Bernhard Steinberger

List of Publications by Year
in descending order

98 papers	11,001 citations	31976 53 h-index	39675 94 g-index
113 all docs	113 docs citations	113 times ranked	6200 citing authors

#	Article	IF	Citations
1	Phanerozoic polar wander, palaeogeography and dynamics. Earth-Science Reviews, 2012, 114, 325-368.	9.1	1,088
2	Long-Term Sea-Level Fluctuations Driven by Ocean Basin Dynamics. Science, 2008, 319, 1357-1362.	12.6	610
3	Global plate motion frames: Toward a unified model. Reviews of Geophysics, 2008, 46, .	23.0	531
4	Plume Generation Zones at the margins of Large Low Shear Velocity Provinces on the coreâ€“mantle boundary. Earth and Planetary Science Letters, 2008, 265, 49-60.	4.4	422
5	Diamonds sampled by plumes from the coreâ€“mantle boundary. Nature, 2010, 466, 352-355.	27.8	399
6	The Emperor Seamounts: Southward Motion of the Hawaiian Hotspot Plume in Earth's Mantle. Science, 2003, 301, 1064-1069.	12.6	375
7	Plumes in a convecting mantle: Models and observations for individual hotspots. Journal of Geophysical Research, 2000, 105, 11127-11152.	3.3	341
8	Prediction of Emperor-Hawaii seamount locations from a revised model of global plate motion and mantle flow. Nature, 2004, 430, 167-173.	27.8	324
9	Acceleration and deceleration of India-Asia convergence since the Cretaceous: Roles of mantle plumes and continental collision. Journal of Geophysical Research, 2011, 116, .	3.3	315
10	Advection of plumes in mantle flow: implications for hotspot motion, mantle viscosity and plume distribution. Geophysical Journal International, 1998, 132, 412-434.	2.4	289
11	Large igneous provinces generated from the margins of the large low-velocity provinces in the deep mantle. Geophysical Journal International, 2006, 167, 1447-1460.	2.4	280
12	Absolute plate motions in a reference frame defined by moving hot spots in the Pacific, Atlantic, and Indian oceans. Journal of Geophysical Research, 2012, 117, .	3.3	252
13	Models of large-scale viscous flow in the Earth's mantle with constraints from mineral physics and surface observations. Geophysical Journal International, 2006, 167, 1461-1481.	2.4	249
14	Origin of anomalous subsidence along the Northern South China Sea margin and its relationship to dynamic topography. Marine and Petroleum Geology, 2006, 23, 745-765.	3.3	242
15	On the uncertainties in hot spot reconstructions and the significance of moving hot spot reference frames. Geochemistry, Geophysics, Geosystems, 2005, 6, n/a-n/a.	2.5	237
16	Absolute plate motions and true polar wander in the absence of hotspot tracks. Nature, 2008, 452, 620-623.	27.8	213
17	Geodynamics of the Yellowstone hotspot and mantle plume: Seismic and GPS imaging, kinematics, and mantle flow. Journal of Volcanology and Geothermal Research, 2009, 188, 26-56.	2.1	210
18	Deep mantle structure as a reference frame for movements in and on the Earth. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 8735-8740.	7.1	200

