

# Douglas R. Schmitt

## List of Publications by Year in descending order

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131  
papers

3,064  
citations

159358

30  
h-index

197535

49  
g-index

138  
all docs

138  
docs citations

138  
times ranked

2607  
citing authors

#	ARTICLE	IF	CITATIONS
1	Simulated annealing inversion of multimode Rayleigh wave dispersion curves for geological structure. <i>Geophysical Journal International</i> , 2002, 151, 622-631.	1.0	224
2	The formation of peak rings in large impact craters. <i>Science</i> , 2016, 354, 878-882.	6.0	181
3	Crustal stress determination from boreholes and rock cores: Fundamental principles. <i>Tectonophysics</i> , 2012, 580, 1-26.	0.9	149
4	First-break timing: Arrival onset times by direct correlation. <i>Geophysics</i> , 1999, 64, 1492-1501.	1.4	96
5	Repeatability of multimode Rayleigh wave dispersion studies. <i>Geophysics</i> , 2003, 68, 782-790.	1.4	84
6	Extreme hydrothermal conditions at an active plate-bounding fault. <i>Nature</i> , 2017, 546, 137-140.	13.7	84
7	Physical properties and seismic imaging of massive sulfides. <i>Geophysics</i> , 2000, 65, 1882-1889.	1.4	76
8	Seismic attributes for monitoring of a shallow heated heavy oil reservoir: A case study. <i>Geophysics</i> , 1999, 64, 368-377.	1.4	72
9	Amplitude and AVO responses of a single thin bed. <i>Geophysics</i> , 2003, 68, 1161-1168.	1.4	71
10	Diminished pore pressure in low porosity crystalline rock under tensional failure: Apparent strengthening by dilatancy. <i>Journal of Geophysical Research</i> , 1992, 97, 273-288.	3.3	67
11	A revised crustal stress orientation database for Canada. <i>Tectonophysics</i> , 2014, 636, 111-124.	0.9	65
12	A comparative study of the anisotropic dynamic and static elastic moduli of unconventional reservoir shales: Implication for geomechanical investigations. <i>Geophysics</i> , 2016, 81, D245-D261.	1.4	65
13	Measurement of total porosity for gas shales by gas injection porosimetry (GIP) method. <i>Fuel</i> , 2016, 186, 694-707.	3.4	60
14	Drilling-induced core fractures and in situ stress. <i>Journal of Geophysical Research</i> , 1998, 103, 5225-5239.	3.3	55
15	Inherent transversely isotropic elastic parameters of over-consolidated shale measured by ultrasonic waves and their comparison with static and acoustic in situ log measurements. <i>Journal of Geophysics and Engineering</i> , 2008, 5, 103-117.	0.7	55
16	Intrinsic elasticity of a textured transversely isotropic muscovite aggregate: Comparisons to the seismic anisotropy of schists and shales. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	52
17	Shock temperatures in silica glass: Implications for modes of shock-induced deformation, phase transformation, and melting with pressure. <i>Journal of Geophysical Research</i> , 1989, 94, 5851-5871.	3.3	51
18	Compressional wave velocities in attenuating media: A laboratory physical model study. <i>Geophysics</i> , 2000, 65, 1162-1167.	1.4	49

