

Doris Breuer

List of Publications by Year in descending order

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129
papers

5,294
citations

50244

46
h-index

95218

68
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149
all docs

149
docs citations

149
times ranked

3258
citing authors

#	ARTICLE	IF	CITATIONS
1	Employing magma ocean crystallization models to constrain structure and composition of the lunar interior. <i>Physics of the Earth and Planetary Interiors</i> , 2022, 322, 106831.	0.7	7
2	The Internal Evolution of Vesta. , 2022, , 53-66.		0
3	Electrical and seismological structure of the martian mantle and the detectability of impact-generated anomalies. <i>Icarus</i> , 2021, 358, 114176.	1.1	2
4	Toward Constraining Mars' Thermal Evolution Using Machine Learning. <i>Earth and Space Science</i> , 2021, 8, e2020EA001484.	1.1	5
5	Seismic Velocity Variations in a 3D Martian Mantle: Implications for the InSight Measurements. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2020JE006755.	1.5	10
6	Delta Deposits on Mars: A Global Perspective. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL094271.	1.5	11
7	Deep learning for surrogate modeling of two-dimensional mantle convection. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	6
8	The Determination of the Rotational State and Interior Structure of Venus with VERITAS. <i>Planetary Science Journal</i> , 2021, 2, 220.	1.5	18
9	MAGMARS: A Melting Model for the Martian Mantle and FeO-Rich Peridotite. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2021JE006985.	1.5	5
10	Stagnant-lid convection with diffusion and dislocation creep rheology: Influence of a non-evolving grain size. <i>Geophysical Journal International</i> , 2020, 220, 18-36.	1.0	6
11	A machine-learning-based surrogate model of Mars's thermal evolution. <i>Geophysical Journal International</i> , 2020, 222, 1656-1670.	1.0	6
12	A long-lived magma ocean on a young Moon. <i>Science Advances</i> , 2020, 6, eaba8949.	4.7	76
13	Retrieval of the Fluid Love Number k_2 in Exoplanetary Transit Curves. <i>Astrophysical Journal</i> , 2019, 878, 119.	1.6	18
14	Magnetic Field Evolution in Terrestrial Bodies from Planetesimals to Exoplanets. , 2019, , 267-285.		2
15	Overturn of Ilmenite-Bearing Cumulates in a Rheologically Weak Lunar Mantle. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 418-436.	1.5	34
16	Pre-mission InSights on the Interior of Mars. <i>Space Science Reviews</i> , 2019, 215, 1.	3.7	85
17	Scaling laws of convection for cooling planets in a stagnant lid regime. <i>Physics of the Earth and Planetary Interiors</i> , 2019, 286, 138-153.	0.7	28
18	Dynamical effects of multiple impacts: Large impacts on a Mars-like planet. <i>Physics of the Earth and Planetary Interiors</i> , 2019, 287, 76-92.	0.7	5

