

David W Eaton

List of Publications by Year in descending order

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117
papers

5,071
citations

87723

38
h-index

98622

67
g-index

120
all docs

120
docs citations

120
times ranked

3028
citing authors

#	ARTICLE	IF	CITATIONS
1	Fault activation by hydraulic fracturing in western Canada. <i>Science</i> , 2016, 354, 1406-1409.	6.0	400
2	The elusive lithosphereâ€“asthenosphere boundary (LAB) beneath cratons. <i>Lithos</i> , 2009, 109, 1-22.	0.6	365
3	Hydraulic Fracturing and Seismicity in the Western Canada Sedimentary Basin. <i>Seismological Research Letters</i> , 2016, 87, 631-647.	0.8	329
4	Two crustal low-velocity channels beneath SE Tibet revealed by joint inversion of Rayleigh wave dispersion and receiver functions. <i>Earth and Planetary Science Letters</i> , 2015, 415, 16-24.	1.8	229
5	The role of aseismic slip in hydraulic fracturingâ€“induced seismicity. <i>Science Advances</i> , 2019, 5, eaav7172.	4.7	173
6	A review and appraisal of arrival-time picking methods for downhole microseismic data. <i>Geophysics</i> , 2016, 81, KS71-KS91.	1.4	145
7	Developments in understanding seismicity triggered by hydraulic fracturing. <i>Nature Reviews Earth & Environment</i> , 2020, 1, 264-277.	12.2	123
8	Spatiotemporal variations in the b-value of earthquake magnitudeâ€“frequency distributions: Classification and causes. <i>Tectonophysics</i> , 2014, 615-616, 1-11.	0.9	118
9	Discriminating induced seismicity from natural earthquakes using moment tensors and source spectra. <i>Journal of Geophysical Research: Solid Earth</i> , 2016, 121, 972-993.	1.4	90
10	Velocityâ€“conductivity relationships for mantle mineral assemblages in Archean cratonic lithosphere based on a review of laboratory data and Hashinâ€“Shtrikman extremal bounds. <i>Lithos</i> , 2009, 109, 131-143.	0.6	89
11	Induced Seismicity Characterization during Hydraulicâ€“Fracture Monitoring with a Shallowâ€“Wellbore Geophone Array and Broadband Sensors. <i>Seismological Research Letters</i> , 2018, 89, 1641-1651.	0.8	89
12	Seismic evidence for convection-driven motion of the North American plate. <i>Nature</i> , 2007, 446, 428-431.	13.7	87
13	Plateau uplift in western Canada caused by lithospheric delaminationâ€“along a craton edge. <i>Nature Geoscience</i> , 2014, 7, 830-833.	5.4	86
14	Solid angles and the impact of receiver-array geometry on microseismic moment-tensor inversion. <i>Geophysics</i> , 2011, 76, WC77-WC85.	1.4	83
15	Increased likelihood of induced seismicity in highly overpressured shale formations. <i>Geophysical Journal International</i> , 2018, 214, 751-757.	1.0	82
16	Development of 3-D seismic exploration technology for deep nickelâ€“copper depositsâ€“A case history from the Sudbury basin, Canada. <i>Geophysics</i> , 2000, 65, 1890-1899.	1.4	80
17	Tectonic entrapment and its role in the evolution of continental lithosphere: An example from the Precambrian of western Canada. <i>Tectonics</i> , 2000, 19, 116-134.	1.3	76
18	Physical properties and seismic imaging of massive sulfides. <i>Geophysics</i> , 2000, 65, 1882-1889.	1.4	76

