Ludovic RIFFORD

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Personal information
Born November 7, 1974 in Le Côteau (France); French citizen

Academic Appointments
Sep. 2023 - Aug. 2027: Chair CNRS-Africa Joint Research Programme
Feb. 2015 - Aug. 2015: Distinghished invited Professor, CMM (Santiago, Chile)
Aug. 2013 - Dec. 2013: Eisenbud Professor, MSRI (Berkeley, USA)
Oct. 2011 - Sep. 2016: Junior member, Institut Universitaire de France (France)
From Sep. 2006: Professor at Université Côte d'Azur
Sep. 2004 - Aug. 2006: Maître de conférences at the Université Paris XI (Orsay)
Sep. 2001 - Aug. 2004: Maître de conférences at the Université Lyon I
Jan. 2000 - Apr. 2001: Postdoc (military service as a cooperant) at the University of Padua (Italy)

Positions held within cooperations activities
From Jan. 2023: Secretary for Policy of the Commission for Developing Countries, IMU
Sep. 2016 - Aug. 2020: Director of the Centre International de Mathématiques Pures et Appliquées

Education
Sep. 1998 - Dec. 1999: PhD student at the Université Lyon I
Sep. 1994 - Aug. 1998: Student of mathematics at the École normale supérieure de Lyon

Diplomas
- Habilitation dissertation (2005)
- PhD Thesis (2000); advisor: Francis Clarke
- Agrégation de Mathématiques (1997)

Research interests
Geometric control theory, Sub-Riemannian geometry, Optimal transport, Hamiltonian dynamics

Training and evaluation

Research training
I have advised four PhD theses:

- Ahed Hindawi: *Transport optimal en théorie du contrôle*; defended on June 27, 2012.

- Ayadi Lazrag: *Théorie du contrôle et systèmes dynamiques*; defended on September 25, 2014.

- Alice Erlinger: *Regularity issues in optimal transport with constraints.* Alice began her PhD in September 2012 under a co-supervision with R.J. McCann (Univ. Toronto).

- Zeinab Badreddine: *Mass transportation in sub-Riemannian structures admitting singular minimizing geodesics*; defended on December 4, 2017.

Participation in jurys
- PhD jurys (by chronological order): Ludovic Faubourg (2001), Chadi Nour (2003), Marco Castelpietra (2007, referee), Alex Bombrun (2007, referee), Si Tiep Dinh (2007, referee), Francesca Chittaro (2007, referee), Quentin Mérigot (2009, president), Pierre Pageault (2011), Thomas Gallouët (2012), Vito Mandorino (2013), Nahla Noun (2013, referee), Luca Rizzi (2014, referee), Sylvain Arguillère (2014), Cristopher Hermosilla (2015, referee), Sebastiano Nicolussi Golo (2017, referee), Ludovic Sacchelli (2018), Vincenzo Basco (2019, referee), Daniele Cannarsa (2021, referee), Shahriar Aslani (2022, referee), Othmane Jerhaoui (2022, referee), M'hammed Oudrane (2023)
- Jury of habilitation for research direction: Alessio Figalli (2009), Nicola Gigli (2011), Jérôme Bertrand (2015), Nicolas Juillet (2018), Luca Rizzi (2021, referee), Maxime Zavidovique (2021, president)

Teaching experience

At undergraduate level
Since September 2001 I have taught courses in analysis, algebra, differential equations, control theory and differential geometry to the students of University of Lyon (2001-2004), University of Orsay (2004-2006) and University Nice Sophia Antipolis renamed Université Côte d'Azur (since 2006).

At graduate level
- *Introduction au problème de stabilisation en théorie du contrôle*, University of Lyon (2003-2004)
- *Théorie du contrôle et transport optimal*, University Nice Sophia Antipolis (2008-2009)
- *Introduction à la théorie KAM faible*, University Nice Sophia Antipolis (2010-2012)

Invited graduate courses
- *Optimal transport and SR geometry*, Franco-Brazilian Workshop on Sub-Riemannian Geometry, Belém (Brazil) (08/2010)

