

## PERSONAL INFORMATION

Luca Rondi  
born in Trieste, Italy, on 5 September 1972  
citizenship: Italian

## POSITION

Associate Professor in Mathematical Analysis at the Dipartimento di Matematica of the Università di Milano, Italy, since 15 September 2018.

## QUALIFICATION

Ph.D. obtained on 22 October 1999 at Sector of Functional Analysis and Applications of SISSA in Trieste, Italy

## WORK EXPERIENCE

15/9/2018 - present

**Associate Professor in Mathematical Analysis**

Dipartimento di Matematica  
Università degli Studi di Milano, Italy

- Research and teaching at a university level

[Academy](#)

21/12/2012 - 14/9/2018

**Associate Professor in Mathematical Analysis**

Dipartimento di Matematica e Geoscienze  
Università degli Studi di Trieste, Italy

- Research and teaching at a university level

[Academy](#)

1/9/2007 - 31/12/2007

**Visiting Assistant Professor**

School of Mathematics  
University of Minnesota, Minneapolis, USA

- Research and teaching at a university level

[Academy](#)

3/9/2001 - 20/12/2012

**Assistant Professor (Ricercatore Universitario) in Mathematical Analysis**

Dipartimento di Matematica e Informatica  
Università degli Studi di Trieste, Italy

- Research and teaching at a university level

[Academy](#)

28/8/2000 - 27/5/2001

**Dunham Jackson Assistant Professor**

School of Mathematics  
University of Minnesota, Minneapolis, USA

- Research and teaching at a university level

[Academy](#)

1/11/1999 - 30/6/2000

**Postdoc Research Assistant**

Institut für Industriemathematik  
Johannes Kepler Universität of Linz, Austria

- Research

[Academy](#)

EDUCATION AND TRAINING

1/11/1996 - 22/10/1999

**Ph.D. program at Sector of Functional Analysis and Applications**

Scuola Internazionale Superiore di Studi Avanzati SISSA  
Trieste, Italy

- Inverse Problems - Calculus of Variations - Nonlinear Analysis - Partial Differential Equations

1/11/1991 - 13/3/1996

**Degree in Mathematics**

Università degli Studi di Trieste, Italy

- Research oriented curriculum

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Communication skills

- excellent communication skills (more than 50 invited seminars, see section Seminars)

Organisational / managerial skills

- good expertise in handling research projects (see section Projects)
- good expertise in organising scientific events (see section Conferences)
- good expertise in handling administrative processes related to the department or to studies programs gained during the following departmental services:
  - \* Institutional Coordinator of International Mobility (Erasmus programme) for the Dipartimento di Matematica e Geoscienze of the Università di Trieste, Italy (23/1/2013 - 18/10/2015)
  - \* Self-evaluation, periodic evaluation and accreditation (AVA) Committee of the Corso di Studi in Matematica of the Università di Trieste, Italy (3/2/2013 - 5/11/2015)
  - \* Didactic Committee of the Corso di Studi in Matematica of the Università di Trieste, Italy (6/11/2015 - 14/9/2018)

Job-related skills

- Research in mathematical analysis, in particular in the following research fields:
  - \* Partial Differential Equations
  - \* Inverse Problems
  - \* Scattering Problems
  - \* Calculus of Variations
 (more than 30 scientific papers on international journals, see section Publications)
- Teaching at a university level of basic and advanced courses in mathematical analysis and of basic calculus courses (more than 25 courses taught, see section Courses)
- Student supervision at a first degree and master level in mathematics:
  - \* Master thesis in Mathematics:
    - Alice Cherini (Università di Trieste, 2008/09)
    - Giulia Fonda (Università di Trieste, 2009/10)
    - Cristiano Guida (Università di Trieste, 2009/10)
    - Giorgio Menegatti (Università di Trieste, 2011/12)
    - Michele Petrini (Università di Trieste, 2012/13)
    - Anna Dessenibus (Università di Trieste, 2014/15)
  - \* First degree thesis in Mathematics:
    - Deborah Agbedjro (Università di Trieste, 2006/07)
    - Giulia Fonda (Università di Trieste, 2007/08)

