

Cristiana De Filippis

Dipartimento di Matematica "Giuseppe Peano" - Via Carlo Alberto 10 - 10123, Torino

Personal informations

- Born: July 23, 1992 in Bari (BA), Italy;
- Languages: Italian (native), English (IELTS certification, Band score 7.5, CEFR level C1);
- Citizenship: Italian.

Contacts

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Areas of spacialization

Calculus of Variations • Regularity Theory

Research positions

July 2020 - Present. Postdoctoral research assistant, University of Turin.
Supervisor: Prof. S. Terracini.
Project: Regolarità e proprietà qualitative delle soluzioni di equazioni alle derivate parziali.

October 2016 - June 2020. DPhil candidate, EPSRC CDT in PDEs, Mathematical Institute, University of Oxford, Grant ref. EP/L015811/1.

Supervisor: Prof. J. Kristensen.

Thesis: Vectorial problems: sharp Lipschitz bounds and borderline regularity.

Thesis defended on 23 June 2020.

Leave to supplicate for the degree of Doctor of Philosophy granted on 10 July 2020.

April 11, 2016 - August 15, 2016. Internship at Inria Sophia Méditerranée.

Team: ACUMES.

Supervisor: Prof. P. Goatin.

Teaching experiences

Perturbation Methods, (C5.5), TA, Mathematical Institute, University of Oxford.

Nonlinear Analysis, (CDT), TA, Mathematical Institute, University of Oxford.

Organizer of the reading seminar "Complex Analysis in several variables", Mathematical Institute, University of Oxford.

Papers

- C. De Filippis, Regularity for solutions of fully nonlinear elliptic equations with non-homogeneous degeneracy. *Proc. Royal Soc. Edinburgh Math.* (2020), to appear. <https://doi.org/10.1017/prm.2020.5>
- C. De Filippis, Regularity results for a class of non-autonomous obstacle problems with (p, q) -growth. *Journal of Mathematical Analysis and Applications* (2019), to appear. <https://doi.org/10.1016/j.jmaa.2019.123450>
- I. Chlebicka, C. De Filippis, Removable sets in non-uniformly elliptic problems. *Ann. Mat. Pura Appl.* 199:619-649, (2020). <https://doi.org/10.1007/s10231-019-00894-1>
- C. De Filippis, G. Mingione, On the regularity of minima of non-autonomous functionals. *Journal of Geometric Analysis* 30:1584-1626, (2020). <https://doi.org/10.1007/s12220-019-00225-z>
- C. De Filippis, G. Mingione, Manifold constrained non-uniformly elliptic problems. *Journal of Geometric Analysis* 30:1661-1723, (2020). <https://doi.org/10.1007/s12220-019-00275-3>

- C. De Filippis, J. Oh, Regularity for multi-phase variational problems. *Journal of Differential Equations* 267, 3, 1631-1670, (2019). <https://doi.org/10.1016/j.jde.2019.02.015>
- C. De Filippis, On the regularity of the ω -minima of φ -functionals. *Nonlinear Anal.* (2019). <https://doi.org/10.1016/j.na.2019.02.017>
- C. De Filippis, Partial regularity for manifold constrained $p(x)$ -harmonic maps. *Calc. Var. & PDE* 58:47, (2019). <https://doi.org/10.1007/s00526-019-1483-6>
- C. De Filippis, G. Palatucci, Hölder regularity for nonlocal double phase equations. *Journal of Differential Equations* 267, 1, 547-586, (2019). <https://doi.org/10.1016/j.jde.2019.01.017>
- C. De Filippis, G. Mingione, A borderline case of Calderón-Zygmund estimates for non-uniformly elliptic problems. *St. Petersburg Mathematical Journal* 31, 455-477, (2020). <https://doi.org/10.1090/spmj/1608>
- C. De Filippis, Higher Integrability for Constrained Minimizers of Integral Functionals with (p, q) -Growth in low dimension, *Nonlinear Anal.* 170, 1-20, (2018). <https://doi.org/10.1016/j.na.2017.12.007>
- C. De Filippis, P. Goatin, The initial-boundary value problem for general nonlocal scalar conservation laws in one space dimension. *Nonlinear Anal.* 161, 131-156, (2017). <http://dx.doi.org/10.1016/j.na.2017.05.017>

Preprints

- I. Chlebicka, C. De Filippis, L. Koch, Boundary regularity for manifold constrained $p(x)$ -harmonic maps. *Preprint* (2020), submitted. <https://arxiv.org/pdf/2001.06243.pdf>
- C. De Filippis, Gradient bounds for solutions to irregular parabolic equations with (p, q) -growth. *Preprint* (2020), submitted. <https://arxiv.org/pdf/2004.01452.pdf>
- C. De Filippis, F. Leonetti, Uniform ellipticity and p, q -growth. *Preprint* (2020), submitted. <https://arxiv.org/pdf/2003.06702.pdf>
- C. De Filippis, G. Mingione, Lipschitz bounds and nonautonomous integrals. *Preprint* (2020), submitted.

In preparation

- L. Beck, C. De Filippis, G. Mingione, Flow of non-uniformly elliptic problems. *In preparation.*
- C. De Filippis, L. Koch, J. Kristensen, Higher differentiability for minimizers of variational integrals under controlled growth hypothesis. *In preparation.*

Referee for *Advances in Calculus of Variations*, *Advances in Differential Equations*, *Advances in Nonlinear Analysis*, *Advances in Nonlinear Studies*, *Advances in Operator Theory*, *AIMS Mathematics*, *Analysis & PDE*, *Annales de l'Institut Henri Poincaré / Analyse non lineaire*, *Annali della Scuola Normale Superiore di Pisa*, *Bulletin of the London Mathematical Society*, *Calc. Var. & PDE*, *Communications in Contemporary Mathematics*, *Complex Variables and Elliptic Equations*, *International Mathematics Research Notices*, *Journal of Mathematical Analysis and Applications*, *Mathematische Nachrichten*, *Nagoya Mathematical Journal*, *Nonlinear Analysis*, *Nonlinearity*, *Potential Analysis*, *Proceedings of the American Mathematical Society*, *Rivista di Matematica della Università di Parma*, *Zeitschrift für Analysis und ihre Anwendungen*.

