

## GIBERT Mathieu

Born January 25, 1981 in Toulouse (31)

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1 child

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## Research Activities

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- Oct 2011 - present : **Associate Researcher**, Institut NÉEL CNRS (France), **Projet 3D-QuantumV** (ANR Retour Postdoc 2011). Principal Investigator : Mathieu Gibert, funding for 36 month.
- June 2009 - Sept 2011 : **Post-doctoral research associate**, Max Plank Institute (Germany), **Marie Curie Fellowship** (Program PEOPLE - Call ID FP7-PEOPLE-IEF-2008 - Panel PHY - Proposal No237521 Acronym : PTurb). Principal Investigator : Mathieu Gibert, funding for 24 month. Group Director : Eberhard Bodenschatz.
- Oct 2007 - June 2009 : **Post-doctoral research associate**, Max Plank Institute (Germany), **MPI fellowship**. Group Director : Eberhard Bodenschatz.
- 2004 - 2007 : **Ph.D.** : at the Laboratoire de Physique, ÉNS-Lyon (France). Supervisor : Pr. Bernard Castaing. Title : “Thermal Turbulent Convection : Thermal plumes and fluctuations”, Link : <http://tel.archives-ouvertes.fr/tel-00268361/fr/>
- April - June 2004 : **Research training** Laboratoire de Physique, ÉNS-Lyon (France). Supervisors : Pr. Bernard Castaing, Dr. Francesca Chillà. Title : “Rayleigh Bénard Convection in a vertical Channel”
- May - July 2002 : **Research training** Universidad de Santiago, Leaf-NL (Chile). Supervisors : Pr. Rodrigo Hernández, Dr. Ludovic Bellon. Title : “Coupling between ageing and convective motion in colloidal glass of Laponite.”
- June - July 2001 : **Research training** Université Montpellier II, GAM (France) Supervisor : Dr. F. Piron. Title : “X-ray versus  $\gamma$ -ray emission processes of blazar objects.”

## Teaching Activities :

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- Training of students of the École Normale Supérieure of Lyon to the national highly competitive examination of the Agrégation de Sciences Physiques (teaching degree) (2004-2007).
- Training of students (Lyon) : preparation for the competitive Engineering Schools exam (2004-2005).
- Interventions in High School : Physics Experiments Presentations (ÉNS-Lyon).

## Education and Diploma

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- 2004-2007 : **Ph.D.** , ÉNS-Lyon (France) Supervisor : Pr. Bernard Castaing .
- Sept 2006 : **GEFD summer school**, DAMPT, Cambridge (UK)
- 2003-2004 : **DEA**, ÉNS-Lyon (Master's Degree with honors) .
- 2002-2003 : **Agrégation of Physics** (ÉNS-Lyon). Teaching degree for high school professors and "classes préparatoires aux grandes écoles". National rank : 61.
- 2000-2002 : BSc, MSc in Physics (ÉNS-Lyon) (with honours)
- 1998-2000 : **Preparatory Schools** : Undergraduate advanced Physics program. Admission to the École Normale Supérieure (Magistérien), Lyon (France).

## Administrative Responsibilities :

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- **Referee** for *Physical Review Letters*, *Physical Review E*, *International Journal of Heat and Mass Transfer*, *Young Scholars Dissertation Award of the The Chinese University Press*.
- **Scientific member** of the IT Council (LFPN), 2008-2011.
- **Elected member** of the Laboratory Council (Laboratoire de Physique ÉNS-Lyon), representing PhD students, 2004-2007.
- **Elected member** of the Administration Council of the ÉNS-Lyon, representing Research personal (except Professors), 2005-2007.
- **Organization and chair man** of "PhD days" 2006 in the ÉNS-Lyon
- **Project leader** of the project : "PhD students in High schools" made to advertise Physics in high school in the region Rhône-Alpes (around Lyon) using basic physics experiments (2004-2007).

## Experimental and computer expertise :

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- Experimental :
- Expert in Temperature measurements.
  - Expert in Particle Image Velocimetry (PIV), and Tomo-PIV.
  - Experience in Laser Doppler Velocimetry (LDV), and Extended-LDV.
  - Expert in 3D Particle Tracking Velocimetry (3D-PTV)
  - Expert in "Smart Particles" (wireless miniature sensors)
  - Familiar with FPGA programming (VHDL)
- Computer :
- OS : Linux (debian), MacOSX, Windows
  - Programming languages : C++, fortran, html, php, L<sup>A</sup>T<sub>E</sub>X
  - Scientific software : LabView, MatLab.
  - Technical drawing software : SolidEdge, SolidWork
  - Network administration : bind, apach, sftpd, mail(exim), dhcp, ssh, samba

## Other :

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- Languages : - French : native; English, Spanish : fluent (oral and written), German : trying to...
- Interests : - Music, sports (ski, diving), motorcycles, travels and new technologies.
- Additional information : - Car and motorcycle driving license.