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19	The next frontier for planetary and human exploration. <i>Nature Astronomy</i> , 2019, 3, 116-120.	4.2	39
20	Mantle Convection. , 2019, , 1-9.		0
21	Top-down freezing in a Fe-FeS core and Ganymede's present-day magnetic field. <i>Icarus</i> , 2018, 307, 172-196.1.1		21
22	Present-day Mars' Seismicity Predicted From Thermal Evolution Models of Interior Dynamics. <i>Geophysical Research Letters</i> , 2018, 45, 2580-2589.	1.5	35
23	Multistage Core Formation in Planetesimals Revealed by Numerical Modeling and Hf-W Chronometry of Iron Meteorites. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 421-444.	1.5	10
24	Modeling the evolution of the parent body of acapulcoites and lodranites: A case study for partially differentiated asteroids. <i>Icarus</i> , 2018, 311, 146-169.	1.1	48
25	â€œsocraterâ€ impacts: Conditions and mantle dynamical responses for different impactor types. <i>Icarus</i> , 2018, 306, 94-115.	1.1	4
26	Hemispheric Dichotomy in Lithosphere Thickness on Mars Caused by Differences in Crustal Structure and Composition. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 823-848.	1.5	24
27	The Thermal State and Interior Structure of Mars. <i>Geophysical Research Letters</i> , 2018, 45, 12,198.	1.5	69
28	The Heat Flow and Physical Properties Package (HP3) for the InSight Mission. <i>Space Science Reviews</i> , 2018, 214, 1.	3.7	105
29	Early planetary atmospheres and surfaces: Origin of the Earth's water, crust and atmosphere. <i>Proceedings of the International Astronomical Union</i> , 2018, 14, 156-163.	0.0	1
30	Interiors and Atmospheres. , 2018, , 221-245.		0
31	Onset of solid-state mantle convection and mixing during magma ocean solidification. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 577-598.	1.5	69
32	On the relative importance of thermal and chemical buoyancy in regular and impact-induced melting in a Mars-like planet. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1554-1579.	1.5	20
33	The habitability of a stagnant-lid Earth. <i>Astronomy and Astrophysics</i> , 2017, 605, A71.	2.1	63
34	How large are present-day heat flux variations across the surface of Mars?. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 2386-2403.	1.5	81
35	Water in the Martian interiorâ€The geodynamical perspective. <i>Meteoritics and Planetary Science</i> , 2016, 51, 1959-1992.	0.7	20
36	A review of volatiles in the Martian interior. <i>Meteoritics and Planetary Science</i> , 2016, 51, 1935-1958.	0.7	43

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37	PLANET TOPERS: Planets, Tracing the Transfer, Origin, Preservation, and Evolution of their Reservoirs. Origins of Life and Evolution of Biospheres, 2016, 46, 369-384.	0.8	2
38	Large Scale Numerical Simulations of Planetary Interiors. , 2016, , 675-687.		1
39	Modelling the internal structure of Ceres: Coupling of accretion with compaction by creep and implications for the water-rock differentiation. Astronomy and Astrophysics, 2015, 584, A117.	2.1	25
40	Water-Rock Differentiation of Icy Bodies by Darcy law, Stokes law, and Two-Phase Flow. Proceedings of the International Astronomical Union, 2015, 11, 261-266.	0.0	4
41	Iron snow, crystal floats, and inner-core growth: modes of core solidification and implications for dynamos in terrestrial planets and moons. Progress in Earth and Planetary Science, 2015, 2, .	1.1	61
42	The Fe snow regime in Ganymede's core: A deep-seated dynamo below a stable snow zone. Journal of Geophysical Research E: Planets, 2015, 120, 1095-1118.	1.5	49
43	Mercury's low-degree geoid and topography controlled by insolation-driven elastic deformation. Geophysical Research Letters, 2015, 42, 7327-7335.	1.5	16
44	Thermal evolution and Urey ratio of Mars. Journal of Geophysical Research E: Planets, 2015, 120, 995-1010.	1.5	48
45	Estimating precipitation on early Mars using a radiative-convective model of the atmosphere and comparison with inferred runoff from geomorphology. Planetary and Space Science, 2015, 105, 133-147.	0.9	15
46	Dynamics and Thermal History of the Terrestrial Planets, the Moon, and Io. , 2015, , 255-305.		30
47	Thermo-Chemical Mantle Convection Simulations Using Gaia. , 2015, , 613-627.		0
48	Modelling of compaction in planetesimals. Astronomy and Astrophysics, 2014, 567, A120.	2.1	20
49	Evolution of Planetary Interiors. , 2014, , 185-208.		2
50	A long-lived lunar dynamo powered by core crystallization. Earth and Planetary Science Letters, 2014, 401, 251-260.	1.8	105
51	Can a fractionally crystallized magma ocean explain the thermo-chemical evolution of Mars?. Earth and Planetary Science Letters, 2014, 403, 225-235.	1.8	31
52	Partial melting in one-plate planets: Implications for thermo-chemical and atmospheric evolution. Planetary and Space Science, 2014, 98, 50-65.	0.9	30
53	Differentiation of Vesta: Implications for a shallow magma ocean. Earth and Planetary Science Letters, 2014, 395, 267-280.	1.8	117
54	Can the interior structure influence the habitability of a rocky planet?. Planetary and Space Science, 2014, 98, 14-29.	0.9	55

