

Roberto Bramati

Curriculum Vitae

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Personal Details

Name Roberto
Surname Bramati
Birth Jesi (Italy), January 6, 1990
Nationality Italian, German

Current position

November 2024 - **Postdoctoral researcher (Assegnista di ricerca).**
Ongoing Università degli Studi di Bergamo

Past positions

October 2021 - **Postdoctoral researcher.**
October 2024 Universiteit Gent
December 2020 - **Postdoctoral researcher (Borsista di ricerca).**
September 2021 Politecnico di Torino
March 2020 - **Postdoctoral researcher (funded by "Fondazione Ing. Aldo Gini").**
November 2020 Institut Élie Cartan de Lorraine, Université de Lorraine (Metz)
March 2019 - **Postdoctoral assistant (Assegnista di ricerca).**
February 2020 Università degli Studi di Padova

Education

2015 - 2019 **PhD in Mathematics.**
Università degli Studi di Padova, Italy
Thesis: *Geometric integral inequalities on homogeneous spaces* | Advisor: Prof. Paolo Ciatti
Thesis reviewers: Prof. Anthony Carbery, Prof. Anthony Dooley.
2012 - 2014 **Master Degree (Laurea Magistrale) in Mathematics, 110/110.**
Sapienza Università di Roma, Italy
Thesis: *L'equazione di Schrödinger nonlineare* | Supervisor: Prof. Piero D'Ancona
2009 - 2012 **Bachelor Degree (Laurea Triennale) in Mathematics, 110/110 cum laude.**
Sapienza Università di Roma, Italy
Thesis: *Teorema spettrale per operatori compatti* | Supervisor: Prof. Piero D'Ancona

Scientific interests

Abstract and Euclidean harmonic analysis.
Brascamp–Lieb and geometric type inequalities.
Spectral properties of differential operators in non-Euclidean settings.
Potential theory.

Publications

- [1] R. Bramati, M. Dalla Riva, P. Luzzini, P. Musolino *Periodic layer potentials and domain perturbations*, to appear in J. Math. Sci. (N.Y.).
- [2] R. Bramati, M. Dalla Riva, P. Luzzini, P. Musolino, *The Functional Analytic Approach for Quasi-periodic Boundary Value Problems for the Helmholtz equation*, Adv. Differential Equations 29 (2024), no. 1/2, 27-68.
- [3] R. Bramati, *A note on a Capelli operator and its resonance*, In: Ruzhansky, M., Van Bockstal, K. (eds) Extended Abstracts 2021/2022. APDEGS 2021. Trends in Mathematics, vol 2. Birkhäuser, Cham.
- [4] R. Bramati, A. Pasquale, T. Przebinda, *The resonances of the Capelli operators for small split orthosymplectic dual pairs*, J. Lie Theory 33, (2023), no.1, 93-132.

- [5] R. Bramati, P. Ciatti, J. Green, J. Wright, *Oscillating spectral multipliers on groups of Heisenberg type*, Rev. Mat. Iberoam. 38, (2022), no. 5, 1529-1551.
- [6] R. Bramati, *A family of sharp inequalities on real spheres*, Complex Var. Elliptic Equ., (2022), no. 8, 2030–2042.
- [7] R. Bramati, *Brascamp–Lieb inequalities on compact homogeneous spaces*, Anal. Geom. Metr. Spaces 7, (2019), 130–157.
- [8] R. Bramati, V. Casarino, P. Ciatti, *On the norms of quaternionic harmonic projection operators*, C. R. Acad. Sci. Paris 356, (2018), no. 5, 482–488.

Preprints and ongoing work

- [1] R. Bramati, M. Dalla Riva, B. Luczak, *Continuous harmonic functions on a ball that are not in H^s for $s > 1/2$* , Submitted.

