

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 Mar 2023
	ETH, Zürich Host: Dr. Alessandro Audrito	8 - 12 Nov 2021
	UZH, Zürich Mentor: Prof. Xavier Ros-Oton	Spring 2020
	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 and Calculus of Variations. More precisely:
- Free boundary problems
 - Degenerate equations
 - Regularity theory
- PREPRINTS
- [5] A capillarity one-phase Bernoulli free boundary problem
L. Ferreri, G. Tortone and B. Velichkov
ArXiv preprint (2023), arXiv:2310.14309
 - [4] Higher order boundary Harnack principle via degenerate equations
S. Terracini, G. Tortone and S. Vita
ArXiv preprint (2022), arXiv:2301.00227
 - [3] 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
 - [2] Liouville theorems and optimal regularity in elliptic equations
G. Tortone
ArXiv preprint (2022), arXiv:2204.10772
 - [1] On the nodal set of solutions to some sublinear equations without homogeneity
N. Soave and G. Tortone
ArXiv preprint (2022), arXiv:2204.10161
- PUBLICATIONS ON JOURNALS
- [11] On the dimension of singular set in optimization problems with measure constraint
D. Mazzoleni, G. Tortone and B. Velichkov
Accepted on J. Convex Anal. (2024)
 - [10] A vectorial problem with thin free boundary
D. De Silva and G. Tortone
Calc. Var. Partial Differential Equations (2023), 10.1007/s00526-023-02561-z
 - [9] 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
 - [8] 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
 - [7] The nodal set of solutions to some nonlocal sublinear problems
G. Tortone
Calc. Var. Partial Differential Equations 61 (2022), 10.1007/s00526-022-02197-5
 - [6] Regularity of shape optimizers for some spectral fractional problems
G. Tortone
Journal of Functional Analysis 281 (2021), 10.1016/j.jfa.2021.109271

- [5] 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
J. Math. Pures Appl. 143 (2020), 10.1016/j.matpur.2020.01.010
- [4] Improvement of flatness for vector valued free boundary problems
D. De Silva and G. Tortone
Mathematics in Engineering 2 (2020), 10.3934/mine.2020027
- [3] Regularity results for segregated configurations involving fractional Laplacian
G. Tortone and A. Zilio
Nonlinear Analysis (2020), 10.1016/j.na.2019.05.013
- [2] The nodal set of solutions to anomalous equations
G. Tortone
Bruno Pini Math. Anal. Semin., 10 (2020), 10.6092/issn.2240-2829/10367
- [1] On s-harmonic functions on cones
S. Terracini, G. Tortone and S. Vita
Analysis & PDE 11 (2018), 10.2140/apde.2018.11.1653

RESEARCH PROJECTS	INDAM-GNAMPA project <i>Nuove frontiere nella capillarità non locale</i> PI: Dott. Alessandra De Luca	01/2024-12/2024
	INDAM-GNAMPA project <i>Regolarità e singolarità in problemi con frontiere libere</i> PI: Dott. Giorgio Tortone	05/2023-04/2024
	ERC Starting Grant n. 853404 <i>Variational approach to the regularity of the free boundaries</i> PI: Prof. Bozhidar Velichkov.	03/2021-present
	INDAM-GNAMPA project <i>Proprietà qualitative per soluzioni di EDP nonlineari ellittiche e paraboliche, locali e nonlocali</i> PI: Dott. Stefano Vita.	03/2020-03/2021
	INDAM-GNAMPA project <i>Esistenza e proprietà qualitative per soluzioni di EDP non lineari ellittiche e paraboliche</i> PI: Prof. Nicola Soave.	03/2019-03/2020
	INDAM-GNAMPA project <i>Aspetti non-locali in fenomeni di segregazione</i> PI: Prof. Nicola Soave.	01/2016-07/2017

ERC Advanced Grant n. 339958

10/2014-07/2018

Complex Patterns for Strongly Interacting Dynamical Systems

PI: Prof. Susanna Terracini.

- INVITED TALKS
AT CONFERENCES
- *AMS-UMI International joint meeting*
Palermo, July 2024
 - *International Conference on Elliptic and Parabolic Problems*
Gaeta, May 2024
 - *CalVaFer - Calculus of Variations in Ferrara*
Ferrara, March 2024
 - *XXXIII Convegno Nazionale di Calcolo delle Variazioni*
Riccione, February 2024
 - *29th Nordic Congress of Mathematicians with EMS*
Aalborg University, July 2023
 - *Regularity Theory for Free Boundary and Geometric Variational Problems III*
CIRM, Levico Terme, July 2023
 - *Geometric Aspects of Nonlinear Partial Differential Equations*
Institute Mittag Leffler, Stockholm, November 2022
 - *Shape Optimization, related topics and applications*
Roscoff Center, Roscoff, June 2022
 - *Regularity Theory for Free Boundary and Geometric Variational Problems*
CIRM, Levico Terme, September 2021
 - *Nonlinear Differential Problems*
Università degli Studi di Messina, Webinar, January 2021
 - *Young PDE's @ Rome*
Università La Sapienza, Roma, February 2018
 - *Variational methods in Analysis, Geometry and Physics*
SNS, Pisa, February 2018
 - *Intensive week of PDEs at SPA*
Université libre de Bruxelles, Spa, December 2017
 - *MATRIX Program - Elliptic partial differential equations of second order*
Mathematical Research Institute, Creswick, October 2017

- INVITED TALKS
AT SEMINARS
- Università di Torino, *Analysis Seminar*, 06/2023
 - NUS Singapore, *Analysis Seminar*, 03/2023
 - UCSD San Diego, *Differential Geometry Seminar*, 05/2022
 - Politecnico di Milano, *Seminari di Analisi Matematica*, 12/2021
 - ETH Zürich, *Analysis Seminar*, 11/2021
 - Università di Pisa, *Seminari di Calcolo delle Variazioni*, 11/2020
 - Università di Bologna, *Seminari di Analisi Matematica*, 01/2020
 - Columbia University, *Geometry and Analysis seminar*, 04/2019
 - Università di Bologna, *Bruno Pini Mathematical Seminar*, 12/2018
 - Università di Torino, *Mathematical Analysis seminar*, 06/2016

HOLDER OF PHD COURSES	- <i>Monotonicity formulas in free boundary and geometric variational problems</i>	2022-2023
	Università di Pisa (English)	
	- <i>An introduction to free boundary problems</i>	2020-2021
	Università di Bologna (English)	
	- <i>An introduction to free boundary problems</i>	2018-2019
	Politecnico di Torino (English)	
HOLDER OF	- <i>Calculus I</i>	2019-2020
REGULAR COURSES	Degree in Information Science for Management (Italian)	
	Università di Bologna	
TEACHING	- <i>Calculus I</i>	2020-2021
ASSISTANT	Degree in Engineer (Italian)	
	Università di Bologna	
	- <i>Calculus I</i>	2017-2018
	Degree in Architecture (English)	2016-2017
	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	
REVIEWER	- Discrete and Continuous Dynamical Systems	
ACTIVITY	- Mathematics in Engineering	
	- Nonlinear Differential Equations and Applications	
	- Nonlinear Analysis	
	- 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	
	- Journal of the European Mathematical Society	

ORGANIZATION OF
CONFERENCE

- *Workshop Calculus of Variations and Free Boundary Problems V*

Università di Pisa, 27-29 March 2023

- *Workshop Calculus of Variations and Free Boundary Problems VIII*

Università di Pisa, 10-12 April 2024

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.

Data: 19-01-2024
