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34 years old.

**Object** : Curriculum Vitae.

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i) *University studies and diplomas.*

- 2002- :** Permanent position as “Maître de Conférences” (Assistant professor) at the University of Marne-La-Vallée, France.
- 2001-2002 :** Post doc position at the University of “Roma Tre”, Italy, under the guidance of Professor Fabio Martinelli. Marie Curie Individual fellowship (Nov 2001 - oct 2002).
- 1998-2001 :** Doctor of the “Université Paul Sabatier”, Toulouse, France, in Mathematic, Probability theory.  
Tittle : “Hardy type inequalities and logarithmic Sobolev inequalities”. Research made under the guidance of Professors M. Ledoux and L. Miclo.  
Awarded in june, 21th, 2001, with honor (“Mention Très Honorable”).
- 1997-1998 :** First year graduate student in Probability (“Diplôme d’Études Avancées”, D.E.A.) at the “Université Paul Sabatier” in Toulouse.  
Courses of initiation to research in Applied Mathematics and a final research project on the spectral gap for some Metropolis algorithms on  $\mathbf{R}$ .  
First rank, with honor (“Mention Très Bien”).
- 1996-1997 :** Agrégation de Mathématiques, rank : 97 (over 400).
- 1995-1996 :** Graduate degree (“Maîtrise”) at the “Université Nice Sophia-Antipolis” in Nice, with honor (“Mention Bien”).
- 1992-1995 :** Ecole Centrale de Lille (French Engineering School), Lille. with honor (“mention Bien”).
- 1990-1992 :** Preparation of the French National Competitive exams for the French Engineering School, at Masséna high school in Nice.
- 1990 :** Baccalauréat C (Mathematic and Physic).

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ii) *Collective duties.*

- Member of the recruiting committee of Marne La Vallée University.
- Locally in charge of the European network Grefi-mefi managed by the french CNRS and the Italian stucture INDAM (Istituto Nazionale di Alta Matematica).
- One of the organizers of the two days workshop “Functional Inequalities and Applications” held in Marne-La-Vallée, december 2007.  
<http://perso-math.univ-mlv.fr/users/roberto.cyril/workshop.html>
- One of the organisers of the five weeks conference “From Dynamical Systems To Statistical Mechanics” held in Luminy, Marseille, february-march 2008.  
<http://www.mat.uniroma2.it/liverani/Cirm-2008/cirm-2008.html>

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iii) *Research experience.*

1- Research interests.

- Probability, Markov chains and ergodic constants.
- Statistical mechanics out of equilibrium : rate of convergence to equilibrium of Glauber and Kawasaki dynamics.
- Functionnal inequalities (Poincaré, Sobolev, log-Sobolev, Hardy type inequalities) and their applications (concentration phenomena, Isoperimetry, hypercontractivity).
- Paths methods and geometric tools.

## 2- Publication list and work in progress.

### - Publications.

- [1] Cancrini, Martinelli, Roberto and Toninelli. Kinetically constrained spin models. *Probability Theory and Related Fields*, **3-4**, 459–504 (2008),
- [2] Barthe, Cattiaux and Roberto. Isoperimetry between exponential and Gaussian. *Electron. J. Probab.*, **12**, no. 44, 1212–1237 (electronic) (2007).
- [3] Roberto and Zegarlinski. Orlicz-Sobolev inequalities for sub-Gaussian measures and ergodicity of Markov semi-groups. *Journal of Functional Analysis*, **243** (1), 28–66 (2007).
- [4] Barthe, Cattiaux and Roberto. Interpolated inequalities between exponential and gaussian, Orlicz hypercontractivity and isoperimetry. *Revista Matemática Iberoamericana* **22** (2006), no. 3, 993–1067.
- [5] Barthe, Cattiaux and Roberto. “Concentration for independent variables with heavy tails.” *Applied Mathematic Research eXpress (AMRX)*, no. 2 (2005), 39–60.
- [6] Cancrini, Cesi and Roberto. “Diffusive long-time behavior of Kawasaki dynamics.” *Electron. J. Probab.*, **10** (2005), no. 7, 216–249 (electronic).
- [7] Barthe and Roberto. “Sobolev inequalities for probability measures on the real line.” Dedicated to Professor Aleksander Pełczyński on the occasion of his 70th birthday (Polish). *Studia Math.*, **159** (2003), no. 3, 481–497.
- [8] Roberto. “Path method for the logarithmic Sobolev constant.” *Combinatorics, Prob. and Comp.*, **12** (2003), no. 4, 431–455.
- [9] Cancrini and Roberto. “Logarithmic Sobolev constant for the dilute Ising lattice gas dynamics below the percolation threshold.” *Stochastic Process. Appl.*, **102** (2002), no. 2, 159–205.
- [10] Cancrini, Martinelli and Roberto. “The logarithmic Sobolev constant of Kawasaki dynamics under a mixing condition revisited.” *Ann. Inst. H. Poincaré Probab. Statist.*, **38** (2002), no. 4, 385–436.
- [11] Gentil and Roberto. “Spectral gaps for spin systems : some non convex phase examples.” *Journal of Functional Analysis*, **180** (2001), 66–84.
- [12] Miclo and Roberto. “Trous spectraux pour certains algorithmes de Métropolis sur  $\mathbf{R}$ .” (in french) *Séminaire de Probabilités, XXXIV*, 336–352, Lecture Notes in Math., 1729, Springer Verlag, Berlin, (2000).