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19	Mapping fractures with GPR: A case study from Turtle Mountain. <i>Geophysics</i> , 2006, 71, B139-B150.	1.4	49
20	Measurement of the speed and attenuation of the Biot slow wave using a large ultrasonic transmitter. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	49
21	Static and dynamic pressure sensitivity anisotropy of a calcareous shale. <i>Geophysical Prospecting</i> , 2016, 64, 875-897.	1.0	49
22	Quantitative constraints to the complete state of stress from the combined borehole and focal mechanism inversions: Fox Creek, Alberta. <i>Tectonophysics</i> , 2019, 764, 110-123.	0.9	44
23	CO2 rock physics as part of the Weyburn-Midale geological storage project. <i>International Journal of Greenhouse Gas Control</i> , 2013, 16, S118-S133.	2.3	39
24	Measuring velocity dispersion and attenuation in the exploration seismic frequency band. <i>Geophysics</i> , 2009, 74, WA113-WA122.	1.4	37
25	Experimental determination of the elastic coefficients of an orthorhombic material. <i>Geophysics</i> , 2001, 66, 1217-1225.	1.4	35
26	High-resolution seismic and resistivity profiling of a buried Quaternary subglacial valley: Northern Alberta, Canada. <i>Bulletin of the Geological Society of America</i> , 2009, 121, 1570-1583.	1.6	33
27	Laboratory measurements of static and dynamic bulk moduli in carbonate. , 2009, , .		33
28	A versatile facility for laboratory studies of viscoelastic and poroelastic behaviour of rocks. <i>Review of Scientific Instruments</i> , 2011, 82, 064501.	0.6	33
29	Optimization of fringe pattern calculation with direct correlations in speckle interferometry. <i>Applied Optics</i> , 1997, 36, 8848.	2.1	32
30	Determination of the complete elastic stiffnesses from ultrasonic phase velocity measurements. <i>Journal of Geophysical Research</i> , 2003, 108, ECV 6-1-ECV 6-11.	3.3	32
31	The first deep heat flow determination in crystalline basement rocks beneath the Western Canadian Sedimentary Basin. <i>Geophysical Journal International</i> , 2014, 197, 731-747.	1.0	31
32	Petrophysical, Geochemical, and Hydrological Evidence for Extensive Fracture-Mediated Fluid and Heat Transport in the Alpine Fault's Hanging-Wall Damage Zone. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 4709-4732.	1.0	31
33	Temperatures of shock-induced shear instabilities and their relationship to fusion curves. <i>Geophysical Research Letters</i> , 1983, 10, 1077-1080.	1.5	29
34	Ultrasonic anisotropic phase velocity determination with the Radon transformation. <i>Journal of the Acoustical Society of America</i> , 1997, 101, 3278-3286.	0.5	28
35	Velocity anisotropy observed in wellbore seismic arrivals: Combined effects of intrinsic properties and layering. <i>Geophysics</i> , 1996, 61, 12-20.	1.4	28
36	Neogene tectonic and climatic evolution of the Western Ross Sea, Antarctica – Chronology of events from the AND-1B drill hole. <i>Global and Planetary Change</i> , 2012, 96-97, 189-203.	1.6	27

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37	Frictional Stabilities on Induced Earthquake Fault Planes at Fox Creek, Alberta: A Pore Fluid Pressure Dilemma. <i>Geophysical Research Letters</i> , 2019, 46, 8753-8762.	1.5	26
38	Depth migration of deep seismic reflection profiles: crustal thickness variations in Alberta. <i>Canadian Journal of Earth Sciences</i> , 2002, 39, 331-350.	0.6	25
39	Seismic anisotropy in the crystalline upper crust: observations and modelling from the Outokumpu scientific borehole, Finland. <i>Geophysical Journal International</i> , 2012, 189, 541-553.	1.0	24
40	Bedrock geology of DFD-2B, central Alpine Fault, New Zealand. <i>New Zealand Journal of Geology, and Geophysics</i> , 2017, 60, 497-518.	1.0	24
41	Flin Flon Belt seismic anisotropy: elastic symmetry, heterogeneity, and shear-wave splitting. <i>Canadian Journal of Earth Sciences</i> , 2005, 42, 533-554.	0.6	23
42	The Transition Between the Scale Domains of Ray and Effective Medium Theory and Anisotropy: Numerical Models. <i>Pure and Applied Geophysics</i> , 2006, 163, 1327-1349.	0.8	23
43	Ultrasonic shear wave reflectometry applied to the determination of the shear moduli and viscosity of a viscoelastic bitumen. <i>Fuel</i> , 2018, 232, 506-518.	3.4	23
44	Three-dimensional stress relief displacement resulting from drilling a blind hole in acrylic. <i>Experimental Mechanics</i> , 1996, 36, 412-420.	1.1	22
45	Inversion of speckle interferometer fringes for hole-drilling residual stress determinations. <i>Experimental Mechanics</i> , 2000, 40, 129-137.	1.1	22
46	A large ultrasonic bounded acoustic pulse transducer for acoustic transmission goniometry: Modeling and calibration. <i>Journal of the Acoustical Society of America</i> , 2006, 119, 54-64.	0.5	22
47	Effects of Kerogen Content on Elastic Properties—Based on Artificial Organic—Rich Shale (AORS). <i>Journal of Geophysical Research: Solid Earth</i> , 2019, 124, 12660-12678.	1.4	22
48	Shock—Induced melting and shear banding in single—crystal NaCl. <i>Journal of Applied Physics</i> , 1988, 63, 99-106.	1.1	21
49	Effects of poisson's ratio and core stub length on bottomhole stress concentrations. <i>International Journal of Rock Mechanics and Minings Sciences</i> , 1997, 34, 761-773.	2.6	21
50	Anisotropic elastic moduli of carbonates and evaporites from the Weyburn—Midale reservoir and seal rocks. <i>Geophysical Prospecting</i> , 2013, 61, 363-379.	1.0	20
51	An integrative geothermal resource assessment study for the siliciclastic Granite Wash Unit, northwestern Alberta (Canada). <i>Environmental Earth Sciences</i> , 2014, 72, 4141-4154.	1.3	19
52	Modeling of viscoelastic properties of nonpermeable porous rocks saturated with highly viscous fluid at seismic frequencies at the core scale. <i>Journal of Geophysical Research: Solid Earth</i> , 2017, 122, 6067-6086.	1.4	19
53	Pressure and temperature dependence of acoustic wave speeds in bitumen-saturated carbonates: Implications for seismic monitoring of the Grosmont Formation. <i>Geophysics</i> , 2017, 82, MR133-MR151.	1.4	19
54	First Results from HOTSPOT: The Snake River Plain Scientific Drilling Project, Idaho, U.S.A.. <i>Scientific Drilling</i> , 0, 15, 36-45.	1.0	19

