Curriculum vitae et studiorum
Nicoletta Cancrini

Civil state: Married, 2 children (2003 and 2008)
Nationality: Italian
Languages: Italian, English, French
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Education

- *Ph. D.* in Theoretical Physics, University of Rome *La Sapienza*, Italy.
- *Laurea* **degree** in Physics, University of Rome *La Sapienza*, Italy.

Current position

- *Associate Professor* in Probability and Statistics at the DIIIE, Department of Industrial and Information Engineering and Economy, University of L'Aquila, Italy.

Previous Positions

- March 1998-October 2005: *Ricercatore* at the Pure and Applied Mathematics Department, University of L'Aquila, Italy.
- February 1997-February 1998: Post Doctorate fellowship Physics Department, University of Rome *La Sapienza*, Italy.
- July 1994-January 1997: Post Doctorate fellowship Centre de Physique Theorique, Ecole Polytechnique, Palaiseau, France.

Visits to Foreign Institutions

- June-July 1999 invited researcher at Cergy–Pontoise University, Paris (France).
- November 2000 invited professor at Paul Sabatier University, Toulouse (France).
- 7-18 November 2001: visitor of the Henri Poincarè Institute Paris, France, for the semester "Hydrodynamic limits".
- 6 December 2002: Member of the of the Jury for the Ph.D. Thesis at the University of Cergy Pontoise (Paris), France.

- 9-15 December 2002: visitor of the University of Marne la Vallee (Paris), France.
- June 2004: visiting Professor at Ceremade, UMR-CNRs 7534 Université Paris 9 - Dauphine, Paris, France.
- May 2005: visiting Professor at the University of Marne la Vallee (Paris), France.
- 17-24 January and 17-24 October 2011, visiting Professor at Laboratoire de Probabilités at Modèles Aléatoires, Université Paris 7, Paris, France.
- October 2012, visiting Professor at Laboratoire de Probabilités at Modèles Aléatoires, Université Paris 7, Paris, France.
- October 2013, visiting Professor at Ceremade, UMR-CNRs 7534 Université Paris 9 - Dauphine, Paris, France.

Teaching Experiences

- 1998-2000: Teaching assistant at the course *Classical Mechanics* University of L'Aquila, Italy.
- 2000/2001 course of *Classical Mechanics* University of L'Aquila, Italy.
- 2001/2002 course of *Classical Mechanics* University of L'Aquila, Italy and *Matematica III* University of Roma Tre, Italy.
- 2002/2003 course of *Probability and Statistics*, course of *Laboratory of Dynamical Systems II* University of L'Aquila, Italy and course of *Matematica III* University of Roma Tre, Italy.
- 2003/2004 course of *Probability and Statistics*, University of L'Aquila, Italy; course of *Matematica III* University of Roma Tre, Italy.
- 2004/2005 course of *Probability and Statistics* and course of *Probabilistic and Statistical Methods* University of L'Aquila, Italy, course of *Elementi Analisi III* University of Roma Tre, Italy.
- 2005/2006 and 2006/2007 course of *Probability and Statistics*, and course of *Probabilistic and Statistical Methods* University of L'Aquila, Italy.
- 2007/2008, 2008/2009 and 2009/2010 course of *Probability and Statistics*, and course of *Stochastic Mechanics* (in english) University of L'Aquila, Italy.
- 2010/2011, 2011/2012 and 2012/2013 course of *Probability and Statistics with applications to Hydrology*, and course of *Stochastic Mechanics* (in english) University of L'Aquila, Italy.

Research Interests

- Stochastic partial differential equations relevant in condensed matter as Burgers equation and KPZ equation and their connection with quantum field theory.

- Equilibrium statistical mechanics, Gibbs measures.
- Statistical mechanics out of equilibrium: interacting particle systems, rate of convergence to equilibrium.
- Spectral gap, logarithmic Sobolev inequalities.