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19	Formation of cratonic mantle keels by arc accretion: Evidence from S receiver functions. <i>Geophysical Research Letters</i> , 2010, 37, .	1.5	74
20	New insights into the lithosphere beneath the Superior Province from Rayleigh wave dispersion and receiver function analysis. <i>Geophysical Journal International</i> , 2007, 169, 1043-1068.	1.0	71
21	Episodic Lithospheric Deformation in Eastern Tibet Inferred From Seismic Anisotropy. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL085721.	1.5	69
22	Crustal thickness and VP/VS variations in the Grenville orogen (Ontario, Canada) from analysis of teleseismic receiver functions. <i>Tectonophysics</i> , 2006, 420, 223-238.	0.9	63
23	Crustal structure beneath SE Tibet from joint analysis of receiver functions and Rayleigh wave dispersion. <i>Geophysical Research Letters</i> , 2014, 41, 1479-1484.	1.5	63
24	Seismic imaging of the lithosphere beneath Hudson Bay: Episodic growth of the Laurentian mantle keel. <i>Earth and Planetary Science Letters</i> , 2013, 373, 179-193.	1.8	61
25	Scaling relations and spectral characteristics of tensile microseisms: evidence for opening/closing cracks during hydraulic fracturing. <i>Geophysical Journal International</i> , 2014, 196, 1844-1857.	1.0	58
26	Breakdown of the Gutenberg-Richter relation for microearthquakes induced by hydraulic fracturing: influence of stratabound fractures. <i>Geophysical Prospecting</i> , 2014, 62, 806-818.	1.0	57
27	Multi-genetic origin of the continental Moho: insights from Lithoprobe. <i>Terra Nova</i> , 2006, 18, 34-43.	0.9	55
28	Microseismicity reveals fault activation before Mw 4.1 hydraulic-fracturing induced earthquake. <i>Geophysical Journal International</i> , 2019, 218, 534-546.	1.0	50
29	Lithospheric architecture and tectonic evolution of the Hudson Bay region. <i>Tectonophysics</i> , 2010, 480, 1-22.	0.9	49
30	The effect of earth rheology and ice-sheet size on fault slip and magnitude of postglacial earthquakes. <i>Earth and Planetary Science Letters</i> , 2014, 388, 71-80.	1.8	49
31	Seismic images of eclogites, crustal-scale extension, and Moho relief in the eastern Grenville province, Quebec. <i>Geology</i> , 1995, 23, 855.	2.0	46
32	Winagami reflection sequence: Seismic evidence for postcollisional magmatism in the Proterozoic of western Canada. <i>Geology</i> , 1997, 25, 199.	2.0	46
33	Seismic-reflection and potential-field studies of the Vulcan structure, western Canada: A Paleoproterozoic Pyrenees?. <i>Journal of Geophysical Research</i> , 1999, 104, 23255-23269.	3.3	46
34	Lithospheric anisotropy structure inferred from collocated teleseismic and magnetotelluric observations: Great Slave Lake shear zone, northern Canada. <i>Geophysical Research Letters</i> , 2004, 31, .	1.5	46
35	Crustal structure beneath Hudson Bay from ambient-noise tomography: implications for basin formation. <i>Geophysical Journal International</i> , 2011, 184, 65-82.	1.0	46
36	Precambrian plate tectonics: Seismic evidence from northern Hudson Bay, Canada. <i>Geology</i> , 2011, 39, 91-94.	2.0	43

