

### Publications

Rang A

- 72.- Dormy E. (2025), Rapidly Rotating Magnetohydrodynamics and the Geodynamo *Annual Reviews of Fluid Mechanics*, to appear.
- 71.- Dormy E., Oruba L., Emanuel K. (2024), Eye Formation and energetics in a dry model of hurricane-like vortices *Journal of the Atmospheric Sciences*, **81** 1565-1578.
- 70.- Zhao X., Oruba L., Hauser D., Zhang B., Dormy E. (2024), What Can Hurricane Sam (2021) Tell Us About Extreme Ocean Waves Under Tropical Cyclones? *Journal of Geophysical Research, Oceans*, **129** e2024JC020957.
- 69.- Dormy E., Moffatt K. (2024), Prandtl-Batchelor flow in a cylindrical domain, *SIAM Journal on Applied Mathematics*, **84** 1658-1667.
- 68.- Riquier A., Dormy E. (2024), Numerical study of a viscous breaking water wave and the limit of vanishing viscosity, *J. Fluid Mech.*, **984**, R5.
- 67.- Dormy E., Moffatt K. (2024), Flow induced by the rotation of two circular cylinders in a viscous fluid, *Physical Review Fluids*, **9** 044102.
- 66.- Dormy E., Lacave C. (2024), Inviscid Water-Waves and interface modeling, *Quarterly of Applied Mathematics*, **82** 583-637.
- 65.- Saulgeot P., Brion V., Bonne N., Dormy E., Jacquin L. (2023) Effects of atmospheric stratification and jet position on the properties of early aircraft contrails *Phys. Rev. Fluids*, **8**, 114702.
- 64.- Teed R.J., Dormy E. (2023) Solenoidal force balances in numerical dynamos, *J. Fluid Mech.*, **964**, A26.
- 63.- Soward A.M., Oruba L., Dormy E. (2022) Bénard convection in a slowly rotating penny shaped cylinder subject to constant heat flux boundary conditions, *J. Fluid Mech.*, **951**, A5.
- 62.- Oruba L., Hauser D., Planes S., Dormy E. (2022) Ocean waves in the South Pacific : complementarity of SWIM and SAR observations *Earth and Space Science*, **9**, e2021EA002187.
- 61.- Garcia F., Stefani F., Dormy E. (2021) Weak branch and multimodal convection in rapidly rotating spheres at low Prandtl number *Phys. Rev. Fluids* **6**, 123501.
- 60.- Oruba L., Soward A., Dormy E. (2021) Inertial wave activity during spin-down in a rapidly rotating penny shaped cylinder, *J. Fluid Mech.* **915**, 1, 5-26.
- 59.- Hauser D. *et al* (24 auteurs), New Observations From the SWIM Radar On-Board CFOSAT : Instrument Validation and Ocean Wave Measurement Assessment, *IEEE Transactions on Geoscience and Remote Sensing* (2020 in press).
- 58.- Arsénio D., Dormy E., Lacave C. (2020) The vortex method for two-dimensional ideal flows in exterior domains *SIAM J. Math. Anal.* **52**, 4, 3881-3961.
- 57.- Carlot J., Rovère A., Casella E., Harris D., Grellet-Munoz C., Chancerelle Y., Dormy E., Hedouin L., Parravicini V. (2020) Community composition predicts photogrammetry-based structural complexity on coral reefs, *Coral Reefs* **39**, 967-975.
- 56.- Oruba L., Soward A., Dormy E. (2020) On the inertial wave activity during spin-down in a rapidly rotating penny shaped cylinder : a reduced model *J. Fluid Mech.* **888**, A9, 1-44.
- 55.- Oruba L., Davidson P., Dormy E. (2018) Formation of eyes in large-scale cyclonic vortices *Phys. Rev. Fluids* **3**, 013502.
- 54.- Dormy E., Oruba L., Petitdemange L. (2018) Three branches of dynamo action *Fluid Dyn. Res* **50**, 01 1415.
- 53.- Garcia F., Oruba L., Dormy E. (2017) Equatorial symmetry breaking and the loss of dipolarity in rapidly rotating dynamos *Geophys. Astrophys. Fluid Dyn.* **111**(5), 380-393.

