John Townend

List of Publications by Year
in descending order

113 papers	5,487 citations	81900 39 h-index	85541 71 g-index
123 all docs	123 docs citations	123 times ranked	3756 citing authors

#	Article	IF	Citations
1	How faulting keeps the crust strong. Geology, 2000, 28, 399.	4.4	782
2	Implications of hydrostatic pore pressures and high crustal strength for the deformation of intraplate lithosphere. Tectonophysics, 2001, 336, 19-30.	2.2	350
3	Ambient noise Rayleigh wave tomography of New Zealand. Geophysical Journal International, 2007, 170, 649-666.	2.4	255
4	Regional tectonic stress near the San Andreas fault in central and southern California. Geophysical Research Letters, 2004, 31, .	4.0	212
5	Calculating horizontal stress orientations with full or partial knowledge of the tectonic stress tensor. Geophysical Journal International, 2007, 170, 1328-1335.	2.4	207
6	Steady-State Failure Equilibrium and Deformation of Intraplate Lithosphere. International Geology Review, 2002, 44, 383-401.	2.1	155
7	Characterizing the seismogenic zone of a major plate boundary subduction thrust: Hikurangi Margin, New Zealand. Geochemistry, Geophysics, Geosystems, 2009, 10, .	2.5	142
8	Stress, strain, and mountain building in central Japan. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	139
9	Slow slip on the northern Hikurangi subduction interface, New Zealand. Geophysical Research Letters, 2005, 32, .	4.0	136
10	Managing injection-induced seismic risks. Science, 2019, 364, 730-732.	12.6	129
11	Drilling reveals fluid control on architecture and rupture of the Alpine fault, New Zealand. Geology, 2012, 40, 1143-1146.	4.4	121
12	A Bayesian approach to estimating tectonic stress from seismological data. Geophysical Journal International, 2007, 170, 1336-1356.	2.4	113
13	Three-dimensional variations in present-day tectonic stress along the Australiaâ€“Pacific plate boundary in New Zealand. Earth and Planetary Science Letters, 2012, 353-354, 47-59.	4.4	108
14	Microseismicity but no tremor accompanying slow slip in the Hikurangi subduction zone, New Zealand. Earth and Planetary Science Letters, 2009, 277, 21-28.	4.4	103
15	Stress and crustal anisotropy in Marlborough, New Zealand: evidence for low fault strength and structure-controlled anisotropy. Geophysical Journal International, 2005, 163, 1073-1086.	2.4	102
16	EQcorrscan: Repeating and Nearâ€Repeating Earthquake Detection and Analysis in Python. Seismological Research Letters, 2018, 89, 173-181.	1.9	92
17	Do great earthquakes occur on the Alpine Fault in central South Island, New Zealand?. Geophysical Monograph Series, 2007, , 235-251.	0.1	84
18	Extreme hydrothermal conditions at an active plate-bounding fault. Nature, 2017, 546, 137-140.	27.8	84

