

# W Steven Holbrook

## List of Publications by Year in descending order

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121  
papers

7,955  
citations

50566

48  
h-index

58552

86  
g-index

127  
all docs

127  
docs citations

127  
times ranked

5315  
citing authors

#	ARTICLE	IF	CITATIONS
1	What Do P-Wave Velocities Tell Us About the Critical Zone?. <i>Frontiers in Water</i> , 2022, 3, .	1.0	13
2	Geophysical imaging of the Yellowstone hydrothermal plumbing system. <i>Nature</i> , 2022, 603, 643-647.	13.7	13
3	Geostatistical Rock Physics Inversion for Predicting the Spatial Distribution of Porosity and Saturation in the Critical Zone. <i>Mathematical Geosciences</i> , 2022, 54, 1315-1345.	1.4	3
4	Limited Mantle Hydration by Bending Faults at the Middle America Trench. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2020JB020982.	1.4	18
5	The Effect of Aspect and Elevation on Critical Zone Architecture in the Reynolds Creek Critical Zone Observatory: A Seismic Refraction Study. <i>Frontiers in Water</i> , 2021, 3, .	1.0	6
6	Quantifying Depth-Dependent Seismic Anisotropy in the Critical Zone Enhanced by Weathering of a Piedmont Schist. <i>Journal of Geophysical Research F: Earth Surface</i> , 2021, 126, e2021JF006289.	1.0	9
7	Resolving Deep Critical Zone Architecture in Complex Volcanic Terrain. <i>Journal of Geophysical Research F: Earth Surface</i> , 2020, 125, e2019JF005189.	1.0	13
8	Subsurface Weathering Revealed in Hillslope-Integrated Porosity Distributions. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL088322.	1.5	21
9	Crustal Structure of the Greenland-Iceland Ridge from Joint Refraction and Reflection Seismic Tomography. <i>Journal of Geophysical Research: Solid Earth</i> , 2020, 125, e2020JB019847.	1.4	15
10	Strong slope-aspect control of regolith thickness by bedrock foliation. <i>Earth Surface Processes and Landforms</i> , 2020, 45, 2998-3010.	1.2	17
11	Porosity production in weathered rock: Where volumetric strain dominates over chemical mass loss. <i>Science Advances</i> , 2019, 5, eaao0834.	4.7	52
12	Characterizing the Critical Zone Using Borehole and Surface Nuclear Magnetic Resonance. <i>Vadose Zone Journal</i> , 2019, 18, 1-18.	1.3	19
13	Spatiotemporal Heterogeneity of Water Flowpaths Controls Dissolved Organic Carbon Sourcing in a Snow-Dominated, Headwater Catchment. <i>Frontiers in Ecology and Evolution</i> , 2019, 7, .	1.1	12
14	Links between physical and chemical weathering inferred from a 65-m-deep borehole through Earth's critical zone. <i>Scientific Reports</i> , 2019, 9, 4495.	1.6	72
15	Characterizing hydrological processes in a semiarid rangeland watershed: A hydrogeophysical approach. <i>Hydrological Processes</i> , 2019, 33, 759-774.	1.1	9
16	Seismic Characterization of Oceanic Water Masses, Water Mass Boundaries, and Mesoscale Eddies SE of New Zealand. <i>Journal of Geophysical Research: Oceans</i> , 2018, 123, 1519-1532.	1.0	10
17	Subsurface plant-accessible water in mountain ecosystems with a Mediterranean climate. <i>Wiley Interdisciplinary Reviews: Water</i> , 2018, 5, e1277.	2.8	90
18	Mapping Inherited Fractures in the Critical Zone Using Seismic Anisotropy From Circular Surveys. <i>Geophysical Research Letters</i> , 2018, 45, 3126-3135.	1.5	31

