



TOMMASO ROSSI



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CAREER

03/2026 – present
Università degli Studi dell'Aquila

Tenure-track researcher
Research group: Geometry

05/2025 – 02/2026
SISSA

Postdoctoral fellow
Research group: Mathematical Analysis, Modelling, and Applications

10/2023 – 05/2025
LJLL - Sorbonne Université

Postdoctoral fellow
Research group: Quantum control
Supervisor(s): Ugo Boscain, Mario Sigalotti

10/2021 – 09/2023
University of Bonn

Postdoctoral fellow
Research group: Stochastic analysis
Supervisor(s): Karl-Theodor Sturm

EDUCATION

10/2018 – 09/2021
Institut Fourier & SISSA

Ph.D. in Mathematics at Institut Fourier (Grenoble) and SISSA (Trieste)
Advisors: Luca Rizzi and Grégoire Charlot (IF), Andrei Agrachev (SISSA)
Thesis title: *Heat content asymptotics in sub-Riemannian geometry*

10/2016 – 09/2018
University of Trieste

MSc in Mathematics (110/110 with merit)
Advisor: Andrei Agrachev
Final dissertation: *The heat kernel in Riemannian and sub-Riemannian manifolds and its asymptotic in the Heisenberg group*

09/2013 – 06/2016 University of
Bologna

Bachelor's degree in Mathematics (110/110 with merit)
Advisor: Giovanna Citti
Final dissertation: *Geodesics in sub-Riemannian manifolds and the Eikonal equation*

RESEARCH INTERESTS

Sub-Riemannian geometry, heat diffusion, non-smooth differential geometry, quantum control

AWARDS & GRANTS

07/2025
Centro di Ricerca Matematica
Ennio De Giorgi

Grant "Research in Pairs" Centro de Giorgi
Grant for a two-week stay awarded for the project "Localization methods with variable Ricci curvature lower bounds"

03/2025 – 10/2025
CNRS

Projet PEPS JCJC de l'Insmi 2025

	Grant worth 2500€ awarded for the project “Optimal control theory and sub-Riemannian Geometry in Paris”
12/2024 The Mathematisches Forschungsinstitut Oberwolfach	Oberwolfach Research Fellows Grant for a two-week stay awarded for the project “Geometry of metric measure spaces satisfying Ricci curvature lower bounds” - ↗
10/2024 – 06/2026 Société de Mathématiques Appliquées et Industrielles	Projet BOUM de la SMAI Grant worth 1000€ awarded for organizing the conference “Optimal control theory and sub-Riemannian Geometry in Paris” - ↗
03/2019 – 03/2022 Université Franco-Italienne	Projet VINCI 2019 Mobility grant worth 5570€ awarded to the best joint PhD projects between a French and an Italian institution - ↗
2019 University of Trieste	“Marco Reni” award Awarded each year for the best Master's degree graduate in maths over the previous three years - ↗
10/2016 – 09/2018 SISSA	SISSA Scholarship “Percorso Formativo Comune” (PFC) SISSA awards fellowships to attend the PFC program the highest ranking students, selected through a national competition - ↗
2016 University of Bologna	Study grant for deserving students Award for the best students in the University of Bologna - ↗

PUBLISHED PAPERS

- Heat content asymptotics for sub-Riemannian manifolds**
With L. Rizzi. *Journal de Mathématiques Pures et Appliquées*, 2021 - [↗](#)
- Integrability of the sub-Riemannian mean curvature at degenerate characteristic points in the Heisenberg group**
Advances in Calculus of Variations, 2021 - [↗](#)
- Almost-Riemannian manifolds do not satisfy the curvature-dimension condition**
With M. Magnabosco, *Calculus of Variations and PDEs*, 2023 - [↗](#)
- First-order heat content asymptotics on RCD(K,N) spaces**
With E. Caputo, *Nonlinear Analysis*, 2023 - [↗](#)
- Relative heat content asymptotics for sub-Riemannian manifolds**
With A. Agrachev, L. Rizzi, *Analysis & PDE*, 2024 - [↗](#)
- The relative heat content for submanifolds in sub-Riemannian geometry**
Actes du séminaire Théorie Spectrale et Géométrie, 2024 - [↗](#)
- The Brunn-Minkowski inequality implies the CD condition in weighted Riemannian manifolds**
With M. Magnabosco, L. Portinale, *Nonlinear Analysis*, 2024 - [↗](#)
- The strong Brunn-Minkowski inequality and its equivalence with the CD condition**
With M. Magnabosco, L. Portinale, *Communications in Contemporary Mathematics*, 2024 - [↗](#)
- The curvature exponent of sub-Finsler Heisenberg groups**
With S. Borza, M. Magnabosco, K. Tashiro, *SIAM Journal on Mathematical Analysis*, 2025 - [↗](#)

10. **A review of the tangent space in sub-Finsler geometry and applications to the failure of the CD condition**

With M. Magnabosco, *Indagationes Mathematicae*, 2025 - [↗](#)

