Bruce A Buffett

List of Publications by Year
in descending order

72 papers	4,836 citations	109264 35 h-index	91828 69 g-index
74 all docs	74 docs citations	74 times ranked	3374 citing authors

#	Article	IF	Citations
1	Coreâ€“mantle boundary heat flow. Nature Geoscience, 2008, 1, 25-32.	5.4	412
2	Global inventory of methane clathrate: sensitivity to changes in the deep ocean. Earth and Planetary Science Letters, 2004, 227, 185-199.	1.8	377
3	Ocean methane hydrates as a slow tipping point in the global carbon cycle. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 20596-20601.	3.3	313
4	Clathrate Hydrates. Annual Review of Earth and Planetary Sciences, 2000, 28, 477-507.	4.6	242
5	Estimates of heat flow in the deep mantle based on the power requirements for the geodynamo. Geophysical Research Letters, 2002, 29, 7-1.	1.5	221
6	On the thermal evolution of the Earth's core. Journal of Geophysical Research, 1996, 101, 7989-8006.	3.3	206
7	Geodynamic estimates of the viscosity of the Earth's inner core. Nature, 1997, 388, 571-573.	13.7	164
8	Geomagnetic fluctuations reveal stable stratification at the top of the Earthâ€™s core. Nature, 2014, 507, 484-487.	13.7	161
9	The strength and efficiency of thermal and compositional convection in the geodynamo. Physics of the Earth and Planetary Interiors, 1995, 91, 17-30.	0.7	155
10	Phase equilibrium of gas hydrate: Implications for the formation of hydrate in the deep sea floor. Geophysical Research Letters, 1997, 24, 1567-1570.	1.5	150
11	Stratification of the outer core at the core-mantle boundary. Physics of the Earth and Planetary Interiors, 1998, 105, 5-19.	0.7	137
12	Analytical model for solidification of the Earth's core. Nature, 1992, 356, 329-331.	13.7	125
13	Kinetics and Stability of CH4-CO2 Mixed Gas Hydrates during Formation and Long-Term Storage. ChemPhysChem, 2005, 6, 646-654.	1.0	121
14	GEOPHYSICS: The Thermal State of Earth's Core. Science, 2003, 299, 1675-1677.	6.0	119
15	Gravitational oscillations in the length of day. Geophysical Research Letters, 1996, 23, 2279-2282.	1.5	113
16	Sources of methane for marine gas hydrate: inferences from a comparison of observations and numerical models. Earth and Planetary Science Letters, 2003, 206, 51-63.	1.8	104
17	Stratification of the top of the core due to chemical interactions with the mantle. Journal of Geophysical Research, 2010, 115, .	3.3	104
18	Detection of a gravitational oscillation in length-of-day. Earth and Planetary Science Letters, 2006, 243, 383-389.	1.8	102

#	Article	IF	Citations
19	Spectroscopic Observations and Thermodynamic Calculations on Clathrate Hydrates of Mixed Gas Containing Methane and Ethane:Â Determination of Structure, Composition and Cage Occupancy. Journal of Physical Chemistry B, 2002, 106, 12426-12431.	1.2	98
20	A mechanism for decade fluctuations in the length of day. Geophysical Research Letters, 1996, 23, 3803-3806.	1.5	83
21	The importance of ocean temperature to global biogeochemistry. Earth and Planetary Science Letters, 2004, 222, 333-348.	1.8	74
22	Gravitational braking of inner-core rotation in geodynamo simulations. Geophysical Research Letters, 2000, 27, 3125-3128.	1.5	70
23	Performance benchmarks for a next generation numerical dynamo model. Geochemistry, Geophysics, Geosystems, 2016, 17, 1586-1607.	1.0	66
24	Tidal dissipation and the strength of the Earthâ€™s internal magnetic field. Nature, 2010, 468, 952-954.	13.7	65
25	Evidence for MAC waves at the top of Earth's core and implications for variations in length of day. Geophysical Journal International, 2016, 204, 1789-1800.	1.0	63
26	Plate bending at subduction zones: Consequences for the direction of plate motions. Earth and Planetary Science Letters, 2006, 245, 359-364.	1.8	60
27	Scaling behaviour in Rayleighâ€“BÃ©nard convection with and without rotation. Journal of Fluid Mechanics, 2013, 717, 449-471.	1.4	60
28	Inversion of torsional oscillations for the structure and dynamics of Earth's core. Geophysical Journal International, 2009, 177, 878-890.	1.0	58
29	Stability and accuracy of free surface time integration in viscous flows. Physics of the Earth and Planetary Interiors, 2017, 262, 90-100.	0.7	53
30	Past and present seafloor age distributions and the temporal evolution of plate tectonic heat transport. Earth and Planetary Science Letters, 2009, 278, 233-242.	1.8	50
31	Onset and orientation of convection in the inner core. Geophysical Journal International, 2009, 179, 711-719.	1.0	49
32	A comparison of subgrid-scale models for large-eddy simulations of convection in the Earth's core. Geophysical Journal International, 2003, 153, 753-765.	1.0	43
33	Considerations concerning the non-rigid Earth nutation theory. Celestial Mechanics and Dynamical Astronomy, 1998, 72, 245-309.	0.5	41
34	Mass transport mechanism between the upper and lower mantle in numerical simulations of thermochemical mantle convection with multicomponent phase changes. Earth and Planetary Science Letters, 2005, 230, 11-27.	1.8	41
35	Enhanced Core-Mantle Coupling Due to Stratification at the Top of the Core. Frontiers in Earth Science, 2018, 6, .	0.8	36
36	Overriding plate thickness control on subducting plate curvature. Geophysical Research Letters, 2015, 42, 3802-3810.	1.5	32

