

Julien Aubert

List of Publications by Year in descending order

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71
papers

5,850
citations

87888

38
h-index

76900

74
g-index

75
all docs

75
docs citations

75
times ranked

3790
citing authors

#	ARTICLE	IF	CITATIONS
1	Satellite magnetic data reveal interannual waves in Earth's core. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2115258119.	7.1	25
2	A taxonomy of simulated geomagnetic jerks. Geophysical Journal International, 2022, 231, 650-672.	2.4	11
3	Evaluation of candidate models for the 13th generation International Geomagnetic Reference Field. Earth, Planets and Space, 2021, 73, .	2.5	33
4	The interplay of fast waves and slow convection in geodynamo simulations nearing Earth's core conditions. Geophysical Journal International, 2021, 225, 1854-1873.	2.4	29
5	International Geomagnetic Reference Field: the thirteenth generation. Earth, Planets and Space, 2021, 73, .	2.5	319
6	A secular variation candidate model for IGRF-13 based on Swarm data and ensemble inverse geodynamo modelling. Earth, Planets and Space, 2021, 73, .	2.5	9
7	Dynamo constraints on the long-term evolution of Earth's magnetic field strength. Geophysical Journal International, 2021, 228, 316-336.	2.4	14
8	Physics-based secular variation candidate models for the IGRF. Earth, Planets and Space, 2021, 73, .	2.5	4
9	Recent geomagnetic variations and the force balance in Earth's core. Geophysical Journal International, 2020, 221, 378-393.	2.4	21
10	Dynamo-based limit to the extent of a stable layer atop Earth's core. Geophysical Journal International, 2020, 222, 1433-1448.	2.4	32
11	Relating force balances and flow length scales in geodynamo simulations. Geophysical Journal International, 2020, 224, 1890-1904.	2.4	19
12	A reduced stochastic model of core surface dynamics based on geodynamo simulations. Geophysical Journal International, 2019, 219, 522-539.	2.4	38
13	Approaching Earth's core conditions in high-resolution geodynamo simulations. Geophysical Journal International, 2019, 219, S137-S151.	2.4	41
14	Geomagnetic jerks and rapid hydromagnetic waves focusing at Earth's core surface. Nature Geoscience, 2019, 12, 393-398.	12.9	65
15	Force balance in numerical geodynamo simulations: a systematic study. Geophysical Journal International, 2019, 219, S101-S114.	2.4	49
16	Impact of Earth's Magnetic Field Secular Drift on the Low-Altitude Proton Radiation Belt From 1900 to 2050. IEEE Transactions on Nuclear Science, 2019, 66, 1746-1752.	2.0	4
17	Geomagnetic acceleration and rapid hydromagnetic wave dynamics in advanced numerical simulations of the geodynamo. Geophysical Journal International, 2018, 214, 531-547.	2.4	36
18	Magnesium Partitioning Between Earth's Mantle and Core and its Potential to Drive an Early Exsolution Geodynamo. Geophysical Research Letters, 2018, 45, 13,240.	4.0	50

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19	Spherical convective dynamos in the rapidly rotating asymptotic regime. <i>Journal of Fluid Mechanics</i> , 2017, 813, 558-593.	3.4	121
20	The signature of inner-core nucleation on the geodynamo. <i>Earth and Planetary Science Letters</i> , 2017, 465, 193-204.	4.4	58
21	Contributions to the geomagnetic secular variation from a reanalysis of core surface dynamics. <i>Geophysical Journal International</i> , 2017, 211, 50-68.	2.4	36
22	A particle-in-cell method for studying double-diffusive convection in the liquid layers of planetary interiors. <i>Journal of Computational Physics</i> , 2017, 346, 552-571.	3.8	14
23	Scaling regimes in spherical shell rotating convection. <i>Journal of Fluid Mechanics</i> , 2016, 808, 690-732.	3.4	95
24	Frequency spectrum of the geomagnetic field harmonic coefficients from dynamo simulations. <i>Geophysical Journal International</i> , 2016, 207, 1142-1157.	2.4	38
25	Modelling the archaeomagnetic field under spatial constraints from dynamo simulations: a resolution analysis. <i>Geophysical Journal International</i> , 2016, 207, 983-1002.	2.4	21
26	Performance benchmarks for a next generation numerical dynamo model. <i>Geochemistry, Geophysics, Geosystems</i> , 2016, 17, 1586-1607.	2.5	66
27	Cyrc-driven decay of the Earth's magnetic dipole. <i>Nature Communications</i> , 2016, 7, 10422.	12.8	66
28	Coupled dynamics of Earth's geomagnetic westward drift and inner core super-rotation. <i>Earth and Planetary Science Letters</i> , 2016, 437, 114-126.	4.4	11
29	International Geomagnetic Reference Field: the 12th generation. <i>Earth, Planets and Space</i> , 2015, 67, .	2.5	1,015
30	A candidate secular variation model for IGRF-12 based on Swarm data and inverse geodynamo modelling. <i>Earth, Planets and Space</i> , 2015, 67, .	2.5	32
31	Ancient planetary dynamos, take two. <i>Science</i> , 2015, 349, 475-476.	12.6	1
32	Geomagnetic forecasts driven by thermal wind dynamics in the Earth's core. <i>Geophysical Journal International</i> , 2015, 203, 1738-1751.	2.4	62
33	A mean-field Babcock-Leighton solar dynamo model with long-term variability. <i>Anais Da Academia Brasileira De Ciencias</i> , 2014, 86, 11-26.	0.8	4
34	A long-lived lunar dynamo powered by core crystallization. <i>Earth and Planetary Science Letters</i> , 2014, 401, 251-260.	4.4	105
35	Full sphere hydrodynamic and dynamo benchmarks. <i>Geophysical Journal International</i> , 2014, 197, 119-134.	2.4	41
36	THE PREDICTABILITY OF ADVECTION-DOMINATED FLUX-TRANSPORT SOLAR DYNAMO MODELS. <i>Astrophysical Journal</i> , 2014, 781, 8.	4.5	15

