

Mark D. Behn

List of Publications by Year in descending order

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103
papers

7,229
citations

41258

49
h-index

56606

83
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112
all docs

112
docs citations

112
times ranked

6132
citing authors

#	ARTICLE	IF	CITATIONS
1	Sensitivity of rift tectonics to global variability in the efficiency of river erosion. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2115077119.	3.3	6
2	High water content of arc magmas recorded in cumulates from subduction zone lower crust. Nature Geoscience, 2022, 15, 501-508.	5.4	13
3	Mantle Heterogeneity and Melting Processes in the South China Sea: Thermal and Melting Models Constrained by Oceanic Crustal Thickness and Basalt Geochemistry. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB020735.	1.4	4
4	Constraints on the Depth, Thickness, and Strength of the G Discontinuity in the Central Pacific From S Receiver Functions. Journal of Geophysical Research: Solid Earth, 2021, 126, e2019JB019256.	1.4	11
5	Hydraulic transmissivity inferred from ice-sheet relaxation following Greenland supraglacial lake drainages. Nature Communications, 2021, 12, 3955.	5.8	13
6	The role of grain size evolution in the rheology of ice: implications for reconciling laboratory creep data and the Glen flow law. Cryosphere, 2021, 15, 4589-4605.	1.5	10
7	On the Evolution and Fate of Sediment Diapirs in Subduction Zones. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009873.	1.0	8
8	High ³ He/ ⁴ He in central Panama reveals a distal connection to the Galpagos plume. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	12
9	Origins of Major Element, Trace Element, and Isotope Garnet Signatures in Mid-Ocean Ridge Basalts. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB019612.	1.4	10
10	New Opportunities to Study Earthquake Precursors. Seismological Research Letters, 2020, 91, 2444-2447.	0.8	27
11	Melt Segregation and Depletion During Ascent of Buoyant Diapirs in Subduction Zones. Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018203.	1.4	11
12	Aseismic transient slip on the Gofar transform fault, East Pacific Rise. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 10188-10194.	3.3	17
13	Marine Ice Cliff Instability Mitigated by Slow Removal of Ice Shelves. Geophysical Research Letters, 2019, 46, 12108-12116.	1.5	36
14	Seafloor expression of oceanic detachment faulting reflects gradients in mid-ocean ridge magma supply. Earth and Planetary Science Letters, 2019, 516, 176-189.	1.8	25
15	Causes of Oceanic Crustal Thickness Oscillations Along a 74�M Mid-Atlantic Ridge Flow Line. Geochemistry, Geophysics, Geosystems, 2019, 20, 6123-6139.	1.0	6
16	Inferring crustal viscosity from seismic velocity: Application to the lower crust of Southern California. Earth and Planetary Science Letters, 2018, 494, 83-91.	1.8	27
17	Controls on Mid-Ocean Ridge Normal Fault Seismicity Across Spreading Rates From Rate- and State Friction Models. Journal of Geophysical Research: Solid Earth, 2018, 123, 6719-6733.	1.4	6
18	Relationship Between Greenland Ice Sheet Surface Speed and Modeled Effective Pressure. Journal of Geophysical Research F: Earth Surface, 2018, 123, 2258-2278.	1.0	7

