

James R Rice

List of Publications by Year in descending order

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136
papers

29,987
citations

9786

73
h-index

14208

128
g-index

141
all docs

141
docs citations

141
times ranked

9784
citing authors

#	ARTICLE	IF	CITATIONS
1	Conditions for the localization of deformation in pressure-sensitive dilatant materials. Journal of the Mechanics and Physics of Solids, 1975, 23, 371-394.	4.8	2,276
2	Some basic stress diffusion solutions for fluid-saturated elastic porous media with compressible constituents. Reviews of Geophysics, 1976, 14, 227-241.	23.0	1,757
3	Inelastic constitutive relations for solids: An internal-variable theory and its application to metal plasticity. Journal of the Mechanics and Physics of Solids, 1971, 19, 433-455.	4.8	1,521
4	Ductile versus brittle behaviour of crystals. Philosophical Magazine and Journal, 1974, 29, 73-97.	1.7	1,452
5	Dislocation nucleation from a crack tip: An analysis based on the Peierls concept. Journal of the Mechanics and Physics of Solids, 1992, 40, 239-271.	4.8	1,390
6	Heating and weakening of faults during earthquake slip. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	946
7	Some remarks on elastic crack-tip stress fields. International Journal of Solids and Structures, 1972, 8, 751-758.	2.7	891
8	On numerically accurate finite element solutions in the fully plastic range. Computer Methods in Applied Mechanics and Engineering, 1974, 4, 153-177.	6.6	872
9	Spatio-temporal complexity of slip on a fault. Journal of Geophysical Research, 1993, 98, 9885-9907.	3.3	865
10	Localized necking in thin sheets. Journal of the Mechanics and Physics of Solids, 1975, 23, 421-441.	4.8	860
11	Crustal earthquake instability in relation to the depth variation of frictional slip properties. Journal of Geophysical Research, 1986, 91, 9452-9472.	3.3	823
12	Embrittlement of interfaces by solute segregation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1989, 107, 23-40.	5.6	695
13	Finite-element formulations for problems of large elastic-plastic deformation. International Journal of Solids and Structures, 1975, 11, 601-616.	2.7	682
14	Limitations to the small scale yielding approximation for crack tip plasticity. Journal of the Mechanics and Physics of Solids, 1974, 22, 17-26.	4.8	568
15	Rate and state dependent friction and the stability of sliding between elastically deformable solids. Journal of the Mechanics and Physics of Solids, 2001, 49, 1865-1898.	4.8	521
16	Chapter 20 Fault Stress States, Pore Pressure Distributions, and the Weakness of the San Andreas Fault. International Geophysics, 1992, , 475-503.	0.6	513
17	Elastodynamic analysis for slow tectonic loading with spontaneous rupture episodes on faults with rate- and state-dependent friction. Journal of Geophysical Research, 2000, 105, 23765-23789.	3.3	482
18	Slip motion and stability of a single degree of freedom elastic system with rate and state dependent friction. Journal of the Mechanics and Physics of Solids, 1984, 32, 167-196.	4.8	467

