

CURRICULUM VITAE OF DR. MATTEO CICCOTTI

Personal data:

Matteo Ciccotti, born in Macerata (MC), Italy on July 24th, 1972. Citizenship: Italian

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Cursus:

14 Décembre 2006 : Diplôme d'Habilitation à Diriger des Recherches à l'Université de Montpellier II. Title : "Étude de la Propagation de Fractures des Échelles très Grandes (Tectoniques) aux Échelles Très Petites (Nanométriques)".

From October 2005: Permanent Researcher Position (CR1) at CNRS (section 5) UMR 5587, Laboratoire des Colloïdes, Verres et Nanomatériaux, Université de Montpellier II.

September 2004 – August 2005: ATER (teacher/researcher) at Université de Montpellier II, Laboratoire des Verres. Research group "Nanomécanique". Theme : AFM study of nanoductility in slow crack propagation in glasses.

September 2003 - August 2004: Researcher at the Laboratoire de Physique of the Ecole Normale Supérieure de Lyon. Theme: Analysis of the thermal fluctuations during the aging of a colloidal glass by dielectric measurements and dynamic light scattering.

September 2000 - August 2003: PostDoc position (Assegno di Ricerca) at the Physics Dipartement of the University of Bologna, Italy. Title of the research projet: "Studio dei terremoti in laboratorio" (Studying earthquakes in the laboratory).

April 2000 - August 2000: Research contract with the Physics Dipartement of the University of Bologna, Italy, with the aim of build up an acquisition system for the ultrasonic emissions produced by microfractures in stressed rocks.

January 1999 - March 1999: Guest at the Laboratoire de Physique et Mécanique des Milieux Hétérogènes of the Ecole Supérieure de Physique et Chimie Industrielles de la Ville de Paris for an experiment concerning fracture dynamics in viscoelastic media.

Since **1997** associate member of INFN (National Institute for Nuclear Physics). Theoretical physics group, Bologna, Italy.

November 1996 - 9 March 2000: Corso di Dottorato in Fisica (PhD) at the University of Bologna, Italy. Title of the thesis: "An exhaustive analysis of the Double Torsion method for sub-critical fracture propagation in lava rocks and its implications for the understanding of earthquake physics".

September 1994 - June 1995: ERASMUS project student at the Université Paris VII, obtention of the maîtrise en physique fondamentale.

September 1991 - March 1996: Laurea in Fisica (bachelor) at the University of Bologna, Italy. Grade: 110/110 cum Laude. Title of the thesis: "Analisi di modelli per la dinamica della linea di frattura del nastro adesivo" (Analysys of dynamical models for the fracture line of an adhesive tape).

June 1991: Classified in the top 10 at the National stage of International Physics Olympiads, held in Senigallia, Italy.

July 1991: Diploma di Maturità Scientifica (Secondary School Diploma) at the Liceo Scientifico Enrico Fermi in Bologna, Italy. With five years specialization in experimental Physics and Chemistry. Grade: 60/60.

Languages:

English and French : fair, written and oral. **Italian:** native.

Informatics Knowledge:

Operating Systems: DOS, Windows 3.11/95/NT/98/ME/2000/XP, Linux, Unix.

Applications: MSC Marc, Office, Origin, Frontpage, Corel Draw, Adobe Illustrator

Programming languages: Fortran, C, C++, Basic, Pascal, Matlab, HTML, LaTeX.

Collaborations with scientific reviews:

Referee of manuscripts submitted to: European Journal of Physics B, Applied Physics Letters, International Journal of Fracture, Materials Science, Rock Mechanics and Rock Engineering, Geophysical Research Letters, Geophysical Journal International, Annals of Geophysics.

Associate Editor of manuscript submitted to: Medical Physics.

Scientific affiliations:

American Ceramic Society since January 2006.

American Geophysical Union and **European Geophysical Union** since January 2003.