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37	Stress and fault parameters affecting fault slip magnitude and activation time during a glacial cycle. <i>Tectonics</i> , 2014, 33, 1461-1476.	1.3	43
38	On the implementation of faults in finite-element glacial isostatic adjustment models. <i>Computers and Geosciences</i> , 2014, 62, 150-159.	2.0	41
39	Large-scale Fracture Systems Are Permeable Pathways for Fault Activation During Hydraulic Fracturing. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2020JB020311.	1.4	40
40	Proterozoic tectonic accretion and growth of western Laurentia: results from Lithoprobe studies in northern Alberta. <i>Canadian Journal of Earth Sciences</i> , 2002, 39, 313-329.	0.6	38
41	Seismic methods for deep mineral exploration: Mature technologies adapted to new targets. <i>The Leading Edge</i> , 2003, 22, 580-585.	0.4	38
42	Precise seismic-wave velocity atop Earth's core: No evidence for outer-core stratification. <i>Physics of the Earth and Planetary Interiors</i> , 2010, 180, 59-65.	0.7	38
43	What controls the maximum magnitude of injection-induced earthquakes?. <i>The Leading Edge</i> , 2018, 37, 135-140.	0.4	38
44	Focal Mechanisms of Some Inferred Induced Earthquakes in Alberta, Canada. <i>Seismological Research Letters</i> , 2015, 86, 1078-1085.	0.8	37
45	Improving seismic resolution of outermost core structure by multichannel analysis and deconvolution of broadband SmKS phases. <i>Physics of the Earth and Planetary Interiors</i> , 2006, 155, 104-119.	0.7	36
46	Ephemeral isopycnicity of cratonic mantle keels. <i>Nature Geoscience</i> , 2013, 6, 967-970.	5.4	36
47	LITHOPROBE reflection studies of Archean and Proterozoic crust in Canada. <i>Tectonophysics</i> , 1996, 264, 65-88.	0.9	35
48	A relic proterozoic subduction zone in western Canada: New evidence from seismic reflection and receiver function data. <i>Geophysical Research Letters</i> , 1996, 23, 3791-3794.	1.5	33
49	The lithospheric root beneath Hudson Bay, Canada from Rayleigh wave dispersion: No clear seismological distinction between Archean and Proterozoic mantle. <i>Lithos</i> , 2010, 120, 144-159.	0.6	33
50	Body Wave Separation in the Time-Frequency Domain. <i>IEEE Geoscience and Remote Sensing Letters</i> , 2015, 12, 364-368.	1.4	33
51	Western Quebec seismic zone (Canada): Clustered, midcrustal seismicity along a Mesozoic hot spot track. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	32
52	Bilinear Magnitude-Frequency Distributions and Characteristic Earthquakes During Hydraulic Fracturing. <i>Geophysical Research Letters</i> , 2018, 45, 12,866.	1.5	32
53	Weak elastic-wave scattering from massive sulfide orebodies. <i>Geophysics</i> , 1999, 64, 289-299.	1.4	31
54	Crustal anisotropy beneath Hudson Bay from ambient noise tomography: Evidence for post-orogenic lower-crustal flow?. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	31

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55	A Long-Lived Swarm of Hydraulic Fracturing-Induced Seismicity Provides Evidence for Aseismic Slip. <i>Bulletin of the Seismological Society of America</i> , 2020, 110, 2205-2215.	1.1	31
56	Machine Learning-Based Analysis of Geological Susceptibility to Induced Seismicity in the Montney Formation, Canada. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL089651.	1.5	31
57	Moment tensors, state of stress and their relation to post-glacial rebound in northeastern Canada. <i>Geophysical Journal International</i> , 2012, 189, 1741-1752.	1.0	27
58	InSAR data reveal that the largest hydraulic fracturing-induced earthquake in Canada, to date, is a slow-slip event. <i>Scientific Reports</i> , 2022, 12, 2043.	1.6	26
59	Enhancing base-metal exploration with seismic imaging This article is one of a series of papers published in this Special Issue on the theme "Lithoprobe" parameters, processes, and the evolution of a continent. <i>Canadian Journal of Earth Sciences</i> , 2010, 47, 741-760.	0.6	25
60	Nontrivial clustering of microseismicity induced by hydraulic fracturing. <i>Geophysical Research Letters</i> , 2016, 43, 10,672.	1.5	22
61	Inversion and interpretation of seismic-derived rock properties in the Duvernay play. <i>Interpretation</i> , 2018, 6, SE1-SE14.	0.5	22
62	2b... or not 2b? Interpreting magnitude distributions from microseismic catalogs. <i>First Break</i> , 2015, 33, .	0.2	22
63	Structure of the crust and upper mantle of the Great Slave Lake shear zone, northwestern Canada, from teleseismic analysis and gravity modelling. <i>Canadian Journal of Earth Sciences</i> , 2003, 40, 1203-1218.	0.6	21
64	Seismic imaging of the upper mantle beneath the Rocky Mountain foreland, southwestern Alberta. <i>Canadian Journal of Earth Sciences</i> , 2000, 37, 1493-1507.	0.6	20
65	Combining double-difference relocation with regional depth-phase modelling to improve hypocentre accuracy. <i>Geophysical Journal International</i> , 2011, 185, 871-889.	1.0	20
66	Stress inversion of shear-tensile focal mechanisms with application to hydraulic fracture monitoring. <i>Geophysical Journal International</i> , 2018, 215, 546-563.	1.0	20
67	Upper-mantle velocity structure of the lower Great Lakes region. <i>Tectonophysics</i> , 2006, 420, 267-281.	0.9	19
68	Detection and analysis of microseismic events using a Matched Filtering Algorithm (MFA). <i>Geophysical Journal International</i> , 0, , ggw168.	1.0	19
69	Large variations in lithospheric thickness of western Laurentia: Tectonic inheritance or collisional reworking?. <i>Precambrian Research</i> , 2015, 266, 579-586.	1.2	17
70	Stick-split mechanism for anthropogenic fluid-induced tensile rock failure. <i>Geology</i> , 2016, 44, 503-506.	2.0	17
71	Rayleigh wave azimuthally anisotropic phase velocity maps beneath western Canada. <i>Journal of Geophysical Research: Solid Earth</i> , 2016, 121, 1821-1834.	1.4	17
72	Anatomy of a buried thrust belt activated during hydraulic fracturing. <i>Tectonophysics</i> , 2020, 795, 228640.	0.9	17

