

ROUX
Raphaël

born on March 1st, 1985
in Poitiers (France)

Civil union, 1 child

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CURRENT POSITION

I am currently an Assistant Professor at LPMA, Université Pierre et Marie Curie (France).

EDUCATION

- 2011 **Postdoctoral researcher** at Université Paris Dauphine
- 2007-2010 **PhD thesis in mathematics** at CERMICS (École des Ponts ParisTech), under the supervision of Benjamin Jourdain and Tony Lelièvre ;
Subject : *Interacting particle systems and applications to moleculaton simulation*.
Defended on December 6, 2010. Jury : Roland Assaraf, Nicolas Fournier, Benjamin Jourdain, Tony Lelièvre, Clément Mouhot, Denis Talay and Anders Szepessy.
- 2005-2007 **M.Sc in Mathematics** (Probability theory), Université de Rennes 1 - ENS de Cachan, with honors.
- 2007 **“Agrégation” in mathematics**, rank : 6th.
- 2004-2005 **B.Sc in Mathematics**, Université de Rennes 1, with honors.
- 2004-2008 Student at **École Normale Supérieure de Cachan**.
- 2002-2004 **“Classes préparatoires”**, Lycée Pierre-de-Fermat (Toulouse).

POSITIONS HELD

- 2011-present **Maître de conférences** at Université Pierre et Marie Curie.
- 2008-2011 **Allocataire de recherche - Moniteur** at Université Paris-Est Marne-La-Vallée.
- 2007-2008 **Enseignant vacataire** at ESIEE, ENSTA and École des Ponts ParisTech.
- 2004-2008 Student at **École Normale supérieure de Cachan**.

SKILLS

- Mathematics** : Probabilistically interacting particle systems,
Euler schemes for stochastic differential equations,
Parabolic and hyperbolic nonlinear partial differential equations,
Nonlinear stochastic differential equations,
Probabilistic interpretation of partial differential equations.
- Physics** : Statistical physics, quantum chemistry.
- Computers** : GNU/Linux, Windows, Scilab, C, L^AT_EX, Beamer, HTML.
- Languages** : french (native), english (fluent),
modern greek (fluent), mandarin chinese (basics).

OTHER

Referee for 2 articles submitted in scientific journals.

PUBLICATIONS

- *Existence, uniqueness and convergence of a particle approximation for the Adaptive Biasing Force process*
B. Jourdain, T. Lelièvre & R. Roux, *ESAIM : M2AN* **44** (2010) 831–865.
- *Convergence of a stochastic particle approximation for fractional scalar conservation laws*
B. Jourdain & R. Roux, *Stochastic Processes and their Applications* **121** (2011) 957-988.

WORK IN PROGRESS

- *Sensitivity of diffusions with respect to some parameter*
R. Assaraf, B. Jourdain, T. Lelièvre & R. Roux.
- *Propagation of chaos for a particle approximation of fractional conservation laws*
S. Mischler, C. Mouhot & R. Roux.
- *Acceleration of diffusions*
S. Mischler, C. Mouhot & R. Roux.

- 2011
Probability seminar, University of Cambridge.
Numerical probability and finance seminar, Université Paris 6.
Workshop “Probabilistic methods in kinetic theory”, CIRM, Luminy.
PDE seminar, Université de Lille 1.
Seminar “Applications of Mathematics”, ENS Cachan - Antenne de Bretagne.
Stochastic processes seminar, Université de Rennes 1.
Probability and statistics seminar, Institut Élie Cartan Nancy.
PhD students seminar, Université Paris 6.
Analysis and probability seminar, Université Paris Dauphine.
Probability and statistics seminar, Université de Nice.
- 2010
Conference “Nonlocal operators and partial differential equations”, Będlewo (Poland).
Workshop “Jeunes probabilistes et Statisticiens”, Le Mont-Dore.
Seminar “Big’MC, Monte Carlo in high dimension”, Institut Henri Poincaré.
Seminar on probability and statistics and their applications, Université Paris-Est Marne-La-Vallée.
- 2009
PhD students seminar at CERMICS, Champs-Sur-Marne.
PhD students seminar, Université Paris 6.
- 2008
PhD students seminar, Université de Lille 1.
Stochastic processes seminar, Université de Rennes 1.
Journées MAS 2008, Rennes.