

# Bruce A Buffett

## List of Publications by Year in descending order

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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	Multidisciplinary Constraints on the Thermal-Chemical Boundary Between Earth's Core and Mantle. <i>Geochemistry, Geophysics, Geosystems</i> , 2022, 23, .	1.0	15
2	Inferring core processes using stochastic models of the geodynamo. <i>Geophysical Journal International</i> , 2021, 228, 1478-1493.	1.0	8
3	Signatures of High-Latitude Waves in Observations of Geomagnetic Acceleration. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL094692.	1.5	5
4	Decomposition of Geomagnetic Secular Acceleration Into Traveling Waves Using Complex Empirical Orthogonal Functions. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL087940.	1.5	13
5	A comprehensive model for the kyr and Myr timescales of Earth's axial magnetic dipole field. <i>Nonlinear Processes in Geophysics</i> , 2019, 26, 123-142.	0.6	13
6	Extracting waves from noisy geomagnetic data – A synthetic study of equatorially trapped waves in Earth's core. <i>Physics of the Earth and Planetary Interiors</i> , 2019, 286, 81-91.	0.7	2
7	Equatorially trapped waves in Earth's core. <i>Geophysical Journal International</i> , 2019, 218, 1210-1225.	1.0	21
8	How Does Temporal Resolution Influence Geomagnetic Reversal Statistics?. <i>Geophysical Research Letters</i> , 2019, 46, 5146-5152.	1.5	1
9	Variability of Millennial-Scale Trends in the Geomagnetic Axial Dipole. <i>Geophysical Research Letters</i> , 2019, 46, 14450-14458.	1.5	1
10	A Probabilistic Assessment of the Next Geomagnetic Reversal. <i>Geophysical Research Letters</i> , 2018, 45, 1845-1850.	1.5	8
11	Stochastic generation of MAC waves and implications for convection in Earth's core. <i>Geophysical Journal International</i> , 2018, 212, 1523-1535.	1.0	7
12	Influence of magnetic field configuration on magnetohydrodynamic waves in Earth's core. <i>Physics of the Earth and Planetary Interiors</i> , 2018, 277, 1-9.	0.7	11
13	Enhanced Core-Mantle Coupling Due to Stratification at the Top of the Core. <i>Frontiers in Earth Science</i> , 2018, 6, .	0.8	36
14	Probabilistic structure of the geodynamo. <i>Physical Review E</i> , 2018, 98, .	0.8	3
15	Constructing stochastic models for dipole fluctuations from paleomagnetic observations. <i>Physics of the Earth and Planetary Interiors</i> , 2017, 272, 68-77.	0.7	10
16	Stability and accuracy of free surface time integration in viscous flows. <i>Physics of the Earth and Planetary Interiors</i> , 2017, 262, 90-100.	0.7	53
17	Submarine groundwater discharge as a possible formation mechanism for permafrost-associated gas hydrate on the circum-Arctic continental shelf. <i>Journal of Geophysical Research: Solid Earth</i> , 2016, 121, 1383-1404.	1.4	10
18	Performance benchmarks for a next generation numerical dynamo model. <i>Geochemistry, Geophysics, Geosystems</i> , 2016, 17, 1586-1607.	1.0	66