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73	Tectonic fabric of the subcontinental lithosphere: Evidence from seismic, magnetotelluric and mechanical anisotropy. <i>Physics of the Earth and Planetary Interiors</i> , 2006, 158, 85-91.	0.7	16
74	Characteristics of fluid-induced resonances observed during microseismic monitoring. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 8207-8222.	1.4	14
75	Refinement of arrival-time picks using a cross-correlation based workflow. <i>Journal of Applied Geophysics</i> , 2016, 135, 55-66.	0.9	14
76	The 3-D crustal structure in the Manicouagan region: new seismic and gravity constraints. <i>Canadian Journal of Earth Sciences</i> , 2000, 37, 307-324.	0.6	12
77	Energy-based hydraulic fracture numerical simulation: Parameter selection and model validation using microseismicity. <i>Geophysics</i> , 2015, 80, W33-W44.	1.4	11
78	Reply to comment by Hampel et al. on "Stress and fault parameters affecting fault slip magnitude and activation time during a glacial cycle". <i>Tectonics</i> , 2015, 34, 2359-2366.	1.3	10
79	Unprecedented quiescence in resource development area allows detection of long-lived latent seismicity. <i>Solid Earth</i> , 2021, 12, 765-783.	1.2	10
80	Seismic hazard due to fluid injections. <i>Physical Review Research</i> , 2020, 2, .	1.3	10
81	Reservoir characterization using microseismic facies analysis integrated with surface seismic attributes. <i>Interpretation</i> , 2016, 4, T167-T181.	0.5	9
82	Automated Microseismic Processing and Integrated Interpretation of Induced Seismicity during a Multistage Hydraulic-Fracturing Stimulation, Alberta, Canada. <i>Bulletin of the Seismological Society of America</i> , 2020, 110, 2018-2030.	1.1	9
83	Backscattering from spherical elastic inclusions and accuracy of the Kirchhoff approximation for curved interfaces. <i>Geophysical Journal International</i> , 2006, 166, 1249-1258.	1.0	8
84	Integration of outcrop, subsurface, and microseismic interpretation for rock-mass characterization: An example from the Duvernay Formation, Western Canada. <i>Interpretation</i> , 2018, 6, T919-T936.	0.5	8
85	The Influence of a Transitional Stress Regime on the Source Characteristics of Induced Seismicity and Fault Activation: Evidence from the 30 November 2018 Fort St. John ML 4.5 Induced Earthquake Sequence. <i>Bulletin of the Seismological Society of America</i> , 2022, 112, 1336-1355.	1.1	8
86	Delineating the Tuwu porphyry copper deposit at Xinjiang, China, with seismic-reflection profiling. <i>Geophysics</i> , 2005, 70, B53-B60.	1.4	7
87	Seismic anisotropy beneath Dronning Maud Land, Antarctica, revealed by shear wave splitting. <i>Geophysical Journal International</i> , 2007, 171, 339-351.	1.0	7
88	Resolution of microseismic moment tensors: A synthetic modeling study. , 2009, , .		6
89	3. Influence of Morphology and Surface Roughness on the Seismic Response of Massive Sulfides, Based on Elastic-Wave Kirchhoff Modeling. , 2003, , 45-58.		6
90	Vertical and lateral facies variability in organic-rich mudstones at the reservoir scale: A case study from the Devonian Duvernay formation of Alberta, Canada. <i>Marine and Petroleum Geology</i> , 2021, 132, 105232.	1.5	5

