Michael Le Bars

List of Publications by Year
in descending order

95 papers	2,541 citations	159585 30 h-index	214800 47 g-index
100 all docs	100 docs citations	100 times ranked	1593 citing authors

#	Article	IF	Citations
1	Interfacial conditions between a pure fluid and a porous medium: implications for binary alloy solidification. Journal of Fluid Mechanics, 2006, 550, 149.	3.4	265
2	An impact-driven dynamo for the early Moon. Nature, 2011, 479, 215-218.	27.8	144
3	Flows Driven by Libration, Precession, and Tides. Annual Review of Fluid Mechanics, 2015, 47, 163-193.	25.0	142
4	How to anchor hotspots in a convecting mantle?. Earth and Planetary Science Letters, 2002, 203, 621-634.	4.4	140
5	Thermal convection in a heterogeneous mantle. Comptes Rendus - Geoscience, 2003, 335, 141-156.	1.2	60
6	Whole layer convection in a heterogeneous planetary mantle. Journal of Geophysical Research, 2004, 109, .	3.3	59
7	A systematic numerical study of the tidal instability in a rotating triaxial ellipsoid. Physics of the Earth and Planetary Interiors, 2010, 182, 119-128.	1.9	59
8	Elliptical instability in hot Jupiter systems. Icarus, 2013, 226, 1642-1653.	2.5	59
9	Experimental Determination of Zonal Winds Driven by Tides. Physical Review Letters, 2010, 104, 214501.	7.8	57
10	Tidal instability in stellar and planetary binary systems. Physics of the Earth and Planetary Interiors, 2010, 178, 48-55.	1.9	57
11	Experimental and numerical study of mean zonal flows generated by librations of a rotating spherical cavity. Journal of Fluid Mechanics, 2010, 662, 260-268.	3.4	55
12	The deep Earth may not be cooling down. Earth and Planetary Science Letters, 2016, 443, 195-203.	4.4	54
13	Stability of thermal convection in two superimposed miscible viscous fluids. Journal of Fluid Mechanics, 2002, 471, 339-363.	3.4	52
14	Experimental Analysis of the Stratorotational Instability in a Cylindrical Couette Flow. Physical Review Letters, 2007, 99, 064502.	7.8	49
15	Inertial Wave Turbulence Driven by Elliptical Instability. Physical Review Letters, 2017, 119, 034502.	7.8	48
16	Elliptical instability in terrestrial planets and moons. Astronomy and Astrophysics, 2012, 539, A78.	5.1	44
17	Librationâ€driven flows in ellipsoidal shells. Journal of Geophysical Research E: Planets, 2017, 122, 1926-1950.	3.6	44
18	Tidal instability in a rotating and differentially heated ellipsoidal shell. Geophysical Journal International, 2010, 182, 1311-1318.	2.4	40

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19	Numerical simulations of internal wave generation by convection in water. Physical Review E, 2015, 91, 063016.	2.1	40
20	Fluid flows in a librating cylinder. Physics of Fluids, 2012, 24, .	4.0	39
21	Low-frequency Variability in Massive Stars: Core Generation or Surface Phenomenon?. Astrophysical Journal Letters, 2019, 886, L15.	8.3	39
22	Large interface deformation in two-layer thermal convection of miscible viscous fluids. Journal of Fluid Mechanics, 2004, 499, 75-110.	3.4	35
23	Magnetic field induced by elliptical instability in a rotating spheroid. Geophysical and Astrophysical Fluid Dynamics, 2006, 100, 299-317.	1.2	35
24	The universal aspect ratio of vortices in rotating stratified flows: experiments and observations. Journal of Fluid Mechanics, 2012, 706, 34-45.	3.4	35
25	Finite-size effects in parametric subharmonicÂinstability. Journal of Fluid Mechanics, 2014, 759, 739-750.	3.4	35
26	Coriolis effects on the elliptical instability in cylindrical and spherical rotating containers. Journal of Fluid Mechanics, 2007, 585, 323-342.	3.4	34
27	A laboratory model for deep-seated jets on the gas giants. Nature Physics, 2017, 13, 387-390.	16.7	34
28	Solidification of a binary alloy: Finite-element, single-domain simulation and new benchmark solutions. Journal of Computational Physics, 2006, 216, 247-263.	3.8	32
29	Libration driven elliptical instability. Physics of Fluids, 2012, 24, .	4.0	32
30	Generation and maintenance of bulk turbulence by libration-driven elliptical instability. Physics of Fluids, 2015, 27, .	4.0	32
31	The energy flux spectrum of internal waves generated by turbulent convection. Journal of Fluid Mechanics, 2018, 854, .	3.4	30
32	Sedimentation of particles in a vigorously convecting fluid. Physical Review E, 2009, 80, 046324.	2.1	29
33	Experimental study of the nonlinear saturation of the elliptical instability: inertial wave turbulence versus geostrophic turbulence. Journal of Fluid Mechanics, 2019, 879, 296-326.	3.4	29
34	Experimental study of libration-driven zonal flows in non-axisymmetric containers. Physics of the Earth and Planetary Interiors, 2012, 204-205, 1-10.	1.9	28
35	Laboratory experiments on the breakup of liquid metal diapirs. Earth and Planetary Science Letters, 2014, 403, 236-245.	4.4	27
36	Dynamics of mixed convectiveâ€“stably-stratified fluids. Physical Review Fluids, 2017, 2, .	2.5	26

