Martha K Savage

List of Publications by Citations

134 papers	5,165 citations	36 h-index	69 g-index
145 ext. papers	5,703 ext. citations	5.4 avg, IF	5.93 L-index

#	Paper	IF	Citations
134	Seismic anisotropy and mantle deformation: What have we learned from shear wave splitting?. *Reviews of Geophysics*, **1999**, 37, 65-106	23.1	887
133	The Interpretation of Shear-Wave Splitting Parameters In the Presence of Two Anisotropic Layers. *Geophysical Journal International*, **1994**, 119, 949-963	2.6	441
132	Lower crustal anisotropy or dipping boundaries? Effects on receiver functions and a case study in New Zealand. *Journal of Geophysical Research*, **1998**, 103, 15069-15087		217
131	Ambient noise Rayleigh wave tomography of New Zealand. *Geophysical Journal International*, **2007**, 170, 649-666	2.6	216
130	Mantle deformation and tectonics: constraints from seismic anisotropy in the western United States. *Physics of the Earth and Planetary Interiors*, **1993**, 78, 207-227	2.3	153
129	Continuous deformation versus faulting through the continental lithosphere of new zealand. *Science*, **1999**, 286, 516-9	33.3	120
128	Global quieting of high-frequency seismic noise due to COVID-19 pandemic lockdown measures. *Science*, **2020**, 369, 1338-1343	33.3	118
127	Seismic anisotropy beneath Ruapehu volcano: a possible eruption forecasting tool. *Science*, **2004**, 306, 1543-7	33.3	112
126	Shear-wave splitting beneath western United States in relation to plate tectonics. *Journal of Geophysical Research*, **1995**, 100, 18135-18149		93
125	Frequency-dependent anisotropy in Wellington, New Zealand. *Geophysical Research Letters*, **1997**, 24, 3297-3300	4.9	92
124	Stress and crustal anisotropy in Marlborough, New Zealand: evidence for low fault strength and structure-controlled anisotropy. *Geophysical Journal International*, **2005**, 163, 1073-1086	2.6	89
123	Changes in seismic anisotropy after volcanic eruptions: evidence from Mount Ruapehu. *Science*, **2001**, 293, 2231-3	33.3	83
122	The use of mechanical restraint in Pacific Rim countries: an international epidemiological study□orrigendum. *Epidemiology and Psychiatric Sciences*, **2021**, 30,	5.1	78
121	A seismic reflection image for the base of a tectonic plate. *Nature*, **2015**, 518, 85-8	50.4	77
120	Automatic measurement of shear wave splitting and applications to time varying anisotropy at Mount Ruapehu volcano, New Zealand. *Journal of Geophysical Research*, **2010**, 115,		77
119	Shear wave anisotropy and stress direction in and near Long Valley Caldera, California, 1979□1988. *Journal of Geophysical Research*, **1990**, 95, 11165		74
118	Calculations on the effect of the surface potential barrier in LEED. *Surface Science*, **1981**, 108, 435-445	1.8	73

117	Seismic anisotropy and mantle flow from the Great Basin to the Great Plains, western United States. *Journal of Geophysical Research*, **2000**, 105, 13715-13734		72
116	Upper mantle anisotropy in the New Zealand Region. *Geophysical Research Letters*, **1999**, 26, 1497-1500	4.9	70
115	Shear-wave anisotropy of active tectonic regions via automated S-wave polarization analysis. *Tectonophysics*, **1989**, 165, 279-292	3.1	67
114	Extreme hydrothermal conditions at an active plate-bounding fault. *Nature*, **2017**, 546, 137-140	50.4	66
113	Observations of teleseismic shear-wave splitting in the basin and range from portable and permanent stations. *Geophysical Research Letters*, **1990**, 17, 21-24	4.9	64
112	Implications for intraplate volcanism and back-arc deformation in northwestern New Zealand, from joint inversion of receiver functions and surface waves. *Geophysical Journal International*, **2006**, 166, 1466-1483	2.6	61
111	Anisotropic structure under a back arc spreading region, the Taupo Volcanic Zone, New Zealand. *Journal of Geophysical Research*, **2004**, 109,		58