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19	New seismic constraints on the upper mantle structure of the Hainan plume. Physics of the Earth and Planetary Interiors, 2009, 173, 33-50.	1.9	176
20	Changes of the Earth's rotation axis owing to advection of mantle density heterogeneities. Nature, 1997, 387, 169-173.	27.8	160
21	Possible links between long-term geomagnetic variations and whole-mantle convection processes. Nature Geoscience, 2012, 5, 526-533.	12.9	152
22	Plate tectonics and net lithosphere rotation over the past 150 My. Earth and Planetary Science Letters, 2010, 291, 106-112.	4.4	150
23	A Precambrian microcontinent in the Indian Ocean. Nature Geoscience, 2013, 6, 223-227.	12.9	147
24	Longitude: Linking Earth's ancient surface to its deep interior. Earth and Planetary Science Letters, 2008, 276, 273-282.	4.4	146
25	A geodynamic model of plumes from the margins of Large Low Shear Velocity Provinces. Geochemistry, Geophysics, Geosystems, 2012, 13, .	2.5	142
26	Long term stability in deep mantle structure: Evidence from the ~ 300ÂMa Skagerrak-Centered Large Igneous Province (the SCLIP). Earth and Planetary Science Letters, 2008, 267, 444-452.	4.4	136
27	Large-scale lithospheric stress field and topography induced by global mantle circulation. Earth and Planetary Science Letters, 2001, 186, 75-91.	4.4	132
28	Implications of a nonlinear40Ar/39Ar age progression along the Louisville seamount trail for models of fixed and moving hot spots. Geochemistry, Geophysics, Geosystems, 2004, 5, .	2.5	107
29	Continental crust beneath southeast Iceland. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E1818-27.	7.1	102
30	The supercontinent cycle. Nature Reviews Earth & Environment, 2021, 2, 358-374.	29.7	102
31	Slabs in the lower mantle â€" results of dynamic modelling compared with tomographic images and the geoid. Physics of the Earth and Planetary Interiors, 2000, 118, 241-257.	1.9	98
32	Genesis of the Western Samoa seamount province: age, geochemical fingerprint and tectonics. Earth and Planetary Science Letters, 2004, 227, 37-56.	4.4	96
33	Effects of latent heat release at phase boundaries on flow in the Earthâ€™s mantle, phase boundary topography and dynamic topography at the Earthâ€™s surface. Physics of the Earth and Planetary Interiors, 2007, 164, 2-20.	1.9	96
34	Constraints on past plate and mantle motion from new ages for the Hawaiianâ€Emperor Seamount Chain. Geochemistry, Geophysics, Geosystems, 2013, 14, 4564-4584.	2.5	95
35	Mantle plumes: Dynamic models and seismic images. Geochemistry, Geophysics, Geosystems, 2007, 8, .	2.5	92
36	Melting at the base of the Greenland ice sheet explained by Iceland hotspot history. Nature Geoscience, 2016, 9, 366-369.	12.9	91

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37	Geodynamic implications of moving Indian Ocean hotspots. Earth and Planetary Science Letters, 2003, 215, 151-168.	4.4	84
38	Conduit diameter and buoyant rising speed of mantle plumes: Implications for the motion of hot spots and shape of plume conduits. Geochemistry, Geophysics, Geosystems, 2006, 7, n/a-n/a.	2.5	84
39	Subsidence in intracontinental basins due to dynamic topography. Physics of the Earth and Planetary Interiors, 2008, 171, 252-264.	1.9	82
40	Pacificâ€Panthalassic Reconstructions: Overview, Errata and the Way Forward. Geochemistry, Geophysics, Geosystems, 2019, 20, 3659-3689.	2.5	79
41	Mantle plumes and their role in Earth processes. Nature Reviews Earth & Environment, 2021, 2, 382-401.	29.7	78
42	Stability of active mantle upwelling revealed by net characteristics of plate tectonics. Nature, 2013, 498, 479-482.	27.8	71
43	A comparison of lithospheric thickness models. Tectonophysics, 2018, 746, 325-338.	2.2	69
44	Pacific plate motion change caused the Hawaiian-Emperor Bend. Nature Communications, 2017, 8, 15660.	12.8	68
45	Topography caused by mantle density variations: observation-based estimates and models derived from tomography and lithosphere thickness. Geophysical Journal International, 2016, 205, 604-621.	2.4	67
46	Integrating deep Earth dynamics in paleogeographic reconstructions of Australia. Tectonophysics, 2010, 483, 135-150.	2.2	64
47	Survival of LLSVPs for billions of years in a vigorously convecting mantle: Replenishment and destruction of chemical anomaly. Journal of Geophysical Research: Solid Earth, 2015, 120, 3824-3847.	3.4	64
48	On the role of slab pull in the Cenozoic motion of the Pacific plate. Geophysical Research Letters, 2012, 39, .	4.0	62
49	Deep versus shallow origin of gravity anomalies, topography and volcanism on Earth, Venus and Mars. Icarus, 2010, 207, 564-577.	2.5	60
50	A failure to reject: Testing the correlation between large igneous provinces and deep mantle structures with EDF statistics. Geochemistry, Geophysics, Geosystems, 2016, 17, 1130-1163.	2.5	60
51	Earth evolution and dynamicsâ€"a tribute to Kevin Burke. Canadian Journal of Earth Sciences, 2016, 53, 1073-1087.	1.3	60
52	Mantle flow models with coreâ€mantle boundary constraints and chemical heterogeneities in the lowermost mantle. Journal of Geophysical Research, 2008, 113, .	3.3	58
53	Toward an explanation for the present and past locations of the poles. Geochemistry, Geophysics, Geosystems, 2010, 11, .	2.5	58
54	Widespread volcanism in the Greenlandâ€"North Atlantic region explained by the Iceland plume. Nature Geoscience, 2019, 12, 61-68.	12.9	57