Gaia Pavoni (Università di Trieste, 2007/08)  
 Irene Ferro-Casagrande (Università di Trieste, 2009/10)  
 Giulia Favaro (Università di Trieste, 2011/12)

## Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Independent user	Independent user

## Other computer skills

- good command of programming language MATLab
- good command of languages LaTeX and html

## Driving licence

B

## ADDITIONAL INFORMATION

## Publications

1. G. Alessandrini and L. Rondi, *Stable determination of a crack in a planar inhomogeneous conductor*, SIAM J. Math. Anal. **30** (1998) 326-340.
2. L. Rondi, *Uniqueness and stability for the determination of boundary defects by electrostatic measurements*, Proc. Roy. Soc. Edinburgh Sect. A **130** (2000) 1119-1151.
3. L. Rondi, *Optimal stability estimates for the determination of defects by electrostatic measurements*, Inverse Problems **15** (1999) 1193-1212.
4. G. Alessandrini and L. Rondi, *Optimal stability for the inverse problem of multiple cavities*, J. Differential Equations **176** (2001) 356-386.
5. L. Rondi and F. Santosa, *Enhanced Electrical Impedance Tomography via the Mumford-Shah Functional*, ESAIM Control Optim. Calc. Var. **6** (2001) 517-538.
6. L. Rondi, *Uniqueness for the determination of sound-soft defects in an inhomogeneous planar medium by acoustic boundary measurements*, Trans. Amer. Math. Soc. **355** (2003) 213-239.
7. M. Di Cristo and L. Rondi, *Examples of exponential instability for inverse inclusion and scattering problems*, Inverse Problems **19** (2003) 685-701.
8. L. Rondi, *Unique determination of non-smooth sound-soft scatterers by finitely many far-field measurements*, Indiana Univ. Math. J. **52** (2003) 1631-1662.
9. G. Alessandrini, L. Del Piero and L. Rondi, *Stable determination of corrosion by a single electrostatic boundary measurement*, Inverse Problems **19** (2003) 973-984.
10. G. Alessandrini and L. Rondi, *Determining a sound-soft polyhedral scatterer by a single far-field measurement*, Proc. Amer. Math. Soc. **133** (2005) 1685-1691.
11. L. Rondi, *Optimal stability of reconstruction of plane Lipschitz cracks*, SIAM J. Math. Anal. **36** (2005) 1282-1292.
12. M. Di Cristo, L. Rondi and S. Vessella, *Stability properties of an inverse parabolic problem with unknown boundaries*, Ann. Mat. Pura Appl. (4) **185** (2006) 223-255.
13. L. Rondi, *A remark on a paper by Alessandrini and Vessella*, Adv. in Appl. Math. **36** (2006) 67-69.
14. L. Rondi, *Unique continuation from Cauchy data in unknown non-smooth domains*, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) **5** (2006) 189-218.
15. L. Rondi, *A variational approach to the reconstruction of cracks by boundary measurements*, J. Math. Pures Appl. (9) **87** (2007) 324-342.
16. M. Di Cristo and L. Rondi, *Exponential instability for inverse elliptic problems with unknown boundaries*, J. Phys.: Conf. Ser. **73** (Inverse Problems in Applied Sciences - towards breakthrough) (2007) 012005 (18 pp).
17. L. Rondi, *Stable determination of sound-soft polyhedral scatterers by a single measurement*, Indiana Univ. Math. J. **57** (2008) 1377-1408.
18. L. Rondi, *Reconstruction in the inverse crack problem by variational methods*, European J. Appl. Math. **19** (2008) 635-660.
19. L. Rondi, *On the regularization of the inverse conductivity problem with discontinuous conductivities*, Inverse Probl. Imaging **2** (2008) 397-409.