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55	Does wettability influence seismic wave propagation in liquid-saturated porous rocks?. Geophysical Journal International, 2015, 203, 2182-2188.	1.0	18
56	Seismic imaging of massive sulfide deposits; Part III, Borehole seismic imaging of near-vertical structures. Economic Geology, 1996, 91, 835-840.	1.8	17
57	In situ seismic measurements in borehole LBâ€8A in the Bosumtwi impact structure, Ghana: Preliminary interpretation. Meteoritics and Planetary Science, 2007, 42, 755-768.	0.7	17
58	Advanced seismic imaging techniques characterize the Alpine Fault at Whataroa (New Zealand). Journal of Geophysical Research: Solid Earth, 2016, 121, 8792-8812.	1.4	17
59	Effects of space exposure on ion-beam-deposited silicon-carbide and boron-carbide coatings. Applied Optics, 1998, 37, 8038.	2.1	16
60	Mapping the geometry of an aquifer system with a high-resolution reflection seismic profile. Geophysical Prospecting, 2005, 53, 817-828.	1.0	16
61	Quantitative modeling of reflected ultrasonic bounded beams and a new estimate of the Schoch shift. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 2661-2673.	1.7	15
62	Near point-source longitudinal and transverse mode ultrasonic arrays for material characterization. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2001, 48, 691-698.	1.7	14
63	Monitoring Results after 36 Ktonnes of Deep CO2 Injection at the Aquistore CO2 Storage Site, Saskatchewan, Canada. Energy Procedia, 2017, 114, 4056-4061.	1.8	14
64	The Alpine Fault Hangingwall Viewed From Within: Structural Analysis of Ultrasonic Image Logs in the DFDPâ€2B Borehole, New Zealand. Geochemistry, Geophysics, Geosystems, 2018, 19, 2492-2515.	1.0	14
65	Estimation of $\hat{\Gamma}$ and $\langle i>C</i><sub>13</sub>$ of organic-rich shale from laser ultrasonic technique measurement. Geophysics, 2018, 83, C137-C152.	1.4	13
66	Least-squares local Radon transforms for dip-dependent GPR image decomposition. Journal of Applied Geophysics, 2006, 59, 224-235.	0.9	12
67	Seismic refraction travelttime inversion for static corrections in a glaciated shield rock environment: a case study. Geophysical Prospecting, 2009, 57, 997-1008.	1.0	12
68	Acoustic Reflectivity From Variously Oriented Orthorhombic Media: Analogies to Seismic Responses From a Fractured Anisotropic Crust. Journal of Geophysical Research: Solid Earth, 2017, 122, 10,069.	1.4	12
69	Seismic rock physics of steam injection in bituminous oil reservoirs. The Leading Edge, 2008, 27, 1132-1137.	0.4	11
70	A Broadband Laboratory Study of the Seismic Properties of Cracked and Fluidâ€Saturated Synthetic Glass Media. Journal of Geophysical Research: Solid Earth, 2018, 123, 3501-3538.	1.4	11
71	States of In Situ Stress in the Duvernay East Shale Basin and Willesden Green of Alberta, Canada: Variable In Situ Stress States Effect Fault Stability. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB021221.	1.4	11
72	Subsurface Tunnel Detection Using Electrical Resistivity Tomography and Seismic Refraction Tomography: A Case Study., 2010, , .		11

