

PERSONAL DATA

First Name: DEBORA
Surname: IMPERA
Born: IGLESIAS (CI), 04/04/1985
Nationality: ITALIAN
Contact address: Via Pier Carlo Boggio, 56
10138, Turin (TO), Italy
e-mail: debora.impera@polito.it

CURRENT POSITIONS

Since December 2021 Associate Professor,
Dipartimento di Scienze Matematiche,
Politecnico di Torino

PREVIOUS POSITIONS

December 2018–December 2021 Ricercatore a tempo determinato di tipo B,
Dipartimento di Scienze Matematiche,
Politecnico di Torino
March 2017–December 2018 Ricercatore a tempo determinato di tipo A,
Dipartimento di Scienze Matematiche,
Politecnico di Torino
May 2012–April 2016 Assegno di Ricerca,
Dipartimento di Matematica e Applicazioni,
Università degli Studi di Milano-Bicocca

ACADEMIC HABILITATIONS

November 2023 National Italian habilitation as Professore di I fascia
in Geometry and Algebra.
Sector: 01/A2.
April 2016 National Italian habilitation as Professore di II fascia
in Geometry and Algebra.
Sector: 01/A2.
February 2016 Qualification Française aux fonctions de *Maître de conférences*.
25ème section.

EDUCATION

- March 2012 Ph.D. in Mathematics,
 Università degli Studi di Milano
 Thesis–Title: *On the Geometry of Newton operators*
 Supervisor: Marco Rigoli
 Defended on March 7th 2012
- September 2008 Laurea specialistica (master degree) cum laude in Mathematics
 Università degli Studi di Cagliari (Cagliari, Italy)
 Thesis–title: *Alcune proprietà delle applicazioni e delle immersioni biarmoniche*
 Supervisor: Stefano Montaldo
- October 2006 Laurea triennale (bachelor) cum laude in Mathematics
 Università degli Studi di Cagliari (Cagliari, Italy)
 Thesis–title: *Approssimazione dei numeri irrazionali*
 Supervisor: Luigi Cerlienco
- July 2003 Diploma di Maturità (A–level) with full marks
 Liceo Scientifico Edoardo Amaldi (Carbonia (CI), Italy)

PUBLICATIONS

- [IRV3] D. IMPERA, M. RIMOLDI, G. VERONELLI
Asymptotically non-negative Ricci curvature, elliptic Kato constant and isoperimetric inequalities
 CALC. VAR. PARTIAL DIFFERENTIAL EQUATIONS
64 (2025), no. 6, Paper No. 195.
- [IR5] D. IMPERA, M. RIMOLDI
Poincare inequality and topological rigidity of translators and self-expanders for the mean curvature flow
 J. GEOM. ANAL.
34 (2024), no. 9, Paper No. 263.
- [IRV2] D. IMPERA, M. RIMOLDI, G. VERONELLI
Higher order distance-like functions and Sobolev spaces
 ADVANCES IN MATHEMATICS
396 (2022), Paper No. 108166
- [IPR] D. IMPERA, S. PIGOLA, M. RIMOLDI
The Frankel property for self-shrinkers from the viewpoint of elliptic PDE's
 JOURNAL FÜR DIE REINE UND ANGEWANDTE MATHEMATIK
773 (2021), 1-20.
- [IRV1] D. IMPERA, M. RIMOLDI, G. VERONELLI
Density problems for second order Sobolev spaces and cut-off functions on manifolds with unbounded geometry
 INTERNATIONAL MATHEMATICS RESEARCH NOTICES
 (2021), no. 14, 10521-10558.
- [IR4] D. IMPERA, M. RIMOLDI
Index and first Betti number of f -minimal hypersurfaces: general ambients
 ANNALI DI MATEMATICA PURA ED APPLICATA
199 (2020), no. 6, 2151-2165.

