# Mark D. Behn

List of Publications by Year
in descending order



| 103 | 7,229 | 41344 | 56724 |
|---|---|---|---|
| papers | citations | 49 h-index | 83 g-index |

| 112 | 112 | 112 | 6132 |
|---|---|---|---|
| all docs | docs citations | times ranked | 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. | 7.1 | 6 |
| 2 | High water content of arc magmas recorded in cumulates from subduction zone lower crust. Nature Geoscience, 2022, 15, 501-508. | 12.9 | 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. | 3.4 | 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. | 3.4 | 11 |
| 5 | Hydraulic transmissivity inferred from ice-sheet relaxation following Greenland supraglacial lake drainages. Nature Communications, 2021, 12, 3955. | 12.8 | 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. | 3.9 | 10 |
| 7 | On the Evolution and Fate of Sediment Diapirs in Subduction Zones. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009873. | 2.5 | 8 |
| 8 | High <sup>3</sup> He/ <sup>4</sup> He in central Panama reveals a distal connection to the GalÃ¡pagos plume. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, . | 7.1 | 12 |
| 9 | Origins of Major Element, Trace Element, and Isotope Garnet Signatures in Midâ€Ocean Ridge Basalts. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB019612. | 3.4 | 10 |
| 10 | New Opportunities to Study Earthquake Precursors. Seismological Research Letters, 2020, 91, 2444-2447. | 1.9 | 27 |
| 11 | Melt Segregation and Depletion During Ascent of Buoyant Diapirs in Subduction Zones. Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018203. | 3.4 | 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. | 7.1 | 17 |
| 13 | Marine Ice Cliff Instability Mitigated by Slow Removal of Ice Shelves. Geophysical Research Letters, 2019, 46, 12108-12116. | 4.0 | 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. | 4.4 | 25 |
| 15 | Causes of Oceanic Crustal Thickness Oscillations Along a 74â€M Midâ€Atlantic Ridge Flow Line. Geochemistry, Geophysics, Geosystems, 2019, 20, 6123-6139. | 2.5 | 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. | 4.4 | 27 |
| 17 | Controls on Midâ€ocean Ridge Normal Fault Seismicity Across Spreading Rates From Rateâ€andâ€State Friction Models. Journal of Geophysical Research: Solid Earth, 2018, 123, 6719-6733. | 3.4 | 6 |
| 18 | Relationship Between Greenland Ice Sheet Surface Speed and Modeled Effective Pressure. Journal of Geophysical Research F: Earth Surface, 2018, 123, 2258-2278. | 2.8 | 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. Geophysical Research Letters, 2018, 45, 6944-6953. | 4.0 | 4 |
| 20 | MeltMigrator: A MATLABâ€based software for modeling threeâ€dimensional melt migration and crustal thickness variations at midâ€ocean ridges following a rulesâ€based approach. Geochemistry, Geophysics, Geosystems, 2017, 18, 445-456. | 2.5 | 2 |
| 21 | Spreading rateâ€dependent variations in crystallization along the global midâ€ocean ridge system. Geochemistry, Geophysics, Geosystems, 2017, 18, 3016-3033. | 2.5 | 22 |
| 22 | Archean crustal compositions promote full mantle convection. Earth and Planetary Science Letters, 2017, 474, 516-526. | 4.4 | 11 |
| 23 | Thermal segmentation of midâ€ocean ridgeâ€transform faults. Geochemistry, Geophysics, Geosystems, 2017, 18, 3405-3418. | 2.5 | 8 |
| 24 | Magmatic Focusing to Midâ€Ocean Ridges: The Role of Grainâ€Size Variability and Nonâ€Newtonian Viscosity. Geochemistry, Geophysics, Geosystems, 2017, 18, 4342-4355. | 2.5 | 21 |
| 25 | Magmatic and tectonic extension at the Chile Ridge: Evidence for mantle controls on ridge segmentation. Geochemistry, Geophysics, Geosystems, 2016, 17, 2354-2373. | 2.5 | 28 |
| 26 | Response to Comment on â€œSensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supplyâ€. Science, 2016, 353, 229-229. | 12.6 | 3 |
| 27 | Greenland Ice Sheet flow response to runoff variability. Geophysical Research Letters, 2016, 43, 11295-11303. | 4.0 | 29 |
| 28 | Response to Comment on â€œSensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supplyâ€. Science, 2016, 352, 1405-1405. | 12.6 | 9 |
| 29 | Formation of lower continental crust by relamination of buoyant arc lavas and plutons. Nature Geoscience, 2016, 9, 197-205. | 12.9 | 125 |
| 30 | The role of elasticity in simulating long-term tectonic extension. Geophysical Journal International, 2016, 205, 728-743. | 2.4 | 21 |
| 31 | Grainâ€size dynamics beneath midâ€ocean ridges: Implications for permeability and melt extraction. Geochemistry, Geophysics, Geosystems, 2015, 16, 925-946. | 2.5 | 20 |
| 32 | The continental drift convection cell. Geophysical Research Letters, 2015, 42, 4301-4308. | 4.0 | 11 |
| 33 | Melting systematics in midâ€ocean ridge basalts: Application of a plagioclaseâ€spinel melting model to global variations in major element chemistry and crustal thickness. Journal of Geophysical Research: Solid Earth, 2015, 120, 4863-4886. | 3.4 | 43 |
| 34 | Compositional dependence of lower crustal viscosity. Geophysical Research Letters, 2015, 42, 8333-8340. | 4.0 | 40 |
| 35 | Mechanism for normal faulting in the subducting plate at the Mariana Trench. Geophysical Research Letters, 2015, 42, 4309-4317. | 4.0 | 44 |
| 36 | Magmatic plumbing at Lucky Strike volcano based on olivineâ€hosted melt inclusion compositions. Geochemistry, Geophysics, Geosystems, 2015, 16, 126-147. | 2.5 | 30 |