Contributions to International Books:

1. **Ciccotti M.** and Giorgini B. The emergence of complexity in a common scotch roller. In: *Symétries, brisures de symétries et complexité*. Edito da L. Boi (Peter Lang, Bern, 2006) pp. 187-216.
2. Associate Editor of the book: *Earthquake Science and Seismic Risk Reduction*. NATO SCIENCE SERIES: IV: Earth and Environmental Sciences Volume 32. Edited by F. Mulargia and R. Geller. (Kluwer, 2003). Author of the following sections in the book:
 1. **Ciccotti M.** Section 2.1: Seismology and Geodesy. pp. 43-49.
 2. Mulargia F., Castellaro S. and **Ciccotti M.**. Section 2.8: Earthquake Energy Balance. pp. 80-89.
 3. Mulargia F., Main I., **Ciccotti M.**, Castellaro S. and Kertesz J. Chapter 3: Physics of Complex Systems and Earthquakes. pp. 107-152.

Submitted papers:

1. Kumar J., Ciccotti M. and Ananthakrishna G. Hidden order in acoustic emission during peeling of an adhesive tape. Submitted in August 2007

International papers:

1. **Ciccotti M.**, George M., Ranieri V., Wondraczek L. and Marlière C.. Dynamic condensation of water at crack tips in oxide glasses. *J. Non-Crist. Solids*. In press.
2. Cortet P.-P., **Ciccotti M.** and Vanel L. Imaging the stick-slip peeling of an adhesive tape. *J. Stat. Mech.*. Art No. P03005. DOI:10.1088/1742-5468/2007/03/P03005.
3. Célarié F., **Ciccotti M.** and Marlière C, 2007. Stress-enhanced ion diffusion at the vicinity of a crack tip as evidenced by atomic force microscopy in silicate glasses. *J. Non-Crist. Solids*. 353, pp. 51-68.
4. Wondraczek L., **Ciccotti M.**, Dittmar A., Oelgardt C., Célarié F. and Marlière C., 2006. Real-time observation of non-equilibrium liquid condensate confined at tensile crack tips in oxide glasses. *J. Am. Cer. Soc.*. 89[2], pp. 746-749.
5. **Ciccotti M.**, Giorgini B., Vallet D. and Barquins M., 2004. Complex dynamics in the peeling of an adhesive tape. *Int. J. Adhes. Adhes.*. 24/2, pp. 143-151. DOI:10.1016/j.ijadhadh.2003.09.001.
6. Mulargia F., Castellaro S. and **Ciccotti M.**. Earthquakes as three stage processes. *Geophys. J. Int.* 158[1], pp. 98-108. DOI:10.1111/j.1365-246X.2004.02262.x.
7. **Ciccotti M.** and Mulargia F., 2004. Experimental differences between static and dynamic measurements of the elastic moduli in a typical seismogenic rock. *Geophys. J. Int.* 157[1], pp. 474-477. DOI:10.1111/j.1365-246X.2004.02213.x
8. **Ciccotti M.**, Almagro R. and Mulargia F., 2004. Static and dynamic moduli of the seismogenic layer in Italy. *Rock Mech. and Rock Eng.* 37[3], pp. 229-238. DOI:10.1007/s00603-003-0019-7.
9. **Ciccotti M.** and Mulargia F., 2002. Pernicious effect of physical cutoffs in fractal analysis. *Physical Review E*. 65, pp. 37201-04.

10. **Ciccotti M.**, Negri N., Gonzato G., Mulargia F., 2001. Practical application of an improved methodology for the Double Torsion load relaxation method. *Int. J. of Rocks Mech. and Mining Sciences*, 38, pp. 569-576.
11. **Ciccotti M.**, Gonzato G., and Mulargia F., 2000. The double torsion loading configuration for fracture propagation: an improved methodology for the load-relaxation at constant displacement. *Int. J. of Rock Mech. and Mining Sciences*. 37/7, pp. 1103-1113.
12. Gonzato G., Mulargia F. and **Ciccotti M.**, 2000. Measuring the fractal dimension of ideal and actual objects: implications for application in geology and geophysics. *Geophysical Journal International*. 142, pp. 108-116.
13. **Ciccotti M.**, 2000. A realistic finite element study of the Double Torsion loading configuration. *Journal of the American Ceramic Society*. 83 [11], pp. 2737-44.
14. **Ciccotti M.**, Negri N., Sassi L., Gonzato G. and Mulargia F., 2000. Elastic and fracture parameters of Etna, Stromboli and Vulcano lava rocks. *Journal of Volcanology and Geothermal Research*. 98/1-4, pp. 209-217.
15. **Ciccotti M.**, Giorgini B., Barquins M., 1998. Stick-slip in the peeling of an adhesive tape : evolution of theoretical model. *Int. J. Adhes. Adhes.* 18, pp. 35-40.
16. Barquins M., **Ciccotti M.**, 1997. On the kinetics of peeling of an adhesive tape under a constant imposed load. *Int. J. Adhesion and Adhesives*. 17, 65-68.
17. Barquins M., Boilot A., **Ciccotti M.**, Varotto A., 1995. Sur la cinétique de décollement d'un ruban adhésif sous l'action d'un poids mort. *C. R. Académie des Sciences Paris.*, t. 321, Série II b, p. 393-399.