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19	Spatial delineation of riparian groundwater within alluvium deposit of mountainous region using Laplace equation. <i>Hydrological Processes</i> , 2018, 32, 30-38.	1.1	3
20	Reynolds Creek Experimental Watershed and Critical Zone Observatory. <i>Vadose Zone Journal</i> , 2018, 17, 1-20.	1.3	29
21	Estimating the water holding capacity of the critical zone using near-surface geophysics. <i>Hydrological Processes</i> , 2018, 32, 3308-3326.	1.1	59
22	Critical Zone Structure Under a Granite Ridge Inferred From Drilling and Three-Dimensional Seismic Refraction Data. <i>Journal of Geophysical Research F: Earth Surface</i> , 2018, 123, 1317-1343.	1.0	70
23	Geophysical Measurements to Determine the Hydrologic Partitioning of Snowmelt on a Snow-Dominated Subalpine Hillslope. <i>Water Resources Research</i> , 2018, 54, 3788-3808.	1.7	32
24	A model of three-dimensional topographic stresses with implications for bedrock fractures, surface processes, and landscape evolution. <i>Journal of Geophysical Research F: Earth Surface</i> , 2017, 122, 823-846.	1.0	52
25	Joint prestack waveform inversion and acoustic reverse time migration. , 2017, , .		3
26	Seismic estimates of turbulent diffusivity and evidence of nonlinear internal wave forcing by geometric resonance in the South China Sea. <i>Journal of Geophysical Research: Oceans</i> , 2017, 122, 8063-8078.	1.0	12
27	Measuring snow water equivalent from common-offset GPR records through migration velocity analysis. <i>Cryosphere</i> , 2017, 11, 2997-3009.	1.5	24
28	Mapping turbulent diffusivity associated with oceanic internal lee waves offshore Costa Rica. <i>Ocean Science</i> , 2016, 12, 601-612.	1.3	18
29	Near-surface adjoint tomography based on the discontinuous Galerkin method. , 2016, , .		5
30	Estimating snow water equivalent over long mountain transects using snowmobile-mounted ground-penetrating radar. <i>Geophysics</i> , 2016, 81, WA183-WA193.	1.4	25
31	pSIN: A scalable, Parallel algorithm for Seismic INterferometry of large-N ambient-noise data. <i>Computers and Geosciences</i> , 2016, 93, 88-95.	2.0	13
32	Geophysical imaging of shallow degassing in a Yellowstone hydrothermal system. <i>Geophysical Research Letters</i> , 2016, 43, 12,027.	1.5	39
33	Along-strike structure of the Costa Rican convergent margin from seismic a refraction/reflection survey: Evidence for underplating beneath the inner forearc. <i>Geochemistry, Geophysics, Geosystems</i> , 2016, 17, 501-520.	1.0	4
34	Continental crust generated in oceanic arcs. <i>Nature Geoscience</i> , 2015, 8, 321-327.	5.4	94
35	Geophysical imaging reveals topographic stress control of bedrock weathering. <i>Science</i> , 2015, 350, 534-538.	6.0	249
36	2-D ocean temperature and salinity images from pre-stack seismic waveform inversion methods: an example from the South China Sea. <i>Geophysical Journal International</i> , 2015, 202, 800-810.	1.0	21

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37	Multiscale geophysical imaging of the critical zone. <i>Reviews of Geophysics</i> , 2015, 53, 1-26.	9.0	192
38	Geophysical constraints on deep weathering and water storage potential in the Southern Sierra Critical Zone Observatory. <i>Earth Surface Processes and Landforms</i> , 2014, 39, 366-380.	1.2	177
39	Constraining hydrologic interpretations using near-surface geophysical methods. , 2014, , .		0
40	Crustal structure across the Costa Rican Volcanic Arc. <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 1087-1103.	1.0	20
41	Estimating Oceanic Turbulence Dissipation from Seismic Images. <i>Journal of Atmospheric and Oceanic Technology</i> , 2013, 30, 1767-1788.	0.5	43
42	Mapping Non-Local Turbulent Breakdown of Oceanic Lee Waves Offshore Costa Rica Through Seismic Oceanography. <i>Proceedings of Meetings on Acoustics</i> , 2013, , .	0.3	2
43	Middle Miocene to early Pliocene oblique extension in the southern Gulf of California. , 2012, 8, 752-770.		47
44	Farallon slab detachment and deformation of the Magdalena Shelf, southern Baja California. <i>Geophysical Research Letters</i> , 2012, 39, .	1.5	26
45	Cascadia fore arc seismic survey: Open access data available. <i>Eos</i> , 2012, 93, 521-522.	0.1	16
46	Structure and serpentinization of the subducting Cocos plate offshore Nicaragua and Costa Rica. <i>Geochemistry, Geophysics, Geosystems</i> , 2011, 12, n/a-n/a.	1.0	114
47	Seismic reflection imaging of large-amplitude lee waves in the Caribbean Sea. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	1.5	16
48	The tail of the Storegga Slide: insights from the geochemistry and sedimentology of the Norwegian Basin deposits. <i>Sedimentology</i> , 2010, 57, 1409-1429.	1.6	7
49	Seismic evidence for fluids in fault zones on top of the subducting Cocos Plate beneath Costa Rica. <i>Geophysical Journal International</i> , 2010, , .	1.0	5
50	Seismic imaging of a thermohaline staircase in the western tropical North Atlantic. <i>Ocean Science</i> , 2010, 6, 621-631.	1.3	38
51	First images and orientation of fine structure from a 3-D seismic oceanography data set. <i>Ocean Science</i> , 2010, 6, 431-439.	1.3	14
52	Prestack waveform inversion for the water column velocity structure—the present state and the road ahead. , 2010, , .		4
53	Seismic Reflection Methods for Study of the Water Column. , 2009, , 11-20.		2
54	Images of internal tides near the Norwegian continental slope. <i>Geophysical Research Letters</i> , 2009, 36, .	1.5	28