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| 37 | Focusing of upward fluid migration beneath volcanic arcs: Effect of mineral grain size variation in the mantle wedge. Geochemistry, Geophysics, Geosystems, 2015, 16, 3905-3923. | 2.5 | 26 |
| 38 | Limits to future expansion of surfaceâ€meltâ€enhanced ice flow into the interior of western Greenland. Geophysical Research Letters, 2015, 42, 1800-1807. | 4.0 | 89 |
| 39 | Seismicity on the western Greenland Ice Sheet: Surface fracture in the vicinity of active moulins. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1082-1106. | 2.8 | 29 |
| 40 | Greenland supraglacial lake drainages triggered by hydrologically induced basal slip. Nature, 2015, 522, 73-76. | 27.8 | 106 |
| 41 | Continental Lower Crust. Annual Review of Earth and Planetary Sciences, 2015, 43, 167-205. | 11.0 | 260 |
| 42 | Sensitivity of seafloor bathymetry to climate-driven fluctuations in mid-ocean ridge magma supply. Science, 2015, 350, 310-313. | 12.6 | 65 |
| 43 | Chalcophile behavior of thallium during <scp>MORB</scp> melting and implications for the sulfur content of the mantle. Geochemistry, Geophysics, Geosystems, 2014, 15, 4905-4919. | 2.5 | 51 |
| 44 | Modes of extensional faulting controlled by surface processes. Geophysical Research Letters, 2014, 41, 6725-6733. | 4.0 | 53 |
| 45 | Pronounced zonation of seismic anisotropy in the Western Hellenic subduction zone and its geodynamic significance. Earth and Planetary Science Letters, 2014, 391, 100-109. | 4.4 | 33 |
| 46 | Variations in melting dynamics and mantle compositions along the Eastern Volcanic Zone of the Gakkel Ridge: insights from olivine-hosted melt inclusions. Contributions To Mineralogy and Petrology, 2014, 167, 1. | 3.1 | 49 |
| 47 | Rapid rotation of normal faults due to flexural stresses: An explanation for the global distribution of normal fault dips. Journal of Geophysical Research: Solid Earth, 2014, 119, 3722-3739. | 3.4 | 22 |
| 48 | Effects of Hydrothermal Cooling and Magma Injection on Mid-Ocean Ridge Temperature Structure, Deformation, and Axial Morphology. Geophysical Monograph Series, 2013, , 151-165. | 0.1 | 3 |
| 49 | Foundering of lower island-arc crust as an explanation for the origin of the continental Moho. Nature, 2013, 504, 131-134. | 27.8 | 121 |
| 50 | Post-entrapment modification of volatiles and oxygen fugacity in olivine-hosted melt inclusions. Earth and Planetary Science Letters, 2013, 374, 145-155. | 4.4 | 193 |
| 51 | Influence of ice-sheet geometry and supraglacial lakes on seasonal ice-flow variability. Cryosphere, 2013, 7, 1185-1192. | 3.9 | 80 |
| 52 | Constraints on the composition of the Aleutian arc lower crust from V<sub>P</sub>/V<sub>S</sub>. Geophysical Research Letters, 2013, 40, 2579-2584. | 4.0 | 20 |
| 53 | Using shortâ€term postseismic displacements to infer the ambient deformation conditions of the upper mantle. Journal of Geophysical Research, 2012, 117, . | 3.3 | 86 |
| 54 | Variations in earthquake rupture properties along the Gofar transform fault, East Pacific Rise. Nature Geoscience, 2012, 5, 336-341. | 12.9 | 86 |