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73	Elastic Anisotropy of a Metamorphic Rock Sample of the Canadian Shield in Northeastern Alberta. <i>Rock Mechanics and Rock Engineering</i> , 2015, 48, 1369-1385.	2.6	10
74	The longitudinal modulus of bitumen: Pressure and temperature dependencies. <i>Geophysics</i> , 2019, 84, MR139-MR151.	1.4	10
75	Effective Stress Coefficient for Seismic Velocities in Carbonate Rocks: Effects of Pore Characteristics and Fluid Types. <i>Pure and Applied Geophysics</i> , 2019, 176, 1467-1485.	0.8	10
76	Broadband laboratory measurements of dispersion in thermally cracked and fluid-saturated quartzite and a synthetic analogue. <i>The Leading Edge</i> , 2014, 33, 624-632.	0.4	9
77	A program to calculate pulse transmission responses through transversely isotropic media. <i>Computers and Geosciences</i> , 2018, 114, 59-72.	2.0	9
78	A program to calculate the state of stress in the vicinity of an inclined borehole through an anisotropic rock formation. <i>Geophysics</i> , 2019, 84, F103-F118.	1.4	9
79	In-situ holographic elastic moduli measurements from boreholes. <i>Geophysics</i> , 1989, 54, 468-477.	1.4	8
80	Point load determination of static elastic moduli using laser speckle interferometry. <i>Optics and Lasers in Engineering</i> , 2004, 42, 511-527.	2.0	8
81	Shear Modulus Dispersion in Cracked and Fluid-Saturated Quartzites: Experimental Observations and Modeling. <i>Journal of Geophysical Research: Solid Earth</i> , 2018, 123, 2825-2840.	1.4	8
82	Fracture Statistics Derived From Digital Ultrasonic Televiewer Logging. <i>Journal of Canadian Petroleum Technology</i> , 1993, 32, .	2.3	7
83	A high-pressure technique for determining the microcrack porosities of damaged brittle materials. <i>Canadian Journal of Physics</i> , 1995, 73, 330-337.	0.4	7
84	Three-dimensional stress-relief displacements from blind-hole drilling: a parametric description. <i>Experimental Mechanics</i> , 2003, 43, 52-60.	1.1	7
85	Acoustic reflectivity goniometry of bounded ultrasonic pulses: Experimental verification of numerical models. <i>Journal of Applied Physics</i> , 2008, 104, 064914.	1.1	7
86	Seismic Measurements for Detecting Underground High-Contrast Voids. , 2009, , .		7
87	Quantitative determination of stress by inversion of speckle interferometer fringe patterns: experimental laboratory tests. <i>Geophysical Journal International</i> , 2006, 167, 1425-1438.	1.0	6
88	Initial seismic observations from a deep borehole drilled into the Canadian Shield in northeast Alberta. <i>International Journal of Earth Sciences</i> , 2015, 104, 1549-1562.	0.9	6
89	The Bow City structure, southern Alberta, Canada: The deep roots of a complex impact structure?. <i>Meteoritics and Planetary Science</i> , 2014, 49, 872-895.	0.7	5
90	Detailed topography of the Devonian Grosmont Formation surface from legacy high-resolution seismic profiles, northeast Alberta. <i>Geophysics</i> , 2014, 79, B135-B149.	1.4	5

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91	ARTc: Anisotropic reflectivity and transmissivity calculator. Computers and Geosciences, 2016, 93, 114-126.	2.0	5
92	Accounting for pressure-dependent ultrasonic beam skew in transversely isotropic rocks: combining modelling and measurement of anisotropic wave speeds. Geophysical Journal International, 2020, 221, 231-250.	1.0	5
93	A program to forward model the failure pattern around the wellbore in elastic and strength anisotropic rock formations. International Journal of Rock Mechanics and Minings Sciences, 2022, 151, 105035.	2.6	5
94	Applications of real time digital acquisition of ultrasonic borehole televiewer data on a personal computer. Review of Scientific Instruments, 1992, 63, 3767-3772.	0.6	4
95	Effects of Explosives on Incubating Lake Trout Eggs in the Canadian Arctic. North American Journal of Fisheries Management, 2006, 26, 833-842.	0.5	4
96	Effects of Simulated Blasting on Mortality of Rainbow Trout Eggs. Transactions of the American Fisheries Society, 2008, 137, 1-12.	0.6	4
97	1. Heavy-Oil Reservoirs: Their Characterization and Production. , 2010, , 1-69.		4
98	Geothermal energy potential of sedimentary formations in the Athabasca region, northeast Alberta, Canada. Interpretation, 2016, 4, SR19-SR33.	0.5	4
99	Geophysical evidence for an igneous dike swarm, Buffalo Creek, Northeast Alberta. Bulletin of the Geological Society of America, 2018, 130, 1059-1072.	1.6	4
100	Seismic $P$ -Wave Velocity Model From $\Delta T$ Surface and Borehole Seismic Data at the Alpine Fault DFDP-2 Drill Site (Whataroa, New Zealand). Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018519.	1.4	4
101	22. Integrating Seismic-Velocity Tomograms and Seismic Imaging: Application to the Study of a Buried Valley. , 2010, , 361-378.		4
102	Intensity and Position Measuring Systems in the Booster of the Zero Gradient Synchrotron. IEEE Transactions on Nuclear Science, 1977, 24, 1739-1741.	1.2	3
103	Model-based inversion of speckle interferometer fringe patterns. Applied Optics, 1998, 37, 2573.	2.1	3
104	Modelling the effect of seismic velocity gradients on the change in geometrical spreading across a boundary. Geophysical Journal International, 2001, 146, 679-690.	1.0	3
105	Seismic imaging through the volcanic rocks of the Snake River Plain: insights from Project Hotspot. Geophysical Prospecting, 2015, 63, 919-936.	1.0	3
106	Laboratory determination of elastic anisotropy in shales from Alberta. , 2006, , .		3
107	Pole Face Winding (PFW) Equipment for Eddy Current Correction at the Zero Gradient Synchrotron (ZGS). IEEE Transactions on Nuclear Science, 1973, 20, 397-398.	1.2	2
108	Time-lapse speckle interferometry. Geophysical Research Letters, 1999, 26, 2589-2592.	1.5	2