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55	Sound speed requirements for optimal imaging of seismic oceanography data. <i>Geophysical Research Letters</i> , 2009, 36, .	1.5	28
56	Origin of pockmarks and chimney structures on the flanks of the Storegga Slide, offshore Norway. <i>Geo-Marine Letters</i> , 2008, 28, 43-51.	0.5	79
57	Full waveform inversion of reflection seismic data for ocean temperature profiles. <i>Geophysical Research Letters</i> , 2008, 35, .	1.5	46
58	Seismic structure of the southern Gulf of California from Los Cabos block to the East Pacific Rise. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	17
59	Three-dimensional seismic imaging of the Blake Ridge methane hydrate province: Evidence for large, concentrated zones of gas hydrate and morphologically driven advection. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	41
60	Seismic signal penetration beneath postrift sills on the Newfoundland rifted margin. <i>Geophysics</i> , 2008, 73, B99-B107.	1.4	9
61	Assessing methane release from the colossal Storegga submarine landslide. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	30
62	Variation in styles of rifting in the Gulf of California. <i>Nature</i> , 2007, 448, 466-469.	13.7	259
63	Evidence for asymmetric nonvolcanic rifting and slow incipient oceanic accretion from seismic reflection data on the Newfoundland margin. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	49
64	Seismic velocity structure of the rifted margin of the eastern Grand Banks of Newfoundland, Canada. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a.	3.3	93
65	Correction to "Evidence for asymmetric nonvolcanic rifting and slow incipient oceanic accretion from seismic reflection data on the Newfoundland margin". <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a.	3.3	3
66	A deep seismic investigation of the Flemish Cap margin: implications for the origin of deep reflectivity and evidence for asymmetric break-up between Newfoundland and Iberia. <i>Geophysical Journal International</i> , 2006, 164, 501-515.	1.0	44
67	Crustal structure across the Grand Banks-Newfoundland Basin Continental Margin - I. Results from a seismic refraction profile. <i>Geophysical Journal International</i> , 2006, 167, 127-156.	1.0	95
68	Crustal structure across the Grand Banks-Newfoundland Basin Continental Margin - II. Results from a seismic reflection profile. <i>Geophysical Journal International</i> , 2006, 167, 157-170.	1.0	46
69	Slide structure and role of gas hydrate at the northern boundary of the Storegga Slide, offshore Norway. <i>Marine Geology</i> , 2006, 229, 179-186.	0.9	107
70	Coupled geophysical constraints on heat flow and fluid flux at a salt diapir. <i>Geophysical Research Letters</i> , 2005, 32, .	1.5	29
71	Crustal and upper mantle seismic structure of the Australian Plate, South Island, New Zealand. <i>Tectonophysics</i> , 2005, 395, 113-135.	0.9	27
72	Ocean internal wave spectra inferred from seismic reflection transects. <i>Geophysical Research Letters</i> , 2005, 32, .	1.5	109

