Curriculum Vitae

Raoul Santachiara
Nationalité : Italienne
né à Mantue (Italie) le 27 Novembre 1975

Adresse professionnelle :

Formation :

Nov. 2003 :	Doctorat de physique théorique de l'Université de Paris VI.
	Directeur : Vl. Dotsenko
Juin 2000 :	DEA de physique théorique de l'Université de Paris VI,
	mention : Bien (3^{eme} classé).
Mars 1999 :	*Laurea* de physique de l'Université de Pavie, 110/110 *cum laude*.
	Directeur : A. Rigamonti.
1993 - 1998 :	Boursier du *Collegio Ghislieri* de Pavie.

2008- :	Recruté au CNRS en qualite de CR2. Affectation au LPTMS, Orsay.
2006-2008 :	stage post-doctoral ANR-CNRS, LPT-ENS, Paris.
2005 - 2006 :	stage post-doctoral CNRS, Laboratoire de Physique Théorique
	Université de Strasbourg.
2003 - 2005 :	stage post-doctoral, Instituut voor Theoretische Fysica
	Université de Amsterdam.
2000 - 2003 :	étudiant en thèse, LPTHE
	Université de Paris VI.
1998 - 2000 :	Assistant de recherche, Laboratorio NMR - NQR
	Istituto di Fisica "A. Volta", Université de Pavie.
Été 1999 :	Stage de recherche, Research Center in Superconductivity
	Cavendish Laboratory de Cambridge.

Thèmes de recherche :

- Thèorie conforme des champs.
- Systèmes désordonnès $d = 1$ et $d = 2$.
- Processus stochastiques, intérfaces aléatoires.
- Liquides quantiques unidimensionnels.
- Statistiques intermédiaires.

Comités de lecture des journaux scientifiques :

- Europhysics Letters(European Physical Society, Genève, Suisse).
- Journal of Statistical Mechanics (JSTAT) (Institute of Physics Publishing, Bristol, Angleterre).
- Physical Review (Americal Society of Physics, New York, USA).

Invitations :

- 2010 : Max-Planck Institute (Dresden) :
  Quantum Information Concepts for Condensed Matter Problems.
- 2010 : Ecole de Physique des Houches (France) :
  La physique dans le plan : de la matire condense la thorie des cordes.
- 2009 : Nordita (Stockolm) : *Quantum matter in low dimensions.*
- 2009 : Institute Poincare (Paris) : *Fractional Quantum Hall systems.*
- 2008 : 13th Itzykson meeting, SPTh Saclay (France)
  Puzzle of growth.
- 2008 : Galileo Galilei Institute for Theoretical Physics, Florence (Italie)
  Low-dimensional quantum field theories and applications.
- 2008 : CRM (Centre de Recherches Mathématiques) de Montréal (Canada)
  Stochastic Loewner evolution and scaling limits.
- 2007 : ITFA Amsterdam (Pays Bas)
  Low-D Quantum Condensed Matter.
- 2006 : Kavli Institute for Theoretical Physics, UCSB, Santa Barbara (USA)
  Stochastic geometry and field theory : From growth phenomena to disordered systems.
- 2006 : Université Henri Poincaré, Nancy (France)
  Statistical Physics and Low dimensional systems.

Articles soumis à des revues à comité de lecture :

1. *"Critical interfaces and duality in the Ashkin Teller model".* M. Picco, R. Santachiara
2. *"Moore-Read Fractional Quantum Hall wavefunctions and SU(2) quiver gauge theories"*, R. Santachiara, A. Tanzini,Phys. Rev. D 82, 126006 (2010)
3. *"Critical interfaces of the Ashkin-Teller model at the parafermionic point"* M. Picco, R. Santachiara,Journal of Statistical Mechanics : Theory and Experiment (2010)
4. *"Electron-Quasihole Duality and Second Order Differential Equation for Read-Rezayi and Jacks Wavefunctions"* B. Estienne, B. A. Bernevig and R. San-

tachiara, Phys. Rev. B 82, 205307 (2010)

