

Ilaria Mondello

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Current Position

Associate professor (maître de conférence)

Since September 2016

Université de Paris-Est Créteil, LAMA.

Previous positions and education

Postdoc, MSRI Semester in Differential Geometry

January - May 2016

Mathematical Sciences Research Institute, Berkeley.

Postdoc, Fondation Sciences Mathématiques de Paris

October - December 2015

Institut de Mathématiques de Jussieu, Paris.

Ph.D. in Mathematics

Title of the Ph.D. thesis: The Yamabe Problem on Stratified Spaces.

2012-2015

Advisor: Gilles Carron, Laboratoire de Mathématiques Jean Leray, Nantes.

Pre-prints

S. Honda, C. Ketterer, I. Mondello, R. Perales, C. Rigoni, *Gromov-Hausdorff stability of tori under Ricci and integral scalar curvature bounds*, arXiv:2311.01342.

G. Carron, I. Mondello, D. Tewodrose, *Kato meets Bakry-Émery*, arXiv:2305.07428.

G. Carron, I. Mondello, D. Tewodrose, *Limits of manifolds with a Kato bound on the Ricci curvature. II*, arXiv:220501956.

Publications

G. Carron, I. Mondello, D. Tewodrose, *Limits of manifolds with a Kato bound on the Ricci curvature*, to appear in *Geometry and Topology*, arXiv:2102.05940.

G. Carron, I. Mondello, D. Tewodrose, *Torus stability under Kato bounds on the Ricci curvature*, to appear in the *Journal of the London Mathematical Society*, available at arXiv:2207.05419.

I. Mondello, A. Mondino, R. Perales, *An upper bound on the revised first Betti number and a torus stability result for RCD spaces*, *Commentarii Mathematici Helvetici* 97 (2022), no.3, 555-609, arXiv:2104.06208.

K. Akutagawa, I. Mondello, *Non-existence of Yamabe minimizers on singular spheres*, *Journal of Geometric Analysis*, 32 (2022), no.7, arXiv:1909.09367.

S. Honda, I. Mondello, *Sphere theorems for RCD and stratified spaces*, *Annali della Scuola Normale di Pisa Cl. Sci. (5)* 22 (2021), no. 2, 903–923, arXiv:1907.03482.

J. Bertrand, C. Ketterer, I. Mondello, T. Richard, *Stratified spaces and synthetic Ricci curvature bounds*, *Annales de l'Institut Fourier (Grenoble)* 71 (2021), no. 1, 123–173, arXiv:1804.08870.

I. Mondello, *An Obata singular theorem for stratified spaces*, *Transactions of the American Mathematical Society*, **370** (2018), 4147-4175, arXiv:1511.08093.

I. Mondello, *The Local Yamabe constant of Einstein stratified spaces*, Annales de l'Institut Henri Poincaré Analyse Non Linéaire **34** (2017), no. 1, 249-275, arXiv:1411.7996.

Survey articles

I. Mondello, *Limits of manifolds with a Kato bound on the Ricci curvature*, Oberwolfach reports, to appear (2021).

I. Mondello, *Structure des limites de variétés à courbure de Ricci minorée, d'après J. Cheeger, W. Jiang and A. Naber*, Séminaire Bourbaki (2020).

I. Mondello, *The Yamabe problem on stratified spaces*, Oberwolfach reports, **14**, issue 3 (2017).

Awards and funding

Prime d'encadrement doctoral et de recherche.	2018-2025
Délégation Jeunes géomètres, Fondation Louis D., six-month leave from teaching.	2019
Délégation CNRS, six-month leave from teaching.	2018
Jeunes Maître de Conférences, one-year UPEC funding.	2018
PEPS (Projet exploratoire premier soutien), one-year CNRS funding.	2017