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73	Temperature contrasts in the water column inferred from amplitude-versus-offset analysis of acoustic reflections. <i>Geophysical Research Letters</i> , 2005, 32, .	1.5	29
74	Continental breakup and the onset of ultraslow seafloor spreading off Flemish Cap on the Newfoundland rifted margin. <i>Geology</i> , 2004, 32, 93.	2.0	124
75	Critically pressured free-gas reservoirs below gas-hydrate provinces. <i>Nature</i> , 2004, 427, 142-144.	13.7	167
76	Inferring crustal structure in the Aleutian island arc from a sparse wide-angle seismic data set. <i>Geochemistry, Geophysics, Geosystems</i> , 2004, 5, .	1.0	85
77	Continental crust under compression: A seismic refraction study of South Island Geophysical Transect I, South Island, New Zealand. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	73
78	Composition and structure of the central Aleutian island arc from arc-parallel wide-angle seismic data. <i>Geochemistry, Geophysics, Geosystems</i> , 2004, 5, n/a-n/a.	1.0	98
79	Seismic reflection imaging of water mass boundaries in the Norwegian Sea. <i>Geophysical Research Letters</i> , 2004, 31, .	1.5	101
80	Thermohaline Fine Structure in an Oceanographic Front from Seismic Reflection Profiling. <i>Science</i> , 2003, 301, 821-824.	6.0	239
81	Structure of the SE Greenland margin from seismic reflection and refraction data: Implications for nascent spreading center subsidence and asymmetric crustal accretion during North Atlantic opening. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	146
82	Lithospheric structure across oblique continental collision in New Zealand from wide-angle Pwave modeling. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	81
83	Seismic anisotropy in gas-hydrate- and gas-bearing sediments on the Blake Ridge, from a walkaway vertical seismic profile. <i>Geophysical Research Letters</i> , 2003, 30, .	1.5	25
84	Crustal structure of the ocean-continent transition at Flemish Cap: Seismic refraction results. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	145
85	Direct seismic detection of methane hydrate on the Blake Ridge. <i>Geophysics</i> , 2003, 68, 92-100.	1.4	92
86	Escape of methane gas through sediment waves in a large methane hydrate province. <i>Geology</i> , 2002, 30, 467.	2.0	58
87	Migration of methane gas through the hydrate stability zone in a low-flux hydrate province. <i>Geology</i> , 2002, 30, 327.	2.0	114
88	Crustal construction of a volcanic arc, wide-angle seismic results from the western Alaska Peninsula. <i>Journal of Geophysical Research</i> , 2002, 107, EPM 4-1.	3.3	59
89	Methods for resolving the origin of large igneous provinces from crustal seismology. <i>Journal of Geophysical Research</i> , 2002, 107, ECV 1-1-ECV 1-27.	3.3	113
90	Gravity anomalies and crustal structure at the southeast Greenland margin. <i>Journal of Geophysical Research</i> , 2001, 106, 8853-8870.	3.3	57

