

ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

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CLAUDIA BUCUR CURRICULUM VITAE

CONTACT INFORMATION

Work address: Dipartimento di Matematica Federigo Enriques, Università degli Studi di Milano, Via Cesare Saldini, 50, 20133, Milano

Birth date 23 January 1982

CURRENT POSITION AND TITLE

April 2019 - presently: **Post-doctoral Researcher** at National Institute of High Mathematics "Francesco Severi" (INdAM) Italy, on the project *PDEs, free boundaries, nonlocal equations and applications* with principal investigator Serena Dipierro

PhD in Mathematics

Awarded by Department of Mathematics Federigo Enriques, University of Milan, Italy

Graduation date April 20, 2017

Thesis Some nonlocal operators and effects due to nonlocality

Supervisor Prof. Enrico Valdinoci (The University of Western Australia)

PREVIOUS POSITIONS

October 2018 - April 2019: **Post-doctoral researcher**, Department of Mathematics and Physics, Catholic University of the Sacred Heart, Italy

November 2017 - October 2018: **Lecturer** Level A, School of Mathematics and Statistics, The University of Melbourne, Australia

RESEARCH RELATED ACTIVITIES

List of publications

Peer review journals

- (1) Claudia Bucur, *A symmetry result in \mathbb{R}^2 for global minimizers of a general type of nonlocal energy*, to appear in Calculus of Variations and PDE's **59**, 52 (2020), DOI 10.1007/s00526-020-1698-6;
- (2) Claudia Bucur, *The stickiness phenomena of nonlocal minimal surfaces: new results and a comparison with the classical case*, Bruno Pini Mathematical Analysis Seminar **10** (2019), pp. 42-82, DOI 10.6092/issn.2240-2829/10362;

- (3) Claudia Bucur and Marco Squassina, *Approximate convexity principle and applications to PDEs in convex domains*, Nonlinear Analysis, Theory, Methods and Applications **192**, Available March 2020, DOI 10.1016/j.na.2019.111661;
- (4) Claudia Bucur, Luca Lombardini and Enrico Valdinoci, *Complete stickiness of nonlocal minimal surfaces for small values of the fractional parameter*, Annales de l'Institut Henri Poincaré C, Analyse non linéaire, **36** (2019), pp. 655-703, DOI 10.1016/j.anihpc.2018.08.003;
- (5) Claudia Bucur and Marco Squassina, *Asymptotic mean value properties for fractional anisotropic operators*, Journal of Mathematical Analysis and Applications, **466** (2018), pp. 107-126, DOI 10.1016/j.jmaa.2018.05.063;
- (6) Claudia Bucur and Maria Medina, *Fractional elliptic problems in \mathbb{R}^n with critical growth and convex nonlinearities*, Manuscripta Mathematica, **158**, (2018), pp 371-400, DOI 10.1007/s00229-018-1032-1;
- (7) Claudia Bucur and Aram L. Karakhanyan, *Potential theoretic approach to Schauder estimates for the Fractional Laplacian*, Proc. Amer. Math. Soc. **145** (2017), pp. 637-651, DOI 10.1090/proc/13227;
- (8) Claudia Bucur and Fausto Ferrari, *An extension problem for the fractional derivative defined by Marchaud*, Fractional Calculus and Applied Analysis (FCAA) **19** (2016), pp. 867-887, DOI 10.1515/fca-2016-0047;
- (9) Claudia Bucur, *Local density of Caputo-stationary functions in the space of smooth functions*, ESAIM: Optimisation and Calculus of Variations (COCV) **23** (2017), pp. 1361-1380, DOI 10.1051/cocv/2016056;
- (10) Claudia Bucur, *Some observations on the Green function for the ball in the fractional Laplace framework*, Communications on Pure and Applied Analysis (CPAA) **15** (2016), pp. 657-699, DOI 10.3934/cpaa.2016.15.657;

Monographs

- (11) Claudia Bucur and Enrico Valdinoci, Nonlocal diffusion and applications, *Lecture Notes of the Unione Matematica Italiana* **20** (2016), Springer, Unione Matematica Italiana, Bologna, pp. xii+155, DOI 10.1007/978-3-319-28739-3

Contributed chapters

- (12) Claudia Bucur, Essentials on nonlocal operators. Chapter in: Kuusi, T., Palatucci, G. (eds.) *Recent Developments in the Nonlocal Theory*. De Gruyter Open (2017). Pages: 5–23, ISBN (Online): 9783110571561, DOI (Chapter) 10.1515/9783110571561-002, DOI (Book) 10.1515/9783110571561

