

# Curriculum Vitae

November 24, 2022

## Mario Santilli

Ricercatore RtdB

Università degli studi dell'Aquila

Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica (DISIM)

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**Languages** Italian, English, German.

**Research Areas.** Geometric Analysis.

### Degrees

*7/2010* Bachelor Degree, Mathematics, University of L'Aquila.

*4/2013* Master Degree, Mathematics, University of L'Aquila.

*7/2017* Phd Degree, Mathematics, University of Potsdam.

### Grants

*10/2013-05/2017* Phd fellowship at the IMPRS (International Max Planck Research School).

### Career

*10/2013-05/2017* Full-time doctoral student fellowship from the Max Planck Institute for Gravitational Physics, Albert-Einstein Institut Golm.

*6/2017- 9/2017* Wissenschaftlicher Mitarbeiter (PostDoc) at Max Planck Institute for Gravitational Physics in the Geometric Analysis Division.

*11/2017-9/2021* Wissenschaftlicher Mitarbeiter (PostDoc) at the Department of Mathematics of the University of Augsburg (Germany).

*Since 10/2021* Ricercatore RtdB (Tenure Track) at the Department of Mathematics of the University of L'Aquila (Italy).

**Supervised Master Thesis** Cristina Poli

**Supervised doctoral thesis** Paolo Valentini (since 2022)

**Invited presentations at seminars and conferences**

- Polish Academy of Sciences. *Geometric function and mapping theory*  
L'Aquila University. *Seminario di Dipartimento*
- 7/11/19 Trento University. *Seminario di Dipartimento.*
- 28/11/19 *Winter School Gradient Flows and Variational Methods in PDEs*, Ulm University. (Talk in conference)
- 9/6/20 Taiwan NCTS. *Differential Geometry Seminar.*
- 2/3/21 University of Tennessee, Knoxville. *Geometric Analysis Seminar.*
- 18/3/21 University TorVergata. *Seminario di Equazioni Differenziali*
- 22/3/21 University of Kopenhagen. *Research Seminar: Geometric Analysis*
- 3/5/21 University of Kopenhagen. *Research Seminar: Geometric Analysis*
- 11/5/21 University of Augsburg. *Augsburger mathematisches Kolloquium*
- 31/5/22 *Geometric Analysis in Castro*, Castro (Lecce). (Talk in conference)
- 14/06/22 *Recent trends in Geometric Analysis and spectral theory*, Università Sapienza (Roma). (Talk in conference)
- 21/07/22 *Differential geometry and its applications*, University of Hradec Kralove. (Talk in conference)
- 14/09/2022 *Another Pisan workshop in Geometric Analysis*, Centro De Giorgi, Pisa. (Talk in conference)
- 16/09/2022 *Workshop on Nonlinear and Stochastic Analysis*, University of Augsburg. (Talk in conference)
- 6/10/22 University of Nice. *Seminaire d'algebre, topologie et geometrie.*

**Courses at doctoral and research schools**

- July 2019 **Beihang University.** (Beijing, China).  
Summer school: *Geometric Measure Theory and Related Fields.*  
Organizer: Prof. Xiangyu Liang.  
Minicourse: *Relating curvatures of geometric measure and convex geometry.* (12 hours)
- February 2022 **University of L'Aquila.**  
Doctoral course (Ciclo XXXVII). *Constant mean curvature hypersurfaces and critical points of the isoperimetric functional* (10 hours).

**Published or accepted papers**

- (1) Mario Santilli. Rectifiability and approximate differentiability of higher order for sets. *Indiana Univ. Math. J.* 68 (2019), 1013–1046.
- (2) Ulrich Menne, Mario Santilli. A geometric second-order-rectifiable stratification for closed subsets of Euclidean space. *Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)* 19(3) (2019), 1185–1198.
- (3) Mario Santilli. Fine properties of the curvature of arbitrary closed sets. *Ann. Mat. Pura Appl. (4)*, 199, (2020), no. 4, 1431–1456.

- (4) Mario Santilli. Normal bundle and Almgren's geometric inequality for singular varieties of bounded mean curvature. *Bull. Math. Sci.* 10(1) 2050008, 24, 2020.
- (5) Antonio De Rosa, Sławomir Kolasiński, Mario Santilli. Uniqueness of critical points of the anisotropic isoperimetric problem for finite perimeter sets. *Arch. Ration. Mech. Anal.* 238 (2020), no. 3, 1157-1198.
- (6) Mario Santilli. Distance functions with dense singular sets. *Comm. Partial Differential Equations.* 46 (2021), no. 7, 1319–1325.
- (7) Mario Santilli. Second order rectifiability of varifolds of bounded mean curvature. *Calc. Var. Partial Differential Equations.* 60 (2021), no. 2, Paper No. 81, 17 pp.
- (8) Sławomir Kolasiński, Mario Santilli. Regularity of distance functions from arbitrary closed sets. arXiv:2106.15955 To appear in *Math. Ann.*
- (9) Daniel Hug, Mario Santilli. Curvature measures and soap bubbles beyond convexity. arXiv:2204.04909 To appear in *Advances in Math.*

**Submitted papers**

- (1) Mario Santilli, Bernd Schmidt. Two phase models for elastic membranes with soft inclusions. arXiv: 2106.01120
- (2) Mario Santilli, Bernd Schmidt. A Blake-Zisserman-Kirchhoff theory for plates with soft inclusions. arXiv:2205.04512