

# Marie-Amélie MORLAIS

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**Situation for the year 2007/2008:** Post doctorant at the ETH-Zurich (Switzerland)  
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## Doctor in Applied Mathematics

**PhD thesis** between 2004 and 2007 at the laboratory of **IRMAR** (University of Rennes 1)

**PhD advisor:** Ying HU

**PhD defended at the university of Rennes 1 the 12th October 2007 (Grade: « Très honorable »)**  
(available at: <http://tel.archives-ouvertes.fr/tel-00179388/en/>)

### Backward Stochastic Differential Equations (BSDEs) with quadratic growth and Applications.

#### RESEARCH INTERESTS

Study of **quadratic BSDEs**, especially in the context of general filtrations such as:

- In a continuous but non necessarily Brownian filtration.
- In a jump diffusion model (equipped with a discontinuous filtration).

Links with **Mathematical Finance (Utility Maximization)** problem: studies of this problem by dynamical methods in incomplete markets.

#### PUBLICATIONS (AND PREPRINTS)

- **Quadratic BSDEs driven by a continuous martingale and application to utility maximization problem** (submitted and in revision, available on arXiv: math.PR/0610749)
- **Utility maximization in a jump market model.** (Accepted in Stochastics and for oral presentation at the BFS conference, London July 2008, available on arXiv: math.PR/0612181 )

#### CONFERENCES AND TALKS

**January 2008:** Talk at the Bachelier conference in Metabief (France).

**October 2007:** Talk at the seminary (university of bordeaux 1), France.

**June 2007:** Talk at the « Séminaire Bachelier », I.H.P, University Pierre et Marie Curie, Paris, France.

**Mai 2007:** Seminar at the university of Evry, France.

**December 2006:** Seminar « Talks in financial and insurance Mathematics » at the **ETH**, Zurich, Switzerland.

**September 2006:** Workshop on **Financial modelling with jumps processes** ( Ecole Polytechnique, Palaiseau, France (6-8 September),

Conference « **Journées de Probabilités** » 2006 at CIRM, Marseille, France (18-22 September).

**April 2006:** Meeting « **Jeunes Probabilistes et Statisticiens** », Aussois, France.

**Mars 2006:** Talk at the **Laboratory of Le Mans**, France.

**September 2005:** Conference « **Journées de Probabilités** » 2005, Nancy, France.

**July 2005:** Summer school « **Ecole d' été de Probabilités de Saint Flour** », France.

#### **STUDIES AND GRADES**

**Since September 2004:** PhD thesis of Mathematics at the university of **Rennes 1**.

**2002 -2004:** « **Agrégation de Mathématiques** » and **Master degree in Mathematics** (University of **Rennes 1**).

Student of the **Ecole Normale Supérieure** (E.N.S) of Cachan (from September 2002 to 2004)

**2000-2002 :** Licence and master (first year) of **Mathematics** (University of **Rennes 1**).

#### **PROFESSIONNAL EXPERIENCES**

**Teaching activities** (during the PhD thesis, between 2004-2007)

(charge of **64 hours of lessons** per year from licence to master )

**Oral lessons** (in 2003) given in « **classes préparatoires aux grandes écoles** ».

#### **LANGUAGES AND ABILITIES**

English: good in oral and written expression.

German: basic (at oral).

Practice of LaTeX to write scientific articles.

Practice of scilab (during practical lessons given in the preparation of « **Agrégation de Mathématiques** »).

#### **HOBBIES**

Dance, cycling.