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19	Tectonic tremor and deep slow slip on the Alpine Fault. Geophysical Research Letters, 2012, 39, .	4.0	79
20	Estimates of conductive heat flow through bottom-simulating reflectors on the Hikurangi and southwest Fiordland continental margins, New Zealand. Marine Geology, 1997, 141, 209-220.	2.1	76
21	Microseismicity and stress in the vicinity of the Alpine Fault, central Southern Alps, New Zealand. Journal of Geophysical Research, 2012, 117, .	3.3	75
22	Triggering of the Pohang, Korea, Earthquake (MwÂ5.5) by Enhanced Geothermal System Stimulation. Seismological Research Letters, 0, , .	1.9	74
23	State of stress in central and eastern North American seismic zones. Lithosphere, 2010, 2, 76-83.	1.4	70
24	Fault rock lithologies and architecture of the central Alpine fault, New Zealand, revealed by DFDP-1 drilling. Lithosphere, 2015, 7, 155-173.	1.4	70
25	Distinguishing between stress-induced and structural anisotropy at Mount Ruapehu volcano, New Zealand. Journal of Geophysical Research, 2011, 116, .	3.3	65
26	Frictional properties of exhumed fault gouges in DFDPâ€1 cores, Alpine Fault, New Zealand. Geophysical Research Letters, 2014, 41, 356-362.	4.0	65
27	Lowâ€frequency earthquakes reveal punctuated slow slip on the deep extent of the Alpine Fault, New Zealand. Geochemistry, Geophysics, Geosystems, 2014, 15, 2984-2999.	2.5	64
28	Implications of earthquake focal mechanisms for the frictional strength of the San Andreas fault system. Geological Society Special Publication, 2001, 186, 13-21.	1.3	62
29	SAHKE geophysical transect reveals crustal and subduction zone structure at the southern Hikurangi margin, New Zealand. Geochemistry, Geophysics, Geosystems, 2013, 14, 2063-2083.	2.5	52
30	Ambient seismic noise tomography of Canada and adjacent regions: Part I. Crustal structures. Journal of Geophysical Research: Solid Earth, 2013, 118, 5865-5887.	3.4	50
31	Hydraulic and acoustic properties of the active Alpine Fault, New Zealand: Laboratory measurements on DFDP-1 drill core. Earth and Planetary Science Letters, 2014, 390, 45-51.	4.4	50
32	A Bayesian approach to determining and parametrizing earthquake focal mechanisms. Geophysical Journal International, 2009, 176, 235-255.	2.4	48
33	Anisotropy, repeating earthquakes, and seismicity associated with the 2008 eruption of Okmok volcano, Alaska. Journal of Geophysical Research, 2010, 115, .	3.3	48
34	High-velocity frictional properties of Alpine Fault rocks: Mechanical data, microstructural analysis, and implications for rupture propagation. Journal of Structural Geology, 2017, 97, 71-92.	2.3	48
35	What do faults feel? Observational constraints on the stresses acting on seismogenic faults. Geophysical Monograph Series, 2006, , 313-327.	0.1	46
36	Fundamental and higherâ€mode Rayleigh wave characteristics of ambient seismic noise in New Zealand. Geophysical Research Letters, 2009, 36, .	4.0	44

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37	Lateâ€interseismic state of a continental plateâ€bounding fault: Petrophysical results from DFDPâ€1 wireline logging and core analysis, Alpine Fault, New Zealand. Geochemistry, Geophysics, Geosystems, 2013, 14, 3801-3820.	2.5	43
38	Source directionality of ambient seismic noise inferred from threeâ€component beamforming. Journal of Geophysical Research: Solid Earth, 2013, 118, 240-248.	3.4	43
39	Deep Fault Drilling Project – Alpine Fault, New Zealand. Scientific Drilling, 0, 8, 75-82.	0.6	43
40	Ambient noise crossâ€correlation observations of fundamental and higherâ€mode Rayleigh wave propagation governed by basement resonance. Geophysical Research Letters, 2013, 40, 3556-3561.	4.0	42
41	Largeâ€displacement, hydrothermal frictional properties of DFDPâ€1 fault rocks, Alpine Fault, New Zealand: Implications for deep rupture propagation. Journal of Geophysical Research: Solid Earth, 2016, 121, 624-647.	3.4	40
42	Crustal stress and fault strength in the Canterbury Plains, New Zealand. Earth and Planetary Science Letters, 2013, 383, 173-181.	4.4	31
43	Petrophysical, Geochemical, and Hydrological Evidence for Extensive Fractureâ€Mediated Fluid and Heat Transport in the Alpine Fault's Hangingâ€Wall Damage Zone. Geochemistry, Geophysics, Geosystems, 2017, 18, 4709-4732.	2.5	31
44	Crustal Fault Connectivity of the M_w 7.8 2016 KaikÅura Earthquake Constrained by Aftershock Relocations. Geophysical Research Letters, 2019, 46, 6487-6496.	4.0	29
45	Fault Zone Guided Wave generation on the locked, late interseismic Alpine Fault, New Zealand. Geophysical Research Letters, 2015, 42, 5736-5743.	4.0	28
46	Cretaceous carbonaceous rocks from the Norfolk Ridge system, Southwest Pacific: Implications for regional petroleum potential. New Zealand Journal of Geology, and Geophysics, 1999, 42, 57-73.	1.8	27
47	Clay mineral formation and fabric development in the DFDP-1B borehole, central Alpine Fault, New Zealand. New Zealand Journal of Geology, and Geophysics, 2015, 58, 13-21.	1.8	27
48	Temperature-dependent frictional properties of heterogeneous Hikurangi Subduction Zone input sediments, ODP Site 1124. Tectonophysics, 2019, 757, 123-139.	2.2	26
49	The benefit of hindsight in observational science: Retrospective seismological observations. Earth and Planetary Science Letters, 2012, 345-348, 212-220.	4.4	25
50	Highâ€Precision Analysis of an Aftershock Sequence Using Matchedâ€Filter Detection: The 4 May 2015M_LÂ6 Wanaka Earthquake, Southern Alps, New Zealand. Seismological Research Letters, 2017, 88, 1065-1077.	1.9	25
51	Bedrock geology of DFDP-2B, central Alpine Fault, New Zealand. New Zealand Journal of Geology, and Geophysics, 2017, 60, 497-518.	1.8	24
52	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.	2.1	23
53	Sub-crustal earthquakes within the Australiaâ€“Pacific plate boundary zone beneath the Southern Alps, New Zealand. Earth and Planetary Science Letters, 2013, 376, 212-219.	4.4	23
54	Structural heterogeneity of the midcrust adjacent to the central <scp>A</scp>lpine <scp>F</scp>ault, <scp>N</scp>ew <scp>Z</scp>ealand: Inferences from seismic tomography and seismicity between <scp>H</scp>arihari and <scp>R</scp>oss. Geochemistry, Geophysics, Geosystems, 2015, 16, 1017-1043.	2.5	23