Invited talks

- January, 2026 (Planned) **V Young Researchers Workshop in Harmonic Analysis**, Torino, Italy.
Talk: TBD.
- December 20, 2024 **XMAS Discrepancy Workshop 2024**, Bergamo, Italy.
Seminar: Oscillating spectral multipliers on groups of Heisenberg type.
- September 29, 2022 **Seminario di Analisi**, Padova, Italy.
Seminar: Ill-behaved harmonic functions on a ball.
- May 18, 2022 **Harmonic Analysis E-Seminars**, Online seminar.
Seminar: Resonances of invariant differential operators.
- October 30, 2021 Workshop **CHAP: Complex and Harmonic Analysis in Padova**, Padova, Italy.
Talk: Oscillating spectral multipliers on groups of Heisenberg type.
- May 14, 2021 **Ghent Analysis&PDE Research Group Seminar**, Ghent, Belgium (held online).
Seminar: Oscillating multipliers: a unified approach.
- May 18, 2020 **Jyväskylä Geometry Seminar**, Jyväskylä, Finland (held online).
Seminar: Brascamp–Lieb type inequalities in non-Euclidean settings.
- January 30, 2020 **Séminaire Théorie de Lie, Géométrie et Analyse (LieGA)**, Metz, France.
Seminar: Brascamp–Lieb inequalities on compact homogeneous spaces
- November 8, 2019 Workshop **1st Math Young Researchers Meeting**, Genova, Italy.
Talk: Brascamp–Lieb inequalities on spheres.
- September 2-7, 2019 Conference **XXI Congresso dell’Unione Matematica Italiana**, Pavia, Italy.
Talk: Integral inequalities of geometric type on homogeneous spaces.
- February 21-23, 2019 Workshop **Varietà reali e complesse: geometria, topologia e analisi armonica**, Pisa, Italy.
Talk: Geometric inequalities on compact homogeneous spaces.
- April 13, 2018 Workshop **Young Researchers Workshop in Harmonic Analysis**, Torino, Italy.
Talk: Brascamp–Lieb type inequalities on spheres.
- May 30, 2018 Seminar **Graduate seminar (Seminario dottorato)**, Padova, Italy.
Talk: Brascamp–Lieb inequalities and heat-flow monotonicity.

Contributed talks

- June 19-23, 2023 School and Workshop **Mini-courses in Mathematical Analysis**, Padova, Italy.
Talk: Ill-behaved harmonic functions on a ball.
- May 29-31, 2023 Conference **XLII Convegno Nazionale di Analisi Armonica**, Milano, Italy.
Talk: Ill-behaved harmonic functions on a ball.
- May 17, 2022 **Ghent Logic and Analysis Seminar**, Ghent, Belgium.
Seminar: Resonances of invariant differential operators.
- November 3, 2021 **Ghent Logic and Analysis Seminar**, Ghent, Belgium.
Seminar: Oscillating multipliers: a unified approach.
- June 4, 2020 Conference **XXXIX Convegno Nazionale di Analisi Armonica**, Bologna, Italy (held online due to the Covid outbreak).
Talk: Resonances of invariant differential operators.

- June 24-28, 2019 School and Workshop **Mini-courses in Mathematical Analysis**, Padova, Italy.
Talk: A family of sharp inequalities on real spheres.
- July 2-6, 2018 School and Workshop **Mini-courses in Mathematical Analysis**, Padova, Italy.
Contributed talk: Brascamp–Lieb type inequalities on spheres.

Research visits

- Mar. 2026 Institut Élie Cartan de Lorraine, Université de Lorraine (Metz) - visiting Prof. Angela Pasquale (planned).
- Sept. 2022 Dipartimento di Matematica, Università degli Studi di Padova - visiting Dott. Paolo Luzzini.
- Dec. 2021 Institut Élie Cartan de Lorraine, Université de Lorraine (Metz) - visiting Prof. Angela Pasquale.
- Jan.-Feb. 2020 Institut Élie Cartan de Lorraine, Université de Lorraine (Metz) - visiting Prof. Angela Pasquale.
- Mar.-Jun. 2019 School of Mathematics, University of Edinburgh - visiting Prof. Anthony Carbery and Prof. James Wright.
- Oct.-Dec. 2018 School of Mathematics, University of Edinburgh - visiting Prof. Anthony Carbery.

Grants and awards

- Mar.-Nov. 2020 Funding by Fondazione Ing. Aldo Gini for postdoctoral position at Université de Lorraine (6600 euros).
- Jan.-Feb. 2020 Funding by LIA-LYSM (AMU-CNRS-ECM-INdAM) for a research visit of 2 months to University of Lorraine (1700 euros).
- 2015-2018 PhD Scholarship (3 years) by Università degli Studi di Padova.
- 2013 Study grant by "Pio Sodalizio dei Piceni" for master studies (6200 euros).

Participation to funded research projects

- 2020 Member of the research project funded by GNAMPA "Between harmonic analysis and several complex variables". Principal investigator: Alessandro Monguzzi.
- 2018 Member of the research project funded by GNAMPA "Operators and integral inequalities in spaces with symmetries". Principal investigator: Nicola Arcozzi.
- 2017 Member of the research project funded by GNAMPA "Harmonic Analysis and Spectral Theory of Laplacians". Principal investigator: Valentina Casarino.
- 2016 Member of the research project funded by GNAMPA "Functional calculus for subelliptic operators on manifolds". Principal investigator: Valentina Casarino.