Co-organization of conferences and workshops

Connections Workshop: New Frontiers in Curvature, Special Geometric Structures MSRI, with L.H. Wuang, G. Wei, A. Chang, X. Zhu.	August 2024
Recent advances in geometric analysis CIRM, with P. Laurain, B. Premoselli, X. Lamy, P. D. Thizy.	November 2023
London-Paris geometry days, with H. Auvray, E. Di Nezza, A. Deruelle, L. Foscolo. Monthly <i>Geometry Colloquium of Créteil</i> UPEC, with F. Fanoni.	May 2023 since 2022
Meeting of the ANR project <i>Curvature constraints and space of metrics</i> . Université de Lorraine, with S. Tapie.	September 2022
Bi-annual workshop <i>Geometry: exchanges and perspectives</i> Institut Henri Poincaré, with H. Auvray and A. Deruelle.	since 2017
<i>Forum de jeunes mathématicien-ne-s, Géométrie et interactions</i> . Institut Henri Poincaré, with E. Di Nezza, E. Floris and A. Vaugon.	October 2019
Master class <i>Differential geometry: structure of limit spaces</i> . Institut Henri Poincaré, with L. Bessières, G. Besson, G. Carron, S. Tapie.	May 2019
Workshop <i>Geometric analysis</i> . Institut Henri Poincaré, with P. Laurain, L. Hauswirth.	December 2018
Meeting of the ANR project <i>Curvature constraints and space of metrics</i> . Université Paris Est Créteil, with T. Richard.	November 2018
"Five-minute Talks", MSRI.	January 2016
Journée du Laboratoire de Mathématiques Jean Leray, with P. Vidotto.	July 2015
Ph.D. students' seminar in Nantes.	2013-2014

Service

Member of the scientific committee of the thematic network Tetrahedron.	2024-28
Elected member of the Conseil National des Universités, Section 25 Pure Mathematics.	2024-28
Elected member of the board of directors of the Société Mathématique de France.	2023-26
External member of the commission CCUPS, Laboratoire de mathématiques d'Orsay.	2022-26
Elected member, Conseil du Laboratoire d'Analyse et Mathématiques appliquées.	2020-24
Nominated member, Conseil du Laboratoire d'Analyse et Mathématiques appliquées.	2018-20

Committees for the recruitment of maîtres de conférences (assistant professors)..

Université Paris Est Créteil (Analysis and interactions).	2021
Université Marne la Vallée (Analysis and interactions with probability and geometry).	2019

Jurys of Ph.D. thesis defenses.....

H. E. Boukhecham, advisor B. Kloeckner, UPEC.	2023
Y. Zang, advisor B. Daniel, Université de Lorraine.	2022
B. Stupovski, advisor R. Torres, SISSA.	2020
N. Marque, advisor P. Laurain, Université de Paris.	2019
D. Tewodrose, advisors L. Ambrosio et T. Coulhon, ENS.	2018

Journal Refereed.....

Archiv der Mathematik, Transactions of the AMS, Journal of Functional Analysis.
Reviewer for *Mathematical Reviews* since January 2022.

Invited seminars and conferences

Conference talks.....

Recent advances in geometric analysis, mini-course, CIRM, Marseille.	November 2023
Recent advances in the theory of submanifolds, Università La Sapienza.	September 2023
Curvature and Global Shape 2023, Münster.	August 2023
Sobolev inequalities in the Alps, Grenoble.	June 2023
Conformal geometry and geometric analysis, Regensburg.	March 2023
Aspects of Ricci curvature bounds, Fields Institute, Toronto.	November 2022
Irish Geometry conference, Galway.	May 2022
Variable Curvature Bounds, Analysis and Topology on Dirichlet Spaces, MFO.	December 2021
Bourbaki seminar, Institut Henri Poincaré.	October 2021
Advances in geometric analysis, Paris.	December 2019
Séminaire Quimpériodique, mini-course on GH-limits, Quimper.	November 2019
XXI Congresso dell'Unione matematica italiana, Pavia.	Sept. 2019
Optimal transport and geometric analysis, Venezia.	April 2019
Analytical problems in conformal geometry and applications, Regensburg.	Sept. 2018
AIMS Conference on Dynamical Systems, Differential Equations, Taipei.	July 2018

