

LIST OF PUBLICATIONS

F. Rincon

◆ Habilitation thesis (HDR)

- **F. Rincon**. Instabilités, turbulence et champs magnétiques dans les fluides et plasmas astrophysiques. Université Paul Sabatier Toulouse III (2020).

◆ Review papers (peer-reviewed)

2. **F. Rincon**. Dynamo theories. 167 pages, published in *J. Plasma Phys. (lecture note series)* **85**, 205850401 (2019). (4 referees)
1. **F. Rincon** and M. Rieutord. The Sun's supergranulation. 74 pages, published in *Living Rev. Solar Phys.* **15**, 6 (2018). (4 referees)

◆ Articles in peer-reviewed journals

29. **F. Rincon**. Helical turbulent nonlinear dynamo at large magnetic Reynolds numbers. *Phys. Rev. Fluids* **6**, L121701 (2021).
28. **F. Rincon**, T. Roudier, A. A. Schekochihin and M. Rieutord. Supergranulation and multiscale flows in the solar photosphere: Global observations vs. a theory of anisotropic turbulent convection. *Astron. & Astrophys.* **599**, A69 (2017).
27. A. Riols, **F. Rincon**, C. Cossu, G. Lesur, G. I. Ogilvie and P.-Y. Longaretti. Magnetorotational dynamo chimeras. The missing link to turbulent accretion disk dynamo models ?. *Astron. & Astrophys.* **598**, A87 (2017).
26. **F. Rincon**, F. Califano, A. A. Schekochihin and F. Valentini. Turbulent dynamo in a collisionless plasma. *Proc. Nat. Acad. Sci.* **113**, 3950 (2016).
25. S. S. Cerri, F. Califano, F. Jenko, D. Told and **F. Rincon**. Subproton-scale cascades in solar wind turbulence: driven hybrid-kinetic simulations. *Astrophys. J. Lett.* **822**, L12 (2016).
24. S. Rawat, C. Cossu and **F. Rincon**. Travelling-wave solutions bifurcating from relative periodic orbits in plane Poiseuille flow. *Comptes Rendus Mécanique* **344**, 448 (2016).
23. **F. Rincon**, A. A. Schekochihin and S. C. Cowley. Nonlinear mirror instability. *MNRAS* **447**, L45 (2015).
22. A. Riols, **F. Rincon**, C. Cossu, G. Lesur, G. I. Ogilvie and P.-Y. Longaretti. Dissipative effects on the sustainement of a magnetorotational dynamo in Keplerian shear flow. *Astron. & Astrophys.* **575**, A14 (2015).
21. S. Rawat, C. Cossu, Y. Hwang and **F. Rincon**. On the self-sustained nature of large-scale motions in turbulent Couette flow. *J. Fluid Mech.* **782**, 515 (2015). (3 referees)

20. S. Rawat, C. Cossu and **F. Rincon**. Relative periodic orbits in plane Poiseuille flow. *Comptes Rendus Mécanique* **342**, 485 (2014).
19. A. Riols, **F. Rincon**, C. Cossu, G. Lesur, P.-Y. Longaretti, G. I. Ogilvie and J. Herault. Global bifurcations to subcritical magnetorotational dynamo action in Keplerian shear flow. 45 pages, *J. Fluid Mech.* **431**, 1 (2013). (3 referees)
18. J. Herault, **F. Rincon**, C. Cossu, G. Lesur, G. I. Ogilvie and P.-Y. Longaretti. Periodic magnetorotational dynamo action as a prototype of nonlinear magnetic field generation in shear flows. *Phys. Rev. E* **84**, 036321 (2011).
17. M. S. Rosin, A. A. Schekochihin, **F. Rincon** and S. C. Cowley. A nonlinear theory of the parallel firehose and gyrothermal instabilities in a weakly collisional plasma. *MNRAS* **413**, 7 (2011).
16. A. A. Schekochihin, S. C. Cowley, **F. Rincon** and M. S. Rosin. Magnetofluid dynamics of magnetized cosmic plasma: firehose and gyrothermal instabilities. *MNRAS* **405**, 291 (2010).
15. M. Rieutord, T. Roudier, **F. Rincon**, J. M. Malherbe, N. Meunier, T. Berger, and Z. Frank. On the power spectrum of solar surface flows. *Astron. & Astrophys.* **512(A4)**, 11 (2009).
14. T. Roudier, M. Rieutord, D. Brito, **F. Rincon**, J. M. Malherbe, N. Meunier, T. Berger, and Z. Frank. Mesoscale dynamics on the Sun's surface from HINODE observations. *Astron. & Astrophys.* **495**, 945 (2009).
13. T. A. Yousef, T. Heinemann, **F. Rincon**, A. A. Schekochihin, N. Kleeorin, I. Rogachevskii, S. C. Cowley and J. C. Mc Williams. Numerical experiments on dynamo action in sheared and rotating turbulence. *Astron. Nach.* **329(7)**, 737 (2008).
12. **F. Rincon**, G. I. Ogilvie, M. R. E. Proctor and C. Cossu. Subcritical dynamos in shear flows. *Astron. Nach.* **329(7)**, 750 (2008).
11. U. Ehrenstein, M. Nagata and **F. Rincon**. Two-dimensional nonlinear plane Poiseuille-Couette flow homotopy revisited. *Phys. Fluids* **20**, 064103 (2008).
10. M. Aurière et al. Weak magnetic fields in Ap/Bp stars: Evidence for a dipole field lower limit and a tentative interpretation of the magnetic dichotomy. *Astron. & Astrophys.* **475**, 1053 (2007).
9. **F. Rincon**. On the existence of two-dimensional nonlinear steady states in plane Couette flow. *Phys. Fluids* **19(7)**, 074105 (2007).
8. **F. Rincon**, G. I. Ogilvie and M. R. E. Proctor. A self-sustaining nonlinear dynamo process in Keplerian shear flows. *Phys. Rev. Lett.* **98**, 254502 (2007).
7. **F. Rincon**, G. I. Ogilvie and C. Cossu. On self-sustaining processes in Rayleigh-stable rotating plane Couette flows and subcritical transition to turbulence in accretion disks. *Astron. & Astrophys.* **463**, 817-832 (2007).
6. T. A. Yousef, **F. Rincon** and A. A. Schekochihin. Exact scaling laws and the local structure of isotropic magnetohydrodynamic turbulence. *J. Fluid Mech.* **575**, 111–120 (2006).

