Davide Tramontana

⚲ Dipartimento di Matematica, Università di Bologna, Piazza di Porta San Donato 5, 40126 Bologna, Italy

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Education

○ **PhD in Mathematics**
University of Bologna
(advisor: Prof. Alberto Parmeggiani)

September 2022 – Current

– **Research interests:** Geometric Analysis of PDEs, Propagation of Singularities, Microlocal Analysis, Semiclassical Analysis, Dispersive Equations, Spectral Theory.

○ **Master Degree in Mathematics: 110/110 cum laude**
University of Bologna

September 2020 – September 2022

– **Thesis**: Teoria spettrale di una passeggiata aleatoria ipoellittica e convergenza all'equilibrio (thesis advisor: Prof. Alberto Parmeggiani).

○ **Bachelor Science in Mathematics: 110/110 cum laude**
University of Bologna

September 2017 – September 2020

– **Thesis**: Coomologia di De Rham e Forme Differenziali Armoniche (thesis advisor: Prof. Bruno Franchi).

Publications

○ **Preprint**

– Propagation of Shubin-Sobolev singularities of Weyl-quantizations of complex quadratic forms (with M. Malagutti and A. Parmeggiani). Preprint (2025). *https://arxiv.org/abs/2503.20955* ↗

– Smoothing effect for third order operators with variable coefficients (with S. Federico). Preprint (2025). *https://arxiv.org/abs/2503.08656* ↗

Research visits

○ **Visiting graduate student** at Northwestern University, Evanston (Illinois). Mentor: Prof. Jared Wunsch.

Scientific activities

○ **Co-Founder of 'ASK - Analysis Students Kernel'**
ASK is a group of young researchers in Mathematical Analysis and Probability at the University of Bologna, founded in 2024 with the aim of sharing their research through periodic seminars.

ASK - Analysis Students Kernel ↗

○ **Conferences organized**

– ASK Conference 2024: Interaction between different areas of Mathematical Analysis and Probability - December 18-20, '24 (University of Bologna).

– Symposium in Harmonic and Complex Analysis, Microlocal and Geometrical Analysis and Applications, for PhD students (SHaCAMIGA) – January 24-26, '24 (University of Bologna).

Conferences and Schools

- Upcoming conferences and schools
  - 15th ISAAC Congress International Society for Analysis, its Applications and Computation – July 21-25, '24 (Astana).

- Conferences and schools attended
  - Semiclapp: Semiclassical analysis and applications – May 13-17, '24 (Nice).
  - Dispersion and Geometry in Padova - May 06-07, '24 (Padova).
  - Modern Aspects of Analysis on Lie Groups - April 02-05, '24 (Göttingen).
  - Pseudo-Differential Operators and Related Topics – January 29 – February 02, '24 (Ghent).
  - More Anomalies in Partial Differential Equations – September 17-22, '23 (Bertinoro).
  - Spectral theory and geometry of ergodic Schrödinger operators - July 31 - August 04 '23, (Potsdam).
  - Harmonic Analysis, PDEs, and GMT in Bilbao 2023 - June 12-16, '24 (Bilbao).

Grants

- **INdAM-GNAMPA 2025 Research Projects**: 'Studio di Invarianti Conformi tramite Teoria dello Scattering' CUP: E5324001950001 01/2025–12/2025. (Amount: 2500 euro).

Teaching

- **A.A 2024/2025**
  - Teaching assistant for the course 'Analisi Superiore ed EDP', Corso di Laurea Magistrale in Matematica, University of Bologna. Instructor: Prof. Alberto Parmeggiani.

- **A.A 2023/2024**
  - Teaching assistant for the course 'Analisi Superiore ed EDP', Corso di Laurea Magistrale in Matematica, University of Bologna. Instructor: Prof. Alberto Parmeggiani.
  - Teaching assistant for the course 'Analisi Superiore e Geometria Differenziale', Corso di Laurea Magistrale in Matematica, University of Bologna. Instructor: Prof. Loredana Lanzani.

- **A.A 2022/2023**
  - Teaching assistant for the course 'Analisi Matematica 1 A – Classe A-L', Corso di Laurea Triennale in Matematica, University of Bologna. Instructor: Prof. Giovanni Cupini.
  - Teaching assistant for the course 'Analisi Matematica 1 A – Classe M-Z', Corso di Laurea Triennale in Matematica, University of Bologna. Instructor: Prof. Giovanni Cupini.
  - Teaching assistant for the course 'Analisi Matematica 1 B', Corso di Laurea Triennale in Matematica, University of Bologna. Instructor: Prof. Giovanni Dore.

Skills

- **Languages**
  - Italian: native.
  - English: fluent.

- **Computer skills**
  - Matlab, Python, Latex, Word, Excel.