Conference in honour of S. Gallot's 70th birthday, Samothrace.	June 2018
Intense activity period: Metric measure spaces and Ricci curvature, MPIM, Bonn.	Sept. 2017
Analysis, geometry and topology of positive scalar curvature metrics, Oberwolfach.	August 2017
Young Women in Geometry, Max Planck Institute for Mathematics, Bonn.	April 2017
Workshops Space of metrics, Bordeaux.	March 2017
France-Italy meeting in Geometric Analysis, Centro Ennio de Giorgi, Pisa.	February 2017
Geometria Reale e Complessa, Levico Terme.	October 2016
Follow-up workshop Optimal Transport, HIM, Bonn.	August 2016
Reflections on Global Riemannian Geometry, Townsend, Tennessee.	August 2016
Geometric Analysis on Riemannian and singular metric measure spaces, Como.	July 2016
Analysis, geometry and topology of stratified spaces, CIRM, Marcheille.	June 2016
Geometry and topology of open manifolds, ANR meeting, Bordeaux.	October 2015
Geometric C.O.R.P, Seillac.	Septembre 2015
Journée du Laboratoire Jean Leray, Nantes.	July 2015

Seminar talks

Darboux seminar, Institut Montpélien A. Grothendieck, Montpellier.	January 2024
Analysis seminar, University of Warwick.	January 2024
Geometry and analysis, University of Bristol.	November 2023
Harmonic analysis seminar, Orsay.	June 2023
Dynamic systems, analysis and geometry, Avignon.	January 2023
Algebra and geometry seminar, Università Roma La Sapienza.	January 2023
Darboux seminar, Institut Montpélien A. Grothendieck, Montpellier.	June 2022
Analysis seminar, Institut de Mathématiques de Toulouse.	June 2022
PDEs and Mathematical physics seminar, LAGA Sorbonne Paris Nord.	May 2022
Geometry seminar, Institut Denis Poisson Tours.	February 2022
Geometry seminar, IECL Nancy.	March 2022
Geometry seminar, LAMA and IMJ, Paris.	Octobre 2020
PDEs seminar, Besançon.	October 2019
Geometry, analysis and dynamics, Nice.	May 2019
Geometry and analysis, University of Bristol.	April 2019
Geometry seminar, Nantes.	November 2018
Harmonic analysis seminar, Orsay.	May 2018
Riemannian geometry seminar, Firenze.	December 2018
Geometric analysis seminar, Pisa.	December 2018
Brussels-London geometry seminar, Université Libre de Bruxelles.	November 2018
DFG Graduiertenkolleg, University of Regensburg.	January 2018
Geometry seminar, University of Lorraine, Nancy.	November 2017
Geometry and topology seminar, University of Luxembourg.	June 2017

Analysis seminar, University of Freiburg.	June 2017
Geometry, Topology and Dynamics seminar, Orsay.	Janvier 2017
Darboux seminar, Institut Montpellierain A. Grothendieck, Montpellier.	December 2016
Differential geometry seminar, Mathematical Institute Münster.	November 2016
Functional analysis seminar, Université de Lille.	November 2016
Geometry seminar, LAMA, Paris.	October 2016
Postdoc Lunch Seminar, MSRI, Berkeley.	March 2016
Geometry and analysis seminar, Laboratoire Dieudonné, Nice.	December 2015
Real analysis seminar, Institut de Mathématiques de Toulouse.	December 2015
Spectral theory and geometry seminar, Institut Fourier, Grenoble.	November 2015
Analysis and geometry seminar, IMJ, Paris.	November 2015
Non linear PDEs seminar, LAGA, Paris 13.	October 2015
Geometry seminar, Tokyo Institute of Technology.	July 2015
Geometry and topology seminar, Université de Bretagne Occidentale, Brest.	March 2015
Geometry seminar, Université de Nantes.	November 2014
Workshop on Steklov eigenvalues, Université de Nantes.	October 2013

Online talks.....

