Martina Zizza
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Current position

Max Planck Institute for Mathematics in the Sciences   **Leipzig (DE)**
PostDoc   *October 2023–Today*

Education

SISSA   **Trieste (IT)**
PhD Student in Mathematical Analysis, Modelling and Applications   *September 2019–September 2023*

IUSS   **Pavia (IT)**
Second level Master   *September 2017-May 2020*

University of Pavia   **Pavia (IT)**
Master's Degree in Mathematics, with honours   *September 2017–October 2019*

IUSS   **Pavia (IT)**
First Level Diploma   *October 2014-September 2017*

University of Pavia   **Pavia (IT)**
Bachelor's Degree in Mathematics, with honours   *October 2014–September 2017*

Teaching experience

University of Pavia – Engineering Department   **Pavia (IT)**
Linear Algebra Tutor (28 hours)   *October 2017 – June 2018*

University of Pavia – Engineering Department   **Pavia (IT)**
Analytical Mechanics tutor (28 hours)   *March 2018 – September 2018*

University of Pavia – Mathematics Department   **Pavia (IT)**
First Course in Analysis tutor (30 hours)   *October 2018 - February 2019*

Awards

- **Student at 'Collegio Ghislieri' in Pavia**. Students selected through an admission test. Students maintain a minimum grade average of 27/30 every year. 5 years full maintenance scholarship.
- **Student at IUSS Pavia**. Selected with an admission test; students take one extra course per semester and receive a scholarship each year.
- **Selected for the INdAM scholarship in 2014**, an italian scholarship for mathematics students. Renounced as incompatible with other scholarships.
- **Student at 'Stiftung Maximilianeum' in Munich, in 2019**. 6 months full maintenance scholarship.

Publications and Preprints

- S. Schiffer, M.Zizza, **On incompressible flows in discrete networks and Shnirelman's inequality** , (2024) preprint. https://arxiv.org/abs/2410.01576
- M.Zizza, **An alternative approach to the discrete Shnirelman's inequality**, (2024) preprint. https://arxiv.org/abs/2407.09377
- A. Rebucci, M.Zizza, **Geometric interpretation of the vanishing Lie Bracket for two-dimensional rough vector fields**, (2024) preprint. https://arxiv.org/abs/2406.02340
- M.Zizza, **An example of a weakly mixing BV vector field which is not strongly mixing**, (2022) preprint. https://arxiv.org/abs/2208.12174
- L.Beck, D.Matthes, M.Zizza, **Exponential convergence to equilibrium for coupled systems of nonlinear degenerate drift diffusion equations**, (2022) SIAM Journal of Mathematical Analysis. https://arxiv.org/abs/2112.05810
- S.Bianchini, M.Zizza, **Properties of Mixing BV vector fields**, (2023) Communications in Mathematical Physics.

In preparation

- S. Bianchini, M. Zizza, **A case study in fire confinement problems**.

Invited talks

- October 2021, **Analysis Junior Seminar (SISSA)**: Properties of mixing BV vector fields;
- Dicember 2021, **Seminar Analysis and Mathematical Physics (Universitat Basel)**: Mixing Properties of BV vector fields;
- February 2022, **Analysis Seminar (TU Darmstadt)**: A density result of mixing BV vector fields;
- July 2022, **12th Meeting on Nonlinear evolution PDEs, fluid dynamics and transport equations (University of l'Aquila)**: Properties of mixing BV vector fields;
- November 2022 **Analysis Junior Seminar (SISSA)**: A case study in fire confinement problems.
- March 2023 **Junior Analysis Seminar (Imperial College London)**: The role of permutations in mixing phenomena.
- July 2023 **Summer school: Deterministic and random features of fluids (EPFL)**(Lausanne, Switxerland):The role of permutations in mixing phenomena.
- October 2023 **Oberseminar Analysis MPI Leipzig**(Leipzig, Germany) Non-admissibility of spiral-like strategies in Bressan's Fire conjecture.
- February 2024 **Workshop: Differential Inclusions and Continuum Mechanics(ETH)**(Zurich, Switxerland):Non-admissibility of spiral-like strategies in Bressan's Fire conjecture.
- May 2024 **Mathematics in Conversation**(Padova, Italy): Non-admissibility of spiral-like strategies in Bressan's Fire conjecture.

Academic Experiences

- **TU München** (Munich (DE)): collaboration with Prof. Daniel Matthes, March 2019-September 2019;
- **TU Darmstadt** (Darmastadt (DE)): collaboration with Prof. Stefano Modena, February 2022;
- **Penn State University** (State College (PA)): collaboration with Prof. Alberto Bressan, August-September 2022.
- **Imperial College** (London (UK)): collaboration with Prof. Michele Coti Zelati, March 2023.

Languages

- **Italian**: Mother tongue.
- **French**: B2 CEFR, DELF.
- **English**: B2 CEFR, FCE.