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37	Earth's core internal dynamics 1840-2010 imaged by inverse geodynamo modelling. <i>Geophysical Journal International</i> , 2014, 197, 1321-1334.	2.4	42
38	Bottom-up control of geomagnetic secular variation by the Earth's inner core. <i>Nature</i> , 2013, 502, 219-223.	27.8	154
39	An ensemble Kalman filter for the time-dependent analysis of the geomagnetic field. <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 4035-4043.	2.5	30
40	Flow throughout the Earth's core inverted from geomagnetic observations and numerical dynamo models. <i>Geophysical Journal International</i> , 2013, 192, 537-556.	2.4	56
41	Possible links between long-term geomagnetic variations and whole-mantle convection processes. <i>Nature Geoscience</i> , 2012, 5, 526-533.	12.9	152
42	The geomagnetic secular variation timescale in observations and numerical dynamo models. <i>Geophysical Research Letters</i> , 2011, 38, .	4.0	80
43	The time-dependence of intense archeomagnetic flux patches. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	39
44	Equatorially asymmetric convection inducing a hemispherical magnetic field in rotating spheres and implications for the past martian dynamo. <i>Physics of the Earth and Planetary Interiors</i> , 2011, 185, 61-73.	1.9	44
45	End-member models of boundary-modulated convective dynamos. <i>Physics of the Earth and Planetary Interiors</i> , 2011, 187, 353-363.	1.9	11
46	Inferring internal properties of Earth's core dynamics and their evolution from surface observations and a numerical geodynamo model. <i>Nonlinear Processes in Geophysics</i> , 2011, 18, 657-674.	1.3	38
47	Steady and fluctuating inner core rotation in numerical geodynamo models. <i>Geophysical Journal International</i> , 2011, 184, 162-170.	2.4	36
48	Inference on core surface flow from observations and 3-D dynamo modelling. <i>Geophysical Journal International</i> , 2011, 186, 118-136.	2.4	38
49	Earth's dynamo limit of predictability controlled by magnetic dissipation. <i>Geophysical Journal International</i> , 2011, 186, 492-508.	2.4	36
50	An Introduction to Data Assimilation and Predictability in Geomagnetism. <i>Space Science Reviews</i> , 2010, 155, 247-291.	8.1	110
51	Observations and Models of the Long-Term Evolution of Earth's Magnetic Field. <i>Space Science Reviews</i> , 2010, 155, 337-370.	8.1	71
52	Earth's dynamo limit of predictability. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	53
53	Stationary, oscillating or drifting mantle-driven geomagnetic flux patches?. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	32
54	Conditions for Earth-like geodynamo models. <i>Earth and Planetary Science Letters</i> , 2010, 296, 487-496.	4.4	164

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55	An Introduction to Data Assimilation and Predictability in Geomagnetism. Space Sciences Series of ISSI, 2010, , 247-291.	0.0	3
56	Observations and Models of the Long-Term Evolution of Earth's Magnetic Field. Space Sciences Series of ISSI, 2010, , 337-370.	0.0	0
57	Modelling the palaeo-evolution of the geodynamo. Geophysical Journal International, 2009, 179, 1414-1428.	2.4	200
58	Thermochemical flows couple the Earth's inner core growth to mantle heterogeneity. Nature, 2008, 454, 758-761.	27.8	225
59	The magnetic structure of convection-driven numerical dynamos. Geophysical Journal International, 2008, 172, 945-956.	2.4	158
60	A simple model for mantle-driven flow at the top of Earth's core. Earth, Planets and Space, 2008, 60, 845-854.	2.5	26
61	Detecting thermal boundary control in surface flows from numerical dynamos. Physics of the Earth and Planetary Interiors, 2007, 160, 143-156.	1.9	69
62	Convection-driven planetary dynamos. Proceedings of the International Astronomical Union, 2006, 2, 188-195.	0.0	2
63	Scaling properties of convection-driven dynamos in rotating spherical shells and application to planetary magnetic fields. Geophysical Journal International, 2006, 166, 97-114.	2.4	611
64	Steady zonal flows in spherical shell dynamos. Journal of Fluid Mechanics, 2005, 542, 53.	3.4	122
65	Nonextensive statistical mechanics for rotating quasi-two-dimensional turbulence. Physica D: Nonlinear Phenomena, 2004, 193, 252-264.	2.8	7
66	Axial vs. equatorial dipolar dynamo models with implications for planetary magnetic fields. Earth and Planetary Science Letters, 2004, 221, 409-419.	4.4	54
67	Quasigeostrophic models of convection in rotating spherical shells. Geochemistry, Geophysics, Geosystems, 2003, 4, .	2.5	52
68	Observations of zonal flow created by potential vorticity mixing in a rotating fluid. Geophysical Research Letters, 2002, 29, 23-1-23-4.	4.0	44
69	A numerical dynamo benchmark. Physics of the Earth and Planetary Interiors, 2001, 128, 25-34.	1.9	224
70	A systematic experimental study of rapidly rotating spherical convection in water and liquid gallium. Physics of the Earth and Planetary Interiors, 2001, 128, 51-74.	1.9	124
71	Ultrasonic Doppler velocimetry in liquid gallium. Experiments in Fluids, 2001, 31, 653-663.	2.4	128