granular composites having orthotropic porous grains and fluid-filled pores. International Journal of Engineering Science, 2013, 72, 11-21.	5.0	4
117	Reply to comments by R. Van Dooren. Physics of Fluids, 1979, 22, 1588.	1.4	3
118	Frequency dependent thermal expansion in binary viscoelastic composites. Mechanics of Materials, 2009, 41, 463-480.	3.2	3
119	Evaluating bounds and estimators for constants of random polycrystals composed of orthotropic elastic materials. International Journal of Engineering Science, 2012, 58, 11-20.	5.0	3
120	Hybrid effective medium approximations for random elastic composites. Mechanics of Materials, 2014, 70, 115-135.	3.2	3
121	An Electromagnetic Induction Tomography Field Experiment at Lost Hills, CA. , 1999, , .		3
122	Extinction time for fast diffusion. Physics Letters, Section A: General, Atomic and Solid State Physics, 1979, 72, 107-110.	2.1	2
123	Chapter 7 Permeability and Relative Permeability in Rocks. International Geophysics, 1992, 51, 169-186.	0.6	2
124	Reply [to "Comment on "Using two-point correlation functions to characterize microgeometry and estimate permeabilities of sandstones and porous glass" by Stephen C. Blair, Patricia A. Berge and James G. Berryman]. Journal of Geophysical Research, 1997, 102, 24813-24813.	3.3	2
125	Geomechanical analysis with rigorous error estimates for a double-porosity reservoir model. International Journal for Numerical and Analytical Methods in Geomechanics, 2006, 30, 441-453.	3.3	2
126	Pore-fluid effects on seismic waves in vertically fractured earth with orthotropic symmetry. Geophysics, 2010, 75, T185-T200.	2.6	2

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127	Computing elastic constants for random polycrystals of orthotropic MgSiO ₃ , related polymorphs, and CaIrO ₃ analogs. Journal of Computational Physics, 2014, 271, 379-396.	3.8	2
128	Modeling nonlinear response of fractured rocks and reservoirs. International Journal for Numerical and Analytical Methods in Geomechanics, 2017, 41, 771-780.	3.3	2
129	Extensions of Biot's theory of poroelasticity to complex porous media. AIP Conference Proceedings, 1987, , .	0.4	1
130	Bounds and self-consistent estimates for elastic constants of polycrystals of hcp solid He $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \langle \text{mml:msup} \rangle \langle \text{mml:mrow} / \rangle \langle \text{mml:mn} \rangle 4 \langle \text{mml:mn} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:math} \rangle$. Physical Review B, 2012, 85, .	3.2	1
131	Influence of crack density on geomechanical behavior of granular composites with porous grains and fluid-saturated pores. International Journal for Numerical and Analytical Methods in Geomechanics, 2014, 38, 1381-1396.	3.3	1
132	Elastic behavior of random polycrystals composed of anisotropic $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si84.gif" overflow="scroll"} \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \pm \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ -quartz (SiO ₂) under pressure. International Journal of Engineering Science, 2015, 89, 121-132.	5.0	1
133	Variational Bounds on Darcy's Constant. The IMA Volumes in Mathematics and Its Applications, 1986, , 52-77.	0.5	1
134	Statistical Stability and Time-Reversal Imaging in Random Media. The IMA Volumes in Mathematics and Its Applications, 2004, , 15-24.	0.5	1
135	Variational Structure of Inverse Problems in Wave Propagation and Vibration. The IMA Volumes in Mathematics and Its Applications, 1997, , 13-44.	0.5	1
136	The frequency dependent electrical conductivity for disordered alloys: Application of an abstract Hilbert space generalization of Feenberg's perturbation theory. Journal of Mathematical Physics, 1976, 17, 2182-2191.	1.1	0
137	Stability analysis of Kamimura-Dawson diffusion in a collisionless plasma. Journal of Applied Physics, 1983, 54, 425-426.	2.5	0
138	The First Boundary Value Problem for Nonlinear Diffusion. North-Holland Mathematics Studies, 1985, 110, 183-186.	0.2	0
139	Poroelasticity Generalized for Polycrystalline Composites. , 2013, , .		0
140	Poroelasticity of carbonates with fractured grains and fluid-saturated pores. International Journal for Numerical and Analytical Methods in Geomechanics, 2015, 39, 1527-1546.	3.3	0
141	Seismic anisotropy for polar media and an extended Thomsen formulation for longer offsets. , 2008, , .		0
142	Schoenberg's angle on fractures and anisotropy: A study in orthotropy. , 2009, , .		0