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55	The tectonic mode of rocky planets: Part 1 – Driving factors, models & parameters. <i>Icarus</i> , 2014, 234, 174-193.	1.1	30
56	Plate tectonics on rocky exoplanets: Influence of initial conditions and mantle rheology. <i>Planetary and Space Science</i> , 2014, 98, 41-49.	0.9	106
57	The thermo-chemical evolution of Asteroid 21 Lutetia. <i>Icarus</i> , 2013, 224, 126-143.	1.1	14
58	Sheet-like and plume-like thermal flow in a spherical convection experiment performed under microgravity. <i>Journal of Fluid Mechanics</i> , 2013, 735, 647-683.	1.4	32
59	Outgassing History and Escape of the Martian Atmosphere and Water Inventory. <i>Space Science Reviews</i> , 2013, 174, 113-154.	3.7	159
60	Long-Term Evolution of the Martian Crust-Mantle System. <i>Space Science Reviews</i> , 2013, 174, 49-111.	3.7	124
61	Overtake and evolution of a crystallized magma ocean: A numerical parameter study for Mars. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 1512-1528.	1.5	35
62	First- and second-order Frank-Kamenetskii approximation applied to temperature-, pressure- and stress-dependent rheology. <i>Geophysical Journal International</i> , 2013, 195, 27-46.	1.0	18
63	Asymmetric thermal evolution of the Moon. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 1435-1452.	1.5	193
64	Thermochemical evolution of Mercury's interior. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 2474-2487.	1.5	113
65	A Particle-in-Cell Method to Model the Influence of Partial Melt on Mantle Convection. , 2013, , 461-472.		1
66	Interior and Surface Dynamics of Terrestrial Bodies and their Implications for the Habitability. <i>Cellular Origin and Life in Extreme Habitats</i> , 2013, , 203-233.	0.3	5
67	Magma Ocean Cumulate Overtake and Its Implications for the Thermo-chemical Evolution of Mars. , 2013, , 619-634.		0
68	THE INFLUENCE OF PRESSURE-DEPENDENT VISCOSITY ON THE THERMAL EVOLUTION OF SUPER-EARTHS. <i>Astrophysical Journal</i> , 2012, 748, 41.	1.6	117
69	Differentiation and core formation in accreting planetesimals. <i>Astronomy and Astrophysics</i> , 2012, 543, A141.	2.1	64
70	Coupling the atmosphere with interior dynamics: Implications for the resurfacing of Venus. <i>Icarus</i> , 2012, 217, 484-498.	1.1	60
71	Mars's atmospheric ⁴⁰ Ar: A tracer for past crustal erosion. <i>Icarus</i> , 2012, 218, 561-570.	1.1	12
72	Future Mars geophysical observatories for understanding its internal structure, rotation, and evolution. <i>Planetary and Space Science</i> , 2012, 68, 123-145.	0.9	32