- 52.- Oruba L., Soward A.M., Dormy E. (2017) Spin-down in a rapidly rotating cylinder container with mixed rigid and stress-free boundary conditions *J. Fluid Mech.* **818**, 205-240.
- 51.- Oruba L., Planes S., Siu G., Chancerelle Y., Dormy E. (2017) Rapid Oceanic Response to Tropical Cyclone Oli (2010) over the South Pacific *J. Phys. Ocean.* **47**(2), 471-483.
- 50.- Oruba L., Davidson P.A., Dormy E. (2017) Eye formation in rotating convection *J. Fluid Mech.* **812**, 890-904.
- 49.- Cameron A., Raynaud R., Dormy E. (2016) Multi-stage high order semi-Lagrangian schemes for incompressible flows in Cartesian geometries *Int. J. Numer. Meth. Fluids*, **82**, 879-892.
- 48.- Marcotte F., Dormy E., Soward A. (2016) On the equatorial Ekman layer *J. Fluid Mech.* **803**, 395-435.
- 47.- Dormy E. (2016) Strong-field spherical dynamos *J. Fluid Mech.* **789**, 500-513.
- 46.- Garcia F., Sánchez J., Dormy E., Net M. (2015) Oscillatory convection in rotating spherical shells : Low Prandtl number and non-slip boundary conditions *SIAM Journal on Applied Dynamical Systems (SIADS)* **14**(4), 1787-1807.
- 45.- Bouya I., Dormy, E. (2015) Toward an asymptotic behaviour of the ABC dynamo *EPL (Europhysics Letters)* **110**, 14003.
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- 36.- Raynaud R., Dormy E. (2013) Intermittency in spherical Couette dynamos *Physical Review E* **87**, 033011.
- 35.- Schrunner M., Petitdemange L., Dormy E. (2012) Dipole collapse and dynamo waves in global direct numerical simulations *Astrophysical Journal (ApJ)* **752**, 121.
- 34.- Gissinger C., Petitdemange L., Schrunner M., Dormy E. (2012) Bistability between Equatorial and Axial Dipoles during Magnetic Field Reversals, *Phys. Rev. Lett.* **108**, 234501.
- 33.- Morin J., Dormy E., Schrunner M., Donati J.F. (2011) Weak- and strong-field dynamos : from the Earth to the stars, *Monthly Notices of the Royal Astronomical Society : Letters*, **418**, 1, L133-L137.
- 32.- Schrunner M., Petitdemange L., Dormy E. (2011) Oscillatory dynamos and their induction mechanisms *Astronomy & Astrophysics*, **530**, A140.
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- 30.- Gérard-Varet D. et Dormy E. (2010) On the ill-posedness of the Prandtl equation *J. Amer. Math. Soc.*, **23**, 591-609.

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- 28.- Morin V. et Dormy E. (2009) The dynamo bifurcation in rotating spherical shells *International Journal of Modern Physics B*, **23** (28-29), 5467–5482.
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- 26.- Gissinger C., Fromang S., Dormy E. (2009) Direct numerical simulations of the galactic dynamo in the kinematic growing phase, *Monthly Notices of the Royal Astronomical Society*, 394-1, L84–L88.
- 25.- Gissinger C., Dormy E., Fauve S. (2008) Bypassing Cowling’s Theorem in Axisymmetric Fluid Dynamos, *Physical Review Letters*, **101**, 144502.
- 24.- Goudard L., Dormy E. (2008) Relations between the dynamo region geometry and the magnetic behavior of stars and planets, *EPL (Europhysics Letters)*, **83**, 59001.
- 23.- Dormy E., Le Mouél J.L. (2008) Geomagnetism and the dynamo : where do we stand ? *C. R. Physique*, **9**, 711–720.
- 22.- Petitdemange L., Dormy E., Balbus S. (2008) Magnetostrophic MRI in the Earth’s outer core, *Geophysical Research Letters*, **35**, L15305, doi :10.1029/2008GL034395.
- 21.- Gissinger C., Iskakov A., Fauve S., Dormy E. (2008) Effect of magnetic boundary conditions on the dynamo threshold of von Kármán swirling flows, *EPL (Europhysics Letters)*, **82**, 29001.
- 20.- Dormy E., Gérard-Varet D. (2008) Time scales separation for dynamo action, *EPL (Europhysics Letters)*, **81**, 64002.
- 19.- Gérard-Varet D., Dormy E. (2006) Ekman layers near wavy boundaries, *Journal of Fluid Mechanics*, **565**, 115–134.
- 18.- Teyssier R., Fromang S., Dormy E. (2006) Kinematic Dynamos using Constrained Transport with High Order Godunov Schemes and Adaptive Mesh Refinement, *Journal of Computational Physics*, **218**, 44–67.
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- 15.- Dormy E., Manda M. (2005) Tracking Geomagnetic Impulses Down to the Core-Mantle Boundary, *Earth and Planetary Science Letters*, **237** :300–309.
- 14.- Iskakov A., Descombes S., Dormy E. (2004) An integro-differential formulation for magnetic induction in bounded domains : boundary element-finite volume method, *Journal of Computational Physics*, **197** :540–554.
- 13.- Morin V., Dormy E. (2004) Time dependent  $\beta$ -convection in Rapidly Rotating Spherical Shells, *Physics of Fluids*, **16** :1603–1609.
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- 3.- “Self-Exciting Fluid Dynamos”, H.K. Moffatt & E. Dormy, Cambridge University Press, 2019 (520 p).
  - 2.- “Mathematical Aspects of Natural Dynamos”, E. Dormy & A. Soward (Eds), CRC press, 2007, édition brochée en 2019 (504 p).  
Co-auteur de deux chapitres dans ce livre : “Governing Equations” avec Benoît Desjardins, “Boundary layers and waves” avec Andrew Soward.
  - 1.- Article d’encyclopédie : Dormy E., Roberts P.H., Soward A.M., “Boundary layers in the core”, *Encyclopedia of Geomagnetism and Paleomagnetism*, Gubbins D. & Herrero-Bervera E. (Eds), Springer 2007.
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- 9.- Dormy E. (2024) Physics of the Earth’s interior, in *European Physical Society Grand Challenges*, Physics for Society in the Horizon 2050, Edited by Carlos Hidalgo, IOP-science books, pages 2.133-2.145.
  - 8.- Dormy E. (2022) Simulations numériques : entre théorie et monde réel, *La Recherche*, **571** 40-43.
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- Focus
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