- *Geometric control theory, closing lemma, and weak KAM theory*, Workshop "Weak KAM Theory in Italy", Cortona (Italy) (09/2011)
- *Optimal Transportation in Sub-Riemannian Geometry*, CIMPA School "Sub-Riemannian Geometry", Beyrouth (Lebanon) (02/2012)
- *Norwegian Summer School on Analysis and Geometry*, Bergen (Norway) (06/2013)
- *Sub-Riemannian Geometry and Optimal Transport*, PUC, Rio de Janeiro (Brazil) (08/2014)
- *Geometric control and sub-Riemannian geodesics*, Summer School "Sub-Riemannian manifolds: from geodesics to hypoelliptic diffusion", Marseille (09/2014)
- *Geometric control and applications*, Minischool on Variational problems in geometry, Fields Institute, Toronto (Canada) (11/2014)
- *Weak KAM Theory: Analysis of Hamiltonian Dynamics*, Universidad de Chile, Santiago (Chile) (Spring 2015)
- *Sub-Riemannian Geometry and Optimal Transport*, Universidad de Chile, Santiago (Chile) (Summer 2015)
- *Geometric control and sub-Riemannian geometry*, University of Isfahan (Iran) (05/2016)
- *Intégration convexe et Géométrie sous-riemannienne*, University of Jijel (Algeria) (05/2018)
- *Introduction to Systems and Control Theory*, University of Arba Minch (Ethiopia) (04/2019 and 02/2020)
- *Quelques propriétés des champs de vecteurs génériques*, École Jeunes Chercheuses et Chercheurs en Informatique Mathématique, Université Côte d'Azur (06/2022)
- *An Introduction to sub-Riemannian geometry*, CIMPA School "Contemporary Geometry", Windhoek (Namibia) (01/2023)
- *Introduction to sub-Riemannian geometry*, Conférence Afrimath 2023 Topologie et Géométrie, IMSP (Benin) (09/2023)

Publications lists

Research papers (published or accepted for publication)

[1] Stabilisation des systèmes globalement asymptotiquement commandables, *Comptes Rendus de l'Académie des Sciences de Paris*, vol. 330(3), 211-216, 2000.

[2] Feedback stabilization and Lyapunov functions, *SIAM Journal of Control and Optimization*, with F. H. Clarke, Yu. S. Ledyaev and R. J. Stern, vol. 39(1), 25-48, 2000.

[3] Existence of Lipschitz and semiconcave control-Lyapunov functions, *SIAM Journal of Control and Optimization*, vol. 39(4), 1043-1064, 2000.

[4] On the existence of nonsmooth control-Lyapunov functions in the sense of generalized gradients, *ESAIM - Control, Optimization and Calculus of Variations*, vol. 6, 593-611, 2001.

[5] Feedback in state constrained optimal control, *ESAIM - Control, Optimization and Calculus of Variations*, with F. H. Clarke and R. J. Stern, vol.7 , 97-133, 2002.

[6] Semiconcave control-Lyapunov functions and stabilizing feedbacks, *SIAM Journal of Control and Optimization*, vol. 41(3), 659-681, 2002.

[7] Singularities of viscosity solutions and the stabilization problem in the plane, *Indiana University Mathematical Journal*, vol. 52(5), 1373-1396, 2003.

[8] Range of the gradient of a smooth bump in finite dimension, *Proceedings of the American Mathematical Society*, vol. 131(10), 3063-3066, 2003.

[9] Global asymptotic controllability implies input to state stability, *SIAM Journal of Control and Optimization*, with M. Malisoff and E.D. Sontag, vol. 42(6), 2221-2238, 2004.

[10] A Morse-Sard theorem for the distance function on Riemannian manifolds, *Manuscripta Mathematica*, vol. 113, 251-265, 2004.

[11] Stratified semiconcave control-Lyapunov functions and the stabilization problem, *Annales de l'Institut Henri Poincaré Analyse Non Linéaire*, vol. 22(3), 343-384, 2005.

[12] Morse-Sard type results in sub-riemannian geometry, with E. Trélat, *Mathematische Annalen*, vol. 332(1), 145-159, 2005.

[13] Approximation and regularization of Lipschitz functions: convergence of the gradients, with M.-O. Czarnecki, *Transactions of the American Mathematical Society*, vol. 358(10), 4467-4520, 2006.

[14] À propos des sphères sous-riemanniennes, *Bulletin of the Belgian Mathematical Society Simon Stevin*, vol. 13(3), 521-526, 2006.

[15] On the existence of local smooth repulsive stabilizing feedbacks in dimension three, *Journal of Differential Equations*, vol. 226(2), 429-500, 2006.