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19	Predicting Rates and Distribution of Carbonate Melting in Oceanic Upper Mantle: Implications for Seismic Structure and Global Carbon Cycling. <i>Geophysical Research Letters</i> , 2018, 45, 6944-6953.	1.5	4
20	MeltMigrator: A MATLAB-based software for modeling three-dimensional melt migration and crustal thickness variations at mid-ocean ridges following a rules-based approach. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 445-456.	1.0	2
21	Spreading rate-dependent variations in crystallization along the global mid-ocean ridge system. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 3016-3033.	1.0	22
22	Archean crustal compositions promote full mantle convection. <i>Earth and Planetary Science Letters</i> , 2017, 474, 516-526.	1.8	11
23	Thermal segmentation of mid-ocean ridge transform faults. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 3405-3418.	1.0	8
24	Magmatic Focusing to Mid-ocean Ridges: The Role of Grain Size Variability and Non-Newtonian Viscosity. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 4342-4355.	1.0	21
25	Magmatic and tectonic extension at the Chile Ridge: Evidence for mantle controls on ridge segmentation. <i>Geochemistry, Geophysics, Geosystems</i> , 2016, 17, 2354-2373.	1.0	28
26	Response to Comment on "Sensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supply". <i>Science</i> , 2016, 353, 229-229.	6.0	3
27	Greenland Ice Sheet flow response to runoff variability. <i>Geophysical Research Letters</i> , 2016, 43, 11295-11303.	1.5	29
28	Response to Comment on "Sensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supply". <i>Science</i> , 2016, 352, 1405-1405.	6.0	9
29	Formation of lower continental crust by relamination of buoyant arc lavas and plutons. <i>Nature Geoscience</i> , 2016, 9, 197-205.	5.4	125
30	The role of elasticity in simulating long-term tectonic extension. <i>Geophysical Journal International</i> , 2016, 205, 728-743.	1.0	21
31	Grain size dynamics beneath mid-ocean ridges: Implications for permeability and melt extraction. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 925-946.	1.0	20
32	The continental drift convection cell. <i>Geophysical Research Letters</i> , 2015, 42, 4301-4308.	1.5	11
33	Melting systematics in mid-ocean ridge basalts: Application of a plagioclase-spinel melting model to global variations in major element chemistry and crustal thickness. <i>Journal of Geophysical Research: Solid Earth</i> , 2015, 120, 4863-4886.	1.4	43
34	Compositional dependence of lower crustal viscosity. <i>Geophysical Research Letters</i> , 2015, 42, 8333-8340.	1.5	40
35	Mechanism for normal faulting in the subducting plate at the Mariana Trench. <i>Geophysical Research Letters</i> , 2015, 42, 4309-4317.	1.5	44
36	Magmatic plumbing at Lucky Strike volcano based on olivine-hosted melt inclusion compositions. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 126-147.	1.0	30

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37	Focusing of upward fluid migration beneath volcanic arcs: Effect of mineral grain size variation in the mantle wedge. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 3905-3923.	1.0	26
38	Limits to future expansion of surface-enhanced ice flow into the interior of western Greenland. <i>Geophysical Research Letters</i> , 2015, 42, 1800-1807.	1.5	89
39	Seismicity on the western Greenland Ice Sheet: Surface fracture in the vicinity of active moulins. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 1082-1106.	1.0	29
40	Greenland supraglacial lake drainages triggered by hydrologically induced basal slip. <i>Nature</i> , 2015, 522, 73-76.	13.7	106
41	Continental Lower Crust. <i>Annual Review of Earth and Planetary Sciences</i> , 2015, 43, 167-205.	4.6	260
42	Sensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supply. <i>Science</i> , 2015, 350, 310-313.	6.0	65
43	Chalcophile behavior of thallium during MORB melting and implications for the sulfur content of the mantle. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 4905-4919.	1.0	51
44	Modes of extensional faulting controlled by surface processes. <i>Geophysical Research Letters</i> , 2014, 41, 6725-6733.	1.5	53
45	Pronounced zonation of seismic anisotropy in the Western Hellenic subduction zone and its geodynamic significance. <i>Earth and Planetary Science Letters</i> , 2014, 391, 100-109.	1.8	33
46	Variations in melting dynamics and mantle compositions along the Eastern Volcanic Zone of the Gakkel Ridge: insights from olivine-hosted melt inclusions. <i>Contributions To Mineralogy and Petrology</i> , 2014, 167, 1.	1.2	49
47	Rapid rotation of normal faults due to flexural stresses: An explanation for the global distribution of normal fault dips. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 3722-3739.	1.4	22
48	Effects of Hydrothermal Cooling and Magma Injection on Mid-Ocean Ridge Temperature Structure, Deformation, and Axial Morphology. <i>Geophysical Monograph Series</i> , 2013, , 151-165.	0.1	3
49	Foundering of lower island-arc crust as an explanation for the origin of the continental Moho. <i>Nature</i> , 2013, 504, 131-134.	13.7	121
50	Post-entrapment modification of volatiles and oxygen fugacity in olivine-hosted melt inclusions. <i>Earth and Planetary Science Letters</i> , 2013, 374, 145-155.	1.8	193
51	Influence of ice-sheet geometry and supraglacial lakes on seasonal ice-flow variability. <i>Cryosphere</i> , 2013, 7, 1185-1192.	1.5	80
52	Constraints on the composition of the Aleutian arc lower crust from P - and S -waves. <i>Geophysical Research Letters</i> , 2013, 40, 2579-2584.	1.5	20
53	Using short-term postseismic displacements to infer the ambient deformation conditions of the upper mantle. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	86
54	Variations in earthquake rupture properties along the Gofar transform fault, East Pacific Rise. <i>Nature Geoscience</i> , 2012, 5, 336-341.	5.4	86