SUBMITTED PAPERS

11. **Failure of the curvature-dimension condition in sub-Finsler manifolds**

With M. Magnabosco, 2023 - [↗](#)

12. **Measure contraction property and curvature-dimension condition on sub-Finsler Heisenberg groups**

With S. Borza, M. Magnabosco, K. Tashiro, 2024 - [↗](#)

13. **Tubes in sub-Riemannian geometry and a Weyl's invariance result for curves in the Heisenberg groups**

With T. Bossio, L. Rizzi, 2024 - [↗](#)

14. **On the rectifiability of CD and MCP spaces with unique tangents**

With M. Magnabosco, A. Mondino, 2025 - [↗](#)

15. **Comparison estimates on nonsmooth spaces with integrable Ricci lower bounds via localization**

With E. Caputo, F. Nobili, 2025 - [↗](#)

INVITED TALKS

CONFERENCES

12/2025	Junior Math Days (SISSA)
06/2025	Hypoellipticity in Lund 2025 (Lund)
11/2024	Frontiers in Sub-Riemannian Geometry (CIRM, Marseille)
09/2024	School and Conference on Metric Measure Spaces, Ricci Curvature, and Optimal Transport (Varenna)
07/2024	Padua Paris Sub-Riemannian seminar (Padova)
06/2023	Geometric analysis and PDEs (Cortona)
05/2023	Hypoelliptic operators in geometry (Oberwolfach)
01/2023	Journées ANR RAGE (Bordeaux)
12/2022	Jeune Mathématicien.ne.es en Géométrie et Analyse (Mulhouse)
09/2022	Geo2Int - Workshop in Geometry and Geometric integration (Bergen)
07/2022	AMS-SFM-EMS Joint International Meeting (Grenoble)
06/2022	Workshop Analisi Geometrica e Teoria Spettrale (Rome)
05/2021	Journées ANR RAGE (online)
09/2020	Final SRGI Conference in Paris

DEPARTMENTAL SEMINARS

10/2025 05/2025	Geometric Analysis Seminar (University of Tokyo) GT CalVa (Paris)
03/2025	Analyse et Dynamique (LJAD - Université Côte d'Azur)
02/2025	Floris Takens Seminar (University of Groningen)
11/2024	Analysis Seminar (IRMA - Université de Strasbourg)
04/2024	OxPDE Seminar (University of Oxford)
03/2024	Geometric Structures seminar (SISSA)
12/2023	Séminaire d'Analyse Fonctionnelle (IMJ - Sorbonne Université)
12/2023	Séminaire d'Analyse (Institut de Mathématiques de Bordeaux)
11/2023	Séminaire "brèves de CAGE" (LJLL - Sorbonne Université)
06/2023	Forschungsseminars Analysis (University of Hagen)
05/2023	Geometric Structures seminar (SISSA)
01/2023	Group seminar (University of Bonn)
04/2022	Geometric Analysis seminar (University of Jyväskylä)
03/2022	BaD Seminars (University of Bologna) – Cancelled due to Covid
10/2021	Group seminar (University of Bonn)
04/2021	Séminaire TSG (Institut Fourier – Université Grenoble Alpes)
01/2021	Analysis Junior Seminar (SISSA)
11/2019	Geometry and control seminars (SISSA)

DISSEMINATION ACTIVITY

03/2024	PiDay au Lycée Louis le Grand (Paris)
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ORGANIZATION OF CONFERENCES

05/2025 Sorbonne Université	"Optimal control theory and sub-Riemannian geometry in Paris" - ↗ Main organizer
09/2025 – present SISSA	Organizer for the seminar series "Geometric Structures" - ↗

TEACHING EXPERIENCE

10/2025 – 01/2026 Università di Bologna	Exercises in Calculus 1 Tutorial position for a 1 st year undergraduate course
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03/2025 Polytech Sorbonne	TP Analyse Numérique des EDP - 6h Tutorial position for a 3 rd year undergraduate course
02/2025 – 04/2025 ENSTA Paris	TD Contrôle Linéaire - 16h Tutorial position for a 3 rd year undergraduate course
09/2024 – 12/2024 Polytech Sorbonne	TD Algèbre Linéaire - 16h Tutorial position for a 3 rd year undergraduate course
03/2023 – 09/2023 University of Bonn	Optimal transport, gradient flows, functional inequalities - 60h Main lecturer of a graduate course – with X. Zhu
10/2019 – 01/2020 University of Trieste	Exercises in Topology - 20h Tutorial position for a 2 nd year undergraduate course
10/2017 – 01/2018 University of Trieste	Exercises in Differential geometry - 20h Tutorial position for a 2 nd year undergraduate course
09/2015 – 06/2016 Malpighi High School (Bologna)	Tutorship - 3h/week Tutorial activities in mathematics and physics for high school's students

LANGUAGES

Italian (Mother tongue), **English** (C1, IELTS score 8/9), **French** (B2)

I hereby declare that all the information given in this CV is true, complete and accurate and no information requested or other material information has been omitted.

L'Aquila, 21/03/2026

Place and date

Signature