

Curriculum vitæ – Vivien LECOMTE

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birth: 6th December 1980, Figeac (46), France
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Cursus - University degrees:

- 2004-07: PhD in Theoretical Physics, *Laboratoire de Physique Théorique*, Orsay, and *Laboratoire Matière et Systèmes Complexes*, Paris VII
- 2003-04: Master in Theoretical Physics, *École Normale Supérieure*, Paris
Agrégation in Mathematics
- 2002-03: Master (1st year) in Physics, *École Normale Supérieure*, Cachan
Master (1st year) in Mathematics, *Université Pierre et Marie Curie*, Paris
- 2001-02: Graduation in Physics, *École Normale Supérieure*, Cachan
Graduation in Mathematics, *Université Pierre et Marie Curie*, Paris

Research experience:

([P1], [P2],... refer to my publication list)

- From April 2010: chargé de recherche, LPMA, CNRS-Paris VII
- September 2007-Mars 2010: post-doctoral scientist at *Département de Physique de la Matière Condensée*, in Thierry Giamarchi's group, Université de Genève [P10], [P11], [P12], [P13], [P14], [P15], [C4].
- April 2007-July 2007: visiting scientist at *Istituto dei Sistemi Complessi*, Università La Sapienza (Roma). Collaboration with A. Cavagna, I. Giardinà and G. Parisi [P9].
- September 2004-March 2007: PhD student in statistical physics at *Laboratoire de Physique Théorique* (Orsay) and *Laboratoire Matière et Systèmes Complexes* (Paris), with Frédéric van Wijland. Subject: thermodynamics of histories and fluctuations in non-equilibrium systems [P2], [P3], [P4], [P5], [P6], [P7], [C2], [C3], [C5]. Defended on March 30, 2007.
- January-May 2004: visiting scientist in the *Statistical Physics Group, Physics of biological molecules team*, (École Normale Supérieure, Paris), with David Bensimon and Vincent Croquette.
- May-July 2003: visiting scientist at *International Center for Theoretical Physics (ICTP)*, Trieste, Italy, with Silvio Franz. Thematics: quasi-equilibrium picture in spin glass systems [P1], [C1].
- June-August 2002: visiting scientist at *Laboratoire Kastler-Brossel* (École Normale Supérieure, Paris), with Gilles Nogues.

Teaching:

- 2008-2010: First year teaching (64 hours; physics for physicians), Université de Genève
- 2007-2008: First year teaching (64 hours; physics, physics for geologists), Université de Genève
- 2006-2007: First year teaching (64 hours, physics for physicians), Université Denis Diderot, Paris
- 2005-2006: First year teaching (64 hours, physics for physicians, experimental physics), Université Denis Diderot, Paris
- 2004-2005: First year teaching (64 hours, informatics for mathematicians), Lycée préparatoire Saint-Louis, Paris

Organization of seminars:

- (Jan 2004 - Jan 2005) co-organization of the *Complex System* weekly seminar, common to the *Laboratoire de physique théorique* (LPT, Orsay) and *Laboratoire de physique théorique et modèles statistique* (LPTMS, Orsay), with Alberto Rosso (LPTMS)
- 2004-2005: co-organization of the Orsay *PhD Seminar* seminar, common to the LPT Orsay, LPTMS, and IPN (Institut de Physique Nucléaire) with Mélanie Lebental (LPTMS).

Refereeing:

Referee for *European Physics Letters*, *European Physics Journal B*, *Journal of Physics A*, *Journal of Physics: Condensed Matter*, *Journal of Statistical Mechanics*, *Physical Review Letters*, *Physical Review E*.