Papers in conference proceedings with peer review:

1. Kumar J., De R., **Ciccotti M.** and Ananthakrishna G. Unfolding the hidden order in acoustic emission data in the peeling of an adhesive tape. In: Proceeding of Multiscale Materials and Modelling, September 18-22 2006, Freiburg, Germany. Symposium 3, page 330-333. Edited by Peter Gumbsch (2007).
2. George M., **Ciccotti M.**, Wondraczek L., Dittmar A., Oelgardt C., Célerié F. and Marlière C. Formation and evolution of a confined liquid condensate at the crack tip in glasses. In: Fractography of Glasses and Ceramics V. Ceramics Transactions, Volume 199. Edited by J.R. Varner, G.D. Quinn and M. Wightman (John Wiley & Sons, 2007). pp. 25-34.
3. Célerié F., **Ciccotti M.**, George M. and Marlière C. Effect of stress gradient at the vicinity of a crack tip on ionic diffusion in silicate glasses: an AFM study. In: Fractography of Glasses and Ceramics V. Ceramics Transactions, Volume 199. Edited by J.R. Varner, G.D. Quinn and M. Wightman (John Wiley & Sons, 2007). pp. 35-48.
4. Bellon L., Buisson L., **Ciccotti M.**, Ciliberto S. et Douarche F., Thermal noise properties of two ageing materials. In : Jamming, Yielding, and Irreversible Deformation in Condensed Matter. Series: Lecture notes in physics, vol 688. Proceedings of the XIX Sitges Conference (June 2004). Edited by M. Rubí and C. Miguel (Springer Verlag, Berlin, 2006). pp. 23-51. cond-mat/0501324.
5. Buisson L., **Ciccotti M.**, Bellon L. and Ciliberto S.. Electrical noise properties in aging materials. In: Fluctuations and Noise in Materials, edited by D. Popovic,

M.B. Weissman and Z.A. Racz. Proceedings of SPIE Vol. 5469 (SPIE, Bellingham, WA, 2004). Invited paper. pp. 150-163. cond-mat/0403294.

International conferences and congresses:

1. **Ciccotti M.**, George M., Grimaldi A., Pallares. G., Charlaix E. and Marlière C., Wetting phenomena at the nanoscale inside sharp cracks in silica glasses. **Poster** at STATPHYS23. Genova, Italy, July 9-13 2007.
2. P.-P. Cortet, **M. Ciccotti** and L. Vanel. Imaging the stick-slip peeling of an adhesive tape under a constant load. **Poster** at STATPHYS23. Genova, Italy, July 9-13 2007.
3. **Ciccotti M.**, George M., Grimaldi A., Wondraczek L. and Marlière C., Modelling the effect of capillary condensation of water at crack tips in oxide glasses. **Oral presentation** at the International Congress on Glass, Strasbourg, France, July 1-6 2007.
4. **Ciccotti M.**, George M., Ranieri V., Wondraczek L., Dittmar A., Oelgardt C., Célarié F. and Marlière C. Dynamic condensation of water at crack tips in oxide glasses. **Oral presentation** at XI International Conference on the Physics of Non-Crystalline solids. 28/10/2006-03/11/2006, Rhodes, Grece.
5. Kumar J., De R., **Ciccotti M.** and Ananthakrishna G. Unfolding the hidden order in acoustic emission data in the peeling of an adhesive tape. **Oral presentation** at the conference : Multiscale Material Modeling, September 18-22, 2006. Freiburg, Germany.
6. **Ciccotti M.**, George M., Wondraczek L., Célarié F. and Marlière C. Nanomechanics of slow crack propagation in oxide glasses. **Oral presentation** at 16th European Conference on Fracture. July 3-7 2006. Alexandroupolis, Greece.
7. George M., **Ciccotti M.**, Wondraczek L., Dittmar A., Oelgardt C., Célarié F. and Marlière C. Formation and evolution of a confined liquid condensate at the crack tip in glasses. **Oral presentation** at the conference Fractography of Glasses and Ceramics V. July 9-12 2006. Rochester, NY (USA).
8. Célarié F., **Ciccotti M.**, George M. and Marlière C. Effect of stress gradient at the vicinity of a crack tip on ionic diffusion in silicate glasses: an AFM study. **Oral presentation** at the conference Fractography of Glasses and Ceramics V. July 9-12 2006. Rochester, NY (USA).
9. Wondraczek L., Célarié F., Dittmar A., Oelgardt C., **Ciccotti M.** and Marlière C., 2005. Real-time observation of liquid condensate confined at tensile crack tips in silica glasses. **Orale Presentation** at 2005 MRS Fall Meeting, Boston, MA, USA, November 28 - December 2 2005.
10. **Ciccotti M.**, George M., Marlière C., 2005. Nanomechanics of slow crack propagation in glasses. Poster at the 3rd International Workshop on Flow and Fracture of Advances Glasses, State College, PA, USA, 2-5 October 2005.
11. Célarié F., **Ciccotti M.**, Marlière C., 2005. A Study of the vicinity of a crack tip at nanometer scale enhanced nano migration-of ions in silicate glasses. **Oral Presentation** at the 5th international conference and 7th annual general meeting of the European Society for Precision Engineering and Nanotechnology. Le Corum, Montpellier, France, 8-11 May 2005.