Organizing activities

- May 22-28, 2026 Member of the Organizing Committee of "XLV Convegno Nazionale di Analisi Armonica", Bergamo, Italy.
- May 26-28, 2021 Member of the Organizing Committee of "XL Convegno Nazionale di Analisi Armonica", Torino, Italy.
- May 23-25, 2017 Member of the Organizing Committee of "XXXVII Convegno Nazionale di Analisi Armonica", Bressanone, Italy.

Teaching Activity

- Fall 2025 **Lecturer**, *Complementi di analisi matematica*, (60 hours), Bachelor degree in Health Technologies Engineering, Università degli Studi di Bergamo.
- Spring 2025 **Tutor**, *Analisi matematica 1*, (20 hours), Bachelor Degrees in Engineering, Università degli Studi di Bergamo.
- Spring 2025 **Teaching Assistant**, *Geometria e algebra lineare*, (40 hours, Instructor: Prof. Marco Pedroni), Bachelor Degree in Mechanical Engineering, Università degli Studi di Bergamo.
- Spring 2023 **Lecturer**, *Mathematics*, Exchange programme of the Faculty of Sciences (bachelor's level), Universiteit Gent.
- Spring 2022 **Lecturer**, *Mathematics*, Exchange programme of the Faculty of Sciences (bachelor's level), Universiteit Gent.

- Mar.-Jul. 2021 **Teaching Assistant**, *Matematica 2* (16 hours online, Instructor: Prof. Massimo Lanza de Cristoforis), Bachelor Degree in Optics and Optometry, Università degli Studi di Padova.
- Mar.-Jul. 2021 **Tutor**, *Analisi Matematica 1 e 2* (60 hours online), Bachelor Degrees in Engineering, Politecnico di Milano.
- Oct. 2020 - Jan. 2021 **Teaching Assistant**, *Fondamenti di Analisi Matematica 2* (30 hours online, Instructor: Prof.ssa Caterina Sartori), Bachelor Degree in Aerospace Engineering, Università degli Studi di Padova.
- Oct. 2019 - Jan. 2020 **Teaching Assistant**, *Analisi Matematica* (24 hours, Instructor: Prof.ssa Caterina Sartori), Bachelor Degree in Computer Science, Department of Mathematics, Università degli Studi di Padova.
- Oct. 2018 - Jan. 2019 **Teaching Assistant**, *Analisi Matematica* (25 hours, Instructor: Prof.ssa Caterina Sartori), Bachelor Degree in Computer Science, Department of Mathematics, Università degli Studi di Padova.
- Oct. 2018 - Jan. 2019 **Teaching Assistant**, *Fondamenti di Analisi Matematica 1* (48 hours, Instructor: Prof. Paolo Ciatti), Bachelor Degree in Civil Engineering, Department of Civil and Environmental Engineering, Università degli Studi di Padova.
- Jan.-Feb. 2018 **Teaching Assistant**, *Fondamenti di Analisi Matematica 2* (20 hours, Instructor: Prof. Pier Domenico Lamberti), Bachelor Degree in Chemical and Materials Engineering, Università degli Studi di Padova.
- July 2017 **Teaching Assistant**, *Gruppo di studio di Analisi Matematica 1* (25 hours), Bachelor Degrees in Engineering, Università degli Studi di Padova.
- Oct. 2016 - Jan. 2017 **Teaching Assistant**, *Fondamenti di Analisi Matematica 1* (25 hours, Instructor: Prof. Paolo Ciatti), Bachelor Degree in Civil Engineering, Department of Civil and Environmental Engineering, Università degli Studi di Padova.

Editorial activities

Referee for *Analysis & PDE*, *Annales Fennici Mathematici*, *Applicable Analysis*, *Journal of Mathematical Sciences*.

Reviewer for Zentralblatt MATH.

Reviewer for Mathematical Reviews

Outreach activities

Spring 2025 **MatNet Seminars**, Organization of seminars on Cryptography and Quantum computing for high school teachers.

Sept. 2022 **Science4all**, Participation with the Mathematics Department of the University of Padova. Laboratory on spectral theory (Chladni plate experiment).

Languages

Italian Mother Tongue
 English Fluent
 German Basic