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55	On the relative motions of long-lived Pacific mantle plumes. Nature Communications, 2018, 9, 854.	12.8	55
56	A record of plume-induced plate rotation triggering subduction initiation. Nature Geoscience, 2021, 14, 626-630.	12.9	50
57	Movement of magnetic bacteria in time-varying magnetic fields. Journal of Fluid Mechanics, 1994, 273, 189-211.	3.4	47
58	Plate-tectonic reconstructions predict part of the Hawaiian hotspot track to be preserved in the Bering Sea. Geology, 2007, 35, 407.	4.4	47
59	Paleolatitudes of the Kerguelen hotspot: new paleomagnetic results and dynamic modeling. Earth and Planetary Science Letters, 2002, 203, 635-650.	4.4	45
60	Subduction to the lower mantle â€“ a comparison between geodynamic and tomographic models. Solid Earth, 2012, 3, 415-432.	2.8	41
61	Major influence of plumeâ€ridge interaction, lithosphere thickness variations, and global mantle flow on hotspot volcanismâ€"The example of <scp>T</scp>ristan. Geochemistry, Geophysics, Geosystems, 2016, 17, 1454-1479.	2.5	41
62	What drives 20th century polar motion?. Earth and Planetary Science Letters, 2018, 502, 126-132.	4.4	40
63	The key role of global solidâ€Earth processes in preconditioning Greenland's glaciation since the Pliocene. Terra Nova, 2015, 27, 1-8.	2.1	38
64	The Importance of Upper Mantle Heterogeneity in Generating the Indian Ocean Geoid Low. Geophysical Research Letters, 2017, 44, 9707-9715.	4.0	37
65	Effects of mantle flow on hotspot motion. Geophysical Monograph Series, 2000, , 377-398.	0.1	35
66	Motion of the Easter hot spot relative to Hawaii and Louisville hot spots. Geochemistry, Geophysics, Geosystems, 2002, 3, 1-27.	2.5	33
67	The effect of the large-scale mantle flow field on the Iceland hotspot track. Tectonophysics, 2008, 447, 5-18.	2.2	33
68	Could the mantle have caused subsidence of the Congo Basin?. Tectonophysics, 2012, 514-517, 62-80.	2.2	32
69	Inferences on the mantle viscosity structure and the post-overturn evolutionary state of Venus. Icarus, 2018, 313, 107-123.	2.5	32
70	On the amplitude of dynamic topography at spherical harmonic degree two. Tectonophysics, 2019, 760, 221-228.	2.2	32
71	On the statistical significance of correlations between synthetic mantle plumes and tomographic models. Physics of the Earth and Planetary Interiors, 2008, 167, 230-238.	1.9	31
72	How plumeâ€ridge interaction shapes the crustal thickness pattern of the <scp>R</scp>Ã©union hotspot track. Geochemistry, Geophysics, Geosystems, 2017, 18, 2930-2948.	2.5	26

