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## Curriculum Vitae et Studiorum

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### Personal Information

Name  
Surname  
Birth date  
E-mail  
Webpage

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### Current employment

Apr.2021 **RTD-A**, *Politecnico di Milano*, Junior Researcher at the Math department of Politecnico di Milano;  
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### Previous employment

Dec. 2019 **Post Doc**, *Università degli studi di Roma Tor Vergata*, Research fellowship at  
Apr 2021 Dipartimento di Matematica, Eccellenza 2018 - 2022  
Dec. 2018 **Post Doc**, *Università degli studi di Firenze and SNS Pisa*, Research fellowship  
Dec. 2019 co-funded by Scuola Normale Superiore di Pisa and University of Florence  
Sept. 2017 **Post Doc**, *Universidade De Lisboa, Faculdade de Ciências - Centro de Matemática e*  
Sept. 2018 *Aplicações Fundamentais*, Campo Grande, Edifício C6, Piso 2, 1749-016 - Lisboa  
Sept. 2015 **Post Doc**, *Carnegie Mellon University, Center for Nonlinear Analysis*, 5000 Forbes  
Sept. 2017 Avenue, Pittsburgh (PA), 15213 - USA

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### Education

2011-2015 **Ph.D.**, *Università degli studi di Pisa*, Pisa, I received my Ph.D after the dissertation in July 27, 2015  
Ph.D. in Analysis  
Thesis *On the isoperimetric properties of Planar  $N$ -clusters*  
Supervisor Prof. Giovanni Alberti and Prof. Francesco Maggi  
Summary We have studied some questions involving the  $N$ -clusters in  $\mathbb{R}^n$ . An  $N$ -cluster is a family of  $N$ -disjoint sets of finite perimeter.

- 2009–2011 **Master**, *Università degli studi di Firenze*, Firenze, 110/110  
Applied Mathematics
- Final work *Asymptotic inequalities for minimal planar clusters*
- Supervisor Prof. Francesco Maggi
- Summary Proof of the *Honeycomb Hexagonal Conjecture* and description of its consequence in the Cluster theory.
- 2006–209 **Bachelor**, *Università degli studi di Firenze*, Firenze, 110/110  
General Curriculum, pure Mathematics
- Final work *Block Cipher Algorithm and primitive group*
- Supervisor Prof. Orazio Puglisi
- Summary Discussion of some algebraic results involving the security of the DES-AES cipher algorithms: Data Encryption Standard and Advanced Encryption Standard (US federal standard cipher algorithms adopted by the *National Security Agency* in 2009). Explanation of a “differential crypt-analysis algorithm ” testing the security of the DES code. Some consideration about the security of the AES code.
- 2001–2006 **General certificate of Secondary Education**, *Technical Institute -A. Meucci-* , Firenze, 100/100  
Electronics and telecommunications industry expert foreman

## List of publications

- 2023 *Asymptotic behavior of the Dirichlet energy on Poisson point clouds.*  
Braides - Caroccia, Journal of Nonlinear Science 33.5 (2023): 80.  
<https://doi.org/10.1007/s00332-023-09937-7>  
[Download Preprint](#)
- 2023 *Isoperimetric sets and  $p$ -Cheeger sets are in bijection.*  
Caroccia - Saracco, The Journal of Geometric Analysis 33.4 (2023): 1-17.  
<https://doi.org/10.1007/s12220-022-01157-x>  
[Download Preprint](#)
- 2022 *A Compactness Theorem for functions on Poisson point clouds.*  
Caroccia, Nonlinear Analysis, 2022, 113032, ISSN 0362-546X,  
<https://doi.org/10.1016/j.na.2022.113032>  
[Download Preprint](#)
- 2021 *Dimensional lower bounds for contact surfaces of Cheeger sets.*  
Caroccia - Ciani, Journal De Mathématiques pures et appliquées, vol. 157, p. 1-44,  
ISSN: 0021-7824, doi: 10.1016/j.matpur.2021.11.010  
[Download Preprint](#)
- 2020 *On the Gamma convergence of functionals defined over pairs of measures and energy-measures.*  
Caroccia - Cristoferi, Journal of Nonlinear Science (2020).  
<https://doi.org/10.1007/s00332-020-09623-y>  
[Download Preprint](#)