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| 55 | Frictional behavior of oceanic transform faults and its influence on earthquake characteristics. Journal of Geophysical Research, 2012, 117, . | 3.3 | 18 |
| 56 | Effects of variable magma supply on midâ€ocean ridge eruptions: Constraints from mapped lava flow fields along the GalÃ¡pagos Spreading Center. Geochemistry, Geophysics, Geosystems, 2012, 13, . | 2.5 | 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. Earth and Planetary Science Letters, 2012, 353-354, 60-71. | 4.4 | 88 |
| 58 | Long-term preservation of slab signatures in the mantle inferred from hydrogen isotopes. Nature Geoscience, 2012, 5, 224-228. | 12.9 | 57 |
| 59 | Timescales for the growth of sediment diapirs in subduction zones. Geophysical Journal International, 2012, 190, 1361-1377. | 2.4 | 16 |
| 60 | Controls on melt migration and extraction at the ultraslow Southwest Indian Ridge 10Â°â€“16Â°E. Journal of Geophysical Research, 2011, 116, . | 3.3 | 44 |
| 61 | Grain-size distribution in the mantle wedge of subduction zones. Journal of Geophysical Research, 2011, 116, . | 3.3 | 15 |
| 62 | Cellular convection in a chamber with a warm surface raft. Physics of Fluids, 2011, 23, . | 4.0 | 7 |
| 63 | Differentiation of the continental crust by relamination. Earth and Planetary Science Letters, 2011, 307, 501-516. | 4.4 | 414 |
| 64 | Diapirs as the source of the sediment signature in arc lavas. Nature Geoscience, 2011, 4, 641-646. | 12.9 | 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 magmaÂemplacement. Nature Geoscience, 2010, 3, 491-495. | 12.9 | 104 |
| 67 | Constraints on lithosphere net rotation and asthenospheric viscosity from global mantle flow models and seismic anisotropy. Geochemistry, Geophysics, Geosystems, 2010, 11, . | 2.5 | 132 |
| 68 | Thermalâ€mechanical behavior of oceanic transform faults: Implications for the spatial distribution of seismicity. Geochemistry, Geophysics, Geosystems, 2010, 11, . | 2.5 | 78 |
| 69 | Deep pooling of low degree melts and volatile fluxes at the 85Â°E segment of the Gakkel Ridge: Evidence from olivine-hosted melt inclusions and glasses. Earth and Planetary Science Letters, 2010, 289, 311-322. | 4.4 | 105 |
| 70 | Implications of grain size evolution on the seismic structure of the oceanic upper mantle. Earth and Planetary Science Letters, 2009, 282, 178-189. | 4.4 | 118 |
| 71 | Melt generation, crystallization, and extraction beneath segmented oceanic transform faults. Journal of Geophysical Research, 2009, 114, . | 3.3 | 71 |
| 72 | Constraints on the lake volume required for hydroâ€fracture through ice sheets. Geophysical Research Letters, 2009, 36, . | 4.0 | 105 |