110	Seismic anisotropy beneath the lower half of the North Island, New Zealand. *Journal of Geophysical Research*, **1999**, 104, 20277-20286		56
109	Seismic anisotropy from local earthquakes in the transition region from a subduction to a strike-slip plate boundary, New Zealand. *Journal of Geophysical Research*, **2000**, 105, 8013-8033		55
108	Double-layer anisotropy resolved fromSphases. *Geophysical Journal International*, **1994**, 117, 653-664	2.6	55
107	Silver and Chan revisited. *Journal of Geophysical Research: Solid Earth*, **2013**, 118, 5500-5515	3.6	53
106	Distinguishing between stress-induced and structural anisotropy at Mount Ruapehu volcano, New Zealand. *Journal of Geophysical Research*, **2011**, 116,		52
105	Distribution of seismic anisotropy in the subduction zone beneath the Wellington region, New Zealand. *Geophysical Journal International*, **2000**, 140, 1-10	2.6	52
104	Relationship between crustal finite strain and seismic anisotropy in the mantle, Pacific-Australia plate boundary zone, South Island, New Zealand. *Geophysical Journal International*, **2002**, 151, 106-116	2.6	47
103	SAHKE geophysical transect reveals crustal and subduction zone structure at the southern Hikurangi margin, New Zealand. *Geochemistry, Geophysics, Geosystems*, **2013**, 14, 2063-2083	3.6	43
102	Stress magnitude and its temporal variation at Mt. Asama Volcano, Japan, from seismic anisotropy and GPS. *Earth and Planetary Science Letters*, **2010**, 290, 403-414	5.3	40
101	Passive seismic imaging using microearthquakes. *Geophysics*, **1995**, 60, 1178-1186	3.1	38
100	Shear wave splitting, vP/vS, and GPS during a time of enhanced activity at Aso caldera, Kyushu. *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		36

99	Stress, strain rate and anisotropy in Kyushu, Japan. *Earth and Planetary Science Letters*, **2016**, 439, 129-142	5.3	36
98	Ambient noise cross-correlation observations of fundamental and higher-mode Rayleigh wave propagation governed by basement resonance. *Geophysical Research Letters*, **2013**, 40, 3556-3561	4.9	34
97	Strong variations in seismic anisotropy across the Hikurangi subduction zone, North Island, New Zealand. *Tectonophysics*, **2008**, 462, 7-21	3.1	34
96	Anisotropy, repeating earthquakes, and seismicity associated with the 2008 eruption of Okmok volcano, Alaska. *Journal of Geophysical Research*, **2010**, 115,		33
95	Velocity and anisotropy structure at the Hikurangi subduction margin, New Zealand from receiver functions. *Geophysical Journal International*, **2007**, 168, 1034-1050	2.6	33
94	Differences between spontaneous and triggered earthquakes: Their influences on foreshock probabilities. *Journal of Geophysical Research*, **2008**, 113,		30
93	Shear wave splitting across the Rocky Mountain Front. *Geophysical Research Letters*, **1996**, 23, 2267-2270	4.9	29
92	Crustal stress and fault strength in the Canterbury Plains, New Zealand. *Earth and Planetary Science Letters*, **2013**, 383, 173-181	5.3	28
91	Petrophysical, Geochemical, and Hydrological Evidence for Extensive Fracture-Mediated Fluid and Heat Transport in the Alpine Fault's Hanging-Wall Damage Zone. *Geochemistry, Geophysics, Geosystems*, **2017**, 18, 4709-4732	3.6	27
90	Crust–mantle structure of the central North Island, New Zealand, based on seismological observations. *Journal of Volcanology and Geothermal Research*, **2010**, 190, 58-74	2.8	26
89	Crust and mantle thickening beneath the southern portion of the Southern Alps, New Zealand. *Geophysical Journal International*, **2007**, 168, 681-690	2.6	26
88	Volcanic, Coseismic, and Seasonal Changes Detected at White Island (Whakaari) Volcano, New Zealand, Using Seismic Ambient Noise. *Geophysical Research Letters*, **2019**, 46, 99-108	4.9	26