- [IRS] D. IMPERA, M. RIMOLDI, A. SAVO
Index and first Betti number of f -minimal hypersurfaces and self-shrinkers
REVISTA MATEMATICA IBEROAMERICANA.
36 (2020), no. 3, 817-840.
- [IR3] D. IMPERA, M. RIMOLDI
Quantitative index bounds for translators via topology
MATHEMATISCHE ZEITSCHRIFT.
292 (2019), no.1-2, 513-527.
- [I2] D. IMPERA
Rigidity and gap results for low index properly immersed self-shrinkers in \mathbb{R}^{m+1} .
DIFFERENTIAL GEOM. APPL.
64 (2019), 1-12.
- [IP] D. IMPERA, E. MUSSO
Space-like Willmore immersions.
RIV. MATH. UNIV. PARMA (N.S.)
9 (2018), no. 2, 255-282..
- [ILPS] D. IMPERA, J.H LIRA, S. PIGOLA, A.G. SETTI
Height estimates for Killing graphs.
J. GEOM. ANAL.
28 (2018), no. 3, 2857-2885.
- [IP] D. IMPERA, S. PIGOLA
On the growth of supersolutions of nonlinear PDE's on exterior domains.
NONLINEAR ANALYSIS
Volume **146** (2016), 20–31.
- [IR2] D. IMPERA, M. RIMOLDI
Rigidity results and topology at infinity of translating solitons of the mean curvature flow.
COMMUN. CONTEMP. MATH.
Volume **19** (2017), no. 6, 21 pp.
- [IPS] D. IMPERA, S. PIGOLA AND A. G. SETTI
Potential theory for manifolds with boundary and applications to controlled mean curvature graphs.
J. REINE ANGEW. MATH.
Volume **733** (2017), 121-159.
- [IR] D. IMPERA, M. RIMOLDI
Stability properties and topology at infinity of f -minimal hypersurfaces.
GEOM. DEDICATA
Volume **178** (2015), 21–47.
- [GI] S. C. GARCIA-MARTINEZ AND D. IMPERA
Height estimates and half-space theorems for spacelike hypersurfaces in generalized Robertson-Walker spacetimes.
DIFFERENTIAL GEOM. APPL.
Volume **32** (2014), 46–67.
- [GIR] S. C. GARCIA-MARTINEZ, D. IMPERA, AND M. RIGOLI
A sharp height estimate for compact hypersurfaces with constant

k-mean curvature in warped product spaces.

PROC. EDINB. MATH. SOC., available on CJO2014.

- [AIR] L. J. ALIAS, D. IMPERA, M. RIGOLI
Hypersurfaces of constant higher order mean curvature in warped products.
 TRANS. AMER. MATH. SOC.
 Volume **365** (2013), no. 2, 591–621.
- [I] D. IMPERA
Comparison Theorems in Lorentzian Geometry and applications to spacelike hypersurfaces
 J. GEOM. PHYS.
 Volume **62** (2012) no. 2, 412–426.
- [AIR2] L. J. ALIAS, D. IMPERA, M. RIGOLI
Spacelike hypersurfaces of constant higher order mean curvature in generalized Robertson-Walker spacetimes
 MATH. PROC. CAMBRIDGE PHILOS. SOC.
 Volume **152** (2012) 365–383.
 (see also the erratum on Math. Proc. Cambridge Philos. Soc.)
- [IMR] D. IMPERA, L. MARI, M. RIGOLI
Some geometric properties of hypersurfaces with constant r -mean curvature in Euclidean space
 PROC. AMER. MATH. SOC.
 Volume **139** (2011), no. 6, 2207–2215.
 (see also the corrigenda on Proc. Amer. Math. Soc.)
- [IM] D. IMPERA, S. MONTALDO
Totally biharmonic submanifolds
 Differential geometry, 232–246, World Sci. Publ., Hackensack, NJ, 2009.