Other papers

Submitted preprints

- (1) Claudia Bucur, Luca Lombardini, Serena Dipierro and Enrico Valdinoci, *Minimisers of a fractional seminorm and nonlocal minimal surfaces*
(Available at <https://arxiv.org/pdf/2002.06313.pdf>)
- (2) Claudia Bucur, Marco Squassina, *An asymptotic expansion for the fractional p-Laplacian and for gradient dependent nonlocal operators*
(Available at <https://arxiv.org/pdf/2001.09892.pdf>)
- (3) Claudia Bucur, Serena Dipierro and Enrico Valdinoci, *On the mean value property of fractional harmonic functions*
(Available at <https://arxiv.org/abs/2002.09679>)

PhD thesis

- (4) Claudia Bucur, Some nonlocal operators and effects due to nonlocality
(Available at <https://arxiv.org/pdf/1504.08292.pdf>)

Seminars and Schools

Invited speaker

- *20-22 April 2020 (Scheduled)* **Nonlocal PDEs and applications**, University of Granada, Granada, Spain
- *28-29 May 2020 (Scheduled)* **Bicocca-Urbino Days in Nonlinear Analysis**, University of Milano-Bicocca, Milano, Italy
- *12 June 2020 (Scheduled)* **Brescia-Trento Nonlinear day**, Catholic University of the Sacred Heart, Brescia, Italy
- *7-10 September 2020 (Scheduled)* **Geometric PDEs @ Caserta**, University of Campania Luigi Vanvitelli, Caserta, Italy
- *13-15 January 2020* **Winter school/workshop on reaction diffusion PDEs and optimization**, Catholic University of the Sacred Heart, Brescia, Italy
- *3 June 2019* **Workshop for young researchers in Mathematics**, University of Bucharest, Romania
- *23 May 2019* **Variational and PDE problems in Geometric Analysis**, University of Bologna, Italy
- *17-20 September 2018* **Advances in Nonlinear Elliptic and Parabolic PDEs** (Joint meeting SIMAI, UMI and PTM 2018) at Wroclaw, Poland
- *5-9 February 2018* **Geometric and nonlinear partial differential equations conference**, at Murramarang, Australia
- *15-17 March 2017* **Topics in nonlinear analysis and applications**, at Dipartimento di Matematica e Applicazioni dell'Università di Milano-Bicocca, Italy
- *6-11 November 2016* **Stable Processes**, organised by Banff International Research Station for Mathematical Innovation and Discovery (BIRS) and Casa Matematica Oaxaca, Mexico

Seminars

- *March 2019 (Scheduled)*, Nonlinear differential problems at University La Sapienza, Rome, Italy
- *October 2019, August 2018*, The University of Western Australia, Perth
- *February 2019*, The University of Bologna, Italy, **Bruno Pini** Mathematical Analysis Seminar
- *July 2018*, AMSI Winter School on Curvature (Finalist Participant talk), The University of Queensland, Brisbane
- *November 2017*, Monash University, Melbourne
- *November 2016*, The University of Melbourne

Contributed talks

- *May 2017* **International Conference on Elliptic and Parabolic Problems**, at Gaeta, Italy
- *September 2015* Workshop **Variational inequalities, Nash equilibrium problems and applications** in Reggio Calabria (Italy)

Poster sessions

- *April 2019* **Italian-Romanian Colloquium on Differential Equations and Applications**, at Udine, Italy

Organisation of Scientific Events

- *1-21 November 2021 (Scheduled) Elliptic Partial Differential Equations, Geometry, and the Calculus of Variations*, University of Melbourne (Matrix Institute), Australia
- *1-5 July 2019 Summer School on Pdes*, Dipartimento di Matematica Federigo Enriques, Università degli Studi di Milano, Italy
- *September 2017 Pde Day in Unimelb*, The University of Melbourne, Australia

Grants

- **Summer school on Pdes, 2019** Grant awarded by the European Mathematical Society for the organization of a Summer School, with Prof. Serena Dipierro
- **HLF2018** travel grant for the participation to the Heidelberg Laureate Forum (Germany) 2018
- **ChooseMath grant** travel grant for the participation to the Winter School on Curvature, The University of Queensland, Brisbane (Australia), July 2018
- **CIME grant** travel grant for the participation to the CIME School Geometric Measure Theory and Applications (September 2019) and the Summer School on Partial Differential Equations and Geometric Measure Theory (June 2014), in Cetraro (Italy)
- **MIUR scholarship** for the 3 years of PhD, University of Milan (Italy), from January 2014 to December 2013