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37	On the effects of an imposed magnetic field on the elliptical instability in rotating spheroids. Physics of Fluids, 2009, 21, 046602.	4.0	25
38	Tilt-over mode in a precessing triaxial ellipsoid. Physics of Fluids, 2010, 22, .	4.0	25
39	Tideâ€driven shear instability in planetary liquid cores. Geophysical Research Letters, 2014, 41, 6078-6083.	4.0	25
40	Order Out of Chaos: Slowly Reversing Mean Flows Emerge from Turbulently Generated Internal Waves. Physical Review Letters, 2018, 120, 244505.	7.8	25
41	Thermo-elliptical instability in a rotating cylindrical shell. Journal of Fluid Mechanics, 2006, 563, 189.	3.4	24
42	Spontaneous generation of inertial waves from boundary turbulence in a librating sphere. Journal of Fluid Mechanics, 2013, 728, .	3.4	22
43	Experimental study of global-scale turbulence in a librating ellipsoid. Physics of Fluids, 2014, 26, .	4.0	22
44	The linear instability of the stratified plane Couette flow. Journal of Fluid Mechanics, 2018, 853, 205-234.	3.4	22
45	Experimental study of the interaction between convective and elliptical instabilities. Physics of Fluids, 2010, 22, .	4.0	21
46	Elliptic instability of a stratified fluid in a rotating cylinder. Journal of Fluid Mechanics, 2010, 660, 240-257.	3.4	20
47	Magnetohydrodynamic simulations of the elliptical instability in triaxial ellipsoids. Geophysical and Astrophysical Fluid Dynamics, 2012, 106, 524-546.	1.2	18
48	Turbulent Kinematic Dynamos in Ellipsoids Driven by Mechanical Forcing. Geophysical Research Letters, 2018, 45, 1741-1750.	4.0	18
49	Near-resonant instability of geostrophic modes: beyond Greenspan's theorem. Journal of Fluid Mechanics, 2020, 900, .	3.4	16
50	Parametric instability and wave turbulence driven by tidal excitation of internal waves. Journal of Fluid Mechanics, 2018, 840, 498-529.	3.4	15
51	Experimental study of internal wave generation by convection in water. Fluid Dynamics Research, 2015, 47, 045502.	1.3	14
52	Remote determination of the shape of Jupiterâ€™s vortices from laboratory experiments. Nature Physics, 2020, 16, 695-700.	16.7	14
53	Fluid Dynamics Experiments for Planetary Interiors. Surveys in Geophysics, 2022, 43, 229-261.	4.6	13
54	Internal shear layers from librating objects. Journal of Fluid Mechanics, 2017, 826, 653-675.	3.4	12

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55	Coupled convection and internal gravity waves excited in water around its density maximum at 4Â°C. Physical Review Fluids, 2020, 5, .	2.5	12
56	Velocity and temperature measurements in a turbulent water-filled Taylorâ€“Couetteâ€“Poiseuille system. International Journal of Thermal Sciences, 2015, 90, 238-247.	4.9	11
57	Experiments on fragmentation and thermo-chemical exchanges during planetary core formation. Physics of the Earth and Planetary Interiors, 2018, 276, 134-144.	1.9	10
58	Zonal jets at the laboratory scale: hysteresis and Rossby waves resonance. Journal of Fluid Mechanics, 2021, 910, .	3.4	10
59	Flows driven by libration, precession, and tides in planetary cores. Physical Review Fluids, 2016, 1, .	2.5	10
60	Tidal instability in exoplanetary systems evolution. EPJ Web of Conferences, 2011, 11, 03003.	0.3	9
61	Dynamics and stability of an iron drop falling in a magma ocean. Physics of the Earth and Planetary Interiors, 2019, 289, 75-89.	1.9	9
62	Hysteresis and instabilities in a spheroid in precession near the resonance with the tilt-over mode. Journal of Fluid Mechanics, 2021, 909, .	3.4	9
63	Evidence of the Zakharov-Kolmogorov spectrum in numerical simulations of inertial wave turbulence. Europhysics Letters, 2020, 132, 64002.	2.0	9
64	Erosion of a sharp density interface by a turbulent jet at moderate Froude and ReynoldsÂnumbers. Journal of Fluid Mechanics, 2018, 838, 631-657.	3.4	8
65	Surface manifestation of stochastically excited internal gravity waves. Monthly Notices of the Royal Astronomical Society, 2021, 508, 132-143.	4.4	8
66	Law of spreading of the crest of a breaking wave. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 1851-1866.	2.1	7
67	Tidally-forced turbulence in planetary interiors. Geophysical Journal International, 0, , ggw479.	2.4	6
68	On the lifetime of a pancake anticyclone in a rotating stratified flow. Journal of Fluid Mechanics, 2016, 804, 688-711.	3.4	5
69	Plumes in rotating fluid and their transformation into tornados. Journal of Fluid Mechanics, 2021, 924, .	3.4	5
70	Shape and size of large-scale vortices: A generic fluid pattern in geophysical fluid dynamics. Physical Review Research, 2020, 2, .	3.6	5
71	A laboratory study of floating lenticular anticyclones. European Journal of Mechanics, B/Fluids, 2017, 61, 1-8.	2.5	4
72	Dynamics of core-mantle separation: Influence of viscosity contrast and metal/silicate partition coefficients on the chemical equilibrium. Physics of the Earth and Planetary Interiors, 2020, 306, 106547.	1.9	4