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73	Long-Term Evolution of the Martian Crust-Mantle System. Space Sciences Series of ISSI, 2012, , 49-111.	0.0	4
74	Outgassing History and Escape of the Martian Atmosphere and Water Inventory. Space Sciences Series of ISSI, 2012, , 113-154.	0.0	6
75	Thermo-chemical evolution and global contraction of mercury. Earth and Planetary Science Letters, 2011, 307, 135-146.	1.8	71
76	Volcanic outgassing of CO2 and H2O on Mars. Earth and Planetary Science Letters, 2011, 308, 391-400.	1.8	139
77	Regime classification and planform scaling for internally heated mantle convection. Physics of the Earth and Planetary Interiors, 2011, 186, 111-124.	0.7	11
78	Thermal and transport properties of mantle rock at high pressure: Applications to super-Earths. Icarus, 2011, 216, 572-596.	1.1	110
79	Crustal recycling, mantle dehydration, and the thermal evolution of Mars. Icarus, 2011, 212, 541-558.	1.1	113
80	Thermal Evolution and Magnetic Field Generation in Terrestrial Planets and Satellites. Space Science Reviews, 2010, 152, 449-500.	3.7	64
81	Planetary Magnetism Foreword. Space Science Reviews, 2010, 152, 1-3.	3.7	0
82	How would life factor in the evolution of planetary interiors?. Physics of Life Reviews, 2010, 7, 471-472.	1.5	1
83	Geophysical and Atmospheric Evolution of Habitable Planets. Astrobiology, 2010, 10, 45-68.	1.5	47
84	On the spatial variability of the Martian elastic lithosphere thickness: Evidence for mantle plumes?. Journal of Geophysical Research, 2010, 115, .	3.3	65
85	Gravity signals on Europa from silicate shell density variations. Journal of Geophysical Research, 2010, 115, .	3.3	15
86	Thermal Evolution and Magnetic Field Generation in Terrestrial Planets and Satellites. Space Sciences Series of ISSI, 2010, , 449-500.	0.0	0
87	Implications of large elastic thicknesses for the composition and current thermal state of Mars. Icarus, 2009, 201, 540-548.	1.1	30
88	Mars environment and magnetic orbiter model payload. Experimental Astronomy, 2009, 23, 761-783.	1.6	7
89	Mars Environment and Magnetic Orbiter Scientific and Measurement Objectives. Astrobiology, 2009, 9, 71-89.	1.5	4
90	4.2.3.4 Dynamics and thermal evolution. Landolt-Börnstein - Group VI Astronomy and Astrophysics, 2009, , 323-344.	0.1	7

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91	The evolution of the martian elastic lithosphere and implications for crustal and mantle rheology. Icarus, 2008, 193, 503-515.	1.1	78
92	Constraints on the radiogenic heat production rate in the Martian interior from viscous relaxation of crustal thickness variations. Geophysical Research Letters, 2008, 35, .	1.5	8
93	Constraints on the maximum crustal density from gravity-topography modeling: Applications to the southern highlands of Mars. Earth and Planetary Science Letters, 2008, 276, 253-261.	1.8	27
94	Interior Evolution of Mercury. Space Sciences Series of ISSI, 2008, , 47-78.	0.0	1
95	Dynamics and Thermal History of the Terrestrial Planets, the Moon, and Io. , 2007, , 299-348.		23
96	An alternative mechanism for recent volcanism on Mars. Geophysical Research Letters, 2007, 34, .	1.5	47
97	Water, Life, and Planetary Geodynamical Evolution. Space Science Reviews, 2007, 129, 167-203.	3.7	28
98	Planetary Magnetic Dynamo Effect on Atmospheric Protection of Early Earth and Mars. Space Science Reviews, 2007, 129, 279-300.	3.7	53
99	A Comparative Study of the Influence of the Active Young Sun on the Early Atmospheres of Earth, Venus, and Mars. Space Science Reviews, 2007, 129, 207-243.	3.7	110
100	Interior Evolution of Mercury. Space Science Reviews, 2007, 132, 229-260.	3.7	71
101	Planetary Magnetic Dynamo Effect on Atmospheric Protection of Early Earth and Mars. Space Sciences Series of ISSI, 2007, , 279-300.	0.0	5
102	A Comparative Study of the Influence of the Active Young Sun on the Early Atmospheres of Earth, Venus, and Mars. Space Sciences Series of ISSI, 2007, , 207-243.	0.0	4
103	Dynamics and Thermal History of the Terrestrial Planets, the Moon, and Io. , 2007, , 299-348.		35
104	Water, Life, and Planetary Geodynamical Evolution. Space Sciences Series of ISSI, 2007, , 167-203.	0.0	1
105	Influence of a variable thermal conductivity on the thermochemical evolution of Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	53
106	Correction to "Influence of a variable thermal conductivity on the thermochemical evolution of Mars". Journal of Geophysical Research, 2006, 111, .	3.3	3
107	Viscosity of the Martian mantle and its initial temperature: Constraints from crust formation history and the evolution of the magnetic field. Planetary and Space Science, 2006, 54, 153-169.	0.9	96
108	A model for the interior structure, evolution, and differentiation of Callisto. Icarus, 2004, 169, 402-412.	1.1	57

