

# Pierre Augier

2nd May 1983

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## Education

- 2008–2011 **Ecole Polytechnique (France, #1 french engineering school)**, PhD candidate at the *LadHyX* laboratory, *Instabilities and turbulence in stratified fluids*.
- 2004–2008 **Ecole Normale Supérieure de Lyon (ENS Lyon, France, prestigious institution of higher education and research)**, Master (master's degree), Physics out of equilibrium.
  - 2007 **ENS Lyon**, *Concours de l'agrégation externe de sciences physiques (higher education teaching degree in physical sciences)*, option Physics.
- 2003–2004 **ENS Lyon**, *Licence de sciences de la matière (three-year undergraduate degree in sciences of matter)*, option Physics.
- 2001–2003 **University of La Rochelle**, *DEUG de sciences de la matière (two-year undergraduate degree in sciences of matter)*, option Physics.

## Research experiences

- 2014– **CNRS researcher (CR 2)**, *LEGI (Laboratoire des Ecoulements Géophysiques et Industriels)*, CNRS, Université Grenoble Alpes, Grenoble-INP.
- 2013-2014 **Post-doc fellowship with Paul Linden**, *University of Cambridge, DAMTP, Mathematical underpinnings of stratified turbulence*.
- 2011-2013 **Post-doc fellowship at KTH, with Erik Lindborg**, *Department of Mechanics, Stockholm, Large-scale atmospheric turbulence and its simulation by global circulation models. Turbulent cascades in forced-dissipative shallow-water flows*.
- 2008-2011 **PhD under the supervision of Jean-Marc Chomaz and Paul Billant**, *LadHyX, Polytechnique, Instabilities and turbulence in stratified fluids*.
  - 2006 **6-month internship under the supervision of Jean-Francois Pinton**, *ENS Lyon, Dynamo Bullard-von Kármán gallium, a fluid dynamo with unconstrained and turbulent flow*.
  - 2005 **3-month internship under the supervision of Stephan Llewellyn Smith**, *University of California San Diego (UCSD), Conversion of the barotropic tide over a three dimensional steep ridge*.
  - 2004 **2-month internship under the supervision of Anne Davaille**, *Institut de Physique du Globe de Paris (IPGP), Experimental study of the thermic convection with two layers in a viscous fluid*.

## Languages

French Mother tongue

English Working knowledge

Spanish Proficiency

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## Computing

Programming Fortran, C/C++, Python, MPI

Other Linux, L<sup>A</sup>T<sub>E</sub>X, Matlab...

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## Other activities

- 2010 Co-organiser of the 4th European Postgraduate Fluid Dynamics Conference, EPFDC 2010.
- 2015- In charge of the seminars of the group MEIGE, the Python module at LEGI, the large carriage in the Coriolis platform.

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## Publications

### Articles

- C. Leclercq and J. L. Partridge and **P. Augier** and S. B. Dalziel and R. R. Kerswell. 2016 Using stratification to mitigate end effects in quasi-Keplerian Taylor–Couette flow. *J. Fluid Mech.* 791 608–630, doi :10.1017/jfm.2016.44.
- P. Augier** and P. Billant and J.-M. Chomaz. 2015 Stratified turbulence forced with columnar dipoles. Numerical study.. *J. Fluid Mech.* 769 403–443, doi :10.1017/jfm.2015.76.
- P. Otheguy and J.-M. Chomaz and **P. Augier** and Y. Kimura and P. Billant. 2015 Pairing of two vertical columnar vortices in a stratified fluid. *European Journal of Mechanics - B/Fluids* 49, Part B 413 - 425, doi :10.1016/j.euromechflu.2014.05.007.
- P. Augier** and P. Billant and M. E. Negretti and J.-M. Chomaz. 2014 Experimental study of stratified turbulence forced with columnar dipoles. *Phys. Fluids* 26 (4).
- E. Deusebio and **P. Augier** and E. Lindborg. 2014 Third-order structure functions in rotating and stratified turbulence : a comparison between numerical, analytical and observational results. *J. Fluid Mech.* 755 294–313, doi :10.1017/jfm.2014.414.
- P. Augier** and E. Lindborg. 2013 A New Formulation of the Spectral Energy Budget of the Atmosphere, With Application to Two High-Resolution General Circulation Models. *J. Atmos. Sci.* 70 2293-2308, doi :10.1175/JAS-D-12-0281.1.
- P. Augier** and S. Galtier and P. Billant. 2012 Kolmogorov laws for stratified turbulence. *J. Fluid Mech.* 709 659-670, doi :10.1017/jfm.2012.379.
- P. Augier** and J.-M. Chomaz and P. Billant. 2012 Spectral analysis of the transition to turbulence from a dipole in stratified fluids. *J. Fluid Mech.* 713 86–108, doi :10.1017/jfm.2012.437.
- P. Augier** and P. Billant. 2011 Onset of secondary instabilities on the zigzag instability in stratified fluids. *J. Fluid Mech.* 662 120-131, doi :10.1017/jfm.2011.231.
- M. Bourgoïn and R. Volk and N. Plihon and **P. Augier** and P. Odier and J.-F. Pinton. 2006 An experimental Bullard-von Kármán dynamo. *New J. Phys.* 8 12 329, doi :10.1088/1367-2630/8/12/329.

### Proceedings

- A. Campagne and H. Alfredsson and R. Chassagne and D. Micard and N. Mordant and A. Segalini and J. Sommeria and S. Viboud and A. Vishnu Mohanan and E. Lindborg and **P. Augier**. 2016 First report of the Milestone experiment : strongly stratified turbulence and mixing efficiency in the Coriolis platform. VIIIth International Symposium on Stratified Flows (ISSF, San Diego, USA).
- P. Augier** and E. Lindborg. 2012 Spectral budget of energy and potential enstrophy in high resolution

General Circulation Models. In EGU General Assembly Conference Abstracts, volume 14, 12186.

**P. Augier** and P. Billant and J.-M. Chomaz. 2011 Experimental and numerical studies of forced stratified turbulence. In Proceedings of the VII International Symposium on Stratified Flows ISSF2011 (Rome).

**P. Augier** and P. Billant. 2010 Onset of secondary instabilities on the zigzag instability in stratified fluids. In book of abstracts, volume 2, EFMC8 (Bad Reichenhall, Germany) 206.

A. Davaille and **P. Augier**. 2010 Morphology and evolution of density heterogeneities in a convecting mantle. In EGU General Assembly Conference Abstracts, volume 12, 8328.

**P. Augier** and P. Billant and M.E. Negretti and J.-M. Chomaz. 2009 Experimental study of forced stratified turbulence. In Advances in Turbulence XII : Proceedings of the 12th Euromech European Turbulence Conference, volume 132, ETC12 (Marburg, Germany) 397–400.