## References :

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Pr. Bernard Castaing                      Pr. Eberhard Bodenschatz                      Pr. Jean-François Pinton  
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### Papers published in refereed journals

1. « High Rayleigh-number Convection in a Vertical Channel », **M. Gibert**, H. Pabiou, F. Chillà, and B. Castaing; *Phys. Rev. Lett.*, **96**, 084501 (2006).  
See also : « Off the Wall »; Don Monroe *Phys. Rev. Focus* **17**, story 9.
2. « Coupling between ageing and convective motion in colloidal glass of Laponite », L. Bellon, **M. Gibert**, R. Hernández; *Eur. Phys. J. B*, **55**, 101 :107 (2007).
3. « An instrumented tracer for Lagrangian measurements in Rayleigh-Bénard convection », W. L. Shew, Y. Gasteuil, **M. Gibert**, P. Metz, J.-F. Pinton; *Rev. Sci. Instrum.*, **78**, 065105 (2007).
4. « Lagrangian Temperature, Velocity, and Local Heat Flux Measurement in Rayleigh-Bénard Convection », Y. Gasteuil, W. L. Shew, **M. Gibert**, F. Chillà, B. Castaing, and J.-F. Pinton; *Phys. Rev. Lett.*, **99**, 234302 (2007).  
See also : Physics Today - January 2008 and *Phys. Rev. Lett.*, **99** cover page.
5. « Des particules instrumentées pour une mesure de flux de chaleur; illustration en convection de Rayleigh-Bénard (Mesures lagrangiennes de température et de vitesse) », J.-F. Pinton, Y. Gasteuil, P. Metz, W. L. Shew, **M. Gibert**; *Techniques de l'Ingénieur*, (2008).
6. « Heat Convection in a vertical Channel : Plumes versus Turbulent Diffusion », **M. Gibert**, H. Pabiou, J.-C. Tisserand, B. Castaing, and F. Chillà; *Phys. Fluids*, **21**, 035109 (2009).
7. « Inertial effects on two-particle relative dispersion in turbulent flows », **M. Gibert**, H. Xu, and E. Bodenschatz; *EPL*, **90**, 64005 (2010).
8. « Convection in a vertical channel », J.-C. Tisserand, M. Creyssels, **M. Gibert**, B. Castaing, F. Chilla; *New Journal of Physics*, **12**, 075024 (2010).
9. « Comparison between a rough and a smooth plates within the same Rayleigh-Bénard cell », J.-C. Tisserand, M. Creyssels, Y. Gasteuil, H. Pabiou, **M. Gibert**, B. Castaing, and F. Chillà; *Phys. Fluids*, **23**, 015105 (2011).
10. « Signatures of non-universal large scales in conditional structure functions from various turbulent flows », D. B. Blum, G. P. Bewley, E. Bodenschatz, **M. Gibert**, A. Gylfason, L. Mydlarski, G. A. Voth, H. Xu, and P. K. Yeung; *NJP*, **13**, 113020 (2011).

### Papers in preparation or under review

1. « Where do heavy particles go in a turbulent flow ? », **M. Gibert**, H. Xu, and E. Bodenschatz; under review by *JFM*.
2. « How to track the full motion of inertial particles together with the flow field around them in fully developed turbulence », **M. Gibert**, S. Klein, A. Bérut, and E. Bodenschatz; in preparation for *Measurement Science and Technology special issue on "Advances in 3D velocimetry"*, **invited contribution**.
3. « Flow around finite-size neutrally buoyant Lagrangian particles in fully developed turbulence », **M. Gibert**, S. Klein, and E. Bodenschatz; in preparation for *Phys. Rev. Lett.*

These papers are available at : <http://www.gibert.biz/>.

### International communications

1. Septembre 2005, *ITI Conference on Turbulence*, Bad Zwischenahn (Germany).
2. Septembre 2006, Conference and EuroMech Colloquium #480 *High Rayleigh Number Convection*, Trieste (Italy).
3. Novembre 2006, *GDR Turbulence*, Nice (France).
4. Juin 2007, *ETC11 - 11th European Turbulence Conference*, Porto (Portugal).
5. Mars 2008, *Harz Seminar*, Hahnenklee (Germany)
6. Novembre 2008, *DFD Meeting*, San Antonio (Texas, USA)
7. Mars 2-6 2009, *Turbulence and Statistical Mechanics*, Les Houches (France)
8. Mars 30 2009, *Rencontres Nicoises de Mécanique des Fluides*, Nice (France), **Talk Invité**
9. 31 Mai-5 Juin 2009, *Second International Conference on Turbulence and Interaction - TI2009*, Sainte-Luce, Martinique (France)

10. Sept. 7-10 2009, *ETC12 - 12th EUROMECH European Turbulence Conference*, Marburg (Germany)
11. Fev. 21-26 2010, *New Challenges in Turbulence Research*, Les Houches (France), **Talk Invité**
12. Mars. 2010, *COST action Meeting*, Bologne (Italie)
13. Nov. 21-23 2010, *DFD Meeting*, Long Beach (Californie, USA)
14. Sept 4-9 2011, *The 2011 European Aerosol Conference*, Manchester (England), **Talk Invité**
15. Sept 12-13 2011, *XXXI Dynamics Days Europe*, Oldenburg (Germany), **Talk Invité**
16. Sept 13-17 2011, *European Turbulence Conference*, Warsaw (Poland)
17. Sept 12-14 2011, *GDR Turbulence*, Aussois (France)