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109	DYNAMO: a Mars upper atmosphere package for investigating solar wind interaction and escape processes, and mapping Martian fields. <i>Advances in Space Research</i> , 2004, 33, 2228-2235.	1.2	3
110	Early plate tectonics versus single-plate tectonics on Mars: Evidence from magnetic field history and crust evolution. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	187
111	Implications from Galileo Observations on the Interior Structure and Chemistry of the Galilean Satellites. <i>Icarus</i> , 2002, 157, 104-119.	1.1	204
112	Numerical Modeling of ²⁶ Al-Induced Radioactive Melting of Asteroids Considering Accretion. <i>Icarus</i> , 2002, 159, 183-191.	1.1	102
113	The Lavoisier mission : A system of descent probe and balloon flotilla for geochemical investigation of the deep atmosphere and surface of Venus. <i>Advances in Space Research</i> , 2002, 29, 255-264.	1.2	6
114	Scientific objectives of the DYNAMO mission. <i>Advances in Space Research</i> , 2001, 27, 1851-1860.	1.2	4
115	The Longevity of Lunar Volcanism: Implications of Thermal Evolution Calculations with 2D and 3D Mantle Convection Models. <i>Icarus</i> , 2001, 149, 54-65.	1.1	95
116	Geophysical Constraints on the Evolution of Mars. <i>Space Science Reviews</i> , 2001, 96, 231-262.	3.7	83
117	Geophysical Constraints on the Evolution of Mars. <i>Space Sciences Series of ISSI</i> , 2001, , 231-262.	0.0	5
118	The NetLander very broad band seismometer. <i>Planetary and Space Science</i> , 2000, 48, 1289-1302.	0.9	61
119	Symmetries of volcanic distributions on Mars and Earth and their mantle plume dynamics. <i>Journal of Geophysical Research</i> , 1998, 103, 28587-28597.	3.3	6
120	Three dimensional models of Martian mantle convection with phase transitions. <i>Geophysical Research Letters</i> , 1998, 25, 229-232.	1.5	70
121	Phase transitions in the Martian mantle: Implications for partially layered convection. <i>Earth and Planetary Science Letters</i> , 1997, 148, 457-469.	1.8	67
122	Phase transitions in the Martian mantle: Implications for the planet's volcanic history. <i>Journal of Geophysical Research</i> , 1996, 101, 7531-7542.	3.3	36
123	Deglacial land emergence and lateral upper-mantle heterogeneity in the Svalbard Archipelago-I. First results for simple load models. <i>Geophysical Journal International</i> , 1995, 121, 775-788.	1.0	29
124	Possible flush instability in mantle convection at the Archaean-Proterozoic transition. <i>Nature</i> , 1995, 378, 608-610.	13.7	66
125	Phase transitions in the Martian mantle and the generation of megaplumes. <i>Geophysical Research Letters</i> , 1995, 22, 1945-1948.	1.5	17
126	Mantle differentiation and the crustal dichotomy of Mars. <i>Planetary and Space Science</i> , 1993, 41, 269-283.	0.9	50

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127	Cooling of the Earth, Urey ratios, and the problem of potassium in the core. Geophysical Research Letters, 1993, 20, 1655-1658.	1.5	33
128	SCIENTIFIC AND TECHNICAL ASPECTS OF THE ESA MARSNEXT MISSION. , 0, , 235-249.		1
129	Interiors of Earth-Like Planets and Satellites of the Solar System. Surveys in Geophysics, 0, , 1.	2.1	5