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Born 29 September 1984, Rouen, France.

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## EDUCATION

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2006–2009 : **PHD** at Laboratoire de Mécanique des Fluides et d'Acoustique (*LMFA, École Centrale de Lyon*, France) under the supervision of Claude Cambon and Fabien Godeferd.

2005–2006 : **MASTER'S DEGREE** in Fluid Mechanics, Energetics and Acoustics at *Université de Poitiers*, France. First class.

2004–2006 : **MASTER'S DEGREE IN ENGINEERING** at *École Nationale Supérieure de Mécanique et d'Aérotechnique*, Poitiers, France. First Class.

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## RESEARCH AND TEACHING

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2011–present : **RESEARCH ASSOCIATE** (*DAMTP, University of Cambridge*) :

- Solar dynamo : magnetic buoyancy instabilities and compressible convection simulations, supervised by M.R.E. Proctor.
- Tidal dissipation in planets : numerical simulations of forced inertial waves in spherical shells, collaboration with G.I. Ogilvie, C. Baruteau and A.J. Barker.

2011–present : **SUPERVISOR** (*University of Cambridge*) :

Astrophysical Fluid Dynamics Part II, 48 hours.

2010–2011 : **RESEARCH ASSOCIATE** (*School of Mathematics and Statistics, Newcastle Uni.*) :

Dynamos in rotating compressible convection under the supervision of Paul Bushby.

2009–2010 : **RESEARCH AND TEACHING ASSISTANT** (*LMFA, France*) :

- Effects of solid-body rotation on MHD turbulence, quasi-static MHD turbulence, homogeneous Rayleigh-Bénard convection.
- Tutorials and practical works for engineering students, installation of two new practical works.

2006–2009 : **PHD** (*LMFA, France*) :

Numerical simulations and theoretical modeling of homogeneous anisotropic turbulence. Rotating turbulence and interactions with inertial waves. MHD turbulence and interactions with Alfvén waves. Linear dynamics and synthetic models. Two-times correlations with applications to Lagrangian diffusion and aeroacoustics (Defense on November 3, 2009. Referees : H.K. Moffatt and T. Alboussière).

2006–2009 : **TEACHING ASSISTANT** (*École Centrale de Lyon, France*) :

- Tutorials (Fluid mechanics, thermodynamics and energetics), 48 hours.
- Practical works (hot-wire measurements in jets, pressure measurements in turbines, energy loss in pipes, flame propagation, inter-cooler, Fluent simulations), 220 hours.

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## LIST OF PUBLICATIONS

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### International journals

- [1] B. FAVIER, A.J. BARKER, C. BARUTEAU & G.I. OGILVIE, Tidal dissipation in rotating fluid bodies due to inertial waves, *Mon. Not. Astron. Soc.* (2013), submitted.
- [2] B. FAVIER & M.R.E. PROCTOR, Kinematic dynamo action in square and hexagonal patterns, *Phys. Rev. E* (2013), submitted.
- [3] B. FAVIER, P. BUSHBY, On the problem of large-scale dynamo action in rotating compressible convection, *J. Fluid Mech.* (2013), in press.
- [4] B. FAVIER, L. JOUVE, W. EDMUNDS, L.J. SILVERS & M.R.E. PROCTOR, How can large-scale twisted magnetic structures naturally emerge from buoyancy instabilities?, *Mon. Not. Astron. Soc.* **426**, pp.3349–3359 (2012).
- [5] C. JAUSE-LABERT, F.S. GODEFERD, B. FAVIER, Numerical validation of the volume penalization method in three-dimensional pseudo-spectral simulations, *Computer & Fluids* **67**, pp.41–56 (2012).
- [6] P. BUSHBY, B. FAVIER, M.R.E. PROCTOR & N.O. WEISS, Convectively-driven dynamo action in the quiet Sun, *Geo. Astro. Fluid Dyn.* **106**, pp.508–523 (2012).
- [7] B. FAVIER, P. BUSHBY, Small-scale dynamo action in rotating compressible convection, *J. Fluid Mech.* **690**, pp.262–287 (2012).
- [8] B. FAVIER, F.S. GODEFERD, A. DELACHE, C. CAMBON, W.J.T. BOS, Quasi-static magnetohydrodynamic turbulence at high Reynolds number, *J. Fluid Mech.* **681**, pp.434–461 (2012).
- [9] B. FAVIER, F.S. GODEFERD, C. CAMBON, On the effect of rotation on MHD turbulence at high magnetic Reynolds number, *Geo. Astro. Fluid Dyn.* **106**-1, pp.89–111 (2011).
- [10] B. FAVIER, F.S. GODEFERD, A. DELACHE, C. CAMBON, On the two-dimensionalization of quasi-static turbulence, *Phys. Fluids* **22**, 075104 (2010).
- [11] B. FAVIER, F.S. GODEFERD, C. CAMBON, On space and time correlations of isotropic and rotating turbulence, *Phys. Fluids* **22**, 015101 (2010).
- [12] B. FAVIER, F.S. GODEFERD, C. CAMBON, Modeling the far-field acoustic emission of rotating turbulence, *J. Turb.* **9**, N 30 (2008).