#	Article	IF	Citations
37	metastability of gas hydrate. Geophysical Research Letters, 1999, 26, 2981-2984.	1.5	31
38	Accumulation and release of methane from clathrates below the Laurentide and Cordilleran ice sheets. Global and Planetary Change, 2006, 53, 176-187.	1.6	26
39	Chemical stratification at the top of Earth's core: Constraints from observations of nutations. Earth and Planetary Science Letters, 2010, 296, 367-372.	1.8	26
40	Sub-grid scale model for convection-driven dynamos in a rotating plane layer. Physics of the Earth and Planetary Interiors, 2005, 153, 108-123.	0.7	25
41	A stochastic model for palaeomagnetic field variations. Geophysical Journal International, 2013, 195, 86-97.	1.0	24
42	A comparison of geodetic and seismic estimates of inner-core rotation. Geophysical Research Letters, 1999, 26, 1509-1512.	1.5	23
43	A power spectrum for the geomagnetic dipole moment. Earth and Planetary Science Letters, 2015, 411, 20-26.	1.8	23
44	Multiscale convection in a geodynamo simulation with uniform heat flux along the outer boundary. Geochemistry, Geophysics, Geosystems, 2014, 15, 3212-3225.	1.0	22
45	C On the Velocity and Magnetic Fields At the Top of the Core. Geophysical Journal International, 1996, 125, 303-317.	1.0	21
46	Deformation of Earth's inner core by electromagnetic forces. Geophysical Research Letters, 2000, 27, 4001-4004.	1.5	21
47	Equatorially trapped waves in Earthâ€™s core. Geophysical Journal International, 2019, 218, 1210-1225.	1.0	21
48	Topography- and fracture-driven fluid focusing in layered ocean sediments. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	19
49	A physical interpretation of stochastic models for fluctuations in the Earth's dipole field. Geophysical Journal International, 2014, 198, 597-608.	1.0	18
50	Magnetic damping of the translational oscillations of the inner core. Geophysical Journal International, 1995, 120, 103-110.	1.0	16
51	Multidisciplinary Constraints on the Thermalâ€Chemical Boundary Between Earth's Core and Mantle. Geochemistry, Geophysics, Geosystems, 2022, 23, .	1.0	15
52	A comprehensive model for the kyr and Myr timescales of Earth's axial magnetic dipole field. Nonlinear Processes in Geophysics, 2019, 26, 123-142.	0.6	13
53	Decomposition of Geomagnetic Secular Acceleration Into Traveling Waves Using Complex Empirical Orthogonal Functions. Geophysical Research Letters, 2020, 47, e2020GL087940.	1.5	13
54	Geomagnetism under scrutiny. Nature, 2012, 485, 319-320.	13.7	12

#	Article	IF	Citations
55	Dipole fluctuations and the duration of geomagnetic polarity transitions. Geophysical Research Letters, 2015, 42, 7444-7451.	1.5	11
56	Influence of magnetic field configuration on magnetohydrodynamic waves in Earthâ€™s core. Physics of the Earth and Planetary Interiors, 2018, 277, 1-9.	0.7	11
57	Submarine groundwater discharge as a possible formation mechanism for permafrostâ€associated gas hydrate on the circumâ€Arctic continental shelf. Journal of Geophysical Research: Solid Earth, 2016, 121, 1383-1404.	1.4	10
58	Constructing stochastic models for dipole fluctuations from paleomagnetic observations. Physics of the Earth and Planetary Interiors, 2017, 272, 68-77.	0.7	10
59	A Probabilistic Assessment of the Next Geomagnetic Reversal. Geophysical Research Letters, 2018, 45, 1845-1850.	1.5	8
60	Inferring core processes using stochastic models of the geodynamo. Geophysical Journal International, 2021, 228, 1478-1493.	1.0	8
61	Stochastic generation of MAC waves and implications for convection in Earthâ€™s core. Geophysical Journal International, 2018, 212, 1523-1535.	1.0	7
62	Large-eddy simulations of convection-driven dynamos using a dynamic scale-similarity model. Geophysical and Astrophysical Fluid Dynamics, 2012, 106, 250-276.	0.4	6
63	Use of cosmogenic ¹²⁹I to constrain numerical models of fluid flow in marine sediments: Application to the Blake Ridge Hydrate Province. Geochemistry, Geophysics, Geosystems, 2013, 14, 1343-1357.	1.0	5
64	Signatures of Highâ€Latitude Waves in Observations of Geomagnetic Acceleration. Geophysical Research Letters, 2021, 48, e2021GL094692.	1.5	5
65	A matter of boundaries. Nature Geoscience, 2009, 2, 741-742.	5.4	4
66	The Enigmatic Inner Core. Science, 2010, 328, 982-983.	6.0	3
67	Probabilistic structure of the geodynamo. Physical Review E, 2018, 98, .	0.8	3
68	The fluid dynamics of inner-core growth. Physics of the Earth and Planetary Interiors, 2015, 243, 22-29.	0.7	2
69	Another energy source for the geodynamo. Nature, 2016, 529, 288-289.	13.7	2
70	Extracting waves from noisy geomagnetic data â€“ A synthetic study of equatorially trapped waves in Earthâ€™s core. Physics of the Earth and Planetary Interiors, 2019, 286, 81-91.	0.7	2
71	How Does Temporal Resolution Influence Geomagnetic Reversal Statistics?. Geophysical Research Letters, 2019, 46, 5146-5152.	1.5	1
72	Variability of Millennialâ€Scale Trends in the Geomagnetic Axial Dipole. Geophysical Research Letters, 2019, 46, 14450-14458.	1.5	1