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55	Statistical methods of fracture characterization using acoustic borehole televiewer log interpretation. Journal of Geophysical Research: Solid Earth, 2017, 122, 6836-6852.	3.4	23
56	Shear velocity structure of the Northland Peninsula, New Zealand, inferred from ambient noise correlations. Journal of Geophysical Research, 2010, 115, .	3.3	22
57	Crustal shear wave tomography of the Taupo Volcanic Zone, New Zealand, via ambient noise correlation between multiple threeâ€component networks. Geochemistry, Geophysics, Geosystems, 2011, 12, .	2.5	22
58	Heat flow through the West Coast, South Island, New Zealand. New Zealand Journal of Geology, and Geophysics, 1999, 42, 21-31.	1.8	21
59	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.	2.5	21
60	Geochemical and microstructural evidence for interseismic changes in fault zone permeability and strength, <scp>A</scp>lpine <scp>F</scp>ault, <scp>N</scp>ew <scp>Z</scp>ealand. Geochemistry, Geophysics, Geosystems, 2017, 18, 238-265.	2.5	20
61	Cross-correlation-based detection and characterisation of microseismicity adjacent to the locked, late-interseismic Alpine Fault, South Westland, New Zealand. Earth and Planetary Science Letters, 2017, 457, 63-72.	4.4	20
62	Textural changes of graphitic carbon by tectonic and hydrothermal processes in an active plate boundary fault zone, Alpine Fault, New Zealand. Geological Society Special Publication, 2018, 453, 205-223.	1.3	19
63	Illuminating the Preâ€ Coâ€ and Postâ€Seismic Phases of the 2016 M7.8 KaikÅura Earthquake With 10ÂYears of Seismicity. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB022304.	3.4	18
64	Orogenic paleofluid flow recorded by discordant detrital zircons in the Caledonian foreland basin of northern Greenland. Lithosphere, 2015, 7, 138-143.	1.4	17
65	Frictional properties and 3-D stress analysis of the southern Alpine Fault, New Zealand. Journal of Structural Geology, 2018, 114, 43-54.	2.3	17
66	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.	4.4	16
67	Spatially and temporally systematic hydrologic changes within large geoengineered landslides, Cromwell Gorge, New Zealand, induced by multiple regional earthquakes. Journal of Geophysical Research: Solid Earth, 2016, 121, 8750-8773.	3.4	15
68	Background and delayed-triggered swarms in the central Southern Alps, South Island, New Zealand. Geochemistry, Geophysics, Geosystems, 2014, 15, 945-964.	2.5	14
69	Evidence for tectonic, lithologic, and thermal controls on fracture system geometries in an andesitic highâ€temperature geothermal field. Journal of Geophysical Research: Solid Earth, 2017, 122, 6853-6874.	3.4	14
70	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.	2.5	14
71	Seep-bubble characteristics and gas flow rates from a shallow-water, high-density seep field on the shelf-to-slope transition of the Hikurangi subduction margin. Marine Geology, 2019, 417, 105985.	2.1	14
72	Glacier velocity variability due to rain-induced sliding and cavity formation. Earth and Planetary Science Letters, 2015, 432, 273-282.	4.4	13