Topology/Geometry Zoom seminar, University of Oregon.	January 2023
Topology/Geometry Zoom seminar, University of Oregon.	December 2022
Workshop RCD spaces: splitting theorem and applications (UNAM).	October 2021
Münster Oberseminar Differentialgeometrie.	June 2021
Duke's Geometry and Topology seminar.	April 2021
Bruxelles-Oxford-Warwick-London geometry seminar.	March 2021
Joint seminar on complex geometry and analysis Bochum, Essen, Köln, Wuppertal.	January 2021
Online workshop in geometric analysis, organised by A. Pluda (Università di Pisa).	December 2020
CUNY Geometric Analysis Seminar.	July 2020
Metric measure spaces and convergence, organised by R. Perales (UNAM).	June 2020

Periods abroad

Nonsmooth Riemannian and Lorentzian Geometry, Fields Institute, Toronto.	6-18 November 2022
Visiting B. Devyver, Israel Institute of Technology, Haifa.	17 - 25 June 2019
Visiting R. Perales Aguilar, Centro Ennio de Giorgi, Pisa.	3-7 December 2018
Metric measure spaces and Ricci curvature, MPIM, Bonn.	10 - 22 September 2017
Visiting C. Ketterer at the University of Freiburg.	June 2017
Postdoctoral Fellow at the Mathematical Sciences Research Institute	January-May 2016
Visiting K. Akutagawa at Tokyo Institute of Technology.	July 2015
Visiting student of G. Staffilani at Massachusetts Institute of Technology.	February-May 2012

Teaching

Master Mini-course.....

Metric spaces and Gromov-Hausdorff convergence. Sept. 2017
Journées de rentrée des Masters, Fondation Mathématique Jaques Hadamard, IHÉS.

Université Paris Est Créteil.....

Geometry and applications, first year of Master Mathematics.	2021 – 2024
Supervision of research projects for first year master students in Mathematics.	2022 – 2023
Supervision of research projects for third year students in Mathematics.	2020 – 2023
Real analysis, first year of Mathematics.	2020 – 2024
Topology, third year of Mathematics.	2020 – 2024
Functions of multiple variables, second year of Mathematics.	2020 – 2023
Series and Integrals, second year of Mathematics.	2020 – 2024
Personalised support, second year of Mathematics.	2020 – 2021
Analysis 3, second year of Mathematics.	2019 – 2020
Curves and surfaces, third year of Mathematics.	2016 – 2019
Mathematics for Physics 3, second year of Engineering	2018 – 2019
Mathematics for Physics 1, first year of Engineering	2017 – 2018
Analysis 2, first year of Mathematics, Physics, Informatics and Engineering.	2016 – 2020
Analysis 1, first year of Mathematics, Physics, Informatics and Engineering.	2016 – 2018

Université de Nantes.....

Real Analysis, first year of Mathematics, Physics, Informatics and Engineering.	2013 – 2015
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Outreach

“*Geometry, curvature and singularities*”, talk for middle and high-school girls at the *Girls and mathematics day: a bright equation* in UPEC, March 2023.

Podcast “*The country woman and the mathematician*”, by L. Pauchon, Jury prize of Radio France's competition *Une fois, une voix*, for high-school students, 2021.

“Speed dating with a mathematician”, short meetings addressed to middle and high school students, at the *Girls and mathematics day: a bright equation*, from 2018 to 2020.

Languages

Italian: Mother tongue.

French: Fluent.

English: Fluent.

Spanish: Intermediate.

Other activities

In March 2014 I won the prize for the best 120-second presentation of my thesis in the Journée des Doctorants of the Ecole Doctorale de Sciences et Technologies de l'Information et Mathématiques. This manifestation collected around eighty PhD students from the Universities of Nantes, Angers, Le Mans, Saint-Nazaire and La Roche sur Yon.

In May 2015 I participated in the Semaine d'étude Maths-entreprises (week of study Mathematics-business), organised in Nantes by the GDR CNRS Mathématiques et entreprises and the Laboratoire Jean Leray.