- 2020 *On the integral representation of variational functionals on BD.*  
Caroccia - Focardi - Van Goethem, SIAM Journal on Mathematical Analysis 52.4 2020.  
<https://doi.org/10.1137/19M1277564>  
[Download Preprint](#)
- 2020 *Mumford – Shah functionals on graphs and their asymptotics.*  
Caroccia - Chambolle - Slepčev, Nonlinearity, Volume 33, Number 8 - doi: 10.1088/1361-6544/ab81ee (2020)  
[Download Preprint](#)
- 2019 *Damage-driven fracture with low-order potentials: asymptotic behavior, existence and applications*  
Caroccia - Van Goethem, ESAIM: M2AN, 53 4 (2019) 1305-1350,  
doi:10.1051/m2an/2019024  
[Download Preprint](#)
- 2018 *Equilibria configurations for epitaxial crystal growth with adatoms*  
Caroccia - Cristofori - Dietrich, Archive for Rational Mechanical Analysis (2018).  
<https://doi.org/10.1007/s00205-018-1258-9>  
[Download Preprint](#)
- 2017 *The Cheeger N-problem in terms of BV functions*  
Caroccia - Littig, Journal of Convex Analysis, Volume 26, Number 1 (2019)  
[Download Preprint](#)
- 2017 *Cheeger N-clusters*  
Caroccia - Calculus of variation and Partial Differential Equation (2017) 56: 30  
doi:10.1007/s00526-017-1109-9  
[Download Preprint](#)
- 2016 *A sharp quantitative version of Hales’ isoperimetric honeycomb theorem*  
Caroccia, Maggi - Journal de Mathématiques Pures et Appliquées, 106.5 (2016): 935-956, <https://doi.org/10.1016/j.matpur.2016.03.017>  
[Download Preprint](#)
- 2015 *A note on the stability of the Cheeger constant of N-gons.*  
Caroccia, Neumayer - Journal of Convex Analysis, Volume 22, Number 4, pgg. 1207-1213 (2015)  
[Download Preprint](#)
- [Ph.D Thesis](#)
- 2016 *On the isoperimetric properties of Planar N-clusters.*  
Caroccia - Preprint arXiv:1601.07116  
[Download Preprint](#)

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## Divulgative publications

- 2024 *Il problema isoperimetrico, da Didone alle bolle di Sapone*  
Caroccia, Nuova lettera matematica (to appear January 2024)

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## Visiting

Apr 15, 2023 **Visiting professor**, *University of Ottawa*, Department of Mathematics and Statistics,  
Jun 4, 2023 STEM building, Faculty of Sciences, 150 Louis-Pasteur Pvt Ottawa, ON, Canada K1N 6N5

Invited by Professor A. Gerolin I have been an active member of the group <https://aiquantum.uottawa.ca/index.html>, doing research and collaborating with the group. As part of the visiting contract, in collaboration with prof. Oliver Tse, we also gave an high level undergrad course on Calculus of Variation and gradient flows - MAT 4199.

### Fall Semester in Austin

Aug 07, 2014 **Courses and research**, *UT Texas at Austin*, 2515 Speedway, 78712 Texas, (512)  
Dec 18, 2014 471-7711, Austin, Texas (US)

I spent five months in Austin to work with my Ph.D thesis co-advisor Francesco Maggi. We worked on some stability isoperimetric issues involving the hexagonal tiling in the plane. I also attended the course: Geometric Measure Theory (Teacher Francesco Maggi).