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91	The interplay between cm- and m-scale geological and geomechanical heterogeneity in organic-rich mudstones: Implications for reservoir characterization of unconventional shale plays. <i>Journal of Natural Gas Science and Engineering</i> , 2022, 97, 104363.	2.1	5
92	Geologists probe buried craton in western Canada. <i>Eos</i> , 1997, 78, 493.	0.1	4
93	Empirical transfer functions: Application to determination of outermost core velocity structure using <i>SmKS</i> phases. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	4
94	Determining elastic properties of organic-rich shales from core, wireline logs and 3-D seismic: A comparative study from the Duvernay play, Alberta, Canada. <i>Journal of Natural Gas Science and Engineering</i> , 2020, 84, 103637.	2.1	4
95	Seismic Anisotropy Reveals Stress Changes around a Fault as It Is Activated by Hydraulic Fracturing. <i>Seismological Research Letters</i> , 2022, 93, 1737-1752.	0.8	4
96	A regularized approach for estimation of a composite focal mechanism from a set of microearthquakes. <i>Geophysics</i> , 2018, 83, KS65-KS75.	1.4	3
97	Application of focal-time analysis for improved induced seismicity depth control: A case study from the Montney Formation, British Columbia, Canada. <i>Geophysics</i> , 2020, 85, KS185-KS196.	1.4	3
98	Characterization of damage processes in Montney siltstone under triaxial compression using acoustic emission and diagnostic imaging. <i>Geophysical Journal International</i> , 2021, 228, 2005-2017.	1.0	3
99	Spatiotemporal Clustering of Seismicity in the Kiskatinaw Seismic Monitoring and Mitigation Area. <i>Frontiers in Earth Science</i> , 2022, 10, .	0.8	3
100	On the roles of magnetization and topography in the scaling behaviour of magnetic-anomaly fields. <i>Geophysical Journal International</i> , 2004, 160, 46-54.	1.0	2
101	Ground-Motion Analysis of Hydraulic-Fracturing Induced Seismicity at Close Epicentral Distance. <i>Bulletin of the Seismological Society of America</i> , 2020, 110, 331-344.	1.1	2
102	Static Ground Displacement for an Induced Earthquake Recorded on Broadband Seismometers. <i>Bulletin of the Seismological Society of America</i> , 2020, 110, 2216-2224.	1.1	2
103	Real-time Earthquake Location Based on the Kalman Filter Formulation. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL086240.	1.5	2
104	Fluid flow and thermal modeling for tracking induced seismicity near the Graham disposal well, British Columbia, Canada. , 2018, , .		2
105	Integrated interpretation: Defining risk corridors by combining 3-D seismic interpretation with induced seismicity hypocenters. <i>Tectonophysics</i> , 2022, 827, 229263.	0.9	2
106	Microseismic monitoring of a tight light oil reservoir: A case history in the Cardium Halo Play, Alberta. <i>Interpretation</i> , 2018, 6, SE39-SE48.	0.5	1
107	Induced Seismicity Near Fox Creek, Alberta: Interpretation of Source Mechanisms. , 2018, , .		1
108	The influence of competing regional stress regimes on the generation of hydraulic fracturing-induced microseismicity. , 2020, , .		1

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109	DuVerNet: Neural network for induced-seismicity detection in the Kaybob Duvernay, Canada production region. , 2018, , .		1
110	Persistent postinjection induced seismicity near Fox Creek, Alberta. , 2018, , .		1
111	Change in microseismic anisotropy lag time reveals stress changes around a fault. , 2021, , .		0
112	Interpretation of harmonic resonances observed during microseismic experiments. , 2015, , .		0
113	Focal-time estimation: A new method for stratigraphic depth control of induced seismicity. , 2018, , .		0
114	Moment tensor and stress inversion based on hydraulic-fracturing induced events. , 2018, , .		0
115	Synthetic modelling to recognize potential duplex waves from basement faults in western Canada. , 2019, , .		0
116	Energy-stack: a fast and robust method for real-time microseismic event-detection. Technical Papers ... Rio Oil & Gas, 2020, 20, 3-4.	0.0	0
117	Integrated interpretation: Using seismic data to de-risk development of the Duvernay Formation, western Canada. , 2020, , .		0