

UNIVERSITÀ DEGLI STUDI DI MILANO

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Codice concorso 5300

GIORGIO TORTONE

CONTACT INFORMATIONS	Università di Pisa	
	Department of Mathematics Largo B. Pontecorvo 5, 56127, Pisa giorgio.tortone@dm.unipi.it Personal Webpage	
POSITIONS	Università di Pisa Post-doc position in the ERC Project VAREG PI: Prof. Bozhidar Velichkov.	03/2021 - present
	Alma Mater Studiorum Università di Bologna Department of Mathematics Post-doc position	05/2019 - 02/2021
ACADEMIC FORMATION	Ph.D. in Mathematics cum Laude Università degli Studi di Torino Politecnico di Torino Advisor: Prof. Susanna Terracini	29/06/2018
	Master in Mathematics cum Laude and Menzione Università degli Studi di Torino	09/2012-06/2014
	Degree in Mathematics Università degli Studi di Torino	09/2009-08/2012
VISITING PERIODS	NUS, Singapore Host: Prof. Hui Yu	12-19 March 2023
	ETH, Zürich Host: Dr. Alessandro Audrito	8 -12 November 2021
	UZH, Zürich	Spring 2020

Mentor: Prof. Xavier Ros-Oton

Columbia University, New York City
Mentor: Prof. Daniela de Silva

Spring 2019

Johns Hopkins University, Baltimore
Mentor: Prof. Yannick Sire

Spring 2017

RESEARCH INTERESTS

My research focuses on elliptic PDEs. More precisely:

- Free boundary problems
- Integro-differential equations
- Calculus of Variations
- Regularity theory

ARTICLES AND PREPRINTS

Higher order boundary Harnack principle via degenerate equations

S. Terracini, G. Tortone and S. Vita

ArXiv preprint, 2022, arXiv:2301.00227

Regularity of the optimal sets for a class of integral shape functionals

G. Buttazzo, F.P. Maiale, D. Mazzoleni, G. Tortone and B. Velichkov

ArXiv preprint, 2022, arXiv:2212.09118

Liouville theorems and optimal regularity in elliptic equations

G. Tortone

ArXiv preprint, 2022, arXiv:2204.10772

On the nodal set of solutions to some sublinear equations without homogeneity

N. Soave and G. Tortone

ArXiv preprint, 2022, arXiv:2204.10161

A vectorial problem with thin free boundary

D. De Silva and G. Tortone

ArXiv preprint, 2020, arXiv:2010.05782

Epsilon-regularity for the solutions of a free boundary system

P.F. Maiale, G. Tortone and B. Velichkov

Revista Matemática Iberoamericana (2023), 10.4171/RMI/1430

The boundary Harnack principle on optimal domains

P.F. Maiale, G. Tortone and B. Velichkov

Annali della Scuola Normale Superiore (2022), 10.2422/2036-2145.202112.003

The nodal set of solutions to some nonlocal sublinear problems

G. Tortone

Calculus of Variations and Partial Differential 61 (2022), 10.1007/s00526-022-02197-5

Regularity of shape optimizers for some spectral fractional problems

G. Tortone

Journal of Functional Analysis 281 (2021), 10.1016/j.jfa.2021.109271

On the nodal set of solutions to degenerate or singular elliptic equations
with an application to s-harmonic functions

Y. Sire, S. Terracini and G. Tortone

Journal de Mathématiques pures et appliquées 143 (2020), 10.1016/j.matpur.2020.01.010

Improvement of flatness for vector valued free boundary problems

D. De Silva and G. Tortone

Mathematics in Engineering 2 (2020), 10.3934/mine.2020027

Regularity results for segregated configurations involving fractional Laplacian

G. Tortone and A. Zilio

Nonlinear Analysis (2020), 10.1016/j.na.2019.05.013

The nodal set of solutions to anomalous equations

G. Tortone

Bruno Pini Mathematical Analysis seminar, 10 (2020), 10.6092/issn.2240-2829/10367

On s-harmonic functions on cones

S. Terracini, G. Tortone and S. Vita

Anal. PDE 11 (2018), 10.2140/apde.2018.11.1653

RESEARCH
PROJECTS

INDAM-GNAMPA project

05/2023-present

Regolarità e singolarità in problemi con frontiere libere

PI: Dott. Giorgio Tortone

ERC Starting Grant n. 853404

03/2021-present

Variational approach to the regularity of the free boundaries

PI: Prof. Bozhidar Velichkov.

INDAM-GNAMPA project

03/2020-03/2021

Proprietà qualitative per soluzioni di EDP

nonlineari ellittiche e paraboliche, locali e nonlocali

PI: Dott. Stefano Vita.