20. G. Alessandrini, L. Rondi, E. Rosset and S. Vessella, *The stability for the Cauchy problem for elliptic equations*, Inverse Problems **25** (2009) 123004 (47pp).
21. L. Rondi, *Reconstruction of material losses by perimeter penalization and phase-field methods*, J. Differential Equations **251** (2011) 150-175.
22. L. Rondi and F. Santosa, *Analysis of an Inverse Problem Arising in Photolithography*, Math. Models Methods Appl. Sci. **22** (2012) 1150026 (30pp).
23. W. Ring and L. Rondi, *Reconstruction of cracks and material losses by perimeter-like penalizations and phase-field methods: numerical results*, Interfaces Free Bound. **13** (2011) 353-371.
24. G. Menegatti and L. Rondi, *Stability for the acoustic scattering problem for sound-hard scatterers*, Inverse Probl. Imaging **7** (2013) 1307-1329.
25. J. Li, H. Liu, L. Rondi and G. Uhlmann, *Regularized Transformation-Optics Cloaking for the Helmholtz Equation: From Partial Cloak to Full Cloak*, Comm. Math. Phys. **335** (2015) 671-712.
26. L. Rondi and M. Sini, *Stable determination of a scattered wave from its far-field pattern: the high frequency asymptotics*, Arch. Ration. Mech. Anal. **218** (2015) 1-54.
27. L. Rondi, *Continuity properties of Neumann-to-Dirichlet maps with respect to the H-convergence of the coefficient matrices*, Inverse Problems **31** (2015) 045002 (24pp).
28. L. Rondi, F. Santosa and Z. Wang, *A variational approach to the inverse photolithography problem*, SIAM J. Appl. Math. **76** (2016) 110-137.
29. H. Liu, M. Petrini, L. Rondi and J. Xiao, *Stable determination of sound-hard polyhedral scatterers by a minimal number of scattering measurements*, J. Differential Equations **262** (2017) 1631-1670.
30. L. Rondi, *A Friedrichs-Mazya inequality for functions of bounded variation*, Math. Nachr. **290** (2017) 1830-1839.
31. L. Rondi, *Discrete approximation and regularisation for the inverse conductivity problem*, Rend. Istit. Mat. Univ. Trieste **48** (2016) 315-352.
32. H. Liu, L. Rondi and J. Xiao, *Mosco convergence for  $H(\text{curl})$  spaces, higher integrability for Maxwell's equations, and stability in direct and inverse EM scattering problems*, J. Eur. Math. Soc. (JEMS), to appear.
33. M. G. Mora, L. Rondi and L. Scardia, *The equilibrium measure for a nonlocal dislocation energy*, Comm. Pure Appl. Math. **72** (2019) 136-158.
34. J. A. Carrillo, J. Mateu, M. G. Mora, L. Rondi, L. Scardia and J. Verdera, *The ellipse law: Kirchhoff meets dislocations*, Comm. Math. Phys., to appear.
35. K. Modin, A. Nachman and L. Rondi, *A Multiscale Theory for Image Registration and Nonlinear Inverse Problems*, Adv. Math., to appear.

#### Projetcs Research projects as Principal Investigator

- Annual individual research project entitled *Identificazione e ottimizzazione di frontiere* funded by the Università di Trieste, Italy, through Progetto GIOVANI RICERCATORI - year 2001 (01/01/2002-31/12/2002).
- Coordinator of the 2008 annual research project *Metodi variazionali applicati a problemi inversi* funded by GNAMPA, INdAM, Italy (01/01/2008-31/12/2008)
- Coordinator of the 2009 annual research project *Misurazioni di tipo ottimale per la stabilità di problemi inversi* funded by GNAMPA, INdAM, Italy (03/03/2009-02/03/2010)
- Coordinator of the 2011 annual research project *Problemi inversi per le equazioni alle derivate parziali* funded by GNAMPA, INdAM, Italy (27/04/2011-26/04/2012)
- 18 months individual research project entitled *Analisi di problemi inversi* funded by the Università di Trieste, Italy, through Finanziamento per Ricercatori di Ateneo - FRA 2009 (06/06/2011-06/12/2012)
- Coordinator of the 2017 annual research project *Analisi di problemi inversi: stabilità e ricostruzione* funded by GNAMPA, INdAM, Italy (14/03/2017-13/03/2018)