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## Seminars

August 21, 2023 **Mini symposium Short talk**, *Waseda University*, ICIAM conference 2023 - Mini symposium: "Geometric methods in machine learning and data analysis" , Tokyo, Japan

"Topologies of convergences for discrete-to-continuum limit on Poission point clouds "

April 25, 2023 **Seminar**, *University of Ottawa*, Colloquium at the department of Mathematics and Statistics, Ottawa, Canada

"Energies on point clouds and discrete to continuum limits"

Jun 21, 2022 **Conference speaker**, *Università di Pisa*, Conference title: "Isoperimetric problems", Pisa, Italy

"Contact surface of Cheeger sets"

May 20, 2022 **Conference speaker**, *CIRM, Luminy* , Conference title: "Beyond Elasticity: Advances and Research Challenges", Marseille, France

"A short-range interaction energy on Poisson Point Clouds"

Sep 7, 2021 **Conference speaker**, *Centro De Giorgi*, Conference title: "Variational methods and applications", Pisa, Italy

"Contact surface of Cheeger sets"

May 26, 2021 **Webinar**, *Politecnico di Milano*, Seminari di Dipartimento, Milan, Italy

"Contact surface of Cheeger sets"

Nov 26, 2020 **Webinar**, *Universidade de Lisboa*, WADE (Webinar in Analysis and Differential Equations), Lisbon, Portugal

"Contact surface of Cheeger sets"

Dec 20, 2019 **Short talk**, *Università degli studi di Roma Tor Vergata*, Dipartimento di Matematica, Roma, Italy

"Isoperimetric properties of the Honeycomb tiling and theme variations"

Dec 12, 2019 **Seminar**, *Universidade de Lisboa*, Center of Mathematics, Fundamental Applications and Operations Research - CmafCIO, Lisbon, Portugal

"A phase-filed approximation for a surface- -evolution energy with a density"

Sept 19, 2019 **Mini symposium Short talk**, *AGH UST*, Conference title "DEA: Dynamics, equation and Application", Krakow, Poland

"Integral representation of local energies on BD"

- Jun 12, 2019 **Seminar**, *Universidade de Lisboa*, Center of Mathematics, Fundamental Applications and Operations Research - CmafCIO, Lisbon, Portugal  
"Integral representation of energy: General overview and a BD result"
- Febr 06, 2019 **Conference Short talk**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7, 38056 (Tn), Trento, Italy  
"Il problema di Mumford-Shah sui grafi: definizione tramite un'energia non locale"
- Nov 28, 2018 **Seminar**, *Università di Pisa*, Dipartimento di Matematica di Pisa, Pisa, Italy  
"Perimeter with densities: An energy for epitaxial growth"
- Oct 24, 2018 **Seminar**, *University of Jyväskylä*, Department of Mathematics and Statistics, Jyväskylä, Finland  
"Perimeter with densities: An energy for epitaxial growth"
- Jun 15, 2018 **Seminar**, *Università degli studi di Firenze*, Department of Mathematics and Statistics, Florence, Italy  
"Perimeter with densities: an energy for epitaxial growth"
- May 20-25, 2018 **Conference speaker**, *Banff international research station, Alberta, Canada*, Conference title: "Topics in the Calculus of Variations: Recent Advances and New Trends"  
"Approximation of fracture problems via Gamma-convergence: state of art and new results"
- June 8, 2017 **Seminar**, *Universidade de Lisboa*, Center of Mathematics, Fundamental Applications and Operations Research - CmafCIO, Lisbon, Portugal  
"Non-local quantities and their application"
- Apr 03, 2017 **Seminar**, *University of Jyväskylä*, Department of Mathematics and Statistics, Jyväskylä, Finland  
"Non-local quantities and their application"
- Oct 06, 2016 **Seminar**, *University of Pittsburgh*, Department of Mathematics, Pittsburgh (PA), USA  
"Optimal partition problems"
- Apr 15, 2016 **Conference speaker**, *University of Leiden*, Lorentz Center, Leiden, Netherlands, Conference Title: "Microstructure Evolution in Materials: Defects, Cracks and Interfaces"  
"On the asymptotic behavior of isoperimetric planar partitions"
- Jan 8, 2016 **Seminar**, *University of Cologne*, Mathematical Institute, Köln, Germany  
"Cheeger  $N$ -clusters"
- Oct 27, 2015 **Seminar**, *Carnegie Mellon University*, Center for Non Linear Analysis, Pittsburgh (PA), USA  
"On the asymptotic behavior of isoperimetric planar partitions"
- July 17, 2015 **Seminar**, *Max Planck Institute*, Max-Planck-Institute for mathematics in the sciences, Leipzig, Germany  
"On the asymptotic behavior of isoperimetric planar partitions"
- May 20, 2015 **Seminar**, *Università degli studi di Modena*, Dipartimento di Scienze Fisiche, Informatiche, Matematiche, Modena, Italy  
"On the asymptotic behavior of isoperimetric planar partitions"