12. **Ciccotti M.**, 2004. Earthquake: the geophysicist's point of view. **Invited Oral Presentation** at the Workshop: Geological evidence of earthquake source dynamics. INOA, Firenze, Italy, August, 30th 2004.
13. **Ciccotti M.** and Mulargia F., 2003. Static and dynamic measurements of the elastic properties of a lava rock from Mount Etna volcano and of a typical seismogenic rock of Italy. **Invited talk**. Workshop: New Technologies in Geophysics, Geomechanics and Volcanology. Napoli, Italy, 18-20 September 2003.
14. **Ciccotti M.**, Castellaro S. and Mulargia F., 2003. Very low strain rate damage evolution monitored by acoustic emissions. **Talk and poster**. EURO-Conference on Rock Physics and Geomechanics. Kijkduin, The Netherlands, 7-11 September 2003.
15. **Ciccotti M.**, Mulargia F. and Almagro R., 2003. Static and dynamic measurements of the elastic moduli in a typical seismogenic rock of Italy and in a lava rock from Mount Etna volcano. **Poster**. EGS-AGU-EUG Joint Assembly 2003. Nice, France, 6-11 April 2003.
16. Vallet D., **Ciccotti M.**, Giorgini B. and Barquins M., 2002. The stick-slip dynamics in the peeling of an adhesive tape. **Oral Presentation** at EUROCOAT 2002 Congress, International Exhibition & Congress for the paint, Pigment, Varnish, Printing Ink, Glue & Adhesive Industries. Barcelona, Palau Sant Jordi (Spain), 4-6 June 2002.
17. Vallet D., **Ciccotti M.**, Giorgini B. and Barquins M., 2002. The stick-slip dynamics in the peeling of an adhesive tape. **Oral Presentation** at Swiss Bonding 2002 - 16th International Symposium Bonding and Sealing Technology. ITR Rapperswill, Switzerland, 27-29 May 2002.
18. Barquins M., **Ciccotti M.**, Giorgini B., Vallet D., 2001. A complex dynamics in the peeling of an adhesive tape. **Oral Presentation** at the international congress: Determinism, holism and complexity, tenuto al Castello Aldobrandesco di Arcidosso, Italia, 3-8 September 2001.
19. **Ciccotti M.**, 2000. Critical rupture in the laboratory. **Oral Presentation** at ARW2000: State of scientific knowledge regarding earthquake occurrence and implications for public policy. Arbus, Sardinia, Italy, 15-19 October, 2000
20. Mulargia F., **Ciccotti M.**, Castellaro S. and Gonzato G., 2000. A very low strain rate rupture experiment. **Oral Presentation** at EGS2000: European Geophysical Society. XXV General Assembly. Nice, France, 25-29 April 2000.
21. Gonzato G., **Ciccotti M.** and Mulargia F., 2000. Fractal dimension of river patterns: a geological context-recognition technique. **Oral Presentation** at EGS2000: European Geophysical Society. XXV General Assembly. Nice, France, 25-29 April 2000.
22. **Ciccotti M.**, Gonzato G. and Mulargia F., 2000. An improved methodology for the double torsion load-relaxation method. **Oral Presentation** at EGS2000: European Geophysical Society. XXV General Assembly. Nice, France, 25-29 April 2000.
23. Gonzato G., Mulargia F. and **Ciccotti M.**, 1999. Other potential sources of bias measuring fractal dimension through box counting. **Oral Presentation** at EGS99: European Geophysical Society. XXIV General Assembly. The Hague, The Netherlands, 19-23 April 1999.