#### Conferences Conferences organization

- Organizer of the minisymposium *Discrete-like inverse problems: analysis and numerics* at AIP 2009 Conference on Applied Inverse Problems (Wien, Austria, 20-24 July 2009, in collaboration with Dr. Michele Di Cristo)

- Organizer of the minisymposium *Inverse problems for partial differential equations* at SIAM Conference on Analysis of Partial Differential Equations (Miami, USA, 7-10 December 2009)

## Seminars Invited seminars

### Invited seminars at conferences

- *Conference on the Inverse Problem for the identification of discontinuity and related problems* (Sapporo, Japan, 2002)
- *Workshop Complex Analysis and Inverse Problems* (Paris, France, 2003)
- *Third conference on Inverse Problems, Control and Shape Optimization PICO'06* (Nice, France, 2006)
- *Workshop Inverse Problems: Recent Progress and New Challenges* (Banff, Canada, 2008)
- *Conference INDI2011 Interfaces and Discontinuities in Solids, Liquids and Crystals* (Gargnano, Italy, 2011)
- *Workshop Analytic and Geometric Methods in Medical Imaging* (Cambridge, UK, 2011)
- *Conference Perspectives in Phase Space Analysis of Partial Differential Equations* (Bertinoro, Italy, 2011)
- *Conference Differential equations, inverse problems and control theory* (Cortona, Italy, 2013)
- *Inverse Problems Follow-up Meeting* (Cambridge, UK, 2014)
- *Conference PDE's, Inverse Problems and Control Theory* (Bologna, Italy, 2014)
- *Conference Reconstruction and Stability Issues in Inverse Problems* (Paris, France, 2015)
- *Conference New advances in PDE's, Inverse Problems and Control Theory* (Parma, Italy, 2015)
- *Workshop Dirichlet-to-Neumann Maps: Spectral Theory, Inverse Problems and Applications* (Oaxaca, Mexico, 2016)
- *Workshop Mathematical and Numerical Modeling in Optics* (Minneapolis, USA, 2016)
- *Conference Partial Differential Equations and Applications* (Bologna, Italy, 2017)
- *Workshop Reconstruction Methods for Inverse Problems* (Roma, Italy, 2018) (4 hours minicourse)
- *Conference Nonlocal interactions: Dislocations and beyond* (Bath, UK, 2018)

### Invited seminars at universities and research institutes

- University of Minnesota, Minneapolis, USA (1999)
- Johannes Kepler Universität of Linz, Austria (1999)
- Ludwig Maximilians Universität of München, Germany (1999)
- University of Tokyo, Japan (2002)
- Università degli Studi di Udine, Italy (2003)
- Università degli Studi di Firenze, Italy (2004)
- Università degli Studi di Roma "La Sapienza", Italy (2004)
- INRIA, Sophia Antipolis, France (2006)
- Università degli Studi di Firenze, Italy (2007)
- University of Minnesota, Minneapolis, USA (2007)
- Karl Franzens Universität of Graz, Austria (2007)
- University of Minnesota, Minneapolis, USA (2007)
- Politecnico di Milano, Italy (2008)
- Università degli Studi di Milano, Italy (2009)
- Karl Franzens Universität of Graz, Austria (2009)
- Mathematical Sciences Research Institute, Berkeley, USA (2010)
- Università di Bologna, Italy (2011)
- Università degli Studi di Milano, Italy (2011)
- University of Minnesota, Minneapolis, USA (2012)
- University of California Irvine, Irvine, USA (2012)
- University of Primorska, Koper, Slovenia (2012)
- Universidad Autónoma de Madrid, Madrid, Spain (2012)
- The University of North Carolina at Charlotte, USA (2012)
- Johann Radon Institute for Computational and Applied Mathematics (RICAM), Linz, Austria (2013)
- Universität Würzburg, Germany (2013)

- École Polytechnique, Palaiseau, France (2013)
- Hong Kong Baptist University, Hong Kong, China (2015)
- University of Bath, UK (2017)
- University of Jyväskylä, Finland (2017)
- Università degli Studi di Milano, Italy (2017)
- Université de Reims Champagne-Ardenne, France (2018)
- Kanazawa University, Japan (2018)

