Alexandre Fournier

List of Publications by Year
in descending order

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66 papers	3,800 citations	172443 29 h-index	123420 61 g-index
73 all docs	73 docs citations	73 times ranked	3620 citing authors

#	Article	IF	Citations
1	International Geomagnetic Reference Field: the 12th generation. Earth, Planets and Space, 2015, 67, .	2.5	1,015
2	International Geomagnetic Reference Field: the thirteenth generation. Earth, Planets and Space, 2021, 73, .	2.5	319
3	Fast torsional waves and strong magnetic field within the Earthâ€™s core. Nature, 2010, 465, 74-77.	27.8	270
4	AxiSEM: broadband 3-D seismic wavefields in axisymmetric media. Solid Earth, 2014, 5, 425-445.	2.8	205
5	Turbulent geodynamo simulations: a leap towards Earthâ€™s core. Geophysical Journal International, 2017, 211, 1-29.	2.4	171
6	Bottom-up control of geomagnetic secular variation by the Earthâ€™s inner core. Nature, 2013, 502, 219-223.	27.8	154
7	Spherical convective dynamos in the rapidly rotating asymptotic regime. Journal of Fluid Mechanics, 2017, 813, 558-593.	3.4	121
8	An Introduction to Data Assimilation and Predictability in Geomagnetism. Space Science Reviews, 2010, 155, 247-291.	8.1	110
9	Dynamical similarity of geomagnetic field reversals. Nature, 2012, 490, 89-93.	27.8	94
10	Deciphering records of geomagnetic reversals. Reviews of Geophysics, 2016, 54, 410-446.	23.0	82
11	The geomagnetic secularâ€variation timescale in observations and numerical dynamo models. Geophysical Research Letters, 2011, 38, .	4.0	80
12	A two-dimensional spectral-element method for computing spherical-earth seismograms - I. Moment-tensor source. Geophysical Journal International, 2007, 168, 1067-1092.	2.4	73
13	Core-flow constraints on extreme archeomagnetic intensity changes. Earth and Planetary Science Letters, 2014, 387, 145-156.	4.4	62
14	A 2-D spectral-element method for computing spherical-earth seismograms-II. Waves in solid-fluid media. Geophysical Journal International, 2008, 174, 873-888.	2.4	56
15	Changes in rotation induced by Pleistocene ice masses with stratified analytical Earth models. Journal of Geophysical Research, 1997, 102, 27689-27702.	3.3	55
16	Spherical-earth FrÃ©chet sensitivity kernels. Geophysical Journal International, 2007, 168, 1051-1066.	2.4	53
17	A sequential data assimilation approach for the joint reconstruction of mantle convection and surface tectonics. Geophysical Journal International, 2016, 204, 200-214.	2.4	47
18	A case for variational geomagnetic data assimilation: insights from a one-dimensional, nonlinear, and sparsely observed MHD system. Nonlinear Processes in Geophysics, 2007, 14, 163-180.	1.3	44

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19	The Present and Future Geomagnetic Field. , 2015, , 33-78.		44
20	Forward and adjoint quasiâ€geostrophic models of the geomagnetic secular variation. Journal of Geophysical Research, 2009, 114, .	3.3	41
21	Inferring internal properties of Earth's core dynamics and their evolution from surface observations and a numerical geodynamo model. Nonlinear Processes in Geophysics, 2011, 18, 657-674.	1.3	38
22	Inference on core surface flow from observations and 3-D dynamo modelling. Geophysical Journal International, 2011, 186, 118-136.	2.4	38
23	Frequency spectrum of the geomagnetic field harmonic coefficients from dynamo simulations. Geophysical Journal International, 2016, 207, 1142-1157.	2.4	38
24	Hydromagnetic quasi-geostrophic modes in rapidly rotating planetary cores. Physics of the Earth and Planetary Interiors, 2014, 229, 1-15.	1.9	35
25	Application of the spectral-element method to the axisymmetric Navier-Stokes equation. Geophysical Journal International, 2004, 156, 682-700.	2.4	33
26	A Fourier-spectral element algorithm for thermal convection in rotating axisymmetric containers. Journal of Computational Physics, 2005, 204, 462-489.	3.8	33
27	Evaluation of candidate models for the 13th generation International Geomagnetic Reference Field. Earth, Planets and Space, 2021, 73, .	2.5	33
28	A candidate secular variation model for IGRF-12 based on Swarm data and inverse geodynamo modelling. Earth, Planets and Space, 2015, 67, .	2.5	32
29	Dynamo-based limit to the extent of a stable layer atop Earthâ€™s core. Geophysical Journal International, 2020, 222, 1433-1448.	2.4	32
30	An ensemble Kalman filter for the timeâ€dependent analysis of the geomagnetic field. Geochemistry, Geophysics, Geosystems, 2013, 14, 4035-4043.	2.5	30
31	Transdimensional inference of archeomagnetic intensity change. Geophysical Journal International, 2018, 215, 2008-2034.	2.4	27
32	Spherical Couette flow in a dipolar magnetic field. European Journal of Mechanics, B/Fluids, 2007, 26, 729-737.	2.5	26
33	Modelling the archaeomagnetic field under spatial constraints from dynamo simulations: a resolution analysis. Geophysical Journal International, 2016, 207, 983-1002.	2.4	21
34	Sustaining Earthâ€™s magnetic dynamo. Nature Reviews Earth & Environment, 2022, 3, 255-269.	29.7	21
35	Analysis of geomagnetic field intensity variations in Mesopotamia during the third millennium BC with archeological implications. Earth and Planetary Science Letters, 2020, 537, 116183.	4.4	18
36	End-effects in rapidly rotating cylindrical Taylor-Couette flow. AIP Conference Proceedings, 2004, , .	0.4	16