Contributions to School and Conferences

- August 1993. School NATO-ASI Mathematics Department of the University of Madeira (Portugal) *Stochastic Analysis and Applications in Physics.*
- August 1995. *19th IUPAP International Conference on Statistical Physics* Xiamen (China).
- August–September 1995. Schooland Euroconference NATO-ASI *From Finite to infinite dimensional dynamical systems* presso Newton Institute for Mathematical Sciences University of Cambridge, Great Britain.
- January 1996. *Systemes aleatoires inhomogenes, grandes deviations et limites Hydrodynamiques*, Ecole Polytechnique, France.
- June 1996. International Conference I.N.D.A.M. *Mathematical Problems in the Statistical Mechanics of Interfaces*, Cortona (Pisa), Italy.
- August 1999. III Brazilian School of Probability, Angra dos Reis, RJ, Brazil.
- August 2000. IV Brazilian School of Probability, Angra dos Reis, RJ, Brazil.
- September 2000. International Conference *Dynamical systems: classical, quantum, stochastic.* Porto Malu, Teulada (Caglari) Italy.
- August 2001. V Brazilian School of Probability, Ubatuba S.P., Brazil.
- December 2001. *Journees IHP jeunes chercheurs : les limites hydrodynamiques* Institut Henri Poincare, Paris (France).
- February 2003. Conference GNFM, Montecatini Terme, Italy.
- October 2007. Workshop Interacting Particle Systems: a classical, quantum and stochastic perspective. Milano Bicocca University, Milano, Italy.

Conference Organization

- International Conference *Field Theory and Statistical Mechanics*, Rome, Italy 10-15 June 2002.

Referee e Reviewer Activity

- Journal of Physics A Mathematical and General.

- Annales Inst. H. Poincarè Probabilites & Statistique.
- Markov Processes and Related Fields.
- Stoch. Proc. and their Applications.
- Electronic Journal of Probability.
- Journal of Mathematical Physics
- Reviewer for Mathematical Reviews.

Publications

(1) N. Cancrini, S. Caprara, C. Castellani, C. Di Castro, M. Grilli, R. Raimondi: **Phase Separation and Superconductivity in the Kondo-like spin-hole coupled model** , *Europhys. Lett.* 14, 597 (1991). (Web of Science)

(2) N. Cancrini: **Solution of the Cauchy problem for the stochastic Burgers equation in one spatial dimension**, *PhD Thesis*, Dip. Fisica, La Sapienza Rome University, in Italian (1994).

(3) L. Bertini, N. Cancrini and G. Jona-Lasinio: **The Stochastic Burgers Equation**, *Commun. Math. Phys.* 165, 211-232 (1994). (Web of Science and Mathscinet)

(4) L. Bertini, N. Cancrini and G. Jona-Lasinio: **Stochastically Forced Burgers Equation**, *On Three Levels. Micro-, Meso-, and Macro Approaches in Physics*, M. Fannes, C. Maes, A. Verbeure eds NATO ASI Series Vol. B 324 pp. 265-269. New York : Plenum Press 1994. (Web of Science)

(5) L. Bertini, N. Cancrini and G. Jona-Lasinio: *Burgers equation forced by conservative or nonconservative noise*, *Stochastic Analysis and Applications in Physics*, A.I. Cardoso et. al., eds. NATO ASI Series Vol. C 449, pp. 35–44. Dordrecht: Kluwer Academic Publishers 1994. (Mathscinet)

(6) L. Bertini and N. Cancrini: bf The stochastic heat equation: Feynman-Kac formula and intermittence, *J. Stat. Phys.* 78, 1377-1401 (1995). (Web of Science and Mathscinet)

(7) N. Cancrini and A. Galves: **Approach to equilibrium in the symmetric simple exclusion process**, *Markov Proc. Relat. Fields* 1, 175-174 (1995). (Mathscinet)

(8) L. Bertini and N. Cancrini: **Reduction Formula for Moments of Stochastic Integrals**, *J. Math. Phys.* 38, 4763-4770 (1997). (Web of Science and Mathscinet)

(9) L. Bertini and N. Cancrini: **The two–dimensional stochastic heat equation: renormalizing a multiplicative noise**, *J. Phys. A: Math. Gen.* 31, 615-622 (1998). (Web of Science and Mathscinet)