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## Partecipazione to research groups and grants

### Grants

- 2023-Now **PRIN2022, 2022R537CS**, *participant*, "NO3 - Nodal Optimization, Nonlinear elliptic equations, Nonlocal geometric problems, with a focus on regularity", funded by the Italian Ministry of Research and University  
Scientific coordinator: Prof. Nicola Soave
- 2022 **INDAM-GNAMPA project 2022, CUP\_E55- F22000270001**, *participant*, "Stime ottimali per alcuni funzionali di forma", funded by INDAM  
Scientific coordinator: dott. Giampaolo Piscitelli
- 2020 **INDAM-GNAMPA project 2020, U-UFMBAZ-2020-000798 15-04-2020**, *participant*, "Problemi isoperimetrici con anisotropie", funded by INDAM  
Scientific coordinator: dott. Giorgio Saracco
- 2019-21 **PRIN2017, 2017BTM7SN\_005**, *participant*, "Variational methods for stationary and evolution problems with singularities and interfaces", funded by the Italian Ministry of Research and University  
Scientific coordinator: Prof. Gianni Dal Maso
- 2012-14 **PRIN2010-2011, 2010A2TFX2\_006 01**, *participant*, "Calculus of Variation", funded by the Italian Ministry of Research and University  
Scientific coordinator: Prof. Gianni Dal Maso

### Groups

- 2021-Now **Gruppo di Ricerca dipartimentale**, *Politecnico di Milano*, *group member*, "Analisi di problemi variazionali e differenziali, teoria degli operatori" nel gruppo "Analysis at Polimi", Scientific referent: Prof. Franco Tomarelli
- May 2023 **AI and QUANTUM**, *uOttawa*, *group member*, Visiting members of the research group AI and QUANTUM lead by prof. Augusto Gerolin
- 2018 **CMAFcIO**, *Universidade de Lisboa*, *group member*, Full member of CMAFcIO research center, FCUL, project référence Math2Disloc, coordinated by prof. Nicolas Van Goethem
- 2014 **INDAM GNAMPA**, *participant*, Affiliation to INDAM,
- 2013 **INDAM GNAMPA**, *participant*, Affiliation to INDAM,

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### International recognition

- 2017-2022 **Maitre de conference qualification**, *Class 26*, "Mathématiques appliquées et applications des mathématiques"
- 2023-2033 **Abilitazione scientifica nazionale**, *01/A3 - MAT/05*, "Analisi matematica, probabilità e statistica matematica", Seconda fascia

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### Teaching experience

Course Lecturer: Elements of calculus of variations and gradient flows MAT 4199 - Spring 2023

- Apr 2023 **Department of Mathematics and Statistics**, *University of Ottawa*, Ottawa, ON,  
Jun 2023 Calculus of variation MAT 4199  
19 hours of an high level undergrad course on Calculus of variation and  $\Gamma$ -convergence at the University of Ottawa during a visiting research period.