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109	Sensitivity of seismic response for monitoring storage in a low porosity reservoir of the St Lawrence Lowlands, Québec, Canada: Part 2 – Synthetic modeling. , 2017, 7, 613-623.		2
110	Plain Language Summary Required for Submission to Journal of Geophysical Research: Solid Earth. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB022351.	1.4	2
111	6. Seismic Rock Physics of Steam Injection in Bituminous-Oil Reservoirs. , 2010, , 107-112.		2
112	A Review of Methods for Estimating Ballast Degradation Using Ground-Penetrating Radar. , 2018, , 54-76.		2
113	3D active source seismic imaging of the Alpine Fault zone and the Whataroa glacial valley in New Zealand. Journal of Geophysical Research: Solid Earth, 0, , .	1.4	2
114	Active and Passive Seismic as an Indicator of Large Equipment Interactions with the Oil Sand. Geotechnical and Geological Engineering, 2010, 28, 727-743.	0.8	1
115	An algorithm for quantitatively modeling reflected ultrasonic bounded pulses and beams. Ultrasonics, 2017, 80, 15-21.	2.1	1
116	Sensitivity of seismic response for monitoring storage in a low porosity reservoir of the St Lawrence Lowlands, Québec, Canada: Part 1 – Laboratory measurements. , 2017, 7, 602-612.		1
117	Always finding faults: New Zealand 2016. , 2017, , .		1
118	The spatial correlation between track roughness and ground-penetrating radar inferred ballast degradation. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2018, 232, 1917-1931.	1.3	1
119	Evaluating the sensitivity of low-frequency ground-penetrating radar attributes to estimate ballast fines in the presence of variable track foundations through simulation. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2018, 232, 1168-1181.	1.3	1
120	Shallow seismic reflection imaging of the Alpine Fault through late Quaternary sedimentary units at Whataroa, New Zealand. New Zealand Journal of Geology, and Geophysics, 2021, 64, 505-517.	1.0	1
121	Empirical rock physics relationships on carbonate dry-frame elastic properties. Petroleum Science, 2021, 18, 783.	2.4	1
122	Analysis of 4D time-lapse seismic responses integrated with 3D data products, production information, and laboratory data to characterize a bitumen-bearing carbonate reservoir. , 2016, , .		1
123	Borehole Seismic Observations From the Chicxulub Impact Drilling: Implications for Seismic Reflectivity and Impact Damage. Geochemistry, Geophysics, Geosystems, 2022, 23, .	1.0	1
124	High resolution seismic imaging of a shallow gas reservoir, Alberta, Canada. , 2006, , .		0
125	Laboratory experiments and numerical simulation on Bitumen Saturated Carbonates: A Rock Physics Study for 4D Seismology. ASEG Extended Abstracts, 2016, 2016, 1-5.	0.1	0
126	Thank You to Our 2018 Peer Reviewers. Journal of Geophysical Research: Solid Earth, 2019, 124, 3242-3253.	1.4	0



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127	Thank You to Our 2019 Reviewers. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB019781.	1.4	0
128	Thank You to Our 2020 Peer Reviewers. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB021896.	1.4	0
129	Application of Local Radon Transforms for dipâ€dependent GPR image decomposition. , 2005, , .		0
130	20. Collaborative Methods in Enhanced Cold Heavy-Oil Production. , 2010, , 251-257.		0
131	Thank You to Our 2021 Peer Reviewers. Journal of Geophysical Research: Solid Earth, 0, , .	1.4	0