

Matteo Carducci

Curriculum Vitae

January 2026

Scuola Normale Superiore, Pisa

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🌐 www.matteocarducci.it

🌐 https://arxiv.org/a/carducci_m_1.html

Personal Information

Born 28 August 1999
Citizenship Italian
Languages Italian (native), English (fluent)

Education

Nov 2023 - Present **Ph.D. Student**, *Scuola Normale Superiore, Pisa*
Advisor: prof. Bozhidar Velichkov

Sep 2011 - Jul 2023 **Master degree in Mathematics**, *University of Rome "La Sapienza"*
Grade: 110/110 with honors
Thesis (in english): Thin obstacle problem and epiperimetric inequalities
Advisors: prof. Emanuele Spadaro and prof. Bozhidar Velichkov (University of Pisa)

Sep 2018 - Jul 2021 **Bachelor degree in Mathematics**, *University of Rome "La Sapienza"*
Grade: 110/110 with honors
Thesis (in italian): Elliptic partial differential equations
Advisor: prof. Luigi Orsina

Research Interests

Free Boundary Problems, Partial Differential Equations, Calculus of Variations, Geometric Measure Theory

List of Publications and Preprint

7. M. Carducci, G. Tortone: Smoothness and stability in the Alt-Phillips problem, preprint arXiv:2507.10336.
6. M. Carducci, G. Bevilacqua: Free boundary regularity for a tumor growth model with obstacle, preprint arXiv:2507.02837.
5. M. Carducci, B. Velichkov: Existence and regularity in the fully nonlinear one-phase free boundary problem, preprint arXiv:2501.12101.
4. M. Carducci, R. Colombo: Generic regularity of free boundaries in the obstacle problem for the fractional Laplacian, preprint arXiv:2412.16066.
3. M. Carducci, B. Velichkov: An epiperimetric inequality for odd frequencies in the thin obstacle problem, *J. Funct. Anal.* (2025).
2. M. Carducci: Epiperimetric inequalities in the obstacle problem for the fractional Laplacian, *Calc. Var. PDE* (2024).

1. M. Carducci: Optimal regularity of the thin obstacle problem by an epi-epimeric inequality, *Ann. Mat. Pura ed Appl.* (2023).

Honors and Awards

- Sep 2023 - Present Ph.D. Fellowship at Scuola Normale Superiore
Sep 2018 - Jul 2021 Fellowship for Bachelor's degree in Mathematics, *by INDAM*
May 2018 Honourable mention at the XXXIV National Mathematical Olympiad, *Cesenate*

Invited talks

- Dec 2025 1^o Workshop of young Analysts in Rome, *Rome*
Dec 2025 Calculus of Variations and Free Boundary Problems: the VAREG edition, *Pisa*
Oct 2025 Variational Analysis of Complex Systems in Materials Science, Physics and Biology, *Trento*
Jun 2025 Interactions between PDEs and Dynamical Systems, University of Turin
Jun 2024 PDEs at Grand Paradis, *Cogne*

Organization of workshops

- Nov 2024 Calculus of Variations and Free Boundary Problems IX, *University of Pisa*

Workshops

- Jun 2024 Regularity Theory for Free Boundary and Geometric Variational Problems V, *Cervia (RA)*
Feb 2025 XXXIV Convegno Nazionale di Calcolo delle Variazioni, *Riccione*
Jun 2024 Regularity Theory for Free Boundary and Geometric Variational Problems IV, *Levico Terme*
Jun 2024 Geometric problems in Analysis, *Padova*
Jun 2024 Geometric Measure Theory and applications, 2024, *Cortona*
Feb 2024 XXXIII Convegno Nazionale di Calcolo delle Variazioni, *Riccione*
Jan 2024 Regularity and geometric aspects of nonlinear PDEs, *University of Pisa*
Oct 2023 Calculus of Variations and Free Boundary Problems VI, *University of Pisa*
Jun 2023 Regularity Theory for Free Boundary and Geometric Variational Problems III, *Levico Terme*
Jun 2023 Vito Volterra Meeting, *University of Rome "La Sapienza", Rome*
Dec 2022 Junior Math Days, *SISSA, Trieste*
Jul 2019 Meeting for INDAM's fellowship winners, *University of Perugia, Perugia*