

Roberta GHEZZI

CONTACT INFORMATION	Institut de Math. de Bourgogne 9 Avenue Alain Savary BP 47870 21078 Dijon Cedex	Phone number: +39 347 32 43 955 Office number: +33 3 80 39 36 02 E-mail: roberta.ghezzi@u-bourgogne.fr
PERSONAL DATA	Date of Birth: October 22, 1983 Place of Birth: Rovigo, Italy Marital Status: married, 2 children Permanent Address: 64, Boulevard Diderot 75012 Paris Nationality: Italian	
LANGUAGES	Italian (mother tongue), English, French, Spanish (basic)	
EDUCATION	SISSA ¹ , Trieste, Italy October 29, 2010 PhD in Applied Mathematics Thesis: <i>Almost-Riemannian Geometry from a Control Theoretical Viewpoint</i> Advisors: A.A. Agrachev, U. Boscain University of Trieste & SISSA, Trieste, Italy July 18, 2007 Master Degree in Mathematics (“Laurea Magistrale in Matematica”), Thesis: <i>Punti Coniugati in Geometria Quasi-Riemanniana</i> , Advisor: U. Boscain, Grade: 110/110 cum laude. University of Bologna, Italy July 15, 2005 Bachelor Degree in Mathematics (“Laurea Triennale in Matematica”), Grade: 110/110 cum laude.	
FELLOWSHIPS AND AWARDS	Université de Bourgogne-Franche Comté, Dijon, France since Sept 2015 Recipient of PEDR (yearly bonus salary based on national ranking in research and teaching) SISSA, Trieste July 2007 “Diploma Percorso Formativo Comune”, additional Diploma in Mathematics awarded by the International School for Advanced Studies. SISSA, Trieste October 2005 - October 2007 Graduate students fellowship assigned by the International School for Advanced Studies through a national competition.	
POSITION HELD	Université de Bourgogne-Franche Comté Dijon, France Sep 2013 - present Maître de Conférences Délégation CNRS at CEREMADE, Paris Dauphine Sept 2016 - Feb 2017 Maternity leave Sept 2015 - Feb 2016	

¹International School for Advanced Studies

PREVIOUS POSITIONS	Scuola Normale Superiore, Pisa Italy	Sep 2012 - Aug 2013
	Post-doctoral fellowship within the ERC project GeMeThNES (PI L. Ambrosio)	
	Topic: sets of finite perimeter in sub-Riemannian manifolds.	
	Rutgers University - Camden NJ, USA	Nov 2011 - Aug 2012
	Post-doctoral associate of CCIB (Center for Computational and Integrative Biology)	
	Topic: control and modelisation of biological systems.	
	CMAP ² École Polytechnique, Palaiseau France	Nov 2010 - Oct 2011
	Post-doctoral fellowship in the research team INRIA “GECO”	
	Topic: Hausdorff measures of transversal paths and rectifiability in sub-Riemannian geometry.	
PREPRINTS	[a] Regularization of chattering phenomena via bounded variation controls, arXiv:1303.5796 (with M. Caponigro, B. Piccoli, E. Trélat)	
CHAPTER	[1] L. Ambrosio, <i>R. Ghezzi</i> Sobolev and bounded variation functions on metric measure spaces <i>Geometry, Analysis and Dynamics in SR manifolds, vol.II</i> , EMS Lecture Notes series (2016), 63 pp., doi : 10.4171/163-1/4 preprint http://cvgmt.sns.it/paper/2738	
JOURNAL PAPERS	[2] Optimal control of a multi-level dynamic model for biofuel production <i>Mathematical Control and Related Fields</i> , to appear arXiv:1303.6688 (with B. Piccoli).	
	[3] Hausdorff volume in non equiregular sub-Riemannian manifolds <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 126 pp. 345-377, 2015 doi 10.1016/j.na.2015.06.011 preprint arXiv:1501.05342 (with F. Jean).	
	[4] BV functions and sets of finite perimeter of sub-Riemannian manifolds <i>Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire</i> 32 (3) pp. 489-517, 2015 doi 10.1016/j.anihpc.2014.01.005 preprint arXiv:1303.6074 (with L. Ambrosio et V. Magnani).	
	[5] Normal forms and invariants for 2-dimensional almost-Riemannian structures <i>Differential Geometry and its Applications</i> , 31 (1) pp. 41-62, 2013 doi 10.1016/j.difgeo.2012.10.001 preprint arXiv:1008.5036 (with U. Boscain, G. Charlot).	
	[6] A new class of $(\mathcal{H}^k, 1)$ -rectifiable subsets of metric spaces <i>Communications on Pure and Applied Analysis</i> 12 (2) 2013 pp. 881-898, DOI 10.3934/cpaa.2013.12.881 preprint arXiv:1109.3181, (with F. Jean).	
	[7] Lipschitz Classification of Almost-Riemannian Distances on Compact Oriented Surfaces	