24. **Ciccotti M.**, Negri N., Gonzato G. and Mulargia F., 1999. The double torsion loading configuration: a detailed numerical study. **Oral Presentation** at EGS99: European Geophysical Society. XXIV General Assembly. The Hague, The Netherlands, 19-23 April 1999.
25. **Ciccotti M.**, 1998. A Wavelet application in the analysis of fracture mechanics data. Presentazione orale e pubblicazione negli atti della International Wavelet Conference - Tangier 98, 13-17 Aprile 1998.
26. **Ciccotti M.**, 1996. On the kinetics of peeling of an adhesive tape under a constant imposed load. **Oral Presentation** at the Workshop: Complexity and Chaos, Institute for Scientific Interchange, Torino (Italia), 1-12 Luglio 1996.
27. Barquins M., **Ciccotti M.**, 1996. On the kinetics of peeling of an adhesive tape under a constant imposed load. **Invited Oral Presentation** at EUROCOAT 1996. International Congress of Paintings and Adhesives. Genova, Italy, 18-20 September 1996.

National conferences and congresses:

1. M. George, A. Grimaldi, G. Pallares, C. Marlière and **M. Ciccotti**. Adhésion capillaire en tête de fissure dans un verre: étude par imagerie de phase AFM. **Oral presentation** at Forum des microscopies à sonde locale 2007, Troyes, France, Mars 26-29 2007.
2. **Ciccotti M.**, George M., Célarié F. and Marlière C. Étude par AFM des mécanismes de corrosion sous contrainte du verre. **Oral presentation** at the joint meeting of Union pour la Science et la Technologie Verrières and GDR Matériaux Vitreux. Montpellier, France, June 8-9 2006.
3. **Ciccotti M.**, George M., Célarié F. and Marlière C. Nanomechanics of slow crack propagation in glasses. **Poster** at Forum des microscopies à sonde locale 2006, Autrans, France, Mars 27-31 2006.
4. Célarié F., **Ciccotti M.**, George M. et Marlière C. Diffusion ionique sous contrainte en tête de fissure : étude par AFM de verres sodo-silicatés. **Oral presentation** at Forum des microscopies à sonde locale 2006, Autrans, France, Mars 27-31 2006.
5. **Ciccotti M.**, George M., Marlière C.. Nanomécanique de la propagation lente de fractures dans les verres. **Poster and invited oral présentation** at the joint meeting of Union pour la Science et la Technologie Verrières and GDR Matériaux Vitreux. Bourg la Reine, France, 20-21 October 2005.
6. **Ciccotti M.**, Célarié F., Dittmar A., Oelgardt C., Wondraczek L., and Marlière C. Quid de l'observation en volume des cavités d'endommagement créés lors de la propagation lente d'une fissure dans un matériau vitreux ? **Oral Presentation** at Forum des microscopies à sonde locale 2005, Anglet, France, 29-31 Mars 2005.
7. **Ciccotti M.**, Giorgini B., Barquins M., Vallet D., 2004. La dynamique de stick-slip dans la propagation d'un front de fracture sur une interface adhésive. **Oral Presentation** at 9ème réunion du Club Fissures : Mécanismes de Fissuration. CEA Saclay. 13 October 2004.
8. Vallet D., **Ciccotti M.**, Giorgini B., Barquins M., 2001. La dynamique de Stick-Slip dans le pelage d'un ruban adhésif. **Oral Presentation** at 4ème Rencontre du Non-Linéaire. Institut Henry Poincaré, Paris, France, 15-16 Mars 2001.