### Conferences with proceedings

- [13] B. FAVIER, P.J. BUSHBY, Dynamos in rotating compressible convection, *European Turbulence Conference 13*, Warsaw (2011).
- [14] B. FAVIER, F.S. GODEFERD, C. CAMBON, A. DELACHE, W.J.T. BOS, Quasi-static magnetohydrodynamic turbulence at high Reynolds number, *European Turbulence Conference 13*, Warsaw (2011).
- [15] B. FAVIER, F.S. GODEFERD, C. CAMBON, Synthetic turbulence model and DNS for magnetohydrodynamics with rotation, *12thEUROMECH European Turbulence Conference*, Marburg (2009).
- [16] F.S. GODEFERD, C. CAMBON, B. FAVIER, Modeling the far-field acoustic emission of rotating turbulence, *5th International Symposium on Turbulence and Shear Flow Phenomena*, Munich (2008).
- [17] F.S. GODEFERD, L. LIECHTENSTEIN, C. CAMBON, J.F. SCOTT, B. FAVIER, A model for the far-field anisotropic acoustic emission of rotating turbulence. *IUTAM Symposium on Computational Physics and New Perspectives in Turbulence*, Nagoya (2007).

## Seminars, Talks, Workshops, Summer schools, Posters

- [18] Forced inertial waves in spherical shells. *Waves and instabilities in astrophysical fluids*, École de physique des Houches, 2013.
- [19] Effect of mesogranulation on convectively-driven dynamo action. *UKMHD annual meeting*, Sheffield, 2012.
- [20] On the origin of solar mesogranulation. *Astrophysics seminars*, Cambridge, 2012.
- [21] Dynamo action in rotating compressible convection. *Dynamics and turbulent transport in plasmas and conducting fluids*, École de physique des Houches, 2011.
- [22] Dynamo action in compressible rotating convection. *UKMHD annual meeting*, London, 2011.
- [23] On the issue of large-scale dynamo action in compressible rotating convection. *Astrophysics seminars*, Cambridge, 2011.
- [24] A linear model for turbulence submitted to rotation and uniform magnetic field. *Fifth workshop on Synthetic turbulence models*, Warsaw, 2009.
- [25] Anisotropy in rotating MHD turbulence (poster). *Ang.-Fr. dynamo conference*, Cambridge, 2009.
- [26] Stochastic models of MHD turbulence. *Symposium Astroflu*, Lyon, 2008.
- [27] MHD and Kinematic Simulation (poster). *GdR Dynamo and EuroMHD*, Nice, 2008.

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## OTHER

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### Languages

French (mother tongue), English (fluent).

### Computer

Fortran, Pseudo-spectral methods, Visualization using FieldView and Vapor, IDL, netCDF, MatLab, Maple, Fluent, Windows and Unix/Linux operating systems.

### Referee

Referee for Journal of Fluid Mechanics, Geophysical and Astrophysical Fluid Dynamics and Physics of Fluids.

### Awards and fellowships

Isaac Newton Trust research grant 2012-2013.

### Miscellaneous

Guitar, piano, computer-assisted music, hiking, 19th century literature, history of sciences.