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91	Mantle thermal structure and active upwelling during continental breakup in the North Atlantic. <i>Earth and Planetary Science Letters</i> , 2001, 190, 251-266.	1.8	227
92	Hybrid shortest path and ray bending method for traveltimes and raypath calculations. <i>Geophysics</i> , 2001, 66, 648-653.	1.4	48
93	Crustal structure of the southeast Greenland margin from joint refraction and reflection seismic tomography. <i>Journal of Geophysical Research</i> , 2000, 105, 21591-21614.	3.3	409
94	Structure and composition of the Aleutian island arc and implications for continental crustal growth. <i>Geology</i> , 1999, 27, 31.	2.0	277
95	Future of gas hydrate research. <i>Eos</i> , 1999, 80, 247-247.	0.1	6
96	Preliminary results from a geophysical study across a modern, continent-continent collisional plate boundary – the Southern Alps, New Zealand. <i>Tectonophysics</i> , 1998, 288, 221-235.	0.9	97
97	Natural gas hydrates on the southeast U.S. margin: Constraints from full waveform and travel time inversions of wide-angle seismic data. <i>Journal of Geophysical Research</i> , 1997, 102, 15345-15365.	3.3	106
98	U.S. mid-Atlantic margin structure and early thermal evolution. <i>Journal of Geophysical Research</i> , 1997, 102, 22855-22875.	3.3	39
99	Crustal structure of a transform plate boundary: San Francisco Bay and the central California continental margin. <i>Journal of Geophysical Research</i> , 1996, 101, 22311-22334.	3.3	62
100	Methane Hydrate and Free Gas on the Blake Ridge from Vertical Seismic Profiling. <i>Science</i> , 1996, 273, 1840-1843.	6.0	478
101	Underplating over hotspots. <i>Nature</i> , 1995, 373, 559-559.	13.7	13
102	Origin of thick, high-velocity igneous crust along the U.S. East Coast Margin. <i>Journal of Geophysical Research</i> , 1995, 100, 10077-10094.	3.3	187
103	The Edge Experiment and the U.S. East Coast Magnetic Anomaly. , 1995, , 155-181.		33
104	Deep structure of the U.S. Atlantic continental margin, offshore South Carolina, from coincident ocean bottom and multichannel seismic data. <i>Journal of Geophysical Research</i> , 1994, 99, 9155-9178.	3.3	122
105	Combined vertical-incidence and wide-angle seismic study of a gas hydrate zone, Blake Ridge. <i>Journal of Geophysical Research</i> , 1994, 99, 17975-17995.	3.3	86
106	Seismic structure of the U.S. Mid-Atlantic continental margin. <i>Journal of Geophysical Research</i> , 1994, 99, 17871-17891.	3.3	98
107	Crustal structure across the Brunswick magnetic anomaly, offshore Georgia, from coincident ocean bottom and multi-channel seismic data. <i>Journal of Geophysical Research</i> , 1994, 99, 21741-21757.	3.3	24
108	Seismic Evidence for a Lower-Crustal Detachment Beneath San Francisco Bay, California. <i>Science</i> , 1994, 265, 1436-1439.	6.0	74

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109	Large igneous province on the US Atlantic margin and implications for magmatism during continental breakup. <i>Nature</i> , 1993, 364, 433-436.	13.7	227
110	Deep seismic reflection data of EDGE U.S. mid-Atlantic continental-margin experiment: Implications for Appalachian sutures and Mesozoic rifting and magmatic underplating. <i>Geology</i> , 1993, 21, 563.	2.0	70
111	Image of the Moho across the continent-ocean transition, U.S. east coast. <i>Geology</i> , 1992, 20, 203.	2.0	27
112	Deep velocity structure of rifted continental crust, U.S. Mid-Atlantic Margin, from wide-angle reflection/refraction data. <i>Geophysical Research Letters</i> , 1992, 19, 1699-1702.	1.5	19
113	Origins of deep crustal reflections: Implications of coincident seismic refraction and reflection data in Nevada. <i>Geology</i> , 1991, 19, 175.	2.0	36
114	The crustal structure of the Northwestern Basin and Range Province, Nevada, from wide-angle seismic data. <i>Journal of Geophysical Research</i> , 1990, 95, 21843-21869.	3.3	48
115	A petrological model of the laminated lower crust in Southwest Germany based on the wide-angle p- and s-wave seismic data. <i>Geophysical Monograph Series</i> , 1989, , 121-125.	0.1	2
116	An interpretation of wide-angle compressional and shear wave data in southwest Germany: Poisson's ratio and petrological implications. <i>Journal of Geophysical Research</i> , 1988, 93, 12081-12106.	3.3	111
117	The crustal structure of the axis of the Great Valley, California, from seismic refraction measurements. <i>Tectonophysics</i> , 1987, 140, 49-63.	0.9	47
118	A three-dimensional crustal model of southwest Germany derived from seismic refraction data. <i>Tectonophysics</i> , 1987, 142, 49-70.	0.9	63
119	Shear-wave velocity and Poisson's ratio structure of the upper lithosphere in southwest Germany. <i>Geophysical Research Letters</i> , 1987, 14, 231-234.	1.5	26
120	Seismic Studies of the Blake Ridge: Implications for Hydrate Distribution, Methane Expulsion, and Free Gas Dynamics. <i>Geophysical Monograph Series</i> , 0, , 235-256.	0.1	27
121	Probabilistic inference of subsurface heterogeneity and interface geometry using geophysical data. <i>Geophysical Journal International</i> , 0, , .	1.0	10