[16] Refinement of the Benoist Theorem on the size of Dini subdifferentials, *Communications in Pure and Applied Analysis*, vol. 7(1), 119-124, 2008.

[17] On viscosity solutions of certain Hamilton-Jacobi equations: Regularity results and generalized Sard's Theorems, *Communications in Partial Differential Equations*, vol. 33(3), 517–559, 2008.

[18] Semiconcavity results for optimal control problems admitting no singular minimizing controls, with P. Cannarsa, *Annales de l'Institut Henri Poincaré Analyse Non Linéaire*, vol. 25(4), 773-802, 2008.

[19] On the stabilization problem for nonholonomic distributions, with E. Trélat, *Journal of the European Mathematical Society*, vol. 11(2), 223-255, 2009.

[20] On the Hausdorff Dimension of the Mather Quotient, with A. Fathi and A. Figalli, *Communications on Pure and Applied Mathematics*, vol. 62(4), 445-500, 2009.

[21] Continuity of optimal transport maps and convexity of injectivity domains on small deformations of the two-sphere, with A. Figalli, *Communications on Pure and Applied Mathematics*, vol. 62(12), 1670-1706, 2009.

[22] Mass Transportation on sub-Riemannian Manifolds, with A. Figalli, *Geometric and Functional Analysis*,vol. 20(1), 124-159, 2010.

[23] Regularity properties of the distance functions to conjugate and cut loci for viscosity solutions of Hamilton-Jacobi equations and applications in Riemannian geometry, with M. Castelpietra, *ESAIM - Control, Optimization and Calculus of Variations*, vol. 16(3), 695-718, 2010.

[24] On the Ma-Trudinger-Wang curvature on surfaces, with A. Figalli and C. Villani, *Calculus of Variations and Partial Differential Equations*, vol. 39(3-4), 307-332, 2010.

[25] Convexity of injectivity domains on the ellipsoid of revolution: The oblate case, with B. Bonnard and J.-B. Caillau, *Comptes Rendus de l'Académie des Sciences de Paris*, vol. 348(23-24), 1315-1318, 2010.

[26] Mass transportation with LQ cost functions, with A. Hindawi and J.-B. Pomet, *Acta Applicandae Mathematicae*, vol. 113(2), 215-229, 2011.

[27] Tangent cut loci on surfaces, with A. Figalli and C. Villani, *Differential Geometry and its Applications*, vol. 29(2), 154-159, 2011.

[28] Necessary and sufficient conditions for continuity of optimal transport maps on Riemannian manifolds, with A. Figalli and C. Villani, *Tohoku Mathematical Journal*, vol. 63(4), 855-876, 2011.

[29] Nearly round spheres look convex, with A. Figalli and C. Villani, *American Journal of Mathematics*, vol. 134(1), 109-139, 2012.

[30] Generic properties of closed orbits of Hamiltonian flows, with R. Ruggiero, *International Mathematics Research Notices*, vol. 22, 5246-5265, 2012.

[31] Closing geodesics in C^1 topology, *Journal of Differential Geometry*, vol. 91(3):361-382, 2012.

[32] Ricci curvature in Carnot groups, *Mathematical Control and Related Fields*, vol. 3(4):467-487, 2013.

[33] Closing Aubry sets I, with A. Figalli, *Communications on Pure and Applied Mathematics*, vol. 68(2):210-285, 2015.

[34] Closing Aubry sets II, with A. Figalli, *Communications on Pure and Applied Mathematics*, vol. 68(3):345-412, 2015.

[35] Generic hyperbolicity of Aubry sets on surfaces, with G. Contreras and A. Figalli, *Inventiones Mathematicae*, vol. 200(1):201-261, 2015.

[36] On the convexity of injectivity domains on nonfocal manifolds, with A. Figalli and T. Gallouët, *SIAM Journal on Mathematical Analysis*, vol. 47(2):969-1000, 2015.

[37] The intrinsic dynamics of optimal transportation, with R.J. McCann, *Journal de l'École Polytechnique*, vol. 3:67-98, 2016.

[38] Sard theorems for Lipschitz functions and applications in Optimization, with L. Barbet, M. Dambrine, A. Daniilidis, *Israel Journal of Mathematics*, vol. 212(2):757-790, 2016.

[39] Franks' lemma for C^2-Mañé perturbations of Riemannian metrics and applications to persistence, with A. Lazrag and R. Ruggiero, *Journal of Modern Dynamics*, vol. 10:379-411, 2016.