#### Invited short talks at conferences or invited talks at minisymposia

- *GAMM-Jahrestagung 2000* (Göttingen, Germany, 2000) at the minisymposium *Regularization Methods for Inverse Problems in Differential Equations*
- *Conference on Applied Inverse Problems: Theoretical and Computational Aspects* (Montecatini Terme, Italy, 2001) at the minisymposium *Determination of Defects from Overdetermined Measurements*
- *Meeting Inverse Problems in Wave Scattering and Impedance Tomography* (Oberwolfach, Germany, 2003)
- *ICIAM03 International Congress on Industrial and Applied Mathematics* (Sydney, Australia, 2003) at the minisymposium *Inverse Scattering - The Inverse Obstacle Problem*
- *Meeting Inverse and Direct Problems* (Cortona, 2005)
- *2006 SIAM Annual Meeting* (Boston, USA, 2006) at the minisymposium *Inverse Problems for Parabolic Equations*
- *AIP 2007 Conference on Applied Inverse Problems: Theoretical and Computational Aspects* (Vancouver, Canada, 2007) at the minisymposium *Inverse Problems in Thermal Imaging*
- *AIP 2007 Conference on Applied Inverse Problems: Theoretical and Computational Aspects* (Vancouver, Canada, 2007) at the minisymposium *Determination of defects from boundary measurements*
- *AIP 2007 Conference on Applied Inverse Problems: Theoretical and Computational Aspects* (Vancouver, Canada, 2007) at the minisymposium *Identification of defects and cracks*
- *AIP 2009 Conference on Applied Inverse Problems* (Wien, Austria, 2009) at the minisymposium *New Developments in Geometric Inverse Problems*
- *8th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (Dresden, Germany, 2010) at the special session *Inverse Problems*
- *ICIAM 2011 International Congress on Industrial and Applied Mathematics* (Vancouver, Canada, 2011) at the minisymposium *Recent Advances in Inverse Problems for Partial Differential Equations*
- *10th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (Madrid, Spain, 2014) at the special session *Inverse Problems in PDE and Geometry*
- *10th AIMS Conference on Dynamical Systems, Differential Equations and Applications* (Madrid, Spain, 2014) at the special session *Microlocal Analysis and the Inverse Conductivity Problem*
- *AIP 2015 Applied Inverse Problems Conference* (Helsinki, Finland, 2015) at the minisymposium *Stability estimates for inverse problems*
- *Workshop Analysis and Numerics of Acoustic and Electromagnetic Problems* (Linz, Austria, 2016)
- *Conference 100 Years of the Radon Transform* (Linz, Austria, 2017) at the minisymposium *Tomographic Reconstruction of Discontinuous Coefficients*

#### Honours and awards

- Italian National Scientific Habilitation as Full Professor in Mathematical Analysis, Probability and Mathematical Statistics obtained on 30 December 2013. Renewed on 27 July 2018.
- Member of the Academic Board of the Doctorate School in “Earth Science and Fluid Mechanics” of the Università di Trieste, Italy (Academic Year 2013/14 - Academic Year 2016/17)
- Member of the Academic Board of the Doctorate School in “Earth Science, Fluid Dynamics, and Mathematics. Interactions and Methods” of the Università degli Studi di Trieste, Italy (Academic Year 2017/18 - present)
- Member of the review panel in applied mathematics of the Academy of Finland and the Research Council for Natural Sciences and Engineering for Academy Projects Funding, Academy Research Fellows and Postdoctoral Researchers (September 2016 call, LT16Math3 panel)
- Referee of a research grant application for the Hertha Firnberg-Program funded by the Austrian Science Fund (FWF) (year 2010)
- Referee of a research grant application for the FONDECYT Regular 2018 Grant Competition funded

by the Chilean National Science and Technology Commission (CONICYT - Chile)

- Referee (rapporteur) of the Ph.D. thesis in Mathématiques appliquées by Mikhail Isaev at École Polytechnique, Palaiseau, France (defense on 27 November 2013)