Invited talks

- Regularity theory for elliptic and parabolic systems and problems in continuum mechanics, Telč, Czech Republic, *May 5-8, 2021*.
- Analysis Seminar, University of Essex, *February 25, 2021*.
- Anisotropy and inhomogeneity in PDEs, IMPAN, Warsaw, *December 7-10, 2020*.
- Elliptic and parabolic partial differential equations, Levico Terme, *October 11-16, 2020*.
- Brescia-Trento nonlinear day, 4th edition, *September 25, 2020*.
- RIMS Symposium, Kyoto University, *July 13-15, 2020*. - *Postponed due to Covid-19 pandemic*.
- Geometric, variational and harmonic analytic methods in PDEs, Uppsala University, *June 1-5, 2020*. - *Cancelled due to Covid-19 pandemic*.
- Bicocca-Urbino Days in Nonlinear Analysis, University of Milano-Bicocca, *May 28-29, 2020*. - *Cancelled due to Covid-19 pandemic*.
- Lunchtime seminar, University of Oxford, *May 7, 2020*.
- PUC-Rio Webinar on Analysis and PDEs, *April 29, 2020*.
- AJS seminar - SISSA, *April 24, 2020*.
- OxPDE 2020 Conference, Cambridge, *March 19-20, 2020*. - *Postponed due to Covid-19 pandemic*.
- Analysis Seminar Brussels/Louvain-la-Neuve, UCLouvain, *February 17, 2020*.
- Junior Analysis Seminar, Imperial College London, *February 14, 2020*.
- Analysis Seminar, Faculty of Mathematics, University of Vienna, *January 28, 2020*.
- Analysis seminar, University of Turin, *January 15, 2020*.
- Analysis seminar, University of Milan, *November 27, 2019*.
- Two days on CalcVar & PDEs, University of Bologna, *November 28-29, 2019*.
- Russian Seminar, Gran Sasso Science Institute, *November 12, 2019*.
- Seminar of Equations of Mathematical Physics, University of Warsaw, *November 7, 2019*.
- Regularity aspects of linear growth functionals, University of Augsburg, *September 9-11, 2019*.
- Analysis seminar, TU Delft, *September 2, 2019*.
- Nonlinear PDEs, KTH Stockholm, *August 26-28, 2019*.
- 10th Function Spaces, Differential Operators and Nonlinear Analysis (FSDO-NA2019), Turku, *June 12-15, 2019*.
- International Conference on Elliptic and Parabolic Problems - Minisimposium "Elliptic PDEs with nonsandard growth and related topics", Gaeta, *May, 20-24, 2019*.
- Workshop on Calculus of Variations, University of Sussex, *March, 19-20, 2019*.
- New Developments in PDEs and related topics, University of Naples Federico II, *October 30, 2018*.
- Two nonlinear days in Urbino, University of Urbino, *July 13, 2018*.
- Women in PDEs, University of Oxford, *June 19, 2018*.
- Recent advances in the Calculus of Variations and PDEs, University of Parma, *March 15, 2018*.
- SIAM-IMA Cambridge Student Chapter, *May 3, 2017*.

Education

July 21, 2016. Laurea Magistrale in Mathematics, University of Milan-Bicocca.
Thesis advisor: Prof. V. Felli.
Degree mark: 110/110 cum laude.
Weighted average: 30/30.

July 15, 2014. Laurea in Mathematics, University of Turin.
Thesis advisor: Prof. S. Terracini.
Degree mark: 110/110 cum laude.
Weighted average: 29.357/30.

July 13, 2011. High school degree (scientific oriented), Liceo scientifico statale D. Alighieri, Matera, Italy.
Degree mark: 100/100 cum laude.

Short Visits

July 5, 2020 - July 18, 2020, University of Tokyo - Invited by A. Tachikawa, *postponed due to Covid-19 pandemic.*

November 4, 2019 - November 12, 2019, University of Warsaw - Invited by I. Chlebicka.
2017 - 2020, University of Parma - Invited by G. Mingione and G. Palatucci.

Awards and scholarships

- G-Research PhD prize, *February 2019.*
- Santander Travel Awards - Pembroke College, *March 3, 2017.*
- EPSRC Studentship, Centre for Doctoral Training in PDEs, University of Oxford, Grant ref. EP/L015811/1.
- "Posti di Studio Gratuiti" Scholarship for the Academic Years 2012/2013 and 2013/2014, Collegio Universitario "R. Einaudi", Turin.
- "Alpha Class" Summer School, Diderot Project, CRT Foundation, 3rd ranked Team Competition, Turin.
- Summer School, SNS, Camigliatello Silano, *July 2010.*
- Summer School, SSSUP, Volterra, *July 2010.*
- "Pagella d'Oro" Scholarship for Scientific merits, Liceo Scientifico D. Alighieri, *December 2010.*
- 3rd ranked in Semifinal of "Campionati Internazionali di Giochi Matematici", Liceo Classico E. Duni, Matera.

Academic referees

Prof. Emilio D. G. Acerbi
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Links

[Scopus] [Orcid] [Google Scholar] [Researchgate] [UniTo] [OxPDE]

Media

[Helsingborgs Dagblad, 19/6/2019] [Gazzetta di Parma, 18/6/2019]
[Pembroke College, 6/6/2019]