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19	Dilatancy, compaction, and slip instability of a fluid-infiltrated fault. Journal of Geophysical Research, 1995, 100, 22155-22171.	3.3	440
20	Overview no. 2. Acta Metallurgica, 1979, 27, 265-284.	2.1	375
21	Spontaneous and triggered aseismic deformation transients in a subduction fault model. Journal of Geophysical Research, 2007, 112, .	3.3	368
22	Can observations of earthquake scaling constrain slip weakening?. Geophysical Journal International, 2005, 162, 406-424.	2.4	349
23	Nucleation and early seismic propagation of small and large events in a crustal earthquake model. Journal of Geophysical Research, 2003, 108, .	3.3	300
24	Tensile crack tip fields in elastic-ideally plastic crystals. Mechanics of Materials, 1987, 6, 317-335.	3.2	297
25	Dilatant strengthening as a mechanism for slow slip events. Journal of Geophysical Research, 2010, 115, .	3.3	292
26	Rate sensitivity of plastic flow and implications for yield-surface vertices. International Journal of Solids and Structures, 1983, 19, 973-987.	2.7	287
27	A finite element formulation for problems of large strain and large displacement. International Journal of Solids and Structures, 1970, 6, 1069-1086.	2.7	283
28	Constitutive relations for fault slip and earthquake instabilities. Pure and Applied Geophysics, 1983, 121, 443-475.	1.9	275
29	Aseismic slip transients emerge spontaneously in three-dimensional rate and state modeling of subduction earthquake sequences. Journal of Geophysical Research, 2005, 110, .	3.3	275
30	A First-Order Perturbation Analysis of Crack Trapping by Arrays of Obstacles. Journal of Applied Mechanics, Transactions ASME, 1989, 56, 828-836.	2.2	266
31	The activation energy for dislocation nucleation at a crack. Journal of the Mechanics and Physics of Solids, 1994, 42, 333-360.	4.8	260
32	Dynamic shear rupture interactions with fault bends and off-axis secondary faulting. Journal of Geophysical Research, 2002, 107, ESE 6-1-ESE 6-18.	3.3	256
33	A note on some features of the theory of localization of deformation. International Journal of Solids and Structures, 1980, 16, 597-605.	2.7	248
34	On the stability of dilatant hardening for saturated rock masses. Journal of Geophysical Research, 1975, 80, 1531-1536.	3.3	246
35	Dynamic motion of a single degree of freedom system following a rate and state dependent friction law. Journal of Geophysical Research, 1986, 91, 521-530.	3.3	246
36	Pore pressure and poroelasticity effects in Coulomb stress analysis of earthquake interactions. Journal of Geophysical Research, 2002, 107, ESE 2-1.	3.3	246

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37	Off-Fault Secondary Failure Induced by a Dynamic Slip Pulse. Bulletin of the Seismological Society of America, 2005, 95, 109-134.	2.3	246
38	Earthquake failure sequences along a cellular fault zone in a three-dimensional elastic solid containing asperity and nonasperity regions. Journal of Geophysical Research, 1993, 98, 14109-14131.	3.3	243
39	Self-healing slip pulse on a frictional surface. Journal of the Mechanics and Physics of Solids, 1995, 43, 1461-1495.	4.8	230
40	The shape of intergranular creep cracks growing by surface diffusion. Acta Metallurgica, 1973, 21, 1625-1628.	2.1	227
41	Slip complexity in earthquake fault models.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 3811-3818.	7.1	213
42	Effects of prestress state and rupture velocity on dynamic fault branching. Journal of Geophysical Research, 2003, 108, .	3.3	211
43	Dynamic simulations of slip on a smooth fault in an elastic solid. Journal of Geophysical Research, 1997, 102, 17771-17784.	3.3	209
44	Earthquake ruptures with thermal weakening and the operation of major faults at low overall stress levels. Journal of Geophysical Research, 2009, 114, .	3.3	205
45	Slip patterns and earthquake populations along different classes of faults in elastic solids. Journal of Geophysical Research, 1995, 100, 12959-12983.	3.3	202
46	Triggering of the 1999MW7.1 Hector Mine earthquake by aftershocks of the 1992MW7.3 Landers earthquake. Journal of Geophysical Research, 2002, 107, ESE 6-1-ESE 6-13.	3.3	189
47	Universal nucleation length for slip-weakening rupture instability under nonuniform fault loading. Journal of Geophysical Research, 2003, 108, .	3.3	188
48	A spectral method for three-dimensional elastodynamic fracture problems. Journal of the Mechanics and Physics of Solids, 1995, 43, 1791-1824.	4.8	176
49	Dr. Bush writes a report: "science--the endless frontier". Science, 1976, 191, 41-47.	12.6	149
50	Earthquake aftereffects and triggered seismic phenomena. Pure and Applied Geophysics, 1983, 121, 187-219.	1.9	148
51	Stress transfer and seismic phenomena in coupled subduction zones during the earthquake cycle. Journal of Geophysical Research, 1988, 93, 7869-7884.	3.3	140
52	Crustal deformation in Great California earthquake cycles. Journal of Geophysical Research, 1987, 92, 11533-11551.	3.3	139
53	Estimates from atomic models of tension-shear coupling in dislocation nucleation from a crack tip. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1993, 170, 67-85.	5.6	137
54	Off-fault plasticity and earthquake rupture dynamics: 1. Dry materials or neglect of fluid pressure changes. Journal of Geophysical Research, 2008, 113, .	3.3	132