Course lecturer: Analisi II - Ingegneria dell'automazione - Fall 2022

- Sep 2022 **Scuola di Ingegneria Industriale e dell'Informazione**, *Politecnico di Milano*,  
 Dec 2022 Milano, IT, Analisi II  
 Full course: 4 hours a week for a total of 48 hours. Final written exams.  
[Teaching assistant: Discrete Dinamical models - Ingegneria matematica - Fall 2022](#)
- Sep 2022 **Corso di studi in Ingegneria Matematica**, *Politecnico di Milano*, Milano , IT,  
 Dec 2022 Analisi III  
 Exercise sessions: 2 hours a week of exercises session with the students for the course Discrete Dinamical models held by Professor Tomarelli, for a total of 12 hours.  
[Teaching assistant: Analisi III - Ingegneria matematica - Fall 2022](#)
- Sep 2022 **Corso di studi in Ingegneria Matematica**, *Politecnico di Milano*, Milano , IT,  
 Dec 2022 Analisi III  
 Exercise sessions: 2 hours a week of exercises session with the students for the course Analisi III, for a total of 20 hours.  
[Course lecturer: Analisi II - Ingegneria dell'automazione - Fall 2021](#)
- Sep 2021 **Scuola di Ingegneria Industriale e dell'Informazione**, *Politecnico di Milano*,  
 Dec 2021 Milano, IT, Analisi II  
 Full course: 4 hours a week for a total of 48 hours. Final written exams.  
[Teaching assistant: Analisi III - Ingegneria matematica - Fall 2021](#)
- Sep 2021 **Scuola di Ingegneria Industriale e dell'Informazione**, *Politecnico di Milano*,  
 Dec 2021 Milano , IT, Analisi III  
 Exercise sessions: 2 hours a week of exercises session with the students for the course Analisi III, for a total of 20 hours.  
[Escola de Verão de Matemática](#)
- June 20-22, **Departamento de Matematica**, *Faculdade de Ciencias*, Universidade de Lisboa,  
 2018 Lisbon, PT  
 Summer school in mathematics: 3 hours class for master students  
<https://ciencias.ulisboa.pt/pt/escola-de-verao-de-matematica>  
[Course lecturer: Principle of real analysis II MATH 21-356 - Spring 2017](#)
- Jan 2017 **Carnegie Mellon University**, *Mellon College of Science*, Pittsburgh (PA), US,  
 May 2017 Principle of real Analysis II  
 Full course: 3 hours a week for a total of 36 hours. Every week a homework sheet has been given to the students and later evaluated with the aid of a teaching assistant. Final written exam.  
[Course lecturer: Principle of real analysis I MATH 21-355 - Fall 2016](#)
- Sep 2016 **Carnegie Mellon University**, *Mellon College of Science*, Pittsburgh (PA), US,  
 Dec 2016 Principle of real Analysis II  
 Full course: 3 hours a week for a total of 36 hours. Every week a homework sheet has been given to the students and later evaluated with the aid of a teaching assistant. Final written exam.  
[Course lecturer: Principle of real analysis II MATH 21-356 - Spring 2016](#)
- Jan 2016 **Carnegie Mellon University**, *Mellon College of Science*, Pittsburgh (PA), US,  
 May 2016 Principle of real Analysis II  
 Full course: 3 hours a week for a total of 36 hours. Every week a homework sheet has been given to the students and later evaluated with the aid of a teaching assistant. Final written exam.



## Course lecturer: Principle of real analysis I MATH 21-355 - Fall 2015

Sep 2015 **Carnegie Mellon University**, *Mellon College of Science*, Pittsburgh (PA), US,  
Dec 2015 Principle of real Analysis II

Full course: 3 hours a week for a total of 36 hours. Every week a homework sheet has been given to the students and later evaluated with the aid of a teaching assistant. Final written exam.

## Tutoring: Analisi 1 - Fall 2013

Sep 2013 **Università degli studi di Pisa**, *Dipartimento di ingegneria civile*, Pisa,

Dec 2013 Analisi I

20 hours tutoring of master students.

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## Event organized

### Topics in Nonlinear Analysis: Calculus of Variations and PDEs

Oct 10, 2018 **Conference**, *Lisboa (PT)*, Faculdade de Ciências, Universidade de Lisboa, Conference  
Oct 12, 2018 on Calculus of Variation - <https://sites.google.com/view/cvpdelisboa/home>

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## Research experiences

### Beyond Elasticity: Advances and Research Challenges

May 16, 2022 **Workshop**, *CIRM*, 163 avenue de Luminy, Marseille, FR

May 22, 2022 Workshop on elasticity and fracture models. I have had also the chance to give a talk.