87	Upper mantle seismic anisotropy at a strike-slip boundary: South Island, New Zealand. *Journal of Geophysical Research: Solid Earth*, **2014**, 119, 1020-1040	3.6	24
86	Contrasting lithospheric structure between the Colorado Plateau and Great Basin: Initial results from Colorado Plateau - Great Basin PASSCAL Experiment. *Geophysical Research Letters*, **1997**, 24, 2609-2612	4.9	24
85	Tracking volcanic and geothermal activity in the Tongariro Volcanic Centre, New Zealand, with shear wave splitting tomography. *Journal of Volcanology and Geothermal Research*, **2012**, 223-224, 1-10	2.8	23
84	Analysis and forward modeling of seismic anisotropy during the ongoing eruption of the Soufrière Hills Volcano, Montserrat, 1996–2007. *Journal of Geophysical Research*, **2011**, 116,		23
83	A major step in the continental Moho and its geodynamic consequences: the Taranaki-Ruapehu line, New Zealand. *Geophysical Journal International*, **2011**, 186, 32-44	2.6	23
82	Modelling seismic anisotropy variations across the Hikurangi subduction margin, New Zealand. *Earth and Planetary Science Letters*, **2009**, 285, 16-26	5.3	23

81	Mantle tectonics beneath New Zealand inferred fromSKSsplitting and petrophysics. *Geophysical Journal International*, **2005**, 163, 760-774	2.6	22
80	Bedrock geology of DFDP-2B, central Alpine Fault, New Zealand. *New Zealand Journal of Geology, and Geophysics*, **2017**, 60, 497-518	1.6	21
79	Shear velocity structure of the Northland Peninsula, New Zealand, inferred from ambient noise correlations. *Journal of Geophysical Research*, **2010**, 115,		21
78	A local-magnitude scale for the western Great Basin-eastern Sierra Nevada from synthetic Wood-Anderson seismograms. *Bulletin of the Seismological Society of America*, **1995**, 85, 1236-1243	2.3	21
77	Crustal Fault Connectivity of the Mw 7.8 2016 Kaikōura Earthquake Constrained by Aftershock Relocations. *Geophysical Research Letters*, **2019**, 46, 6487-6496	4.9	20
76	Seismic anisotropy and lithospheric deformation of the plate-boundary zone in South Island, New Zealand: inferences from local S-wave splitting. *Geophysical Journal International*, **2013**, 193, 507-530	2.6	20
75	Imaging the Hikurangi subduction zone, New Zealand, using teleseismic receiver functions: crustal fluids above the forearc mantle wedge. *Geophysical Journal International*, **2007**, 169, 602-616	2.6	20
74	Seismic anisotropy of the upper crust around Mount Fuji, Japan. *Journal of Geophysical Research: Solid Earth*, **2015**, 120, 2739-2751	3.6	19
73	Crustal shear wave tomography of the Taupo Volcanic Zone, New Zealand, via ambient noise correlation between multiple three-component networks. *Geochemistry, Geophysics, Geosystems*, **2011**, 12, n/a-n/a	3.6	19
72	Earthquake refraction profiles of the root of the Sierra Nevada. *Tectonics*, **1994**, 13, 803-817	4.3	18
71	Cumulative rate analysis (CURATE): A clustering algorithm for swarm dominated catalogs. *Journal of Geophysical Research: Solid Earth*, **2013**, 118, 553-569	3.6	17
70	Modelling shear wave splitting observations from Wellington, New Zealand. *Geophysical Journal International*, **2004**, 157, 853-864	2.6	17
69	High-resolution relocation of aftershocks of the Mw 7.1 Darfield, New Zealand, earthquake and implications for fault activity. *Journal of Geophysical Research: Solid Earth*, **2013**, 118, 4184-4195	3.6	16
68	Seismicity in the Rotorua and Kawerau geothermal systems, Taupo Volcanic Zone, New Zealand, based on improved velocity models and cross-correlation measurements. *Journal of Volcanology and Geothermal Research*, **2009**, 180, 50-66	2.8	16
67	Shear wave automatic picking and splitting measurements at Ruapehu volcano, New Zealand. *Journal of Geophysical Research: Solid Earth*, **2015**, 120, 3363-3384	3.6	14