²Centre de Mathématiques Appliquées (Centre for Applied Mathematics)

- Journal of Geometric Analysis*, 23 (1) pp 438-455, 2013
doi 10.1007/s12220-011-9262-4
preprint arxiv:1003.4842 (with U. Boscain, G. Charlot, M. Sigalotti).
- [8] On a class of vector fields with discontinuities of divide-by-zero type and its applications to geodesics in singular metrics
Journal of Dynamical and Control Systems, 18 (1) pp. 135-158, 2012
doi 10.1007/s10883-012-9137-4
preprint arXiv:1007.0912 (with A.O. Remizov).
- [9] The Sphere and The Cut Locus at a Tangency Point in Two-dimensional Almost-Riemannian Geometry
Journal of Dynamical and Control Systems 17(I), pp. 141-161, 2011
doi 10.1007/s10883-011-9113-4,
preprint arXiv:1009.2612 (with B. Bonnard, G. Charlot, G. Janin).
- [10] Two-Dimensional Almost-Riemannian Structures with Tangency Points
Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire, 27(3) pp. 793-807, 2010
doi 10.1016/j.anihpc.2009.11.011
preprint arXiv:0908.2564 (with A.A. Agrachev, U. Boscain, G. Charlot, M. Sigalotti).
- CONFERENCE PROCEEDINGS [11] Hausdorff measures and dimensions in non equiregular sub-Riemannian manifolds
Proceedings of "INDAM Meeting on Geometric Control and Sub-Riemannian Geometry", Cortona, May 2012
Geometric Control Theory and Sub-Riemannian Geometry, Springer INDAM Series 5 pp. 201-218
doi 10.1007/978-3-319-02132-4-13
preprint arXiv:1301.3682 (with F. Jean).
- [12] Two-dimensional almost-Riemannian structures with tangency points
Proceedings of the 48th IEEE Conference on Decision and Control, Shanghai, China, 2009 pp.4340-4345
(with A.A.Agrachev, U.Boscain, G.Charlot, M. Sigalotti).
- SEMINAR PROCEEDINGS [13] On almost-Riemannian surfaces
Séminaire de Théorie Spectrale et Géométrie (Grenoble), (29) (2010-2011), pp. 15-49
preprint arXiv:1203.0949.
- [14] On measures in sub-Riemannian geometry
Séminaire de Théorie Spectrale et Géométrie (Grenoble), to appear
preprint arXiv:1702.00241 (with F. Jean).
- TEACHING Conservatoire National des Arts et Métiers, Paris **2015/16**
Calculus for first year undergraduate students (36h)
University of Burgundy, Dijon **2015/16**
Optimization for first, second year undergraduate students (53h)
University of Burgundy, Dijon **2014/15**
Analysis, Calculus, Linear Algebra, Optimization for first, second and fourth

	year undergraduate students (212h)	
	University of Burgundy, Dijon	2013/14
	Analysis, Calculus, Linear Algebra, Optimization for first, second and fourth year undergraduate students (180h)	
	ESSTIN ³ , Nancy	April - June 2011
	Linear Algebra for first year undergraduate students (24 h)	
	University of Trieste	September 2008 - January 2009
	Analysis and Linear Algebra for first year undergraduate students in Physics (50 h)	
SUPERVISIONS OF RESEARCH	Matthieu Pelletier, Master student ‘Multiscale optimal control of a bioreactor’ (together with B. Piccoli)	April - August 2012
MISCELLANEOUS	Member of Bureau de Proposition (committee to select candidates for temporary positions at Institut de Mathématiques de Bourgogne, since 2014) Member of committees to select candidates for assistant professorships (permanent position) at Institut de Mathématiques de Bourgogne (2015 and 2016) Member of evaluation committee for a local prize of best talk (for graduate students) at University of Burgundy Reviewer of scientific papers and research projects (since November 2011) Organizer of “MCT: Mathematical Control in Trieste” (December 2013) Organizer of the invited session “Modeling and Control of Collective Dynamics” within the IFAC Workshop Control of Partial Differential Equations in Paris (September 2013)	
RESEARCH STAY	Visiting scientist at Institut Élie Cartan, Nancy	Mai - Septembre 2010
INVITED LECTURES	University of Zaragoza, Spain 4h Minicourse on “Geometry and Analysis on almost-Riemannian manifolds” (within the conference 9th International Young Researchers Workshop on Geometry, Mechanics and Control)	January 2015
INVITED TALKS	SISSA, Trieste, Italy Women in Mathematics : the contribution of SISSA	June 2016
	Université Pierre et Marie Curie, Paris, France Groupe de Travail de Contrôle	June 2015
	Université de Rouen, Rouen, France Rencontres Mathématiques de Rouen	June 2015
	Institut Henri Poincaré, Paris, France Thematic day: “Optimal transport and sub-Riemannian manifolds”	December 2014