### Variational methods and applications

Sep 06, 2021 **Workshop**, *Pisa*, Centro di Ricerca Ennio de Giorgi, Pisa, Italy

Sep 10, 2021 Workshop in Calculus of Variation. I have had also the chance to give a talk.

### PDEs and continuum mechanics

Jul 21, 2021 **Conference**, *Varese*, Riemann International School of Mathematics (RISM), Villa

Jul 23, 2021 Toeplitz Via G.B. Vico, 46 21100 Varese VA, Trento, Italy

Conference in PDEs. I have had also the honor to present a poster in the Poster session.

### XXX National conference in Calculus of Variation

Feb 03, 2020 **Conference**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7,

Feb 07, 2020 38056 (Tn), Trento, Italy

Conference on calculus of variation organized by CIRM.

### Calculus of variation and applications

Jan 27, 2020 **Conference**, *Trieste*, Scuola Internazionale di Studi Superiori Avanzati (SISSA)

Feb 02, 2020 An International Conference to celebrate Gianni Dal Maso's 65th Birthday.

### Geometric Measure Theory and Applications: From Geometric Analysis to Free Boundary Problems

Sep 02, 2019 **Summer school**, *Cetraro*, International Mathematical Summer Center, Cosenza,

Sep 06, 2019 Italy

Summer school in geometric measure theory.

### XXIX National conference in Calculus of Variation

Feb 04, 2019 **Conference**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7,

Feb 08, 2019 38056 (Tn), Trento, Italy

Conference on calculus of variation organized by CIRM. I have had also the chance to give a short talk.



### [Oberwolfach - Emergence of Structures in Particle Systems: Mechanics, Analysis and Computation](#)

Oct 28, 2018 **Workshop**, *Oberwolfach, (GE)*, MFO, Oberwolfach Research Institute for Mathematics,  
Nov 2, 2018 Workshop in materials science. Only invited participants were allowed.

### [BANFF - Topics in the Calculus of Variations: Recent Advances and New Trends](#)

May 20, 2018 **Workshop**, *Alberta(Canada)*, Banff international research station, Alberta, Canada,  
May 25, 2018 Workshop on Calculus of variation held at the international research station in Banff.  
I have had also the honor to be a speaker

### [Topics in Applied Analysis and Optimisation](#)

Dec 6, 2017 **Conference**, *Lisbon (PO)*, Centro de Matemática, Aplicações Fundamentais e Investiga-  
Dec 8, 2017 tação Operacional, The event presented and discussed the main scientific interests  
among the research groups of the Weierstrass Institute in Berlin and mathematics  
centres in Portugal

### [A Mathematical Tribute to Ennio De Giorgi](#)

Sep 19, 2016 **Conference**, *Pisa (IT)*, Centro di ricerca Ennio De Giorgi, Palazzo dei congressi, Via  
Sep 23, 2016 Giacomo Matteotti 1, Pisa(Pi), On the occasion of the vigintennial of Ennio De Giorgi's  
departure, the meeting gathers many generations of mathematicians and aims at the  
presentation of the most recent advances in the many research fields marked by De  
Giorgi's contributions

### [New Frontiers in Nonlinear Analysis for Materials](#)

Jun 2, 2016 **Summer school**, *Pittsburgh (PA)*, Center for Nonlinear Analysis, Carnegie Mellon  
Jun 10, 2016 University, 5000 Forbes Avenue, Pittsburgh (PA), USA  
PIRE-CNA 2016 Summer school

### [New challenge for the calculus of variation stemming for problems in the materials science and image processing](#)

May 16, 2016 **Workshop**, *Montréal, Quebec (CA)*, Centre de recherches mathématiques (CRM),  
May 20, 2016 Université de Montréal, PO Box 6128, Station Centre-ville, Montréal  
Workshop in honor of the 60th birthday of Irene Fonseca

### [Micro structure Evolution in Materials: Defects, Cracks & Interfaces](#)

Apr 11, 2016 **Workshop**, *Leiden (NE)*, University of Leiden, Lorentz center, 3rd Floor Oort Building,  
Apr 15, 2016 Niels Bohrweg, Leiden (NE)  
Workshop on materials science.