[40] Self-contracted curves in Riemannian manifolds, with A. Daniilidis, R. Deville, E. Durand-Carthagena, *Journal of Mathematical Analysis and Applications*, vol. 457(2):1333-1352, 2018.

[41] The Sard conjecture on Martinet surfaces, with A. Belotto da Silva, *Duke Mathematical Journal*, vol. 167(8):1433-1471, 2018.

[42] Uniquely minimizing costs for the Kantorovitch problem, with A. Moameni, *Annales de la Faculté des Sciences de Toulouse*, vol. 29(3):507-563, 2020.

[43] Measure contraction properties for two-step analytic sub-Riemannian structures and Lipschitz Carnot groups, with Z. Badreddine, *Annales de l'Institut Fourier (Grenoble)*, vol. 70(6):2303-2330, 2020.

[44] On the stability conjecture for geodesic flows of manifolds without conjugate points, with R. Ruggiero, *Annales Henri Lebesgue*, vol. 4:759-784, 2021.

[45] A Quantitative version of Tao's result on the Toeplitz Square Peg Problem, *North-Western European Journal of Mathematics*, vol. 8:61-90, 2022.

[46] Strong Sard conjecture and regularity of singular minimizing geodesics for analytic sub-Riemannian structures in dimension 3, with A. Belotto da Silva, A. Figalli, A. Parusinski, *Inventiones Mathematicae*, vol. 229(1):395-448, 2022.

[47] On the time for a runner to get lonely, *Acta Applicandae Mathematicae*, vol. 180, Paper No. 15, 66 pp., 2022.

[48] Subdifferentials and Minimizing Sard Conjecture in Sub-Riemannian Geometry, *Journal de l'École Polytechnique*, vol. 10:1195-1244, 2023.

Recently or nearly completed works

[49] Abnormal subanalytic distributions and minimal rank Sard Conjecture, with A. Belotto da Silva, A. Parusinski, Preprint, 72 pages, 2022.

[50] Abnormal singular foliations and the Sard Conjecture for generic co-rank one distributions, with A. Belotto da Silva, A. Parusinski, Preprint, 28 pages, 2023.

Conference proceedings and short surveys

[51] Stabilization of the logistic law under yield control constrained to initial harvest, with A. Rapaport, in Proceedings of the 4th European Control Conference, (Brussels, July 1997), p. 3228-3233.

[52] Remark on input to state stabilization, with M. Malisoff and E.D. Sontag, in Proceedings of the 42nd IEEE Conference on Decision and Control (Maui, HI, December 2003), p. 1053-1058.

[53] The stabilization problem: AGAS and SRS feedbacks, in Optimal Control, Stabilization, and Nonsmooth Analysis, Lectures Notes in Control and Information Sciences Vol. 301, Springer-Verlag, Heidelberg, p. 173-184, 2004.

[54] The stabilization problem on surfaces, *Rendiconti del Seminario Matematico, Università e Politecnico di Torino*, Control Theory and Stabilization II, vol. 64(1), 55-61, 2006.

[55] Stabilization problem for nonholonomic control systems, in Geometric Control and Nonsmooth Analysis, Series on Advances in Mathematics for Applied Sciences Vol. 76, World Scientific, p. 260-269, 2008.

[56] Regularity of weak KAM solutions and Mañé's Conjecture, in *Séminaire Laurent Schwartz – EDP et applications* (2011-2012), Exposé num. XXVII, 22 pages.

[57] Aubry sets, Hamilton-Jacobi equations, and Mañé Conjecture, with A. Figalli, in *Geometric Analysis, Mathematical Relativity, and Nonlinear Partial Differential Equations*, Contemporary Mathematics, 599, Amer. Math. Soc., Providence, RI, 2013.

[58] Singulières minimisantes en géométrie sous-Riemannienne. In Séminaire Bourbaki. Vol. 2015/2016. Exposés 1104-1119. *Astérisque*, No. 390, Exp. No. 113, 277-301, 2017.

Books

[59] Sub-Riemannian Geometry and Optimal Transport, BCAM Springer Briefs in Mathematics, 2014.