**Memberships** Member of Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni (GNAMPA) of the Istituto Nazionale di Alta Matematica (INdAM)

**References** Giovanni Alessandrini, Università di Trieste, Italy  
Adrian Nachman, University of Toronto, Canada  
Fadil Santosa, University of Minnesota, USA  
Gunther Uhlmann, University of Washington, USA

**Courses** Courses given at universities in Italy and abroad

- Fall 2000 Term (School of Mathematics, University of Minnesota, Minneapolis, USA)  
*MATH 1142 Short Calculus*
- Spring 2001 Term (School of Mathematics, University of Minnesota, Minneapolis, USA)  
*MATH 1142 Short Calculus*  
*MATH 1151 Precalculus II*
- Academic Year 2006-2007 (Università di Trieste, Italy)  
*Analisi 5* of the Corso di Laurea in Matematica
- Fall 2007 Term (School of Mathematics, University of Minnesota, Minneapolis, USA)  
*MATH 2374 IT Multivariable Calculus and Vector Analysis*
- Academic Year 2007-2008 (Università di Trieste, Italy)  
*Elementi di Analisi Superiore* of the Corso di Laurea in Fisica
- Academic Year 2008-2009 (Università di Trieste, Italy)  
*Analisi Matematica II* of the Corso di Laurea in Fisica
- Academic Year 2009-2010 (Università di Trieste, Italy)  
*Analisi Matematica II* of the Corso di Laurea in Fisica
- Academic Year 2010-2011 (Università di Trieste, Italy)  
*Analisi Matematica II* of the Corso di Laurea in Fisica
- Academic Year 2011-2012 (Università di Trieste, Italy)  
*Analisi Superiore 2* of the Corso di Laurea Magistrale in Matematica  
*Analisi Matematica II - parte B* of the Corso di Laurea in Fisica
- Academic Year 2012-2013 (Università di Trieste, Italy)  
*Analisi Superiore 2* of the Corso di Laurea Magistrale in Matematica  
*Equazioni Differenziali* of the Corso di Laurea Magistrale in Matematica
- Academic Year 2013-2014 (Università di Trieste, Italy)  
*Analisi Superiore 2* of the Corso di Laurea Magistrale in Matematica  
*Analisi Matematica II - parte B* of the Corso di Laurea in Fisica
- Academic Year 2014-2015 (Università di Trieste, Italy)  
*Analisi Superiore 2* of the Corso di Laurea Magistrale in Matematica  
*Analisi Matematica II - parte B* of the Corso di Laurea in Fisica
- Academic Year 2015-2016 (Università di Trieste, Italy)  
*Analisi Superiore 2* of the Corso di Laurea Magistrale in Matematica  
*Analisi Matematica II - parte B* of the Corso di Laurea in Fisica
- Academic Year 2016-2017 (Università di Trieste, Italy)  
*Analisi Superiore 2* of the Corso di Laurea Magistrale in Matematica  
*Analisi Matematica II - parte B* of the Corso di Laurea in Fisica
- Academic Year 2017-2018 (Università di Trieste, Italy)  
*Analisi Superiore 2 - parte A* of the Corso di Laurea Magistrale in Matematica  
*Analisi 3 - modulo A* of the Corso di Laurea in Matematica  
*Analisi Matematica II - parte A* of the Corso di Laurea in Fisica
- Academic Year 2018-2019 (Università di Milano, Italy)  
*Matematica del Continuo* of the Corso di Laurea in Informatica per la Comunicazione Digitale  
*Analisi Matematica 1* of the Corso di Laurea in Fisica

*Analisi Reale (exercise sessions)* of the Corso di Laurea Magistrale in Matematica

## ANNEXES

No annexes

## Personal information

I authorize the handling of personal information in this curriculum, according to D.Lgs n. 196/03 and following modifications and Regulations EU 679/2016 (General Regulations concerning Data Protection or GRDP) and art. 7 of University Regulations concerning protection of personal information.

Date, 10 January 2019

Signature

A handwritten signature in black ink, appearing to read "Luca Rondi", written in a cursive style.