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19	Another energy source for the geodynamo. <i>Nature</i> , 2016, 529, 288-289.	13.7	2
20	Evidence for MAC waves at the top of Earth's core and implications for variations in length of day. <i>Geophysical Journal International</i> , 2016, 204, 1789-1800.	1.0	63
21	Dipole fluctuations and the duration of geomagnetic polarity transitions. <i>Geophysical Research Letters</i> , 2015, 42, 7444-7451.	1.5	11
22	Overriding plate thickness control on subducting plate curvature. <i>Geophysical Research Letters</i> , 2015, 42, 3802-3810.	1.5	32
23	The fluid dynamics of inner-core growth. <i>Physics of the Earth and Planetary Interiors</i> , 2015, 243, 22-29.	0.7	2
24	A power spectrum for the geomagnetic dipole moment. <i>Earth and Planetary Science Letters</i> , 2015, 411, 20-26.	1.8	23
25	Geomagnetic fluctuations reveal stable stratification at the top of the Earth's core. <i>Nature</i> , 2014, 507, 484-487.	13.7	161
26	Multiscale convection in a geodynamo simulation with uniform heat flux along the outer boundary. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 3212-3225.	1.0	22
27	A physical interpretation of stochastic models for fluctuations in the Earth's dipole field. <i>Geophysical Journal International</i> , 2014, 198, 597-608.	1.0	18
28	Scaling behaviour in Rayleigh-Bénard convection with and without rotation. <i>Journal of Fluid Mechanics</i> , 2013, 717, 449-471.	1.4	60
29	A stochastic model for palaeomagnetic field variations. <i>Geophysical Journal International</i> , 2013, 195, 86-97.	1.0	24
30	Use of cosmogenic <sup>129</sup> I to constrain numerical models of fluid flow in marine sediments: Application to the Blake Ridge Hydrate Province. <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 1343-1357.	1.0	5
31	Geomagnetism under scrutiny. <i>Nature</i> , 2012, 485, 319-320.	13.7	12
32	Large-eddy simulations of convection-driven dynamos using a dynamic scale-similarity model. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 2012, 106, 250-276.	0.4	6
33	Topography- and fracture-driven fluid focusing in layered ocean sediments. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	1.5	19
34	Tidal dissipation and the strength of the Earth's internal magnetic field. <i>Nature</i> , 2010, 468, 952-954.	13.7	65
35	The Enigmatic Inner Core. <i>Science</i> , 2010, 328, 982-983.	6.0	3
36	Stratification of the top of the core due to chemical interactions with the mantle. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	104

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37	Chemical stratification at the top of Earth's core: Constraints from observations of nutations. <i>Earth and Planetary Science Letters</i> , 2010, 296, 367-372.	1.8	26
38	Ocean methane hydrates as a slow tipping point in the global carbon cycle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 20596-20601.	3.3	313
39	Inversion of torsional oscillations for the structure and dynamics of Earth's core. <i>Geophysical Journal International</i> , 2009, 177, 878-890.	1.0	58
40	Onset and orientation of convection in the inner core. <i>Geophysical Journal International</i> , 2009, 179, 711-719.	1.0	49
41	A matter of boundaries. <i>Nature Geoscience</i> , 2009, 2, 741-742.	5.4	4
42	Past and present seafloor age distributions and the temporal evolution of plate tectonic heat transport. <i>Earth and Planetary Science Letters</i> , 2009, 278, 233-242.	1.8	50
43	Core-mantle boundary heat flow. <i>Nature Geoscience</i> , 2008, 1, 25-32.	5.4	412
44	Detection of a gravitational oscillation in length-of-day. <i>Earth and Planetary Science Letters</i> , 2006, 243, 383-389.	1.8	102
45	Plate bending at subduction zones: Consequences for the direction of plate motions. <i>Earth and Planetary Science Letters</i> , 2006, 245, 359-364.	1.8	60
46	Accumulation and release of methane from clathrates below the Laurentide and Cordilleran ice sheets. <i>Global and Planetary Change</i> , 2006, 53, 176-187.	1.6	26
47	Kinetics and Stability of CH <sub>4</sub> -CO <sub>2</sub> Mixed Gas Hydrates during Formation and Long-Term Storage. <i>ChemPhysChem</i> , 2005, 6, 646-654.	1.0	121
48	Mass transport mechanism between the upper and lower mantle in numerical simulations of thermochemical mantle convection with multicomponent phase changes. <i>Earth and Planetary Science Letters</i> , 2005, 230, 11-27.	1.8	41
49	Sub-grid scale model for convection-driven dynamos in a rotating plane layer. <i>Physics of the Earth and Planetary Interiors</i> , 2005, 153, 108-123.	0.7	25
50	The importance of ocean temperature to global biogeochemistry. <i>Earth and Planetary Science Letters</i> , 2004, 222, 333-348.	1.8	74
51	Global inventory of methane clathrate: sensitivity to changes in the deep ocean. <i>Earth and Planetary Science Letters</i> , 2004, 227, 185-199.	1.8	377
52	A comparison of subgrid-scale models for large-eddy simulations of convection in the Earth's core. <i>Geophysical Journal International</i> , 2003, 153, 753-765.	1.0	43
53	Sources of methane for marine gas hydrate: inferences from a comparison of observations and numerical models. <i>Earth and Planetary Science Letters</i> , 2003, 206, 51-63.	1.8	104
54	GEOPHYSICS: The Thermal State of Earth's Core. <i>Science</i> , 2003, 299, 1675-1677.	6.0	119