(10) N. Cancrini, F. Cesi and F. Martinelli: **The spectral gap for the Kawasaki dynamics at low temperature**, *J. Stat. Phys.* 95, Nos 1/2, 219-175 (1999). (Web of Science and Mathscinet)
(11) N. Cancrini and F. Martinelli: **Comparison of finite volume canonical and grand canonical Gibbs measures under a mixing condition**, *Markov Proc. Rel. Fields* 6, 1-49 (2000). (Mathscinet)
(12) N. Cancrini and F. Martinelli: **On the spectral gap of Kawasaki dynamics under a mixing condition revisited**, it J. Math. Phys. 41, N.3 1391-1423 (2000). (Web of Science and Mathscinet)
(13) N. Cancrini and F. Martinelli: **Diffusive scaling of the spectral gap for the dilute Ising lattice gar dynamics below the percolation threshold**, *Probab. Theory and Relat. Fields* 120 4, 497-534 (2001). (Web of Science and Mathscinet)
(14) N. Cancrini and F. Martinelli: **Stochastic dynamics for the dilute Ising lattice gas: results and open problems**, *Markov. Proc. Rel. Fields* 7, 39-50 (2001). (Mathscinet)
(15) N. Cancrini, F. Martinelli and C. Roberto: **The logarithmic Sobolev constant of Kawasaki dynamics under a mixing condition revisited**, *Ann. I. H. Poincare – Probab. Stat.* PR 38 4, 385-436 (2002). (Web of Science and Mathscinet)
(16) L. Bertini, N. Cancrini and F. Cesi: **The spectral gap for a Glauber–type dynamics in a continuous gas**, *Ann. I. H. Poincare – Probab. Stat.* PR 38 1, 91-108 (2002). (Web of Science and Mathscinet)
(17) N. Cancrini, F. Martinelli and C. Roberto: **Spectral gap and logarithmic Sobolev constant of Kawasaki dynamics under a mixing condition revisited**, *In and Out of Equilibrium: Probability with a Physics Flavor* editor Vladas Sidoravicius, Birkhauser Boston (2002). (Web of Science and Mathscinet)
(18) N. Cancrini: **Relaxation to equilibrium of spin exchange dynamics for lattice gases**, *Markov. Proc. Rel. Fields* 8, 251-270 (2002). (Mathscinet)
(19) N. Cancrini and C. Roberto: **Logarithmic Sobolev constant for the dilute Ising lattice gas dynamics below the percolation threshold**, *Stochastic Process. Appl.* 102, 159-205 (2002) . (Web of Science and Mathscinet)
(20) N. Cancrini and C. Tremoulet: **Comparison of finite volume canonical and grand canonical Gibbs measures: the continuous case**, *J. Stat. Phys.* 117, 1023-1046 (2004) . (Web of Science and Mathscinet)

(21) N. Cancrini, F. Cesi, C. Roberto: **Diffusive long time behavior of Kawasaki dynamics**, *Electron. J. Probab.* 10 , n.7, 216-249 (2005) (electronic) . (Web of Science and Mathscinet)

(22) N. Cancrini, P. Caputo and F. Martinelli: **Relaxation time of L-Reversal chains and other chromosome shuffles**, *Ann. Appl. Probab.* 16, n.3, 1506-1527 (2006) . (Web of Science and Mathscinet)

(23) N. Cancrini, F. Martinelli, C. Roberto and C. Toninelli: **Relaxation times of kinetically constrained spin models with glassy dynamics**, *J. Stat. Mech.* (letter) (2007). (Web of Science and Mathscinet)

(24) N. Cancrini, F. Martinelli, C. Roberto and C. Toninelli: **Kinetically constrained spin models**, *Probab. Theory. Relat. Fields* 140, n.3-4, 459-504 (2008). (Web of Science and Mathscinet)

(25) N. Cancrini, F. Martinelli, C. Roberto and C. Toninelli: **Facilitated spin models: recent and new results**, in *Methods of Contemporary Mathematical Statistical Physics* , Biskup, M., Bovier, A. (et al) Kotecky, R. (Ed.), *Lecture Notes in Mathematics* , Springer Vol. 1970, (2009). (Web of Science and Mathscinet)

(26) N. Cancrini, F. Martinelli, C. Roberto and C. Toninelli: **Kinetically Constrained Models**, *New Trends in Mathematical Physics.* p.741-752, Springer Netherlands (2009). (Web of Science)

(27) N. Cancrini, F. Martinelli, R. Schonman and C. Toninelli: **Facilitated oriented spin models: some non equilibrium results.**, *J. Stat. Phys.*, vol.138; p. 1109-1123 (2010). (Web of Science and Mathscinet)

(28) N. Cancrini, F. Martinelli, C. Roberto and C. Toninelli: **Kinetically Constrained Lattice Gases**. *Comm. Math. Phys.*, vol. 297, n.2, p. 299-344 (2010). (Web of Science and Mathscinet)

(29) L. Bertini, N. Cancrini, G. Posta: **On the Dynamical Behavior of the ABC Model**, *J. Stat. Phys.* , vol. 144, p. 1284-1307 (2011). (Web of Science)

(30) O. Blondel, N. Cancrini, F. Martinelli, C. Roberto and C. Toninelli: **Fredrickson-Andersen one spin facilitated model out of equilibrium.** Accepted for publication by *Markov Proc. Rel. Fields.*

Preprints

- N. Cancrini , F. Martinelli, C. Roberto, C. Toninelli: *Mixing time of a kinetically constrained spin model on trees: power*

law scaling at criticality. Submitted to Probability Theory and Related Fields.