9. Mulargia F., **Ciccotti M.** and Castellaro S., 2001. Static and dynamic elastic constants. **Poster.** GNV Annual assembly. Rome 9-11 September 2001.
10. **Ciccotti M.**, Castellaro S. e Mulargia F., 2001. Costanti elastiche statiche e dinamiche. **Talk.** Workshop on the coordinated project GNV-POSEIDON. Catania 19-20 July 2001.
11. Gonzato G., **Ciccotti M.** e Mulargia F., 1999. Si fa presto a dire invarianza di scala. **Talk.** 18th GNGTS annual meeting.
12. **Ciccotti M.**, Gonzato G. e Mulargia F., 1999. La propagazione stabile e controllata di fratture in laboratorio. **Talk.** 18th GNGTS annual meeting.
13. **Ciccotti M.**, 1999. Le Deroulement du Scotch. **Talk.** Journée du Laboratoire de Physique et Mecanique des Milieux Heterogenes. 16/2/1999. Ecole Superieure de Physique et Chimie Industrielle de la Ville de Paris. Chaired by Nobel price P. G. de Gennes.

Further Workshops and International Schools:

1. 8th ESG Conference : « Glass, The art of Science » along with the annual meeting of the ICG and SGT, September 10-14 2006. Sunderland, UK.
2. 12ème Colloque sur les cristaux liquides, 13-16 September 2005, Montpellier.
3. Ecole thématique CNRS : Nanosciences et sondes locales. Anglet, France, 1-5 April 2005.
4. 3^{ème} rencontre du PPF : « Dynamique des Systèmes Complexes » of the Université Grenoble I, 6-7 December 2004, Pinsot, Massif de Belledonne, France.
5. ERMES - Earthquake mechanics, Earth structure and related problems. 22nd Course of the International School of Geophysics. EMFCSC, Erice, Sicily, 1-8 August 2002.
6. EAGE2002 Symposium. New Technologies for Land Monitoring: from Digital Elevation Models to Subsidence Estimation. 27 May 2002. Florence, Italy.
7. Natural and Anthropogenically Induced Hazards. Euresco Conference. 24-29 June 2000. Acquafredda di Maratea, Italy.
8. International Wavelet School. July 1998. Orsay, Paris, France.
9. Workshop ``Complexity and Chaos'', Institute for Scientific Interchange, Torino (Italy), 1-12 July 1996.

Teaching Experience:

1. 2004-2005 : ATER (teacher/researcher) at Université de Montpellier II, Département de Physique. Teaching activity : **197 hours** de ETD :
 1. Experimental Physics, 1st year (**66 hours** cours/TD + **54 hours** TP) ;
 2. Passeport Minimale Informatique, 1st year (**30 hours** TP) ;
 3. Thermodynamics, DEUG 2nd year (**30 hours** TP) ;
 4. Thermodynamics and Fluid Mechanics, 3rd year (**65 hours** TP).
2. Contract teacher at the Dipartimento di Ingegneria Gestionale of the University of Bologna, Italy, from January to June 2003. **90 hours** of didactic activities in the course of "General Physics", including 32 hours of lecturing and the remaining hours shared in tutoring and exams.
3. Teacher of a **8 hours** course on scientific data analysis with the software Matlab. Aimed at the formation of the PhD students of the University of Siena. May 2003.
4. Teacher at the ECPIAR professional training center. **48 hour** course on the use of Microsoft Office XP for producing Formatted Documents and SpreadSheets. March-July 2002.
5. Appointed Teacher (course of Physics) at the high school ITIS-IPIA, Imola (BO), Italy after September 1st, 2001 (detached for research).
6. Teacher of a **10 hour** course on the use of the software "Octave" for data analysis and representation. Within the course "Geodinamica" (course held by Prof. Francesco Mulargia) at the Università di Bologna, Italy. May 2002.
7. Assistant at the course "Fisica della Terra" (course held by Prof. Francesco Mulargia) for four years (1998-2002) at the Università di Bologna, Italy. Tutoring, lecturing, marking students work.
8. Invited Lecturer, Natural Sciences @ Liceo Statale Copernico, Bologna, Italy (high school) 2000
9. Assistant at the course "Fisica Tecnica" (course held by Dr. Bruno Giorgini) for three years (1996-1999) at the Politecnico di Milano, Italy. Tutoring, lecturing, marking students work and final oral and written tests.