Member of and Participation to Research Groups

- 2014 - 2016 European Research fundings **ERC (Starting Grant)**, Project *Elliptic Pdes and Symmetry of Interfaces and Layers for Odd Nonlinearities*, Group Leader Enrico Valdinoci
- 2017 - 2018 **Australian Research Council** fundings (ARC), Discovery Project 2017 *NEW – Nonlocal equations at work*, Group Leader Enrico Valdinoci

Referee activity

- Referee for Journal de Mathématiques Pures et Appliquées (JMPA), Electronic Journal of Differential Equations (EJDE), Topological Methods in Nonlinear Analysis, Communications in Mathematics, Rivista di Matematica della Università di Parma
- Preliminary evaluation for Journal of the American Mathematical Society
- Reviewer for Mathematical Reviews (AMS)

Visiting

- *3-31 October 2019* collaboration with Enrico Valdinoci, Serena Dipierro and Luca Lombardini at The University of Western Australia, Perth
- *14-20 May 2019* collaboration with Enrico Valdinoci and Serena Dipierro at Columbia University, New York
- *10-14 December 2018* collaboration with Hoai-Minh Nguyen at École polytechnique fédérale de Lausanne
- *27 October - 29 November 2016* collaboration with Enrico Valdinoci at the University of Melbourne
- *1- 23 October 2015* collaboration with Aram Karakhanyan at the University of Edinburgh
- *2 November - 12 December 2015* collaboration with Maria Medina at Universidad Autónoma de Madrid
- *9 September- 10 October 2014* collaboration with Enrico Valdinoci at Weierstrass Institute for Applied Analysis, Berlin

Supervising

- *2019* Co-supervisor for Michael Piantoni, Master Degree at Catholic University of the Sacred Heart, Brescia (Italy), Thesis *Convexity principles and applications to partial differential equations in convex domains*, Supervisor Prof. Marco Squassina

Distinctions

- *September 2018* PostDoc participant at Heidelberg Laureate Forum
- H-Index 5, total citations 162 on 9 publications (Scopus and WOS).

TEACHING ACTIVITY

December 2018 Tutoring for Functional Analysis, Prof. Marco Squassina, Department of Mathematics and Physics, The Catholic University of the Sacred Heart

March 2017 - July 2017 Teaching assistant and tutoring for Analysis II (Engineering), Prof. Ettore Lanzarone, Polytechnic School, Milan

December 2016 - March 2017 Teaching assistant for Analysis I and Geometry (Engineering), Prof. Angela Iannelli, Polytechnic School

October 2015 - January 2016 Teaching assistant and tutoring for Analysis I (Engineering), Prof. Angela Iannelli, Polytechnic School

OTHER PROFESSIONAL EXPERIENCES

July 2006 - October 2012 SAS Institute S.r.l. as a Sales Support and Developer on SAS products

EDUCATION

January 2014 - April 2017 **PhD in Mathematics**, University of Milan
 Thesis: Some nonlocal operators and effects due to nonlocality
 Supervisor: Prof. Enrico Valdinoci

October 2013 **Master Degree in Mathematics**, vote 109/110, University of Milan
 Thesis: Representation formulas for solutions of fractional Laplacian equations
 Supervisor: Prof. Enrico Valdinoci

October 2006 **Bachelor Degree in Mathematics**, vote 100/110, University of Milan
 Thesis: Sobolev spaces. Existence of weak solutions of linear elliptic second order partial differential equations
 Supervisor: Prof. Kevin Ray Payne

2001 - 2004 **Student of Mathematics** at the University of Bucharest, vote 9.61/10.
 September 2003 - April 2004, **Erasmus scholarship**, as a student from the University of Bucharest to the University of Padova

2001 **High school Diploma**, 99/100

Acknowledgments

1996 Third prize at the national stage of the Romanian Olympiad for Mathematics;
 1998, 2000 Third prize at the inter-regional competition of Mathematics, Romania;
 From 1996 to 2001 Participant in the national final stage at the Mathematics Olympiad;
 2001 Third prize at the national stage of the Romanian Olympiad for English.

SPOKEN LANGUAGES

Romanian - Native speaker, Italian - Native speaker level, English - Fluent (IELTS certificate with an overall score of 7.5)

02/03/2020, Milano