Talks, conferences:

- Bariloche (Argentina), November 2009, Solid State Theory Group, CNEA
- Trieste (Italy), May 2009, Condensed Matter and Statistical Physics Section, ICTP
- Nancy (Suisse), May 2009, Institut Jean Lamour
(invited speaker to the *Statistical Physics and Low Dimension Systems* Workshop)
- Genève (Suisse), March 2009, Département de Physique Théorique
- Paris (France), January 2009, Laboratoire de Physique Statistique, ENS
- Marseille (France), January 2009, Centre de Physique Théorique
- Edinburgh (UK), August 2008, Condensed Matter Group, School of Physics
- Genève (Suisse), October 2007, Département de Physique de la Matière Condensée
- Rome (Italy), May 2007, Istituto dei Sistemi Complessi, CNR
- Orsay (France), March 2007, Laboratoire de Physique Théorique et Modèles Statistiques
- Paris (France), December 2006, Laboratoire de Physico-Chimie Théorique, ESPCI
- Saclay (France), November 2006, Service de Physique Théorique
- Barcelona (Spain), October 2006, Departament de Física Fonamental
(invited speaker to the *Workshop on complex systems*)
- Nancy (France), May 2006, Laboratoire de Physique des Matériaux
(invited speaker to the *Statistical Physics and Low Dimensional Systems* conference)
- Montpellier (France), April 2006, Laboratoire Colloïdes, Verres et Nanomatériaux

Posters, Short talks, Summer Schools:

- Diablerets, September 2009, *MANEP workshop*
- Paris, January 2009, *Journées de Physique Statistiques* (ESPCI annual meeting)
- Beg-Rohu, June 2008, *Manifolds in random media, random matrices and extreme value statistics*
- Genève, March 2008, *Swiss Physical Society – MaNEP meeting*
- Dresden, July 2007, *Fluctuation and dissipation phenomena in driven systems far from equilibrium*
- Genoa, July 2007, *International Conference on Statistical Physics* (STATPHYS XXIII)
- Paris, January 2007, *Journées de Physique Statistiques* (ESPCI annual meeting)
- Cambridge (UK), June 2006, *First-Passage and Extreme Value Problems in Random Processes*
- Bruxelles (Belgium), March 2006, *Work, dissipation and fluctuations in nonequilibrium physics*
- Paris, January 2006, *Journées de Physique Statistiques* (ESPCI annual meeting)
- Leuven (Belgium), September 2005, *Fundamental problems in statistical physics XI* summer school
- Paris, January 2005, *Journées de Physique Statistiques* (ESPCI annual meeting)

Prizes:

- With Julien Tailleur, 2007 JSTAT prize for young scientists, for the paper [P6]:
V. Lecomte and J. Tailleur,
A numerical approach to large deviations in continuous-time,
J. Stat. Mech. (2007) P03004
- With Julien Tailleur and Jorge Kurchan, Journal of Physics A Best Paper Prize 2009, for [P11]:
J. Tailleur, J. Kurchan and V. Lecomte,
Mapping out of equilibrium into equilibrium in one-dimensional transport models,
J. Phys. A, **41** 505001 (2008)

Accepted papers:

- [P16] V. Lecomte, A. Imparato and F. van Wijland, *Current fluctuations in systems with diffusive dynamics, in and out of equilibrium*, [arXiv:0911.0564]
Accepted for publication, Progress of Theoretical Physics Supplement (2010)
- [P15] V. Lecomte, S. E. Barnes, J.-P. Eckmann and T. Giamarchi, *Depinning of domain walls with an internal degree of freedom*, [arXiv:0903.04175]
Phys. Rev. B, **80** 054413 (2009)
- [P14] A. Imparato, V. Lecomte and F. van Wijland, *Equilibriumlike fluctuations in some boundary-driven open diffusive systems*, [arXiv:0904.1478]
Phys. Rev. E, **80** 011131 (2009)
- [P13] J.P. Garrahan, R.L. Jack, V. Lecomte, E. Pitard, K. van Duijvendijk and F. van Wijland, *First-order dynamical phase transition in models of glasses: an approach based on ensembles of histories*, [arXiv:0810.5298]
J. Phys. A, **42** 075007 (2009)
- [P12] T. Bodineau, B. Derrida, V. Lecomte and F. van Wijland, *Long range correlations and phase transition in non-equilibrium diffusive systems*, [arXiv:0807.2394]
J. Stat. Phys, **133** 1013 (2008)
- [P11] J. Tailleur, J. Kurchan and V. Lecomte, *Mapping out of equilibrium into equilibrium in one-dimensional transport models*, [arXiv:0809.0709]
J. Phys. A, **41** 505001 (2008)
- [P10] C. Appert-Rolland, B. Derrida, V. Lecomte and F. van Wijland, *Universal cumulants of the current in diffusive systems on a ring*, [arXiv:0804.2590]
Phys. Rev. E, **78** 021122 (2008)
- [P9] M. Ballerini, N. Cabibbo, R. Candelier, A. Cavagna, E. Cisbani, I. Giardina, V. Lecomte, A. Orlandi, G. Parisi, A. Procaccini, M. Viale, V. Zdravković, *Interaction ruling animal collective behaviour depends on topological rather than metric distance: evidence from a field study*, [arXiv:0709.1916]
PNAS **105** 1232 (2008)
- [P8] J. Tailleur, J. Kurchan and V. Lecomte, *Mapping nonequilibrium onto equilibrium: the macroscopic fluctuations of simple transport models*, [arXiv:0705.4033]
Phys. Rev. Lett., **99** 150602 (2007)
- [P7] J.P. Garrahan, R.L. Jack, V. Lecomte, E. Pitard, K. van Duijvendijk and F. van Wijland, *Dynamic first-order phase transition in kinetically constrained models of glasses*, [cond-mat/0701757]
Phys. Rev. Lett., **98** 195702 (2007)
- [P6] V. Lecomte and J. Tailleur, *A numerical approach to large deviations in continuous-time*, [cond-mat/0612561]
J. Stat. Mech. (2007) P03004
- [P5] V. Lecomte, U. C. Täuber and F. van Wijland, *Current distribution in systems with anomalous diffusion: renormalisation group approach*, [cond-mat/0611265]
J. Phys. A, **40** 1447 (2007)
- [P4] V. Lecomte, C. Appert-Rolland and F. van Wijland, *Thermodynamic formalism for systems with Markov dynamics*, [cond-mat/0606211]
J. Stat. Phys **127** 51 (2007)
- [P3] V. Lecomte, C. Appert-Rolland and F. van Wijland, *Chaotic properties of systems with Markov dynamics*, [cond-mat/0505483]
Phys. Rev. Lett. **95** 010601 (2005)
- [P2] V. Lecomte, Z. Rácz and F. van Wijland, *Energy flux distribution in a two-temperature Ising model*, [cond-mat/0412547]
J. Stat. Mech. P02008 (2005)
- [P1] S. Franz, V. Lecomte and R. Mulet, *Quasi-equilibrium during aging of the two-dimensional Edwards-Anderson model*, [cond-mat/030919]
Phys. Rev. E **68** 066128 (2003)

Proceedings, lecture notes:

- [C4] J. Tailleur and V. Lecomte, *Simulation of large deviation functions using population dynamics*, [arXiv:0811.1041]
Proceedings of the 10th Granada Seminar on Computational and Statistical Physics: Modeling and simulation of new materials, AIP Conf. Proc, **1091** 212 (2009)
- [C3] V. Lecomte, C. Appert-Rolland and F. van Wijland *Thermodynamic formalism and large deviation functions in continuous time Markov dynamics*, [cond-mat/0703435]
C. R. Physique (Paris), **8** 609 (2007)
- [C2] B. Derrida, lecture notes by V. Lecomte, *Out of equilibrium systems* (in french), Doctoral lectures, SPhT, CEA Saclay (2004)
http://dpmc.unige.ch/gr_giamarchi/Personal_pages/Lecomte/hors_eq_derrida.pdf
- [C1] S. Franz, V. Lecomte and R. Mulet, *On pre-asymptotic aging in finite dimensional spin glasses*, Proceeding of the Capri conference “*Unifying concepts in granular media and glasses*”, June 25 - 28, 2003, A. Coniglio, A. Fierro, H.J. Herrmann and M. Nicodemi eds. Elsevier 2004, p. 119-128