### - Submitted article.

- [13] Fougères, Roberto and Zegarlinski. Sub-Gaussian measures and associated semi-linear problems. Preprint (2007).
- [14] Barthe, Roberto. Modified logarithmic Sobolev inequalities on  $\mathbf{R}$ . Preprint (2007).

### - In preparation.

- [15] Gozlan and Roberto. Isoperimetry for some measures with heavy tails. In preparation, 2008.
- [16] Cancrini, Martinelli, Roberto and Toninelli. Kinetically constrained lattice gases. In preparation, 2008.

### - Book.

- [17] C. Ané, Blachère, Chafaï, Fougères, Gentil, Malrieu, Roberto and Scheffer. “Sur les inégalités de Sobolev logarithmiques.” (french) [Logarithmic Sobolev Inequalities] with a preface by Dominique Bakry and Michel Ledoux. Panoramas et Synthèses 10, *Société Mathématique de France*, Paris, 2000.

### - Proceeding.

- [18] Cancrini, Martinelli and Roberto. “Spectral gap and logarithmic Sobolev constant of Kawasaki dynamics under a mixing condition revisited.” *In and out of equilibrium* (Mambucaba, 2000), 259–271, Progr. Probab., 51, *Birkhäuser Boston, Boston, MA*, 2002.
- [19] Cancrini, Martinelli, Roberto and Toninelli. “Facilitated spin models : recent and new results”, preprint, 2007. To appear as a proceeding for the Prague summer school 2006.

### - Letter.

[20] Cancrini, Martinelli, Roberto and Toninelli. "Relaxation times of kinetically constrained spin models with glassy dynamics" *Journal of Statistical Mechanics : Theory and Experiment*, (letter) **L03001** (2007).

- Unpublished note.

[21] Roberto. "Inégalités de Hardy avec poids." (french), preprint, 2001 (<http://www.lsp.ups-tlse.fr/Fp/Roberto/>).

[22] Cancrini, Roberto. "Density-density correlation for conservative systems in dimension one". 2004.

[23] Roberto. "Path Method, a general approach". 2004.

### 3- International research period.

**April-may 2007** At the University of Rome 3 "Roma Tre", Rome, Italy.

**March-april 2006** At Berkeley's and Stanford's Statistic department, in collaboration with Professor Yuval Peres and Amir Dembo.

**March-May 2005** At the Imperial college of London, in collaboration with Professeur Boguslaw Zegarliniski.

**March-May 2004** At the Imperial college of London, in collaboration with Professeur Boguslaw Zegarliniski.

**May-June 2003** At the University of L'Aquila, Italy.

**Nov 2001-Oct 2002** At the University of "Roma Tre", Rome, Italy, under the guidance of Professor Fabio Martinelli. Post doc position (Marie Curie Individual Fellowship).

**August-september 2000** At the "Instituto de Matematica Pura y Aplicada", Rio de Janeiro, Brazil. Under the guidance of L. Miclo.

**February-april 2000** At the "Università di Roma Tre", Rome, Italy, under the guidance of Professor F. Martinelli.

### 4- Conferences and seminars.

**feb 2008** Talk at the seminar of the University of Lille, France, "Isoperimetry between exponential and Gaussian".

**feb 2008** Talk at the seminar of the University of Rouen, France, "Isoperimetry between exponential and Gaussian".

**january 2008** Talk at the seminar of the University of Dauphine, Paris, "Isoperimetry between exponential and Gaussian".

**december 2007** Two-days workshop "functional inequalities and applications", Marne-La-Vallée, december 2007. <http://perso-math.univ-mlv.fr/users/roberto.cyril/workshop.html>. Talk on "Poincaré and logarithmic Sobolev inequalities in Probability, Analysis and Statistical Mechanics".

**june 2007** Conference "Functional Inequalities : Probability and PDE's", Nanterre, <http://www.ceremade.dauphine.fr/%7Egentil/ANR/workshop-nanterre.html>. Talk on "Spectral gap for Kinetically constrained spin models."

**may 2007** Talk at the seminar of the University of Rome La Sapienza, "Isoperimetry between exponential and Gaussian".

**sept 2006** Talk at the seminar of the University of Toulouse, "Kinetically constrained spin models."

**june 2006** Two days workshop on "Inégalités de Poincaré, de Log-Sobolev et Systèmes de Particules", <http://math.univ-lille1.fr/heinrich/poin/index.html>, Lille, France. Talk on "Trous spectraux pour des modèles de spins avec contraintes."

**june 2006** At the conference "Phenomena in High dimensions" <http://phdconf-math.univ-mlv.fr>, Paris. Talk on "Kinetically constrained spin models."