Invitations and communications

Invitations
04/2003: Centre de Recherches Mathématiques, University of Montreal (Canada), 2 weeks
04/2004: University of Rome 2 "Tor Vergata" (Italy), 3 weeks
11/2004: University of Rome 2 "Tor Vergata" (Italy), 1 month
06/2005: Louisiana State University, Bâton Rouge (USA), 2 weeks
09/2005: University of Rome 2 "Tor Vergata" (Italy), 1 week
04/2010: University of Texas at Austin (USA), 1 week

05/2012: University of Texas at Austin (USA), 1 week
10/2012: Universitat Autònoma de Barcelona (Spain), 1 week
12/2012: PUC, Rio de Janeiro (Brazil), 1 week
04/2013: Universidad de la Republica, Montevideo (Uruguay), 1 week
06/2013: Nanjing University, Nanjing (China), 1 week
08/2013: Mathematical Sciences Research Institute, Berkeley (USA), 4 months
03/2014: Universidad de Chile, Santiago (Chile), 1 week
08/2014: PUC, Rio de Janeiro (Brazil), 3 weeks
11/2014: Fields Institute, Toronto (Canada), 2 weeks
02/2015: Center for Mathematical Modeling, Universidad de Chile, Santiago (Chili), 6 months
05/2017: Universidad de Chile, Santiago (Chile), 1 week
05/2023: Technische Universität Wien (Austria), 1 week

Talks in conferences, colloquia and schools
06/1999: Workshop on Nonlinear Analysis and Control Theory, *Porto (Portugal)*
06/2000: Mathematical Control Theory and Robotic, *SISSA, Trieste (Italy)*
06/2002: Commande des systèmes non linéaires, *University of Metz*
10/2002: European Meeting on Control Theory and Stabilization, *University of Dijon*
04/2003: Louisiana Conference on Mathematical Control Theory, *Baton Rouge (USA)*
06/2003: Singularités réelles en Savoie, *University of Chambéry*
12/2003: European Meeting on Control Theory and Stabilization, *Turin (Italy)*
07/2004: "Differential Equations and Control" Session, Canada-France Conference, *Toulouse*
11/2004: Colloquium, *INDAM, University of Rome 1 "La Sapienza" (Italy)*
09/2005: European Meeting on Control and Stabilization, *Byalystok (Poland)*
06/2006: Geometric Control and Nonsmooth Analysis, *Rome (Italy)*
12/2007: Atelier sur les aspects de la mécanique céleste, *Institut Henri Poincaré, Paris*
09/2008: 50 Years of Optimal Control, *Banach Center, Bedlewo (Poland)*
11/2008: Optimal Transportation and Applications, *Pisa (Italy)*
07/2009: Gradient flows and Applications, *IMPAN, Sopot (Poland)*
10/2009: Recent Advances in Optimal Transportation and Applications, *University of Nice*
04/2010: Nonlinear Analysis and PDEs, *University of Texas at Austin (USA)*
04/2010: Optimal Transportation and applications, *Banff International Research Station (Canada)*
09/2010: Topics on Optimal Transport, *IRMA, University of Strasbourg*
10/2010: Rencontre KAM faible, *Calvi*
10/2010: Optimal Transport meeting in Pisa, *Pisa (Italy)*
06/2011: Colloquium Lorrain de Mathématiques, *University of Nancy*
06/2011: Nonlinear PDEs Workshop, *Instituto Superior Técnico, Lisbon (Portugal)*
07/2011: OPTDE - Summer School, *Basque Center for Applied Mathematics, Bilbao (Spain)*
09/2011: Geometry Meets Transport, *University of Nice*
01/2012: Colloquium de l'Institut de Mathématiques de Jussieu, *Université Paris VI*
01/2012: Workshop on Geometric Control for PDEs, *Université Libanaise, Beyrouth (Lebanon)*
03/2012: 18ème Colloque de la Société Mathématique de Tunisie, *Mahdia (Tunisia)*
04/2012: PICOF' 12, *École Polytechnique*, Paris