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| 73 | Reconstruction of the Talkeetna intraoceanic arc of Alaska through thermobarometry. Journal of Geophysical Research, 2008, 113, . | 3.3 | 75 |
| 74 | Magmatic and tectonic extension at midâ€ocean ridges: 1. Controls on fault characteristics. Geochemistry, Geophysics, Geosystems, 2008, 9, . | 2.5 | 100 |
| 75 | Magmatic and tectonic extension at midâ€ocean ridges: 2. Origin of axial morphology. Geochemistry, Geophysics, Geosystems, 2008, 9, . | 2.5 | 66 |
| 76 | A community benchmark for subduction zone modeling. Physics of the Earth and Planetary Interiors, 2008, 171, 187-197. | 1.9 | 187 |
| 77 | Mid-ocean ridge jumps associated with hotspot magmatism. Earth and Planetary Science Letters, 2008, 266, 256-270. | 4.4 | 75 |
| 78 | Intermittent Plate Tectonics?. Science, 2008, 319, 85-88. | 12.6 | 180 |
| 79 | Role of melt supply in oceanic detachment faulting and formation of megamullions. Geology, 2008, 36, 455. | 4.4 | 245 |
| 80 | Fracture Propagation to the Base of the Greenland Ice Sheet During Supraglacial Lake Drainage. Science, 2008, 320, 778-781. | 12.6 | 497 |
| 81 | Thermal structure of oceanic transform faults. Geology, 2007, 35, 307. | 4.4 | 100 |
| 82 | Trench-Parallel Anisotropy Produced by Foundering of Arc Lower Crust. Science, 2007, 317, 108-111. | 12.6 | 92 |
| 83 | Global mantle flow and the development of seismic anisotropy: Differences between the oceanic and continental upper mantle. Journal of Geophysical Research, 2007, 112, . | 3.3 | 134 |
| 84 | A constitutive model for layer development in shear zones near the brittle-ductile transition. Geophysical Research Letters, 2007, 34, . | 4.0 | 34 |
| 85 | Mantle flow and melting underneath oblique and ultraslow midâ€ocean ridges. Geophysical Research Letters, 2007, 34, . | 4.0 | 64 |
| 86 | Spreading rate dependence of gravity anomalies along oceanic transform faults. Nature, 2007, 448, 183-187. | 27.8 | 63 |
| 87 | Automated Analysis of Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectra of Natural Organic Matter. Analytical Chemistry, 2006, 78, 4363-4373. | 6.5 | 335 |
| 88 | Stability of arc lower crust: Insights from the Talkeetna arc section, south central Alaska, and the seismic structure of modern arcs. Journal of Geophysical Research, 2006, 111, n/a-n/a. | 3.3 | 115 |
| 89 | Understanding cratonic flood basalts. Earth and Planetary Science Letters, 2006, 245, 190-201. | 4.4 | 69 |
| 90 | Periodic slow earthquakes on the flank of KÄ«lauea volcano, HawaiÊ»i. Earth and Planetary Science Letters, 2006, 246, 207-216. | 4.4 | 72 |

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| 91 | Topographic controls on dike injection in volcanic rift zones. Earth and Planetary Science Letters, 2006, 246, 188-196. | 4.4 | 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. Earth and Planetary Science Letters, 2005, 234, 401-419. | 4.4 | 129 |
| 93 | Detection of upper mantle flow associated with the African Superplume. Earth and Planetary Science Letters, 2004, 224, 259-274. | 4.4 | 151 |
| 94 | Effect of the GalÃ¡pagos hotspot on seafloor volcanism along the GalÃ¡pagos Spreading Center (90.9â€“97.6Â°W). Earth and Planetary Science Letters, 2004, 217, 331-347. | 4.4 | 41 |
| 95 | Relationship between seismic P-wave velocity and the composition of anhydrous igneous and meta-igneous rocks. Geochemistry, Geophysics, Geosystems, 2003, 4, n/a-n/a. | 2.5 | 105 |
| 96 | Morphology and segmentation of the western GalÃ¡pagos Spreading Center, 90.5Â°-98Â°W: Plume-ridge interaction at an intermediate spreading ridge. Geochemistry, Geophysics, Geosystems, 2003, 4, . | 2.5 | 68 |
| 97 | Mechanisms of normal fault development at mid-ocean ridges. Journal of Geophysical Research, 2002, 107, EPM 7-1-EPM 7-17. | 3.3 | 35 |
| 98 | Correlated geophysical, geochemical, and volcanological manifestations of plume-ridge interaction along the GalÃ¡pagos Spreading Center. Geochemistry, Geophysics, Geosystems, 2002, 3, 1-14. | 2.5 | 119 |
| 99 | Evidence for weak oceanic transform faults. Geophysical Research Letters, 2002, 29, 60-1-60-4. | 4.0 | 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. Earth and Planetary Science Letters, 2002, 202, 725-740. | 4.4 | 64 |
| 101 | A comparison of ocean topography derived from the Shuttle Laser Altimeter-01 and TOPEX/POSEIDON. IEEE Transactions on Geoscience and Remote Sensing, 2000, 38, 1425-1438. | 6.3 | 7 |
| 102 | Segmentation in gravity and magnetic anomalies along the U.S. East Coast passive margin: Implications for incipient structure of the oceanic lithosphere. Journal of Geophysical Research, 2000, 105, 25769-25790. | 3.3 | 51 |
| 103 | A three-dimensional gravity model of the southern contact of the Sebago pluton, Maine. Canadian Journal of Earth Sciences, 1998, 35, 649-656. | 1.3 | 3 |