TALKS, SEMINARS AND POSTERS

- September 2025 POLITECNICO DI MILANO, MILAN, ITALY
Perspectives in Geometric Analysis
 Invited talk:
Isoperimetric inequalities on manifolds whose negative part of the curvature is small. Part 1
- June 2025 UNIVERSITÀ DE L'AQUILA, L'AQUILA, ITALY
Differential Geometry @L'Aquila 2025
 Invited talk:
Isoperimetric Inequalities on Manifolds with Asymptotically Non-Negative Curvature
- June 2025 UNIVERSITÀ DI PISA, PISA, ITALY
Topics in Geometric Analysis
 Invited talk:
Isoperimetric Inequalities on Manifolds with Asymptotically Non-Negative Curvature
- January 2025 UNIVERSITÀ DEGLI STUDI DI CAGLIARI, ITALY
Seminari di Geometria Differenziale e Topologia
 Invited seminar talk:
“Disuguaglianze isoperimetriche su varietà con curvatura asintoticamente non negativa”
- April 2024 SBAI, SAPIENZA UNIVERSITÀ DI ROMA, ROME, ITALY

- A Spring Day in Geometric Analysis*
Invited talk:
*Asymptotically non-negative Ricci curvature,
elliptic Kato constant and isoperimetric inequalities*
September 2023 UNIVERSITÀ DEGLI STUDI DI TORINO, TURIN, ITALY
MGT²:Milano-Grenoble-Torino
Meeting in Geometry and Topology
Invited talk:
“Rigidity and non-existence results for collapsed translators.”
September 2023 ISTITUTO NAZIONALE DI ALTA MATEMATICA, ROME, ITALY
Recent Advances in the Theory of Submanifolds:
Invited talk:
“Rigidity and non-existence results for collapsed translators.”
June 2023 UNIVERSITÀ DI ROMA TOR VERGATA, ROME, ITALY
*Real and Complex Manifolds:
Topology, Geometry and Holomorphic Dynamics*
Invited talk:
*“Rigidity and non-existence results
for collapsed translators.”*
June 2022 UNIVERSITÀ DI TORINO, TURIN, ITALY
A Geometric Analysis Meeting at UniTo.
Invited talk:
*“Quantitative bounds for the index
of translators via topology.”*
July 2022 CASTRO (LE), ITALY
Geometric Analysis in Castro
Invited talk:
*“Quantitative bounds for the index
of translators via topology.”*
July 2021 UNIVERSITÀ DI PISA, PISA, ITALY
*Real and complex manifolds.
The mathematical heritage of Edoardo Vesentini*
Invited talk:
*“Quantitative index bounds for f -minimal
hypersurfaces in the Euclidean space.”*
March 2021 UNIVERSITY OF TENNESSEE KNOXVILLE, USA
Geometric analysis seminar
Invited online seminar talk:
*“Quantitative index bounds for f -minimal
hypersurfaces in the Euclidean space.”*
September 2019 UNIVERSITÀ DI PAVIA, PAVIA, ITALY
XXI Congresso dell’Unione Matematica Italiana
Invited communication:
*“Indice e primo numero di Betti per
ipersuperfici f -minime e self-shrinkers’*
September 2018 UNIVERSITÀ DI CAGLIARI, CAGLIARI, ITALY
Differential Geometry Workshop 2018
Harmonic maps, biharmonic maps, harmonic morphism and related topics
Invited talk:

- “Index and first Betti number of f -minimal hypersurfaces and self-shrinkers”*
- May 2018 UNIVERSITÀ DEGLI STUDI DI CAGLIARI, ITALY
*Workshop del Corso di Studi in Matematica:
 La ricerca raccontata agli studenti...dagli ex studenti*
 Invited seminar talk:
“Topologia delle lamine saponate”
- July 2017 UNIVERSITÄT KONSTANZ, KONSTANZ, GERMANY
Oberseminars Partielle Differentialgleichungen
 Invited seminar talk:
“Rigidity results and topology at infinity of translating solitons of the mean curvature flow.”
- April 2017 UNIVERSITÀ DI TORINO, TORINO, ITALY
Differential Geometry Days
 Invited talk:
“Rigidity results and topology at infinity of translating solitons of the mean curvature flow.”
- January 2016 INSTITUT HENRI POINCARÉ, PARIS, FRANCE
Seminaire de Géométrie
 Invited seminar talk:
“Topology at infinity of translating solitons of the mean curvature flow.”
- September 2015 UNIVERSITÀ DI SIENA, SIENA, ITALY
XX Congresso dell’Unione Matematica Italiana
 Contributed talk:
“Solitoni traslati per il flusso di curvatura media in \mathbb{R}^{n+1} ”
- June 2015 FREIE UNIVERSITÄT, BERLIN, GERMANY
Topics on Geometric Analysis
 Invited seminar talk:
“Rigidity results and topology at infinity of translating solitons of the mean curvature flow.”
- February 2015 UNIVERSITÀ DEGLI STUDI DI CAGLIARI, ITALY
Seminari di Matematica 2015
 Invited seminar talk:
“Alcuni aspetti della teoria del potenziale su varietà con bordo e applicazioni a grafici con curvatura media controllata”
- October 2014 LEVICO TERME, TRENTO, ITALY
Progressi Recenti in Geometria Reale e Complessa - IX
 Invited talk:
“Some aspects of potential theory on complete manifolds with boundary and applications to controlled mean curvature graphs”
- July 2014 UNIVERSIDAD DEL PAÍS VASCO, BILBAO, SPAIN
First Joint International Meeting of the Italian and Spanish Mathematical Societies RSME-SCM-SEMA-SIMAI-UMI
 Invited talk:
“Potential Theory for manifolds with boundary and applications

	Lecturer (60 hours) for the following course: “Algebra lineare e Geometria”	
March-June 2024	Politecnico di Torino Ingegneria (Triennale) Lecturer (60 hours) for the following course: “Algebra lineare e Geometria”	TORINO, ITALY
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March-June 2022	Politecnico di Torino Ingegneria (Triennale) Lecturer (40 hours) for the following course: “Algebra lineare e Geometria”	TORINO, ITALY
March-June 2021	Politecnico di Torino Collaboration (10 hours) to the courses “Laboratorio di Problem Solving 2 - Intraprendenti”.	TORINO, ITALY
March-June 2021	Politecnico di Torino Ingegneria (Triennale) Lecturer (60 hours) for the following course: “Algebra lineare e Geometria”	TORINO, ITALY
March-June 2020	Politecnico di Torino Ingegneria (Triennale) Lecturer (60 hours) for the following course: “Algebra lineare e Geometria”	TORINO, ITALY
Oct. 2018–Jan. 2019	Politecnico di Torino Architettura (Triennale) Teaching assistant (40 hours) for the following course: “Istituzioni di Matematica”	TORINO, ITALY
Oct. 2018–Jan. 2019	Politecnico di Torino Architettura (Triennale) Teaching assistant (40 hours) for the following course:	TORINO, ITALY

	“Istituzioni di Matematica”	
Oct. 2017–Jan. 2018	Politecnico di Torino Architettura (Triennale) Teaching assistant (40 hours) for the following course: “Istituzioni di Matematica”	TORINO, ITALY
March–June 2017	Politecnico di Torino Pianificazione (Triennale) Teaching assistant (20 hours) for the following course: “Calcolo”	TORINO, ITALY
March–June 2015	Università degli Studi di Milano-Bicocca Matematica (Triennale) Teaching assistant (24 hours) for the following course: “Geometria 2”	MILANO, ITALY
March–June 2014	Università degli Studi di Milano-Bicocca Matematica (Triennale) Teaching assistant (24 hours) for the following course: “Geometria 2”	MILANO, ITALY
March–June 2012	Politecnico di Milano Ingegneria Industriale Teaching assistant (48 hours) for the following course: “Analisi 2 e Geometria”	MILANO, ITALY
March–June 2012	Politecnico di Milano Ingegneria Gestionale Teaching assistant (20 hours) for the following course: “Probabilità e Statistica Matematica”	MILANO, ITALY
March–June 2012	Università degli Studi dell’Insubria, Matematica (Triennale) Teaching assistant (10 hours) for the following course: “Analisi 2”	COMO, ITALY
Oct. 2011–Jan. 2012	Università degli Studi dell’Insubria, Scienze dell’Ambiente e della Natura Teaching assistant (8 hours) for the following course: “Matematica”	COMO, ITALY
Oct. 2011–Jan. 2012	Politecnico di Milano Ingegneria Meccanica e Aerospaziale Teaching assistant (48 hours) for the following course: “Analisi 1 e Geometria”	MILANO, ITALY
October 2009	Università degli Studi di Milano, Facoltà di Scienze MM.FF.NN. Teaching assistant (21 hours) for the MINIMAT course (remedial classes of Mathematics) addressed to freshman students of the Facoltà di Scienze MM. FF. NN. and of the 5 courses of the Biotechnology degree.	MILANO, ITALY

JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS
 KODAI MATHEMATICAL JOURNAL
 THE ROYAL SOCIETY OF EDINBURGH, PROCEEDINGS SECTION A
 THE SCIENTIFIC WORLD JOURNAL
 Reviewer for AMS Mathematical Reviews.

 ORGANIZATION OF SCIENTIFIC EVENTS

Member of the organizing committee of the workshop:
 A CONFERENCE ON CLASSICAL DIFFERENTIAL GEOMETRY
 AND INTEGRABLE SYSTEMS
 Turin, Italy, February 26-28, 2024

Member of the organizing committee of the workshop:
 DIFFERENTIAL GEOMETRY DAYS @POLITO
 Turin, Italy, November 6-7, 2023

Member of the organizing committee of the Indam workshop:
 RECENT ADVANCES
 IN THE THEORY OF SUBMANIFOLDS
 Rome, Italy, September 4-8, 2023

Member of the organizing committee of the Indam workshop:
 GEOMETRIC ANALYSIS AND PDE'S
 Cortona, Italy, June 5-9, 2023

Member of the organizing committee of the online workshop:
 DISCRETE HARMONIC ANALYSIS
 AND DIFFERENTIAL GEOMETRY DAYS
 September 24-25, 2020

Member of the organizing committee of the workshop:
 GEOMETRIC ANALYSIS, SUBMANIFOLDS
 AND GEOMETRY OF OF PDE'S
 Turin, Italy, September 9-13, 2019

Member of the organizing committee of the school:
 PLURIPOTENTIAL THEORY, GEOMETRIC ANALYSIS
 AND CALIBRATED GEOMETRY
 Turin, Italy, May 2-5, 2018

Member of the scientific committee of the workshop:
 COMPLEX AND RIEMANNIAN GEOMETRY DAYS
 Cagliari, Italy, September 8-9, 2016

Member of the organizing committee of the workshop:
 A GEOMETRY DAY IN COMO 2015
 Como, Italy, Jan 10, 2014
 Talks by: Z. Djadli, A. Malchiodi, L. Mari,
 B. Nelli, R. Paoletti.

Member of the organizing committee of the workshop:
 A GEOMETRY DAY IN COMO 2014
 Como, Italy, Jan 10, 2014
 Talks by: F. Bonsante, F. Coda-Marques, I. Holopainen, N. Gigli,

C. Mantegazza, M. Rigoli.

Member of the organizing committee of the school:

GEOMETRIC ANALYSIS ON RIEMANNIAN AND SINGULAR METRIC SPACES

Como, Italy, Sept 30-Oct 5, 2013

Mini-courses by: S. Alexander, G. Carron, E. Hebey, U. Lang, A. Neves

Scientific Committee: G. Besson, S. Pigola, A. Setti, M. Troyanov.

Organizer of the workshop:

A GEOMETRY DAY IN BICOCCA

Como, Italy, Sept 27, 2013

OTHER ACTIVITIES

Febr-June 2018

ATTENDANCE OF THE COURSE

Apprendere ad insegnare nell'Higher Education

Commitment: 40 hours.

Politecnico di Torino

LANGUAGE SKILLS

Mother tongue: Italian.

Other languages: English, Spanish, French.

Torino, October 2, 2025