05/2012: INDAM meeting on Geometric Control and sub-Riemannian Geometry, *Cortona (Italy)*
06/2012: Geometric Optimal Control, *University of Dijon*
07/2012: "Global Dynamics in Hamiltonian Systems" Session, AIMS Conference, *Orlando (USA)*
11/2012: Henri Poincaré, du mathématicien au philosophe, *Institut Henri Poincaré, Paris*
04/2013: Non linear Control: Geometric Methods and Applications, *Florence (Italy)*
08/2013: Workshop on Control and Observation, *University of Hawaii (USA)*
11/2013: Recent developments of nonlinear PDEs, *ANU, Canberra (Australia)*
03/2014: GGTM Colloquium - Salah Baouendi Memorial Conference, *Tunis (Tunisie)*
06/2014: Analysis and Geometry in Control Theory and its Applications, *INDAM, Rome (Italy)*
11/2014: Rencontres de l'ANR Geometrya, *Université Nice Sophia Antipolis*
01/2015: Workshop on Hamiltonian dynamical systems, *Fudan University, Shanghai (China)*
05/2015: Colloquium of the Math Department, *PUC, Santiago (Chile)*
09/2015: Workshop on Nonlinear Analysis and Optimization, *Royal Society, London (UK)*
10/2015: Journée de Dynamique, *IMJ-PRG, Université Paris VII, Paris*
10/2015: Workshop Analysis in Lyon, *ENS Lyon, Lyon*
12/2015: "Analysis of HJ equations" Session, SIAM Conf. on Analysis of PDEs, *Scottsdale (USA)*
02/2016: Rencontre d'Analyse Mathématique et ses Applications, *Ouargla (Algeria)*
03/2016: CIMPA Research school "Géométrie et Analyse", *Abidjan (Côte d'Ivoire)*
03/2016: Séminaire Bourbaki, *Institut Henri Poincaré, Paris*
03/2016: Rencontre de l'ANR ISDEEC, *CIRM, Marseille*
04/2016: Colloquium de l'Institut de Mathématiques, *Université de Neuchâtel (Switzerland)*
04/2016: International Conference of the GE2MI, *Hammamet (Tunisia)*
05/2016: Colloquium du Département de Mathématiques, *University of Orsay*
06/2016: Analysis, Geometry, and Optimal Transport, *KIAS, Seoul (South Corea)*
08/2016: The cut locus, *KMITL, Bangkok (Thailand)*
12/2016: 2016 Analysis School, *Cotonou (Benin)*
07/2017: Pan African Congress of Mathematics, *Rabat (Morocco)*
07/2017: New Trends in Control Theory and PDEs, *INdAM, Rome (Italy)*
09/2017: Conférence à la mémoire d'Ahmad El Soufi, *Université François Rabelais, Tours*
02/2018: Conference: Subriemannian Geometry and Beyond, *University of Jyväskylä (Finland)*
10/2018: Riemannian Geometry and Generalised Functions, *Université Paris Diderot, Paris*
12/2018: Dynamical Aspects in Variational Analysis, *École Polytechnique, Palaiseau*
02/2019: Second International Conference of Mathematics in Erbil, *Salahaddin University (Iraq)*
05/2019: "Real and complex singularities in Cargèse", *IESC, Cargèse*
10/2019: 1st International MIPAnet Conference on Science and Mathematics, *Parapat (Indonesia)*
11/2019: Rencontre d'Analyse Mathématique et ses Applications, *Sidi Bel Abbès (Algeria)*
11/2023: Rencontre d'Analyse Mathématique et ses Applications 12, *Adrar (Algeria)*

Talks in research seminars
02/2000: University of Padua (Italy)
04/2000: Politecnico di Torino (Italy)
05/2000: University of Rome 2 (Italy)
11/2000: École des Mines de Paris