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37	THE PREDICTABILITY OF ADVECTION-DOMINATED FLUX-TRANSPORT SOLAR DYNAMO MODELS. Astrophysical Journal, 2014, 781, 8.	4.5	15
38	Energy distribution in nonaxisymmetric magnetic Taylor-Couette flow. Astronomische Nachrichten, 2007, 328, 1162-1165.	1.2	14
39	Variational Estimation of the Large-scale Time-dependent Meridional Circulation in the Sun: Proofs of Concept with a Solar Mean Field Dynamo Model. Astrophysical Journal, 2017, 849, 160.	4.5	14
40	A particle-in-cell method for studying double-diffusive convection in the liquid layers of planetary interiors. Journal of Computational Physics, 2017, 346, 552-571.	3.8	14
41	The impact of geomagnetic spikes on the production rates of cosmogenic ¹⁴C and ¹⁰Be in the Earth's atmosphere. Geophysical Research Letters, 2015, 42, 2759-2766.	4.0	12
42	ESTIMATING THE DEEP SOLAR MERIDIONAL CIRCULATION USING MAGNETIC OBSERVATIONS AND A DYNAMO MODEL: A VARIATIONAL APPROACH. Astrophysical Journal, 2015, 814, 151.	4.5	12
43	Coarse predictions of dipole reversals by low-dimensional modeling and data assimilation. Physics of the Earth and Planetary Interiors, 2017, 262, 8-27.	1.9	12
44	Archeomagnetic intensity variations during the era of geomagnetic spikes in the Levant. Physics of the Earth and Planetary Interiors, 2021, 312, 106657.	1.9	12
45	Geomagnetic semblance and dipolarâ€“multipolar transition in top-heavy double-diffusive geodynamo models. Geophysical Journal International, 2021, 226, 1897-1919.	2.4	12
46	Coupled dynamics of Earth's geomagnetic westward drift and inner core super-rotation. Earth and Planetary Science Letters, 2016, 437, 114-126.	4.4	11
47	Analyzing the geomagnetic axial dipole field moment over the historical period from new archeointensity results at Bukhara (Uzbekistan, Central Asia). Physics of the Earth and Planetary Interiors, 2021, 310, 106633.	1.9	11
48	A taxonomy of simulated geomagnetic jerks. Geophysical Journal International, 2022, 231, 650-672.	2.4	11
49	Archeomagnetic intensity investigations of French medieval ceramic workshops: Contribution to regional field modeling and archeointensity-based dating. Physics of the Earth and Planetary Interiors, 2021, 318, 106750.	1.9	10
50	Ensemble Kalman filter for the reconstruction of the Earth's mantle circulation. Nonlinear Processes in Geophysics, 2018, 25, 99-123.	1.3	9
51	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
52	The influence of a sloping bottom endwall on the linear stability in the thermally driven baroclinic annulus with a free surface. Theoretical and Computational Fluid Dynamics, 2013, 27, 433-451.	2.2	8
53	Imprint of magnetic flux expulsion at the coreâ€“mantle boundary on geomagnetic field intensity variations. Geophysical Journal International, 2020, 221, 1984-2009.	2.4	8
54	A mean-field Babcock-Leighton solar dynamo model with long-term variability. Anais Da Academia Brasileira De Ciencias, 2014, 86, 11-26.	0.8	4

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55	Impact of Earthâ€™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
56	Refining the high-fidelity archaeointensity curve for western Europe over the past millennium: analysis of Tuscan architectural bricks (Italy). Geological Society Special Publication, 2020, 497, 73-88.	1.3	4
57	Tracing the geomagnetic field intensity variations in Upper Mesopotamia during the Pottery Neolithic to improve ceramic-based chronologies. Journal of Archaeological Science, 2021, 132, 105430.	2.4	4
58	Physics-based secular variation candidate models for the IGRF. Earth, Planets and Space, 2021, 73, .	2.5	4
59	An Introduction to Data Assimilation and Predictability in Geomagnetism. Space Sciences Series of ISSI, 2010, , 247-291.	0.0	3
60	Can one use Earthâ€™s magnetic axial dipole field intensity to predict reversals?. Geophysical Journal International, 2021, 225, 277-297.	2.4	3
61	A solar cycle 25 prediction based on 4D-var data assimilation approach. Proceedings of the International Astronomical Union, 2019, 15, 138-146.	0.0	2
62	Seismic Waveâ€Based Constraints on Geodynamical Processes: An Application to Partial Melting Beneath the RÃ©union Island. Geochemistry, Geophysics, Geosystems, 2020, 21, e2019GC008815.	2.5	1
63	An assessment of implicit-explicit time integrators for the pseudo-spectral approximation of Boussinesq thermal convection in an annulus. Journal of Computational Physics, 2022, , 110965.	3.8	1
64	Can machine learning reveal precursors of reversals of the geomagnetic axial dipole field?. Geophysical Journal International, 2022, 231, 520-535.	2.4	1
65	Corrigendum to â€œHydromagnetic quasi-geostrophic modes in rapidly rotating planetary coresâ€•[Phys. Earth Planet. Inter. 229 (2014) 1â€“15]. Physics of the Earth and Planetary Interiors, 2014, 234, 60.	1.9	0
66	Towards Estimating the Solar Meridional Flow and Predicting the 11-yr Cycle Using Advanced Variational Data Assimilation Techniques. Proceedings of the International Astronomical Union, 2017, 13, 183-186.	0.0	0