**april 2006** Talk at the seminar of Statistic of Stanford, "Kinetically constrained spin models."

**april 2006** talk at the Séminar of Statistic of Berkeley, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."

- july 2005** Saint-Flour summer school of probability, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- april 2005** Talk at the seminar of the Imperial College of London, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- jan 2005** Winter school "Probabilistic Methods in High Dimension Phenomena" Toulouse, January 10-14, 2005.
- sept 2004** Talk at the seminar of the University of Marseille, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- sept 2004** workshop "Dynamical Systems : Classical, Quantum and Stochastic" Acireale, Italy, September 12-18, 2004.
- may 2004** Talk at the seminar of the Imperial College of London, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- feb 2004** Talk at the seminar of the Università of Roma 3 and the University of L'Aquila, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- nov 2003** Talk at the seminar of the University of Jussieu, Paris, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- nov 2003** Talk at the seminar of the Imperial college of London, "Interpolated inequalities between exponential and gaussian. Application to isoperimetry."
- sept 2003** Talk at the seminar of the Università of Roma 3, "Sobolev inequality for probability measure on the real line".
- sept 2003** workshop for the 60th anniversary of Marzio Cassandro "Statistical Mechanics And Applications". Roma, Italy.
- may 2003** : Workshop "Large systems : some mathematical problems and perspectives". 26-29 may 2003, Roma, Italy.
- june 2003** : Talk at the seminar of L'Aquila on "Sobolev inequality for probability measure on the real line".
- July 2002** : International Conference : Stochastic Analysis On Large Scale Interacting Systems. Tokyo, Kyoto, Japan. Shot talk on "Logarithmic Sobolev constant for the dilute Ising lattice gas dynamics below the percolation threshold."
- June 2002** : International Conference : Field Theory and Statistical Mechanics. Roma, Italy.
- February 2002** : Workshop on "Probability models and disordered systems", Rome, Italy, (<http://carpenter.mat.uniroma1.it/40/index.html>). Short talk on "The Path method for the logarithmic Sobolev constant".
- February 2002** : Talk at the seminar of the University of Marseille on "Path method for the logarithmic Sobolev constant".
- December 2001** : Talk at the Trimester "Hydrodynamical limit" of the Institut Henri Poincaré (organized by Golse, Olla), on "Logarithmic Sobolev constant for Kawasaki dynamics".
- November 2001** : Talk at the seminar of the University "Politecnico" of Milano, Italy, on "Path method for the logarithmic Sobolev constant".
- August 2001** : V-th Brazilian School of Probability, Ubatuba, San Paolo, Brazil (<http://www.ime.unicamp.br/~ebp5/>). Short talk on "The Path method for the logarithmic Sobolev constant".
- July 2001** : One day workshop on "Stochastic Processes and Applications", Padova, Italy. Talk on "Path method for the logarithmic Sobolev constant".
- December 2000** : Workshop on "Markov chains and rapid mixing", Rome, Italy. Short talk on "Spectral gaps for spin system : some non convex phase examples".
- December 2000** : Talk at the seminar of "Università dell'Aquila", L'Aquila, Italy, on "Spectral gaps for spin system : some non convex phase examples".
- October 2000** : Workshop on "Etats de la recherche : milieu alic<sub>2</sub>atoire", Marseille, France.
- September 2000** : Talk at the seminar of the University "Istituto de Matematica Pura y Applicada", Rio de Janeiro, Brazil, on "Spectral gaps for spin system : some non convex phase examples".
- August 2000** : IV-th Brazilian School of Probability, Mambucaba, Rio de Janeiro, Brazil (<http://www.ime.usp.br/~gprob/ebp4/>). Short talk on "Spectral gaps for spin system : some non convex phase examples".

**June 2000** : Workshop on “Probability theory, phase transition and computational complexity”, in Cortona, Italy (<http://www.mat.uniroma3.it/users/martin/Cortona/index.html>).

**April 2000** : Talk at the seminar of “Roma La Sapienza” on “Spectral gaps for spin system : some non convex phase examples”.

**February 2000** : Talk at the seminar of “Roma Tre” on “Spectral gaps for spin system : some non convex phase examples”.

**1999** : XXIX-th Summer School of Probability in Saint Flour. Talk on “Spectral gap for some Metropolis algorithms on  $\mathbf{R}$ ”.

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**iv)** *Languages.*

Italian : Fluent.

English : Working knowledge.

Spanish : Basic knowledge.

Computer languages : Latex, Mapple, Microsoft Office, Unix.

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**v)** *Personal activities.*

Sports : runing, football, hiking, climbing and skying.

Culture : Cinema and classical music.

Travel : Argentina, Armenia, Brazil, India, Italy, Iran, Japan, London, Praga, Turkey, Vienna.

Human Rights : member of Amnesty International.

Translation : Translation from italian to french and subtittling in french the documentaries « Gènes sans réponse », « Notes d'en Bas » and « Nunca mais, la marée noire » by S. Lorenzi, F. Micali and T. Paoli; the movie « Présents dans l'ombre » by Giulio Bruni, and the paper in sociology “Police et immigrés : une analyse ethnographique” by Salvatore Palidda.