³Ecole Supérieure des Sciences et Technologies de l’Ingénieur de Nancy (Engineer School)

Institut Henri Poincaré, Paris, France	October 2014
Thematic day: “Analysis and geometry of almost-Riemannian and sub-Finslerian manifolds”	
Lake Baikal, Russia	August 2014
International Conference “Geometric Control Theory and Analysis on Metric Structures” (satellite meeting to ICM2014)	
Tours, France	June 2014
Conference on New Trends in Optimal Control	
ITN SADCO, Université de Tours	
Laboratoire de Mathématiques de Besançon, France	March 2014
Seminar of PDEs	
Institut de Mathématiques de Bourgogne, Dijon, France	March 2014
General Seminar	
Institut de Mathématiques de Bourgogne, Dijon, France	Octobre 2013
Seminar of Statistics, Probability, Optimization and Control	
Institut Henri Poincaré, Paris, France	February 2013
Seminar of sub-Riemannian geometry	
Institut de Mathématiques de Bourgogne, Dijon, France	February 2013
Seminar “Contrôle, Optimisation, Transport”	
Dipartimento di Matematica Università di Pisa, Italy	November 2012
seminar of the group of Calculus of Variations.	
Institut de Mathématiques de Bourgogne, Dijon, France	September 2012
Journée Contrôle Géométrique et Transport.	
Math Department, Lehigh University, Bethlehem PA	February 2012
Weekly Math Colloquium.	
CRM Ennio de Giorgi, Pisa, Italy	Octobre 2011
ERC Workshop on Geometric Analysis on sub-Riemannian and Metric Spaces.	
Departement de Mathématiques Avignon, France	September 2011
seminar of dynamical systems and geometry.	
CMAF Palaiseau, France	June 2011
seminar of CMAF.	
Institut Fourier Grenoble, France	April 2011
seminar of spectral theory and geometry.	
LAMA, Université de Savoie Chambéry, France	March 2011
seminar of geometry.	
Institut Élie Cartan de Nancy, France	March 2011
seminar of differential geometry.	

CONTRIBUTED
TALKS

Tours, France	June 2014
NetCo 2014, Conference on “New Trends in Optimal Control” (ITN European project SADCO).	
Ghent University, Belgium	January 2010
“4th International Young Researchers Workshop on Geometry, Mechanics and Control”.	
Departement of Mathematics, Politecnico of Torino, Italy	April 2009
“Mathematical Control Theory: Controllability, Optimization, Stability”.	

POSTERS	Drexel University, Philadelphia, PA	March 2012
	“The Drexel Microbiome Workshop”.	
	Miraflores de la Sierra, Spain	July 2011
	“V International Summer School on Geometry, Mechanics, and Control”.	
SCHOOLS	L’Ametlla de Mar, Catalonia, Spain	June 2009
	“III International Summer School on Geometry, Mechanics, and Control”.	
	Moscow State University, Moscow, Russian Federation	June 2008
	“International Conference: Differential Equations and Topology”.	
CONFERENCES AND WORKSHOPS	CIRM Marseille, France	September 2014
	“Sub-Riemannian manifolds: from geodesics to hypoelliptic diffusion”.	
	Ravello, Italy	September 2012
	“New Trends in Optimal Control” (ITN European project SADCO).	
	Miraflores de la Sierra, Spain	July 2011
	“V International Summer School on Geometry, Mechanics, and Control”.	
	Santiago de Compostela, Spain	July 2010
	“IV International Summer School on Geometry, Mechanics, and Control”.	
	L’Ametlla de Mar, Catalonia, Spain	June 2009
	“III International Summer School on Geometry, Mechanics, and Control”.	
CONFERENCES AND WORKSHOPS	Institut Henri Poincaré, Paris, France	September - December 2014
	Trimester “Geometry, Analysis and Dynamics on sub-Riemannian Manifolds”.	
	Institut Henri Poincaré, Paris France	October - December 2010
	Trimester “Control of PDE and Applications”.	
	University of Nice Sophia Antipolis, Nice France	April 2010
	“New Trends in Sub-Riemannian Geometry”.	
	Dipartimento di Matematica, University of Bologna, Italy	June 2009
	“International Conference of Sub-Riemannian Geometry and Vision”.	
	I.N.d.A.M. Istituto Nazionale di Alta Matematica, Roma, Italy	June 2009
	“Nonsmooth Analysis, Control Theory and Differential Equations”, on the occasion of the 60th birthday of Francis Clarke.	
CONFERENCES AND WORKSHOPS	SISSA/ISAS Trieste, Italy	November 2008
	“Trent’anni di Analisi Matematica alla SISSA: il contributo degli ex allievi”.	
	Moscow State University, Moscow, Russian Federation	June 2008
	“International Conference: Differential Equations and Topology”.	
	SISSA Trieste, Italy	June 2007
	Workshop on “Control, Optimization and Stability of Nonlinear Systems: Geometric and Analytic Methods”.	