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55	A model for turbulent hydraulic fracture and application to crack propagation at glacier beds. Journal of Geophysical Research, 2010, 115, .	3.3	126
56	The stabilization of spreading shear faults by coupled deformation-diffusion effects in fluid-infiltrated porous materials. Journal of Geophysical Research, 1976, 81, 5322-5334.	3.3	124
57	Energy Variations in Diffusive Cavity Growth. Journal of the American Ceramic Society, 1981, 64, 46-53.	3.8	121
58	Somewhat circular tensile cracks. International Journal of Fracture, 1987, 33, 155-174.	2.2	120
59	Thermal pressurization and onset of melting in fault zones. Journal of Geophysical Research, 2006, 111, .	3.3	118
60	Crack front waves. Journal of the Mechanics and Physics of Solids, 1998, 46, 467-487.	4.8	117
61	Earthquake precursory effects due to pore fluid stabilization of a weakening fault zone. Journal of Geophysical Research, 1979, 84, 2177-2193.	3.3	103
62	Shear Stress Intensity Factors for a Planar Crack With Slightly Curved Front. Journal of Applied Mechanics, Transactions ASME, 1986, 53, 774-778.	2.2	103
63	Three-dimensional perturbation solution for a dynamic planar crack moving unsteadily in a model elastic solid. Journal of the Mechanics and Physics of Solids, 1994, 42, 813-843.	4.8	102
64	Interaction of the San Andreas Fault Creeping Segment with Adjacent great rupture zones and earthquake recurrence at Parkfield. Journal of Geophysical Research, 1993, 98, 2135-2144.	3.3	100
65	Repeating Earthquakes as Low-Stress-Drop Events at a Border between Locked and Creeping Fault Patches. Bulletin of the Seismological Society of America, 2001, 91, 532-537.	2.3	96
66	Frictional response induced by time-dependent fluctuations of the normal loading. Journal of Geophysical Research, 2001, 106, 13455-13472.	3.3	87
67	Does shear heating of pore fluid contribute to earthquake nucleation?. Journal of Geophysical Research, 2006, 111, .	3.3	86
68	Off-fault damage patterns due to supershear ruptures with application to the 2001Mw8.1 Kokoxili (Kunlun) Tibet earthquake. Journal of Geophysical Research, 2007, 112, .	3.3	82
69	Three-dimensional elastic crack tip interactions with transformation strains and dislocations. International Journal of Solids and Structures, 1985, 21, 781-791.	2.7	81
70	Contained plastic deformation near cracks and notches under longitudinal shear. International Journal of Fracture Mechanics, 1966, 2, 426.	0.8	80
71	Nucleation of slip-weakening rupture instability in landslides by localized increase of pore pressure. Journal of Geophysical Research, 2012, 117, .	3.3	79
72	Preseismic rupture progression and great earthquake instabilities at plate boundaries. Journal of Geophysical Research, 1983, 88, 4231-4246.	3.3	78