66	The Erua earthquake cluster and seismic anisotropy in the Ruapehu region, New Zealand. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	14
65	The role of fluids in earthquake generation in the 2009 Mw6.3 L'Aquila, Italy, earthquake and its foreshocks: Figure 1.. *Geology*, **2010**, 38, 1055-1056	5	14
64	Changes in attenuation related to eruptions of Mt. Ruapehu Volcano, New Zealand. *Journal of Volcanology and Geothermal Research*, **2010**, 190, 168-178	2.8	14

63	Temporal and spatial variations in seismic anisotropy and VP/VS ratios in a region of slow slip. *Earth and Planetary Science Letters*, **2020**, 532, 115970	5.3	14
62	Fracture-related wavefield polarization and seismic anisotropy across the Greendale Fault. *Journal of Geophysical Research: Solid Earth*, **2015**, 120, 7048-7067	3.6	13
61	Temporal and spatial evolution of hypocentres and anisotropy from the Darfield aftershock sequence: implications for fault geometry and age. *New Zealand Journal of Geology, and Geophysics*, **2012**, 55, 287-293	1.6	13
60	Seismicity at the Northern Hikurangi Margin, New Zealand, and Investigation of the Potential Spatial and Temporal Relationships With a Shallow Slow Slip Event. *Journal of Geophysical Research: Solid Earth*, **2019**, 124, 4751-4766	3.6	12
59	Extension and stress during continental breakup: Seismic anisotropy of the crust in Northern Afar. *Earth and Planetary Science Letters*, **2017**, 477, 41-51	5.3	12
58	The 1992 Little Skull Mountain Earthquake Sequence, Southern Nevada Test Site. *Bulletin of the Seismological Society of America*, **2001**, 91, 1595-1606	2.3	12
57	Variations in Seismogenic Thickness Along the Central Alpine Fault, New Zealand, Revealed by a Decade's Relocated Microseismicity. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 470-486	3.6	11
56	Focal mechanisms and inter-event times of low-frequency earthquakes reveal quasi-continuous deformation and triggered slow slip on the deep Alpine Fault. *Earth and Planetary Science Letters*, **2018**, 484, 111-123	5.3	11
55	Strain modelling, seismic anisotropy and coupling at strike-slip boundaries: applications in New Zealand and the San Andreas fault. *Geological Society Special Publication*, **2004**, 227, 9-39	1.7	11
54	Shear-wave velocity structure of the Tongariro Volcanic Centre, New Zealand: Fast Rayleigh and slow Love waves indicate strong shallow anisotropy. *Journal of Volcanology and Geothermal Research*, **2017**, 336, 33-50	2.8	10
53	Absent anisotropy: The paradox of the Southern Alps orogen. *Geophysical Research Letters*, **2003**, 30,	4.9	10
52	Foreshock probabilities in New Zealand. *New Zealand Journal of Geology, and Geophysics*, **2000**, 43, 461-469	1.6	10
51	Aftershocks of an M = 4.2 earthquake in Hawaii and comparison with long-term studies of the same volume. *Bulletin of the Seismological Society of America*, **1985**, 75, 759-777	2.3	10
50	Volcanic Unrest at Taup□Volcano in 2019: Causes, Mechanisms and Implications. *Geochemistry, Geophysics, Geosystems*, **2021**, 22, e2021GC009803	3.6	10
49	Quantifying seismicity associated with slow slip events in the Hikurangi margin, New Zealand. *New Zealand Journal of Geology, and Geophysics*, **2016**, 59, 58-69	1.6	9
48	Mapping Stress and Structure From Subducting Slab to Magmatic Rift: Crustal Seismic Anisotropy of the North Island, New Zealand. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 5038-5056	3.6	9
47	Illuminating the plate interface structure beneath Cook Strait, New Zealand, with receiver functions. *Journal of Geophysical Research*, **2007**, 112,		9
46	Seismic Anisotropy and Mantle Deformation in the Western United States and Southwestern Canada. *International Geology Review*, **2002**, 44, 913-937	2.3	9