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73	Internal gravity waves in a stratified layer atop a convecting liquid core in a non-rotating spherical shell. Geophysical Journal International, 2021, 228, 337-354.	2.4	4
74	Geometrical focusing of surface waves. Physical Review Fluids, 2018, 3, .	2.5	4
75	Some statistical properties of three-dimensional zonostrophic turbulence. Geophysical and Astrophysical Fluid Dynamics, 2018, 112, 207-221.	1.2	3
76	Numerical study of the McIntyre instability around Gaussian floating vortices in thermal wind balance. Physical Review Fluids, 2021, 6, .	2.5	3
77	Rotational Dynamics of Planetary Cores: Instabilities Driven By Precession, Libration and Tides. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2020, , 91-127.	0.6	2
78	Tidal instability in exoplanetary systems evolution. EPJ Web of Conferences, 2011, 11, 03003.	0.3	2
79	Fluid dynamics of a mixed convective/stably stratified systemâ€"A review of some recent works. Comptes Rendus Physique, 2020, 21, 151-164.	0.9	2
80	Multimodal Excitation to Model the Quasibiennial Oscillation. Physical Review Letters, 2020, 125, 234501.	7.8	1
81	Fall and fragmentation of liquid metal in a viscous fluid. Physical Review Fluids, 2017, 2, .	2.5	1
82	Focusing of Surface Waves. Environmental Science and Engineering, 2014, , 315-325.	0.2	1
83	Thermal evolution of a metal drop falling in a less dense, more viscous fluid. Physical Review Fluids, 2020, 5, .	2.5	1
84	Dynamics of a reactive spherical particle falling in a linearly stratified fluid. Physical Review Fluids, 2020, 5, .	2.5	1
85	Experimental evidence of the Strato-rotational instability. Journal of Physics: Conference Series, 2008, 137, 012013.	0.4	0
86	Vortices in rotating and stratified flows: aspect ratio and sustainability. EPJ Web of Conferences, 2013, 46, 05004.	0.3	0
87	Mass transport induced by a jet impinging on a density interface: The role of interfacial wave breaking. Europhysics Letters, 2017, 117, 64003.	2.0	0
88	Zombie vortex instability in the protoplanetary disk: can we find it in the lab?. EAS Publications Series, 2019, 82, 435-444.	0.3	0
89	The turbulent response to tidal and libration forcing. EAS Publications Series, 2019, 82, 51-58.	0.3	0
90	Large-scale flow driven by turbulently generated internal gravity waves. Physical Review Fluids, 2021, 6, .	2.5	0

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91	Flows Driven by Harmonic Forcing in Planetary Atmospheres and Cores. Environmental Science and Engineering, 2014, , 83-91.	0.2	0
92	Ã‰tude de l'attÃ©nuation, en fonction de la distance, du flux thermique produit par une source ponctuelle monoÃ©nergÃ©tique de neutrons rapides, en milieu hydrogÃ©nÃ© application au calcul de l'efficacitÃ© d'un compteur de neutrons. Revue De Physique AppliquÃ©e, 1968, 3, 53-58.	0.4	0
93	Gas giantâ€“like zonal jets in the laboratory. Physical Review Fluids, 2020, 5, .	2.5	0
94	Un cycle nÃ© du chaos. Pourlascience Fr, 2019, NÂ° 497 - mars, 26-33.	0.0	0
95	La Grande Tache rouge de Jupiterâ€¦ en laboratoireÂ!. Pourlascience Fr, 2021, NÂ° 519 - janvier, 24-33.	0.0	0