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73	Microseismicity and Pâ€“wave tomography of the central Alpine Fault, New Zealand. New Zealand Journal of Geology, and Geophysics, 2016, 59, 483-495.	1.8	13
74	Seismic Response to Injection Well Stimulation in a Highâ€Temperature, Highâ€Permeability Reservoir. Geochemistry, Geophysics, Geosystems, 2019, 20, 2848-2871.	2.5	13
75	Seismological and Hydrogeological Controls on New Zealand-Wide Groundwater Level Changes Induced by the 2016 M_w7.8 KaikÅura Earthquake. Geofluids, 2019, 2019, 1-18.	0.7	11
76	Tidal Behavior and Waterâ€Level Changes in Gravel Aquifers in Response to Multiple Earthquakes: A Case Study From New Zealand. Water Resources Research, 2019, 55, 1263-1278.	4.2	11
77	Quantitative geometric description of fracture systems in an andesite lava flow using terrestrial laser scanner data. Journal of Volcanology and Geothermal Research, 2017, 341, 315-331.	2.1	11
78	Deep Fault Drilling ProjectÂ—Alpine Fault, New Zealand. Scientific Drilling, 2009, , .	0.6	10
79	Tectonic Tremor Recorded by Ocean Bottom Seismometers. Seismological Research Letters, 2013, 84, 752-758.	1.9	9
80	Regional earthquake location using empirical traveltimes in a region of strong lateral velocity heterogeneity. Geophysical Journal International, 2008, 175, 560-570.	2.4	8
81	Gravity analysis of glaciotectonic processes, central Alpine Fault, South Island, New Zealand. New Zealand Journal of Geology, and Geophysics, 2013, 56, 100-108.	1.8	8
82	3-D P- and S-wave velocity structure along the central Alpine Fault, South Island, New Zealand. Geophysical Journal International, 2017, 209, 935-947.	2.4	8
83	An automated workflow for adjoint tomographyâ€”waveform misfits and synthetic inversions for the North Island, New Zealand. Geophysical Journal International, 2020, 223, 1461-1480.	2.4	8
84	Fluid Flux in Fractured Rock of the Alpine Fault Hangingâ€Wall Determined from Temperature Logs in the DFDPâ€2B Borehole, New Zealand. Geochemistry, Geophysics, Geosystems, 2018, 19, 2631-2646.	2.5	7
85	Comparison of fiber-optic sensor and borehole seismometer VSP surveys in a scientific borehole: DFDP-2b, Alpine Fault, New Zealand. , 2016, , .		6
86	Detailed spatiotemporal analysis of the tectonic stress regime near the central Alpine Fault, New Zealand. Tectonophysics, 2020, 775, 228205.	2.2	6
87	Shear wave velocity changes induced by earthquakes and rainfall at the Rotokawa and Ngatamariki geothermal fields, TaupÅ•Volcanic Zone, New Zealand. Geophysical Journal International, 2020, 221, 97-114.	2.4	6
88	A Probabilistic Model of Aquifer Susceptibility to Earthquake-Induced Groundwater-Level Changes. Bulletin of the Seismological Society of America, 2020, 110, 1046-1063.	2.3	6
89	Crustal Thermal Structure and Exhumation Rates in the Southern Alps Near the Central Alpine Fault, New Zealand. Geochemistry, Geophysics, Geosystems, 2020, 21, e2020GC008972.	2.5	6
90	A Repeating Earthquake Catalog From 2003 to 2020 for the Raukumara Peninsula, Northern Hikurangi Subduction Margin, New Zealand. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009670.	2.5	6