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55	Frictional behavior of oceanic transform faults and its influence on earthquake characteristics. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	18
56	Effects of variable magma supply on mid-ocean ridge eruptions: Constraints from mapped lava flow fields along the Galápagos Spreading Center. <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	1.0	42
57	Effects of heterogeneous hydration in the incoming plate, slab rehydration, and mantle wedge hydration on slab-derived H ₂ O flux in subduction zones. <i>Earth and Planetary Science Letters</i> , 2012, 353-354, 60-71.	1.8	88
58	Long-term preservation of slab signatures in the mantle inferred from hydrogen isotopes. <i>Nature Geoscience</i> , 2012, 5, 224-228.	5.4	57
59	Timescales for the growth of sediment diapirs in subduction zones. <i>Geophysical Journal International</i> , 2012, 190, 1361-1377.	1.0	16
60	Controls on melt migration and extraction at the ultraslow Southwest Indian Ridge 10°–16°E. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	44
61	Grain-size distribution in the mantle wedge of subduction zones. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	15
62	Cellular convection in a chamber with a warm surface raft. <i>Physics of Fluids</i> , 2011, 23, .	1.6	7
63	Differentiation of the continental crust by relamination. <i>Earth and Planetary Science Letters</i> , 2011, 307, 501-516.	1.8	414
64	Diapirs as the source of the sediment signature in arc lavas. <i>Nature Geoscience</i> , 2011, 4, 641-646.	5.4	330
65	Submarine Landslides and Slow Earthquakes: Monitoring Motion with GPS and Seafloor Geodesy. , 2011, , 889-907.		4
66	The structure of oceanic core complexes controlled by the depth distribution of magma emplacement. <i>Nature Geoscience</i> , 2010, 3, 491-495.	5.4	104
67	Constraints on lithosphere net rotation and asthenospheric viscosity from global mantle flow models and seismic anisotropy. <i>Geochemistry, Geophysics, Geosystems</i> , 2010, 11, .	1.0	132
68	Thermo-mechanical behavior of oceanic transform faults: Implications for the spatial distribution of seismicity. <i>Geochemistry, Geophysics, Geosystems</i> , 2010, 11, .	1.0	78
69	Deep pooling of low degree melts and volatile fluxes at the 85°E segment of the Gakkel Ridge: Evidence from olivine-hosted melt inclusions and glasses. <i>Earth and Planetary Science Letters</i> , 2010, 289, 311-322.	1.8	105
70	Implications of grain size evolution on the seismic structure of the oceanic upper mantle. <i>Earth and Planetary Science Letters</i> , 2009, 282, 178-189.	1.8	118
71	Melt generation, crystallization, and extraction beneath segmented oceanic transform faults. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	71
72	Constraints on the lake volume required for hydrofracture through ice sheets. <i>Geophysical Research Letters</i> , 2009, 36, .	1.5	105