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73	Stability and localization of rapid shear in fluid-saturated fault gouge: 2. Localized zone width and strength evolution. Journal of Geophysical Research: Solid Earth, 2014, 119, 4334-4359.	3.4	77
74	Fault branching and rupture directivity. Journal of Geophysical Research, 2005, 110, .	3.3	74
75	MECHANICS AND THERMODYNAMICS OF BRITTLE INTERFACIAL FAILURE IN BIMATERIAL SYSTEMS. , 1990, , 269-294.		73
76	Deformation-induced melting in the margins of the West Antarctic ice streams. Journal of Geophysical Research F: Earth Surface, 2014, 119, 1004-1025.	2.8	73
77	Slow slip predictions based on granite and gabbro friction data compared to GPS measurements in northern Cascadia. Journal of Geophysical Research, 2009, 114, .	3.3	71
78	Role of fault branches in earthquake rupture dynamics. Journal of Geophysical Research, 2007, 112, .	3.3	69
79	Disordering of a dynamic planar crack front in a model elastic medium of randomly variable toughness. Journal of the Mechanics and Physics of Solids, 1994, 42, 1047-1064.	4.8	67
80	Stability and localization of rapid shear in fluid-saturated fault gouge: 1. Linearized stability analysis. Journal of Geophysical Research: Solid Earth, 2014, 119, 4311-4333.	3.4	67
81	Off-fault plasticity and earthquake rupture dynamics: 2. Effects of fluid saturation. Journal of Geophysical Research, 2008, 113, .	3.3	65
82	Existence of continuum complexity in the elastodynamics of repeated fault ruptures. Journal of Geophysical Research, 2000, 105, 23791-23810.	3.3	61
83	Effective normal stress alteration due to pore pressure changes induced by dynamic slip propagation on a plane between dissimilar materials. Journal of Geophysical Research, 2006, 111, .	3.3	57
84	Anti-plane shear cracks in ideally plastic crystals. Journal of the Mechanics and Physics of Solids, 1985, 33, 595-622.	4.8	56
85	Recent finite element studies in plasticity and fracture mechanics. Computer Methods in Applied Mechanics and Engineering, 1979, 17-18, 411-442.	6.6	55
86	Perturbative simulations of crack front waves. Journal of the Mechanics and Physics of Solids, 2000, 48, 1229-1251.	4.8	55
87	Earthquake slip between dissimilar poroelastic materials. Journal of Geophysical Research, 2008, 113, .	3.3	54
88	Possible mechanisms for glacial earthquakes. Journal of Geophysical Research, 2008, 113, .	3.3	54
89	Subglacial hydrology and ice stream margin locations. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1352-1368.	2.8	54
90	Crack tip singular fields in ductile crystals with Taylor power-law hardening. Journal of the Mechanics and Physics of Solids, 1989, 37, 673-691.	4.8	53

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91	Nearly Circular Connections of Elastic Half Spaces. Journal of Applied Mechanics, Transactions ASME, 1987, 54, 627-634.	2.2	46
92	A spectral method for numerical elastodynamic fracture analysis without spatial replication of the rupture event. Journal of the Mechanics and Physics of Solids, 1997, 45, 1393-1418.	4.8	46
93	Effect of Fault Architecture and Permeability Evolution on Response to Fluid Injection. Journal of Geophysical Research: Solid Earth, 2018, 123, 9982-9997.	3.4	46
94	First-Order Occurrence Time of High-Level Crossings in a Continuous Random Process. Journal of the Acoustical Society of America, 1966, 39, 323-335.	1.1	41
95	Effects of ice deformation on Rothlisberger channels and implications for transitions in subglacial hydrology. Journal of Glaciology, 2016, 62, 750-762.	2.2	40
96	Shear heating and weakening of the margins of West Antarctic ice streams. Geophysical Research Letters, 2015, 42, 3406-3413.	4.0	32
97	The stress field and energy of a three-dimensional dislocation loop at a crack tip. Journal of the Mechanics and Physics of Solids, 1987, 35, 743-769.	4.8	31
98	Crack tip singular fields in ductile crystals with Taylor power-law hardening. I: Anti-plane shear. Journal of the Mechanics and Physics of Solids, 1988, 36, 189-214.	4.8	30
99	Finite element simulations of dynamic shear rupture experiments and dynamic path selection along kinked and branched faults. Journal of Geophysical Research, 2009, 114, .	3.3	29
100	Strain localization driven by thermal decomposition during seismic shear. Journal of Geophysical Research: Solid Earth, 2015, 120, 4405-4433.	3.4	28
101	Modeling Turbulent Hydraulic Fracture Near a Free Surface. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	2.2	27
102	Seismicity variations associated with aseismic transients in Guerrero, Mexico, 1995–2006. Earth and Planetary Science Letters, 2007, 262, 493-504.	4.4	25
103	Influence of plastic deformation on bimaterial fault rupture directivity. Journal of Geophysical Research, 2011, 116, .	3.3	21
104	Tsunami Wave Analysis and Possibility of Splay Fault Rupture During the 2004 Indian Ocean Earthquake. Pure and Applied Geophysics, 2012, 169, 1707-1735.	1.9	21
105	Path independent integrals in equilibrium electro-chemo-elasticity. Journal of the Mechanics and Physics of Solids, 2017, 107, 525-541.	4.8	20
106	A Model for the Downstream Evolution of Temperate Ice and Subglacial Hydrology Along Ice Stream Shear Margins. Journal of Geophysical Research F: Earth Surface, 2018, 123, 1682-1698.	2.8	20
107	The elastic-plastic mechanics of crack extension. International Journal of Fracture Mechanics, 1968, 4, 41.	0.8	19
108	On the theory of perfectly plastic anti-plane straining. Mechanics of Materials, 1984, 3, 55-80.	3.2	18