5. *"Relating Jack wavefunctions to WA_{k-1} theories "*
   B. Estienne and R. Santachiara, J. Phys. A : Math. Theor. 42 445209 (2009)
6. *"Clustering properties, Jack polynomials and unitary conformal field theories"*
   B. Estienne, N. Regnault and R. Santachiara, Nucl. Phys. B824, 539-562 (2010)
7. *"Geometrical properties of parafermionic spin models"*
   M. Picco, R. Santachiara and A. Sicilia J. Stat. Mech. : P04013 (2009)
8. *"Off-diagonal correlations in one-dimensional anyonic models : A replica approach."*
   P. Calabrese and R. Santachiara,J. Stat. Mech. P03002 (2009)
9. *" A first numerical study on SLEs in non-minimal conformal field theories "*, M. Picco and R. Santachiara, Phys. Rev. Lett. 100 015704(2008)
10. *" One-particle density matrix and momentum distribution function of one-dimensional anyon gases "*, R.Santachiara and P. Calabrese, J. Stat. Mech. (2008) P06005.
11. *'Critical interfaces in the random-bond Potts model'*, J. L. Jacobsen, P. Le-Doussal, M. Picco, R. Santachiara, K.J. Wiese Phys.Rev.Lett.102 :070601,(2009)
12. *" SLEs in self-dual Z(N) spin systems : CFT predictions "*,
    R. Santachiara, Nucl. Phys. B **739**, 396 (2008)
13. *"Universal width distributions in non-Markovian Gaussian processes"*,
    R. Santachiara, A. Rosso, and W. Krauth, J. Stat. Mech. (2007) P02009.
14. *"Entanglement and moment distributions of a system of hard-core anyons."*,
    R. Santachiara, F. Stauffer and D. Cabra, J. Stat. Mech. (2007) L05003.
15. *"Increasing of entanglement entropy from pure to random quantum critical chain"*, R. Santachiara, J. Stat. Mech L06002 (2006) .
16. *"Geometry of Gaussian signals"*, A. Rosso, R. Santachiara, and W. Krauth, J. Stat. Mech L08001 (2005) .
17. *" Supersymmetric model of spin 1/2 fermions on a chain"*, R. Santachiara, K.Schoutens, J. Phys. A : Math. Gen. **38** No 24 5425-5439 (2005) ,
18. *"The third parafermionic chiral algebra with the symmetry Z_3"*, Vl. Dotsenko, R. Santachiara, Phys. Lett. B, **611**,189 (2005).
19. *"Parafermionic theory with the symmetry Z(N), for N even"*, Vl. Dotsenko, J.L. Jacobsen, and R. Santachiara, Nucl. Phys. B **679**, 464 (2004).

20. *"Conformal field theories with the symmetry Z_N and Lie algebra symmetries"*, Vl. Dotsenko, J.L. Jacobsen, and R. Santachiara, Phys. Lett. B **584**, 186 (2004).
21. *"Parafermionic theory with the symmetry Z_N, N odd"*, Vl. Dotsenko, J.L.Jacobsen, and R. Santachiara, Nucl. Phys. B, **664**, 477-511 (2003).
22. *"Parafermionic theory with the symmetry Z_5"*, Vl. Dotsenko, J.L. Jacobsen, and R. Santachiara, Nucl. Phys. B **656**, 259 (2003).
23. *"Universality of coupled Potts models"*, Vl. Dotsenko, J.L.Jacobsen, X.S. Nguyen, and R. Santachiara, Nucl. Phys. B **631**, 426-446 (2002).
24. *" Models WD_n in the precence of disorder and the coupled models "* ,Vl. Dotsenko, X.S. Nguyen, and R. Santachiara, Nucl. Phys. B **613**, 445-471 (2001).
25. *"On-site magnetization in open antiferromagnetic chains : a classical analysis versus NMR experiments in a spin-1 compound"*, S. Botti, A. Rosso, R. Santachiara and F. Tedoldi, Phys. Rev. B **63**, 012409 (2001).
26. *" Boundary Effects in Finite Heisenberg Antiferromagnetic S = 1 Chains : 89Y NMR in Y2BaNi1 -xMgxO5"*, F. Tedoldi, A. Rigamonti, R. Santachiara, M. Horvatic, L. Linati, M. Bini, D. Capsoni, and V. Massarotti, Applied Magnetic Resonance **19**, 3-4, (2000).
27. *"NMR imaging of oscillating magnetization in finite-length spin-1 chain with antiferromagnetic interactions in"*, F. Tedoldi, A. Rigamonti, R. Santachiara and M. Horvatic, Highlights 1998/1999 INFN" (Instituto Nazionale per la Fisica della Materia), 66-8.
28. *"Y NMR imaging of the staggered magnetization in doped Haldane chain Y(2)BaNi(1-x)Mg(x)O(5)"*, F. Tedoldi, R. Santachiara, M. Horvatic, Phys. Rev. Lett. **83**, 412 (1999).

Autres publications :

1. R. Santachiara, *"Étude des phénomènes critiques à l'aide des théories des champs conformes : des systèmes désordonnés aux théories parafermioniques"*, Thèse de Doctorat en Physique Théorique, Paris VI - France (2003). (http ://tel.ccsd.cnrs.fr/documents/archives0/00/00/43/02/index_fr.html)
2. *"Coupled Models WD_3. Their fixed point."*, Vl. Dotsenko, X.S. Nguyen, and R. Santachiara, in Statistical field theories, Nato Science Series II. Mathematics, Physics and Chemistry Vol 73 (2002).

3. R. Santachiara, *"Effets de taille finie dans une chaîne quantique antiferromagnétique ($S = 1$)."*, Thèse de *Laurea*, Université de Pavie - Italie (1999).