45	Strong Ground motions in North America from the Bolivia Earthquake of June 9, 1994 (Mw=8.3). *Geophysical Research Letters*, **1995**, 22, 2293-2296	4.9	9
44	The lithosphere sthenosphere boundary beneath the South Island of New Zealand. *Earth and Planetary Science Letters*, **2018**, 484, 92-102	5.3	8
43	Special issue 2016 Kumamoto earthquake sequence and its impact on earthquake science and hazard assessment *Earth, Planets and Space*, **2017**, 69,	2.9	7
42	Shear-wave splitting variations across an array in the southern North Island, New Zealand. *Geophysical Research Letters*, **2004**, 31, n/a-n/a	4.9	7
41	Spatio-temporal analysis of seismic anisotropy associated with the Cook Strait and Kaik ra earthquake sequences in New Zealand. *Geophysical Journal International*, **2020**, 223, 1987-2008	2.6	7
40	Seismic Response to Injection Well Stimulation in a High-Temperature, High-Permeability Reservoir. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 2848-2871	3.6	6
39	Hydration of the crust and upper mantle of the Hikurangi Plateau as it subducts at the southern Hikurangi margin. *Earth and Planetary Science Letters*, **2020**, 541, 116271	5.3	6
38	Stress Orientations in a Locked Subduction Zone at the Southern Hikurangi Margin, New Zealand. *Journal of Geophysical Research: Solid Earth*, **2017**, 122, 7895-7911	3.6	6
37	Seismic anisotropy and its precursory change before eruptions at Piton de la Fournaise volcano, La R nion. *Journal of Geophysical Research: Solid Earth*, **2015**, 120, 3430-3458	3.6	6
36	S-wave splitting in the offshore South Island, New Zealand: Insights into plate-boundary deformation. *Geochemistry, Geophysics, Geosystems*, **2015**, 16, 2829-2847	3.6	6
35	Earthquake Analysis Suggests Dyke Intrusion in 2019 Near Tarawera Volcano, New Zealand. *Frontiers in Earth Science*, **2021**, 8,	3.5	6
34	Post-seismic velocity changes following the 2010 Mw 7.1 Darfield earthquake, New Zealand, revealed by ambient seismic field analysis. *Geophysical Journal International*, **2018**, 213, 931-939	2.6	5
33	Modeling shear wave splitting due to stress-induced anisotropy, with an application to Mount Asama Volcano, Japan. *Journal of Geophysical Research: Solid Earth*, **2014**, 119, 4269-4286	3.6	5
32	Search for temporal changes in shear-wave splitting associated with the 2012 Te Maari Eruptions at Mount Tongariro, New Zealand. *Journal of Volcanology and Geothermal Research*, **2014**, 286, 277-293	2.8	5
31	Earthquake source mechanism analysis for events between 1992 and 1997 using sparse New Zealand broadband data. *New Zealand Journal of Geology, and Geophysics*, **2006**, 49, 75-89	1.6	5
30	Modeling Strain and Anisotropy Along the Alpine Fault, South Island, New Zealand. *Geophysical Monograph Series*, **2007**, 289-305	1.1	5
29	Shear wave velocity changes induced by earthquakes and rainfall at the Rotokawa and Ngatamariki geothermal fields, Taup Volcanic Zone, New Zealand. *Geophysical Journal International*, **2020**, 221, 97-114	2.6	5
28	Strength of an obliquely convergent plate boundary: lithospheric stress magnitudes and viscosity in New Zealand. *Geophysical Journal International*, **2019**, 216, 1005-1024	2.6	5

27	Upper Plate Heterogeneity Along the Southern Hikurangi Margin, New Zealand. *Geophysical Research Letters*, **2020**, 47, e2019GL085511	4.9	4
26	SAHKE seismic-scatter imaging of subduction beneath Wellington, North Island, New Zealand. *Geophysical Research Letters*, **2015**, 42, 3240-3247	4.9	4
25	Time-, Distance-, and Magnitude-Dependent Foreshock Probability Model for New Zealand. *Bulletin of the Seismological Society of America*, **2008**, 98, 2149-2160	2.3	4
24	Geographical distributions of prospective foreshock probabilities in New Zealand. *New Zealand Journal of Geology, and Geophysics*, **2004**, 47, 327-339	1.6	4