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55	Spectroscopic Observations and Thermodynamic Calculations on Clathrate Hydrates of Mixed Gas Containing Methane and Ethane: A Determination of Structure, Composition and Cage Occupancy. <i>Journal of Physical Chemistry B</i> , 2002, 106, 12426-12431.	1.2	98
56	Estimates of heat flow in the deep mantle based on the power requirements for the geodynamo. <i>Geophysical Research Letters</i> , 2002, 29, 7-1.	1.5	221
57	Clathrate Hydrates. <i>Annual Review of Earth and Planetary Sciences</i> , 2000, 28, 477-507.	4.6	242
58	Gravitational braking of inner-core rotation in geodynamo simulations. <i>Geophysical Research Letters</i> , 2000, 27, 3125-3128.	1.5	70
59	Deformation of Earth's inner core by electromagnetic forces. <i>Geophysical Research Letters</i> , 2000, 27, 4001-4004.	1.5	21
60	metastability of gas hydrate. <i>Geophysical Research Letters</i> , 1999, 26, 2981-2984.	1.5	31
61	A comparison of geodetic and seismic estimates of inner-core rotation. <i>Geophysical Research Letters</i> , 1999, 26, 1509-1512.	1.5	23
62	Considerations concerning the non-rigid Earth nutation theory. <i>Celestial Mechanics and Dynamical Astronomy</i> , 1998, 72, 245-309.	0.5	41
63	Stratification of the outer core at the core-mantle boundary. <i>Physics of the Earth and Planetary Interiors</i> , 1998, 105, 5-19.	0.7	137
64	Phase equilibrium of gas hydrate: Implications for the formation of hydrate in the deep sea floor. <i>Geophysical Research Letters</i> , 1997, 24, 1567-1570.	1.5	150
65	Geodynamic estimates of the viscosity of the Earth's inner core. <i>Nature</i> , 1997, 388, 571-573.	13.7	164
66	On the thermal evolution of the Earth's core. <i>Journal of Geophysical Research</i> , 1996, 101, 7989-8006.	3.3	206
67	Gravitational oscillations in the length of day. <i>Geophysical Research Letters</i> , 1996, 23, 2279-2282.	1.5	113
68	A mechanism for decade fluctuations in the length of day. <i>Geophysical Research Letters</i> , 1996, 23, 3803-3806.	1.5	83
69	C On the Velocity and Magnetic Fields At the Top of the Core. <i>Geophysical Journal International</i> , 1996, 125, 303-317.	1.0	21
70	Magnetic damping of the translational oscillations of the inner core. <i>Geophysical Journal International</i> , 1995, 120, 103-110.	1.0	16
71	The strength and efficiency of thermal and compositional convection in the geodynamo. <i>Physics of the Earth and Planetary Interiors</i> , 1995, 91, 17-30.	0.7	155
72	Analytical model for solidification of the Earth's core. <i>Nature</i> , 1992, 356, 329-331.	13.7	125