5. **F. Rincon**. Anisotropy, inhomogeneity and inertial-range scalings in turbulent convection. *J. Fluid Mech.* **563**, 43–69 (2006). (3 referees)
4. **F. Rincon**, F. Lignières and M. Rieutord. Mesoscale flows in large aspect ratio simulations of turbulent compressible convection. *Astron. & Astrophys. Lett.* **430**, L57-L60 (2005).
3. D. Reese, **F. Rincon** and M. Rieutord. Oscillations of magnetic stars: II. Axisymmetric toroidal and non-axisymmetric shear Alfvén modes in a spherical shell. *Astron. & Astrophys.* **427**, 279-292 (2004).
2. **F. Rincon** and M. Rieutord. Oscillations of magnetic stars: I. Axisymmetric shear Alfvén modes of a spherical shell in a dipolar magnetic field. *Astron. & Astrophys.* **398**, 663-675 (2003).
1. M. Rieutord, T. Roudier, J.-M. Malherbe et **F. Rincon**. On mesogranulation, network formation and supergranulation. *Astron. & Astrophys.* **357**, 1063-1072 (2000).

◆ Proceedings papers

13. S. Rawat, C. Cossu and **F. Rincon**. Exact Invariant Solutions for Coherent Turbulent Motions in Couette and Poiseuille Flows. *Procedia IUTAM* **20**, 94 (2017).
12. **F. Rincon**, A. Riols, C. Cossu, G. Lesur, G. I. Ogilvie and P.-Y. Longaretti. Subcritical magnetorotational dynamo action in Keplerian shear flow. *Euromech Colloquium EC565 on subcritical transition to turbulence, Cargèse, May 2014* (2014).
11. **F. Rincon**. Instabilités et turbulence dans les disques d'accrétion astrophysiques. *Proceedings du congrès de la division plasma de la Société Française de Physique, Toulouse, Mar. 2014* (2014).
10. S. Rawat, C. Cossu and **F. Rincon**. Relative periodic edge orbits in plane channel flow. *Proceedings of the 14th European Turbulence Conference, Lyon* (2013).
9. **F. Rincon**, A. Riols, C. Cossu, G. Lesur, G. I. Ogilvie and P.-Y. Longaretti. Global bifurcations to subcritical magnetorotational dynamo action in Keplerian shear flow. *Proceedings of the 14th European Turbulence Conference, Lyon* (2013).
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7. Th. Roudier et al.. Supergranulation, network formation and TFGs evolution from Hinode observations. *Second HINODE science Meeting "Beyond discovery – towards understanding"*, M. Cheung, B. Lites, T. Magara, J. Mariska, and K. Reeves Eds., Boulder, USA, 29 Sep.-3 Oct. 2008. *Astronomical Society of the Pacific, 2009*, p. 83. (2009).
6. M. Aurière et al.. Why are some A stars magnetic while some others are not ?. *Solar Polarization 5: In Honor of Jan Stenflo ASP Conference Series, Vol. 405, proceedings of the conference held 17-21 September, 2007 at Centro Stefano Franscini–Monte Verità, Ascona, Switzerland*. Edited by Svetlana V. Berdyugina, K. N. Nagendra,

and Renzo Ramelli. San Francisco: Astronomical Society of the Pacific, 2009., p.499. (2009).

5. T. A. Yousef, **F. Rincon** and A. A. Schekochihin. Exact scaling laws, nonlocality and structure in isotropic MHD turbulence. *Advances in Turbulence XI*, J. M. L. Palma and A. Silva Lopes, Eds., Proc. 11th EUROMECH European Turbulence Conf., Porto, Portugal, 25-28 June 2007. Springer **76** (2007).
4. **F. Rincon**. Theories of convection and the spectrum of turbulence in the solar photosphere. *Convection in astrophysics*, F. Kupka, I. W. Roxburgh and K. L. Chan, Eds., Proc. IAU Symposium 239, Prague, Czech Republic, 21-25 August. Cambridge University Press (2006).
3. D. Reese, **F. Rincon** and M. Rieutord. Shear Alfvén modes in magnetized spherical shells. Proc. SF2A-2004: Semaine de l’Astrophysique Francaise (2004).
2. **F. Rincon** and M. Rieutord. Stability of a compressible fluid layer in a magnetic field: a simple model for supergranulation. Proc. SF2A-2003: Semaine de l’Astrophysique Francaise, p.103-107 (2003).
1. **F. Rincon** and M. Rieutord. A Study of Shear Alfvén Waves in Magnetic Stars: the spherical shell model. *Asteroseismology Across the HR Diagram*, M. J. Thompson, M. S. Cunha and M. J. P. F. G. Monteiro, Eds. Proc. of the Asteroseismology Workshop, Porto, Portugal, 1-5 July, 2002, p. 561-564. Kluwer Academic Publishers (2003).

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