23	Seismic Anisotropy in South Island, New Zealand. *Geophysical Monograph Series*, **2007**, 95-114	1.1	3
22	Crustal Thickness and Pn Anisotropy Beneath the Southern Alps Oblique Collision, New Zealand. *Geophysical Monograph Series*, **2007**, 115-122	1.1	3
21	A quest for unrest in multiparameter observations at Whakaari/White Island volcano, New Zealand 2007–2018. *Earth, Planets and Space*, **2021**, 73,	2.9	3
20	The use of mechanical restraint in Pacific Rim countries: an international epidemiological study. *Epidemiology and Psychiatric Sciences*, **2020**, 29, e190	5.1	3
19	Inferring shear-velocity structure of the upper 200 m using cultural ambient noise at the Ngatamariki geothermal field, Central North Island, New Zealand. *Interpretation*, **2016**, 4, SJ87-SJ101	1.4	3
18	Anisotropy as an indicator for reservoir changes: example from the Rotokawa and Ngatamariki geothermal fields, New Zealand. *Geophysical Journal International*, **2020**, 220, 1-17	2.6	3
17	Crustal imaging of northern Harrat Rahat, Saudi Arabia, from ambient noise tomography. *Geophysical Journal International*, **2019**, 219, 1532-1549	2.6	2
16	Crustal Thermal Structure and Exhumation Rates in the Southern Alps Near the Central Alpine Fault, New Zealand. *Geochemistry, Geophysics, Geosystems*, **2020**, 21, e2020GC008972	3.6	2
15	Comment on "Apparent stresses, stress drops, and amplitude ratios of earthquakes preceding and following the 1975 Hawaii MS = 7.2 main shock" by F. R. Zuñiga, M. Wyss, and M. E. Wilson. *Bulletin of the Seismological Society of America*, **1989**, 79, 1300-1304	2.3	2
14	Detailed spatiotemporal analysis of the tectonic stress regime near the central Alpine Fault, New Zealand. *Tectonophysics*, **2020**, 775, 228205	3.1	2
13	Seismic P Wave Velocity Model From 3-D 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	3.6	1
12	Real-Time Earthquake Monitoring during the Second Phase of the Deep Fault Drilling Project, Alpine Fault, New Zealand. *Seismological Research Letters*, **2017**, 88, 1443-1454	3	1
11	Continuous tremor activity with stable polarization direction following the 2014 large slow slip event in the Hikurangi subduction margin offshore New Zealand. *Journal of Geophysical Research: Solid Earth*,e2021JB022161	3.6	1
10	Reply to comment by C. H. Thurber on "A search for seismic reflections from the top of the oceanic crust beneath Hawaii" *Bulletin of the Seismological Society of America*, **1991**, 81, 1035-1041	2.3	1

9	Seismic response to evolving injection at the Rotokawa geothermal field, New Zealand. *Geothermics*, **2020**, 85, 101750	4.3	1
8	Illumination of deformation by bending stresses and slab pull within the Southern Hikurangi Double Benioff Zone. *New Zealand Journal of Geology, and Geophysics*, **2019**, 62, 111-120	1.6	1
7	Stretching, Shaking, Inflating: Volcanic-Tectonic Interactions at a Rifting Silicic Caldera. *Frontiers in Earth Science*, **2022**, 10,	3.5	1
6	Receiver Function Inversion Using Genetic Algorithms **1995**, 583-588		0
5	Velocity changes around the Kaikōura earthquake ruptures from ambient noise cross-correlations. *Geophysical Journal International*, **2022**, 229, 1357-1371	2.6	0
4	Taupōinflate: illustrating detection limits of magmatic inflation below Lake Taupō*New Zealand Journal of Geology, and Geophysics*,1-18	1.6	0
3	Modelling ground motion in the Hutt Valley, New Zealand. *Bulletin of the New Zealand Society for Earthquake Engineering*, **2007**, 40, 190-199	0.5	
2	Temporal velocity variations in the northern Hikurangi margin and the relation to slow slip. *Earth and Planetary Science Letters*, **2022**, 584, 117443	5.3	
1	Spatial and temporal stress field changes in the focal area of the 2016 Kaikōura earthquake, New Zealand: A multi-fault process interpretation. *Tectonophysics*, **2022**, 229390	3.1	