

PERSONAL DATA

First Name: DEBORA
Surname: IMPERA
Born: IGLESIAS (CI), 04/04/1985
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CURRENT POSITIONS

Since March 2017 Ricercatore a tempo determinato di tipo A,
Dipartimento di Scienze Matematiche,
Politecnico di Torino

PREVIOUS POSITIONS

May 2012–April 2016 Assegno di Ricerca,
Dipartimento di Matematica e Applicazioni,
Università degli Studi di Milano-Bicocca

ACADEMIC HABILITATIONS

April 2016 National Italian habilitation as Professore di II fascia
in Geometry and Algebra.
Sector: 01/A2.
Validity: 30/03/2018?30/03/2024

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

- [ILPS] D. Impera, J.H Lira, S. Pigola, A.G. Setti
Height estimates for Killing graphs.
Accepted for publication on J. GEOM. ANAL.
Preliminary version on **arXiv:1612.01257**.
- [IP] D. Impera, S. Pigola
On the growth of supersolutions of nonlinear PDE's on exterior domains.
NONLINEAR ANALYSIS
Volume **146** (2016), 20–31.
<http://doi.org/10.1016/j.na.2016.08.010>
- [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.
<https://doi.org/10.1142/S021919971750002X>
- [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.
[doi:10.1515/crelle-2014-0137](https://doi.org/10.1515/crelle-2014-0137)
- [IR] D. Impera, M. Rimoldi
Stability properties and topology at infinity of f -minimal hypersurfaces.
GEOM. DEDICATA
Volume **178** (2015), 21–47.
[doi:10.1007/s10711-014-9999-6](https://doi.org/10.1007/s10711-014-9999-6)
- [GI] S. C. García-Martínez 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.
[doi:10.1016/j.difgeo.2013.10.017](https://doi.org/10.1016/j.difgeo.2013.10.017)
- [GIR] S. C. García-Martínez, 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.
doi:10.1017/S0013091514000157

- [AIR] L. J. Alías, 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.
doi:10.1016/j.geomphys.2011.11.004
- [AIR2] L. J. Alías, 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.
doi:10.1017/S0305004111000697
(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.

PREPRINTS

- [IR3] D. Impera, M. Rimoldi
Quantitative index bounds for translators via topology .
Submitted for publication. Preliminary version on **arXiv:1804.07709**.
- [IRS] D. Impera, M. Rimoldi, A. Savo
Index and first Betti number of f -minimal hypersurfaces and self-shrinkers .
Submitted for publication. Preliminary version on **arXiv:1803.08268**.
- [IPR] D. Impera, S. Pigola, M. Rimoldi
The Frankel property for self-shrinkers from the viewpoint of elliptic PDE's .
Submitted for publication. Preliminary version on **arXiv:1803.02332**.
- [I2] D. Impera
Rigidity and gap results for low index properly immersed self-shrinkers in \mathbb{R}^{m+1} .
Submitted for publication. Preliminary version on **arXiv:1408.3479**.

TALKS, SEMINARS AND POSTERS

- 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
 to controlled mean curvature graphs*”
- February 2014 UNIVERSIDADE FEDERAL DO CEARÁ, FORTALEZA, BRASIL

- VII Workshop on Geometric Analysis*
- Invited talk:
“Stability properties and topology at infinity of f -minimal hypersurfaces”
- May 2013 UNIVERSITÀ DI MILANO–BICOCCA, ITALY
Seminari di Analisi Armonica
 Seminar:
“Stime di altezza per grafici a curvatura media costante”
- September 2011 UNIVERSIDAD DE GRANADA, SPAIN
VI International Meeting on Lorentzian Geometry
 Contributed talk:
“Spacelike hypersurfaces of constant higher order mean curvature in generalized Robertson-Walker spacetimes”
- February 2011 UNIVERSIDAD DE GRANADA, SPAIN
Spanish–Japanese Workshop on Differential Geometry in Granada
 Poster:
“Hypersurfaces of constant higher order mean curvature in warped products”
- December 2010 UNIVERSITÀ DEGLI STUDI DI CAGLIARI, ITALY
Seminari di Geometria
 Seminar:
“Superfici con curvatura media di ordine k costante in spazi dotati di metriche distorte”

 INVITATIONS

- May 2018 UNIVERSITÀ DI CAGLIARI, CAGLIARI, ITALY (1 WEEK)
- Jan.-April 2016 UNIVERSITÉ PARIS-EST MARNE LA VALLÉE, FRANCE (3 MONTHS)
 Winner of a INDAM scholarship for a research period abroad
- February 2015 UNIVERSITÀ DI CAGLIARI, CAGLIARI, ITALY (1 WEEK)
- February 2014 UNIVERSIDADE FEDERAL DO CEARÁ, FORTALEZA, BRASIL (2 WEEKS)
- Sept.-Dec. 2012 INSTITUT HENRI POINCARÉ, PARIS, FRANCE (3 MONTHS)
 Guest for the research trimester in *Conformal and Kähler Geometry*

 REFEREE ACTIVITY

Referee for: ANNALI DELL'UNIVERSITÀ DI FERRARA
 GEOMETRIAE DEDICATA
 JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS
 KODAI MATHEMATICAL JOURNAL
 THE SCIENTIFIC WORLD JOURNAL

 OTHER ACTIVITIES

Coordinator of the INdAM-GNAMPA Project 2014:
 PROPRIETÀ ANALITICHE E SPETTRALI
 DI VARIETÀ PESATE E APPLICAZIONI

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

PROFESSIONAL EXPERIENCE

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
Oct. 2008–Jan. 2009	Università degli Studi di Cagliari Dipartimento di Matematica Teaching assistant (32 hours) for the following course: “Geometria 1”	CAGLIARI, ITALY
April 2008	Istituto Comprensivo di Santadi Involvement in the organization of the exhibition ‘Do you play mathematics?’ and in the activities as expert guide for school students and other visitors at the Cittadella dei Musei in Cagliari.	SANTADI (CI), ITALY
April 2008	Istituto Comprensivo di Santadi Supervision, training of the guides and involvement in the organization of the exhibition ‘Ma-te-logic@-mente’ and in the activities as expert guide for school students and other visitors at the Centro Sociale in Santadi (CI).	SANTADI (CI), ITALY
March-April 2008	Istituto Comprensivo di Santadi Involvement in the project ‘Ma-te-logic@-mente’ as teacher encharged by the Università di Cagliari.	SANTADI (CI), ITALY

April 2007

Università degli Studi di Cagliari
Facoltà di Scienze MM.FF.NN.

CAGLIARI, ITALY

Involvement as expert guide in the organization of the exhibition of Mathematics during the 'settimana di cultura scientifica' organized at the Dipartimento di Matematica of the Facoltà di Scienze MM.FF.NN.

Torino, May 21, 2018