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109	New Perspectives on Crack and Fault Dynamics. , 2001, , 1-24.		17
110	Influence of material contrast on fault branching behavior. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	17
111	Heating, weakening and shear localization in earthquake rupture. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160015.	3.4	17
112	Penetration of a quasi-statically slipping crack into a seismogenic zone of heterogeneous fracture resistance. Journal of Geophysical Research, 1991, 96, 21535-21548.	3.3	16
113	Exact results with the J-integral applied to free-boundary flows. Journal of Fluid Mechanics, 2002, 461, 321-341.	3.4	15
114	How pore fluid pressurization influences crack tip processes during dynamic rupture. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	15
115	Elastic-plastic fracture mechanics. Engineering Fracture Mechanics, 1973, 5, 1019-1022.	4.3	14
116	Elementary Engineering Fracture Mechanics. Journal of Applied Mechanics, Transactions ASME, 1975, 42, 751-752.	2.2	13
117	The Path-Independent M Integral Implies the Creep Closure of Englacial and Subglacial Channels. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	2.2	13
118	Rupture nucleation on an interface with a power-law relation between stress and displacement discontinuity. International Journal of Fracture, 2010, 163, 1-13.	2.2	12
119	Dynamic growth of anti-plane shear cracks in ideally plastic crystals. Mechanics of Materials, 1988, 7, 163-173.	3.2	10
120	Determining conditions that allow a shear margin to coincide with a R��thlisberger channel. Journal of Geophysical Research F: Earth Surface, 2016, 121, 1273-1294.	2.8	9
121	Constitutive Relations for Fault Slip and Earthquake Instabilities. , 1983, , 443-475.		9
122	EARTHQUAKE SEQUENCE CALCULATIONS WITH DYNAMIC WEAKENING MECHANISMS. Springer Series in Geomechanics and Geoengineering, 2011, , 149-152.	0.1	9
123	Dislocation Nucleation Versus Cleavage in Ni3Al and Ni. Materials Research Society Symposia Proceedings, 1990, 213, 243.	0.1	8
124	Influence of Fluid-Assisted Healing on Fault Permeability Structure. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB020553.	3.4	8
125	Two general integrals of singular crack tip deformation fields. Journal of Elasticity, 1988, 20, 131-142.	1.9	6
126	Effect of Permeability Evolution in Fault Damage Zones on Earthquake Recurrence. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB021787.	3.4	6

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127	Elastic reciprocity and symmetry constraints on the stress field due to a surface-parallel distribution of dislocations. Journal of the Mechanics and Physics of Solids, 2011, 59, 753-757.	4.8	4
128	Time Scale for Rapid Draining of a Surficial Lake Into the Greenland Ice Sheet. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	2.2	4
129	Cristallisation par onde acoustique : le cas de l'h�lium. Comptes Rendus - Mecanique, 2003, 331, 601-607.	2.1	2
130	Discussion: "A Study of the Law of Crack Propagation" (Yang, C. T., 1967, ASME J. Basic Eng., 89, pp.)	0.1	0
131	Dislocation Pinning Effect of Grain Boundary Segregated Solute Atoms at a Crack Tip. Materials Research Society Symposia Proceedings, 1988, 122, 361.	0.1	1
132	Some Studies of Crack Dynamics. , 2001, , 3-11.		1
133	On the Calculation of Changes in the Earth's Inertia Tensor Due to Faulting. Geophysical Journal International, 1973, 35, 373-373.	2.4	0
134	NON-EQUILIBRIUM MODELS FOR DIFFUSIVE CAVITATION OF GRAIN INTERFACES. , 1983, , 87-106.		0
135	James R. Rice Receives 2012 Walter H. Bucher Medal: Response. Eos, 2013, 94, 8-8.	0.1	0
136	Rupture nucleation on an interface with a power-law relation between stress and displacement discontinuity. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2010, , 255-267.	0.2	0