05/2001: University of Montpellier
12/2001: INRIA Sophia-Antipolis
03/2002: Politecnico di Torino (Italy)
11/2002: University of Orsay, Numerical Analysis seminar
02/2003: University of Montpellier, Analysis seminar.
03/2003: University of Lille, Differentiable Galois Theory seminar
04/2003: CRM, University of Montréal (Canada)
10/2003: University of Bordeaux, Analysis seminar
02/2004: University of Brest, Applied Analysis seminar.
02/2004: University of Rennes, Real Algebraic Geometry seminar.
04/2004: University of Rome 2 "Tor Vergata" (Italy), Differential Equations seminar
06/2004: University of Montpellier, Analysis seminar
03/2006: Séminaire Parisien d'Optimisation, Institut Henri Poincaré, Paris
03/2006: University of Dijon, Differential Equations seminar
03/2006: University Nice Sophia Antipolis
04/2006: University of Montpellier
05/2006: University of Limoges, Nonlinear Analysis and Optimization seminar
09/2006: University Nice Sophia Antipolis
02/2007: University of Avignon, Dynamical Systems and Geometry seminar
03/2007: ENS Lyon, PDEs and Applications seminar
06/2007: EPFL (Switzerland), Analysis seminar
03/2008: Séminaire commun d'analyse géométrique, CIRM, Marseille
04/2009: University of Marseille, Geometry and Singularities seminar
10/2009: University Nice Sophia Antipolis, Dynamics and Geometry seminar
12/2009: INRIA Sophia-Antipolis, APICS seminar
02/2010: University of Orléans
03/2010: University of Dijon
08/2010: PUC, Rio de Janeiro (Brazil), Dynamical Systems seminar
09/2010: University of Avignon, Dynamical Systems and Geometry seminar
11/2010: University Nice Sophia Antipolis, Dynamics and Geometry seminar
11/2010: University of Grenoble, Analysis seminar
12/2010: University of Cergy-Pontoise, Geometry, PDEs and Mathematical Physics seminar
01/2011: University of Toulouse, Geometry seminar
03/2011: University Paris VI, "Control" workshop
03/2011: University of Orsay, Geometry, Topology and Dynamics seminar
11/2011: University of Orsay, Harmonic Analysis seminar
01/2012: Séminaire X-EDP, École polytechnique
01/2012: University of Bilbao (Spain)
03/2012: Séminaire Parisien d'Optimisation, Institut Henri Poincaré, Paris
12/2012: PUC, Rio de Janeiro (Brazil), Dynamical Systems seminar
03/2013: University of Rome 1 "La Sapienza" (Italy), Analysis seminar
04/2013: IMERL-CMAT Montevideo (Uruguay), Dynamical Systems seminar
05/2013: Transport optimal et géométrie, CIRM, Marseille
06/2013: Nanjing University (China)

06/2013: Hefei University (China)
12/2013: MSRI, Berkeley (USA)
01/2014: École Normale Supérieure de Lyon, Geometry and Dynamics seminar
03/2014: Universidad de Chile (Chile), Optimization seminar
08/2014: PUC, Rio de Janeiro (Brazil), Dynamical Systems seminar
02/2016: University of Marseille, Calculus of Variations and PDEs
11/2016: ETH Zurich (Switzerland), Dynamical Systems seminar
11/2016: University Nice Sophia Antipolis, Dynamics and Geometry seminar
12/2016: Seminaire de Géométrie Hamiltonienne, Paris VI
05/2017: Universidad de Chile (Chile), Optimization seminar
06/2017: INRIA Sophia-Antipolis, ATHENA seminar
04/2019: Université Aix-Marseille, "Geometry, Dynamics and Topology" seminar
04/2019: University of Arba Minch (Ethiopia)
09/2019: Séminaire commun d'analyse géométrique, CIRM, Marseille
05/2021: Zoom Seminar, China
12/2021: Séminaire Français d'Optimisation, Online Seminar
12/2022: AFRIMath Seminar, Online Seminar
01/2023: GStats Seminar, INRIA Sophia Antipolis - Méditerranée
06/2023: Université Savoie Mont Blanc, Geometry Seminar
10/2023: Lomonosov Moscow State University (Russia), Geometric Control Seminar (online)
01/2024: AIMS-Senegal
01/2024: Université Cheikh Anta Diop (Senegal), Geometry Seminar

Research teams and projects

- Head of the research group "Geometry, Analysis and Dynamics" in Nice, 2010-2013
- Member of the INRIA project-team McTAO (Mathematics for Control, Transport, and their ApplicatiONs), 2012-2019

- Member of the ANR project ISDEEC (Interactions Systèmes Dynamiques Équations d'Évolution et Contrôle), 2015-2019
- Member of the ANR project SRGI (Géométrie sous-Riemannienne et Interactions), 2015-2019
- Member of the ANR project WKBHJ (Weak KAM beyond Hamilton-Jacobi), 2013-2017
- Member of the ANR project GMT (Géométrie et transport optimal de mesure), 2011-2016
- Member of the ANR project GCM (Geometric Control Methods, Sub-Riemannian Geometry and Applications), 2009-2013
- Member of the ANR project KAM faible (Hamilton-Jacobi et théorie KAM faible), 2007-2011

- Member of the GdR project MOA (Mathématiques de l'Optimisation et Applications)
- Member of the GDRE CONEDP (Control of Partial Differential Equations)

Further informations

- Member of the Editorial board of the "Journal of Dynamical and Control Systems", 2010-2014
- Member of the Editorial board of the journal "Discrete and Continuous Dynamical Systems - A", 2014-2016