Supervision of Student Projects:

Co-supervisor of the PHD thesis :

- a. PHD thesis in Geological Sciences of Dr. S. Castellaro at Università di Bologna, Italy, during the years 1998-2001. Title: "Studio del Meccanismo Sismico in Laboratorio e al Calcolatore" (Study of the seismic mechanism in the laboratory and by numerical simulation).

Co-supervisor for the following final year University projects (Tesi di Laurea):

- b. Tesi di Laurea in Scienze Geologiche of Mr. F. Menapace at the l'Université de Bologne, Italie, dans l'année 2003-2004. Titre de la thèse: "Studio di propagazione sottocritica delle fratture su roccia in configurazione di carico double-torsion" ("Study of the subcritical propagation of crack in rocks in double-torsion load configuration).

- c. Tesi di Laurea in Scienze Geologiche of Mr. R. Almagro at the Università di Bologna in the autumn session of a.y. 2001-2002. Title of the thesis: "Caratterizzazione meccanica di un litotipo sismico italiano: il Calcarea Massiccio." ("Mechanical characterization of an Italian seismic lithotype: the Calcarea Massiccio").
- d. Tesi di Laurea in Fisica of Mr. E. Lunedei at the Università di Bologna in the autumn session of a.y. 2001-2002. Title of the thesis: "Modellizzazione ed analisi dei dati in un esperimento di dinamica delle fratture" ("Modelization and data analysis of an experiment of fracture dynamics").
- e. Tesi di Laurea in Scienze Geologiche of Miss. M. Morrone at the Università di Bologna in the autumn session of a.y. 1998-99. Title of the thesis: "Un modello a stick-slip e sue applicazioni in sismotettonica" ("A stick-slip model and its applications in seismotectonics").
- f. Tesi di Laurea in Scienze Geologiche of Mr. N. Negri at the Università di Bologna in the autumn session of a.y. 1997-98. Title of the thesis: "Caratterizzazione dei parametri morfologici, chimici, elastici e di frattura di lave eoliane" ("Characterization of morphological, chemical, elastic and fracture parameters of Aeolian lava rocks").

Stages of Professional Formation:

Stage "Découverte des métiers" at the Association de Formation Professionnelle de l'Industrie rhodanienne. Lyon. The stage involves an activity of **21 heures** of formation to the use of lathe, cutter and drilling machine for the realization of plastic and metal parts. 4-6 February 2004.

Scientific Animation Activities:

1. Seminaires at Lycee La Merci (Montpellier) on the 'Physics of Fracture' in the context of the Fête de la Science 2006, October 2006.
2. Participation at the animation of the exposition "Jeux de grains" in the context of the Année Mondiale de la Physique 2005 in Languedoc Roussillon, Mars 2005.
3. Participation at the animation of the stand of the Laboratoire de Physique of the ENS-Lyon in the context of the Fête de la Science 2003, October 2003.

Collective responsibilities:

1. « Chair » of Technical Committee N6 : Nanomechanics of Glass. In the context of the International Committee on Glass (ICG) that has the mission of promoting international cooperation in glass science and technology. Since June 2007.
2. Member of the Scientific Council of the Forum de Microscopies à Sonde Locale since Mars 2007.
3. Member of Technical Committee 6 : Mechanical Properties of Glasses in the context of the International Committee on Glass (ICG). Since June 2006.
4. Direction of the Equipe Nanomécanique at the Laboratoire de Colloïdes, Verres et Nanomatériaux since October 2005.

5. Member of the Conseil du Laboratoire de Colloïdes, Verres et Nanomatériaux since February 2005.

Establishment of scientific cooperation:

1. Establishment of a scientific cooperation between Dipartimento di Fisica, Dipartimento di Ingegneria and Istituto Nazionale di Fisica della Materia (all in Bologna, Italy) with the aim of sharing the use of the machines and of the related know-how for making a more complete mechanical characterisation of rocky materials. This cooperation is presently on the run and has led to multiple international publications.
2. Establishment of a scientific cooperation with Ecole Supérieure de Physique et Chimie Industrielles de la Ville de Paris during my ERASMUS project at Paris VII University, with the aim of developing an experiment on fracture dynamics in adhesive tapes. This cooperation is presently on the run and has led to multiple international publications.