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91	Subduction Systems Revealed: Studies of the Hikurangi Margin. Eos, 2010, 91, 417-418.	0.1	5
92	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.	2.4	5
93	RT-EQcorrscan: Near-Real-Time Matched-Filtering for Rapid Development of Dense Earthquake Catalogs. Seismological Research Letters, 2020, 91, 3574-3584.	1.9	5
94	Introduction to the Canterbury earthquake sequence special issue. New Zealand Journal of Geology, and Geophysics, 2012, 55, 151-154.	1.8	4
95	Seismic PÂWave Velocity Model From 3â€D Surface and Borehole Seismic Data at the Alpine Fault DFDPâ€2 Drill Site (Whataroa, New Zealand). Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018519.	3.4	4
96	Strong Upperâ€Plate Heterogeneity at the Hikurangi Subduction Margin (North Island, New Zealand) Imaged by Adjoint Tomography. Journal of Geophysical Research: Solid Earth, 2022, 127, .	3.4	4
97	Evidence for Deeply Subducted Lowerâ€Plate Seamounts at the Hikurangi Subduction Margin: Implications for Seismic and Aseismic Behavior. Journal of Geophysical Research: Solid Earth, 2022, 127, .	3.4	4
98	Derivation and implementation of a nonlinear experimental design criterion and its application to seismic network expansion at Kawerau geothermal field, New Zealand. Geophysical Journal International, 2012, 191, 686-694.	2.4	3
99	Inferring shear-velocity structure of the upper 200Âm using cultural ambient noise at the Ngatamariki geothermal field, Central North Island, New Zealand. Interpretation, 2016, 4, SJ87-SJ101.	1.1	3
100	Detecting Real Earthquakes Using Artificial Earthquakes: On the Use of Synthetic Waveforms in Matchedâ€Filter Earthquake Detection. Geophysical Research Letters, 2018, 45, 11,641.	4.0	3
101	Implications of upper-mantle seismicity for deformation in the continental collision zone beneath the Alpine Fault, South Island, New Zealand. New Zealand Journal of Geology, and Geophysics, 2018, 61, 283-308.	1.8	3
102	Seismic response to evolving injection at the Rotokawa geothermal field, New Zealand. Geothermics, 2020, 85, 101750.	3.4	3
103	Drilling, Sampling, and Monitoring the Alpine Fault: Deep Fault Drilling Project-Alpine Fault, New Zealand; Franz Josef, New Zealand, 22-28 March 2009. Eos, 2009, 90, 312-312.	0.1	2
104	Realâ€Time Earthquake Monitoring during the Second Phase of the Deep Fault Drilling Project, Alpine Fault, New Zealand. Seismological Research Letters, 2017, 88, 1443-1454.	1.9	2
105	Crustal imaging of northern Harrat Rahat, Saudi Arabia, from ambient noise tomography. Geophysical Journal International, 2019, 219, 1532-1549.	2.4	2
106	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, , .	3.4	2
107	Mapping Tectonic Stress Using Earthquakes. AIP Conference Proceedings, 2005, , .	0.4	1
108	Always finding faults: New Zealand 2016. , 2017, , .		1

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109	Tercentenary of the 1717 AD Alpine Fault earthquake: advances in science and understanding hazards. New Zealand Journal of Geology, and Geophysics, 2018, 61, 247-250.	1.8	1
110	Seismic observations of crevasse growth following rain-induced glacier acceleration, Haupapa/Tasman Glacier, New Zealand. Annals of Glaciology, 2019, 60, 14-22.	1.4	1
111	Gravity survey of the central Alpine Fault near the DFDP-2 drill site, Whataroa, South Island, New Zealand. New Zealand Journal of Geology, and Geophysics, 2020, 63, 128-144.	1.8	1
112	Lidar reveals uniform Alpine fault offsets and bimodal plate boundary rupture behavior, New Zealand: COMMENT. Geology, 2014, 42, e351-e351.	4.4	0
113	Thermal properties of the hanging wall of the central Alpine Fault, New Zealand. New Zealand Journal of Geology, and Geophysics, 2020, , 1-12.	1.8	0