INDAM-GNAMPA project

03/2019-03/2020

Esistenza e proprietà qualitative per soluzioni

di EDP non lineari ellittiche e paraboliche

PI: Prof. Nicola Soave.

INDAM-GNAMPA project

01/2016-07/2017

Aspetti non-locali in fenomeni di segregazione

PI: Prof. Nicola Soave.

ERC Advanced Grant n. 339958

10/2014-07/2018

Complex Patterns for Strongly Interacting Dynamical Systems

PI: Prof. Susanna Terracini.

INVITED TALKS AT CONFERENCES	<ul style="list-style-type: none">- <i>Regularity Theory for Free Boundary and Geometric Variational Problems III</i> CIRM, Levico Terme, July 2023- <i>Geometric Aspects of Nonlinear Partial Differential Equations</i> <i>Shape Optimization, related topics and applications</i> Roscoff Center, Roscoff, June 2022- <i>Regularity Theory for Free Boundary and Geometric Variational Problems</i> CIRM, Levico Terme, September 2021- <i>Nonlinear Differential Problems</i> Università degli Studi di Messina, Webinar, January 2021- <i>Young PDE's @ Rome</i> Università La Sapienza, Roma, February 2018- <i>Variational methods in Analysis, Geometry and Physics</i> SNS, Pisa, February 2018- <i>Intensive week of PDEs at SPA</i> Université libre de Bruxelles, Spa, December 2017- <i>MATRIX Program - Elliptic partial differential equations of second order</i> Mathematical Research Institute, Creswick, October 2017	
INVITED TALKS AT SEMINARS	<ul style="list-style-type: none">- Università di Torino, <i>Analysis Seminar</i>, 06/2023- NUS Singapore, <i>Analysis Seminar</i>, 03/2023- UCSD San Diego, <i>Differential Geometry Seminar</i>, 05/2022- Politecnico di Milano, <i>Seminari di Analisi Matematica</i>, 12/2021- ETH Zürich, <i>Analysis Seminar</i>, 11/2021- Università di Pisa, <i>Seminari di Calcolo delle Variazioni</i>, 11/2020- Università di Bologna, <i>Seminari di Analisi Matematica</i>, 01/2020- Columbia University, <i>Geometry and Analysis seminar</i>, 04/2019- Università di Bologna, <i>Bruno Pini Mathematical Analysis Seminar</i>, 12/2018- Università di Torino, <i>Mathematical Analysis seminar</i>, 06/2016	
HOLDER OF PHD COURSES	<ul style="list-style-type: none">- <i>Monotonicity formulas in free boundary and geometric variational problems</i> Università di Pisa (English) 2022-2023- <i>An introduction to free boundary problems</i> Università di Bologna (English) 2020-2021- <i>An introduction to free boundary problems</i> Politecnico di Torino (English) 2018-2019	
HOLDER OF	<ul style="list-style-type: none">- <i>Calculus I</i>	2019-2020

REGULAR COURSES	Degree in Information Science for Management (Italian) Università di Bologna	
TEACHING ASSISTANT	<ul style="list-style-type: none"> - <i>Calculus I</i> 2020-2021 Degree in Engineer (Italian) Università di Bologna - <i>Calculus I</i> 2017-2018 Degree in Architecture (English) Politecnico di Torino - <i>Calculus I</i> 2016-2017 Degree in Architecture (Italian) Politecnico di Torino - <i>Pre-course in Mathematics</i> 2016-2017 Degree in Mathematics (Italian) Università di Torino - <i>Calculus III</i> 2013-2014 Degree in Physics (Italian) Università di Torino - <i>Calculus I</i> 2013-2014 Degree in Mathematics (Italian) Università di Torino 	
INSTITUTIONAL ACTIVITIES	Member of the <i>Educational commission</i> Mathematics Department Università di Torino	2014-2018
REVIEWER ACTIVITY	<ul style="list-style-type: none"> -Discrete and Continuous Dynamical Systems -Mathematics in Engineering -Nonlinear Differential Equations and Applications -Nonlinear Analysis -The Annali della Scuola Normale Superiore di Pisa, Classe di Scienze -Calculus of Variations and Partial Differential Equations -Communications on Pure and Applied Mathematics -Communications in Partial Differential Equations 	
ORGANIZATION OF CONFERENCE	Monotonicity formulas in free boundary and geometric variational problems Università di Pisa, 27-29 March	

Autorizzo il trattamento dei dati personali contenuti nel mio curriculum vitae in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 GDPR 679/16.