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73	Reconstruction of the Talkeetna intraoceanic arc of Alaska through thermobarometry. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	75
74	Magmatic and tectonic extension at mid-ocean ridges: 1. Controls on fault characteristics. <i>Geochemistry, Geophysics, Geosystems</i> , 2008, 9, .	1.0	100
75	Magmatic and tectonic extension at mid-ocean ridges: 2. Origin of axial morphology. <i>Geochemistry, Geophysics, Geosystems</i> , 2008, 9, .	1.0	66
76	A community benchmark for subduction zone modeling. <i>Physics of the Earth and Planetary Interiors</i> , 2008, 171, 187-197.	0.7	187
77	Mid-ocean ridge jumps associated with hotspot magmatism. <i>Earth and Planetary Science Letters</i> , 2008, 266, 256-270.	1.8	75
78	Intermittent Plate Tectonics?. <i>Science</i> , 2008, 319, 85-88.	6.0	180
79	Role of melt supply in oceanic detachment faulting and formation of megamullions. <i>Geology</i> , 2008, 36, 455.	2.0	245
80	Fracture Propagation to the Base of the Greenland Ice Sheet During Supraglacial Lake Drainage. <i>Science</i> , 2008, 320, 778-781.	6.0	497
81	Thermal structure of oceanic transform faults. <i>Geology</i> , 2007, 35, 307.	2.0	100
82	Trench-Parallel Anisotropy Produced by Foundering of Arc Lower Crust. <i>Science</i> , 2007, 317, 108-111.	6.0	92
83	Global mantle flow and the development of seismic anisotropy: Differences between the oceanic and continental upper mantle. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	134
84	A constitutive model for layer development in shear zones near the brittle-ductile transition. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	34
85	Mantle flow and melting underneath oblique and ultraslow mid-ocean ridges. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	64
86	Spreading rate dependence of gravity anomalies along oceanic transform faults. <i>Nature</i> , 2007, 448, 183-187.	13.7	63
87	Automated Analysis of Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectra of Natural Organic Matter. <i>Analytical Chemistry</i> , 2006, 78, 4363-4373.	3.2	335
88	Stability of arc lower crust: Insights from the Talkeetna arc section, south central Alaska, and the seismic structure of modern arcs. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a.	3.3	115
89	Understanding cratonic flood basalts. <i>Earth and Planetary Science Letters</i> , 2006, 245, 190-201.	1.8	69
90	Periodic slow earthquakes on the flank of Kālauea volcano, Hawaii. <i>Earth and Planetary Science Letters</i> , 2006, 246, 207-216.	1.8	72

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91	Topographic controls on dike injection in volcanic rift zones. <i>Earth and Planetary Science Letters</i> , 2006, 246, 188-196.	1.8	42
92	Spatio-temporal evolution of strain accumulation derived from multi-scale observations of Late Jurassic rifting in the northern North Sea: A critical test of models for lithospheric extension. <i>Earth and Planetary Science Letters</i> , 2005, 234, 401-419.	1.8	129
93	Detection of upper mantle flow associated with the African Superplume. <i>Earth and Planetary Science Letters</i> , 2004, 224, 259-274.	1.8	151
94	Effect of the Galpagos hotspot on seafloor volcanism along the Galpagos Spreading Center (90.997.6W). <i>Earth and Planetary Science Letters</i> , 2004, 217, 331-347.	1.8	41
95	Relationship between seismic P-wave velocity and the composition of anhydrous igneous and meta-igneous rocks. <i>Geochemistry, Geophysics, Geosystems</i> , 2003, 4, n/a-n/a.	1.0	105
96	Morphology and segmentation of the western Galpagos Spreading Center, 90.598W: Plume-ridge interaction at an intermediate spreading ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2003, 4, .	1.0	68
97	Mechanisms of normal fault development at mid-ocean ridges. <i>Journal of Geophysical Research</i> , 2002, 107, EPM 7-1-EPM 7-17.	3.3	35
98	Correlated geophysical, geochemical, and volcanological manifestations of plume-ridge interaction along the Galpagos Spreading Center. <i>Geochemistry, Geophysics, Geosystems</i> , 2002, 3, 1-14.	1.0	119
99	Evidence for weak oceanic transform faults. <i>Geophysical Research Letters</i> , 2002, 29, 60-1-60-4.	1.5	58
100	A continuum mechanics model for normal faulting using a strain-rate softening rheology: implications for thermal and rheological controls on continental and oceanic rifting. <i>Earth and Planetary Science Letters</i> , 2002, 202, 725-740.	1.8	64
101	A comparison of ocean topography derived from the Shuttle Laser Altimeter-01 and TOPEX/POSEIDON. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2000, 38, 1425-1438.	2.7	7
102	Segmentation in gravity and magnetic anomalies along the U.S. East Coast passive margin: Implications for incipient structure of the oceanic lithosphere. <i>Journal of Geophysical Research</i> , 2000, 105, 25769-25790.	3.3	51
103	A three-dimensional gravity model of the southern contact of the Sebago pluton, Maine. <i>Canadian Journal of Earth Sciences</i> , 1998, 35, 649-656.	0.6	3