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73	Effects of upper mantle heterogeneities on the lithospheric stress field and dynamic topography. Solid Earth, 2018, 9, 649-668.	2.8	22
74	The convective mantle flow signal in rates of true polar wander. Geodynamic Series, 2002, , 233-256.	0.1	21
75	Spatial Characteristics of Recycled and Primordial Reservoirs in the Deep Mantle. Geochemistry, Geophysics, Geosystems, 2021, 22, e2020GC009525.	2.5	20
76	Influence of variable uncertainties in seismic tomography models on constraining mantle viscosity from geoid observations. Physics of the Earth and Planetary Interiors, 2011, 184, 51-62.	1.9	18
77	Variable Melt Production Rate of the Kerguelen HotSpot Due To Longâ€Term Plumeâ€Ridge Interaction. Geophysical Research Letters, 2018, 45, 126-136.	4.0	17
78	Modelled palaeolatitudes for the Louisville hot spot and the Ontong Java Plateau. Geological Society Special Publication, 2004, 229, 21-30.	1.3	15
79	Seismic structure of the lithosphere beneath <scp>NW</scp><scp>N</scp>amibia: Impact of the <scp>T</scp>ristan da <scp>C</scp>unha mantle plume. Geochemistry, Geophysics, Geosystems, 2017, 18, 125-141.	2.5	14
80	Mantle flow influence on subduction evolution. Earth and Planetary Science Letters, 2018, 489, 258-266.	4.4	14
81	Evaluating the Influence of Plate Boundary Friction and Mantle Viscosity on Plate Velocities. Geochemistry, Geophysics, Geosystems, 2018, 19, 642-666.	2.5	13
82	Glacialâ€Isostatic Adjustment Models Using Geodynamically Constrained 3D Earth Structures. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009853.	2.5	13
83	Limited true polar wander as evidence that Earth's nonhydrostatic shape is persistently triaxial. Geophysical Research Letters, 2017, 44, 827-834.	4.0	12
84	Yellowstone Plume Conduit Tilt Caused by Largeâ€Scale Mantle Flow. Geochemistry, Geophysics, Geosystems, 2019, 20, 5896-5912.	2.5	11
85	Mantle convection and possible mantle plumes beneath Antarctica â€" insights from geodynamic models and implications for topography. Geological Society Memoir, 2023, 56, 253-266.	1.7	10
86	The Indian Ocean Geoid Low at a plume-slab overpass. Tectonophysics, 2021, 817, 229037.	2.2	9
87	On the effect of a low viscosity asthenosphere on the temporal change of the geoidâ€"A challenge for future gravity missions. Journal of Geodynamics, 2005, 39, 493-511.	1.6	8
88	Interior structure of the Moon: Constraints from seismic tomography, gravity and topography. Physics of the Earth and Planetary Interiors, 2015, 245, 26-39.	1.9	8
89	Comparison of gravimetric and mantle flow solutions for sub-lithopsheric stress modeling and their combination. Geophysical Journal International, 2018, 213, 1013-1028.	2.4	8
90	An explanation for the shape of Earth's gravity spectrum based on viscous mantle flow models. Geophysical Research Letters, 2002, 29, 15-1.	4.0	6

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91	Reconstructing Earth History in Three Dimensions. Science, 2008, 322, 866-868.	12.6	6
92	Why is the areoid like the residual geoid?. Geophysical Research Letters, 2012, 39, .	4.0	6
93	MANTLE PLUMES AND HOT SPOTS. , 2005, , 335-343.		1
94	Mantle Plumes and Hotspots. , 2013, , .		0
95	Conrad et al. reply. Nature, 2013, 503, E4-E4.	27.8	0
96	Dynamic Topography. , 2015, , .		0
97	Two models in one. , 2003, , 1029-1033.		0
98	Increased density of large low-velocity provinces recovered by seismologically constrained gravity inversion. Solid Earth, 2020, 11, 1551-1569.	2.8	0