### [Mathematics and Mechanics in the 22nd Century: Seven Decades and Counting](#)

Oct 23, 2016 **Workshop**, *Eugene (OR)*, Valley River Inn Hotel, Eugene (OR), US  
Oct 25, 2016 IMA Special Workshop in honor of the 90th birthday of Jerry Ericksen.)

### [Analysis of partial differential equations](#)

Dec 07, 2015 **Conference**, *Phoenix (AR)*, Double tree resort Hilton, Paradise Valley, Scottsdale,  
Dec 10, 2015 Phoenix (AR), US  
SIAM Conference.

### [XXV National conference in Calculus of Variation](#)

Feb 02, 2015 **Conference**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7,  
Feb 06, 2015 38056 (Tn), Trento, Italy  
Conference on calculus of variation organized by CIRM.

## XXIV National conference in Calculus of Variation

Jan 26, 2014 **Conference**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7,  
Jan 31, 2014 38056 (Tn), Trento, Italy  
Conference on calculus of variation organized by CIRM.

## School and workshop on "geometric measure theory and optimal transport"

Jul 15, 2014 **School and workshop**, *ICTP*, Strada costiera 11, 3415 (Ts), Trieste, Italy  
Aug 03, 2014 The main topics of the school were the optimal transport theory and the theory of currents. The mini course on "optimal transport theory" were taught by Alessio Figalli and Guido De Philippis. As far as the course "theory of currents" is concerned the teachers were Camillo De Lellis and Emanuele Spadaro. At the end of the school I attend a one-week conference on these fields.

## Convexit  cach e en  quations aux d riv es partielles non-lin aires

May 14, 2013 **Lectures series**, *Universit  catholique de Louvain*, Institut de recherche en  
May 16, 2013 math matique et physique, Louvain La Neuve, Belgium  
Course on optimal transport.

## XXIII National conference in Calculus of Variation

Feb 3, 2013 **Conference**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7,  
Feb 8, 2013 38056 (Tn), Trento, Italy  
Conference on calculus of variation organized by CIRM.

## International Conference on Fluids And Variational Methods

Jan 28, 2013 **Conference**, *University of Leipzig*, Felix-Klein-H rsaal, Room 501, Paulinum, Univer-  
Feb 1, 2013 sity of Leipzig, Universit tsstra e 1, 04109, Leipzig, Germany  
Conference on variational methods in fluids dynamics.

## XXII National conference in Calculus of variation

Feb 5, 2012 **Conference**, *Levico Terme*, Bellavista Relax Hotel, Viale Vittorio Emanuele III 7,  
Feb 10, 2012 38056 (Tn), Trento, Italy  
Conference on calculus of variation organized by CIRM.

## Summer School

Jul 31, 2011 **School**, *Universit  degli studi di Perugia*, Via Vanvitelli 1, 06123, Perugia, Italy  
Sept 2, 2011 In August 2011 I attended the "SMI", (Scuola Matematica interuniversitaria) in Perugia. I attended two lectures in analysis named Partial Differential Equation (given by prof. Pagani, Carlo and Johnson, Russell) and Functional Analysis (given by prof. Milmann, Vitali and Eidelman, Yuli)

## International Modeling Week

June 14, 2010 **School and workshop**, *Universidad Complutense de Madrid*, Plaza de Ciencias, 3  
Ciudad Universitaria 28040, Madrid, Spain  
June 22, 2010 In June 2010 I attended the "International Modeling Week" in Madrid offered by the Universidad Complutense de Madrid through a scholarship. The work, named "Calibration of single-factor HJM models of interest rates", was about a mathematical-economic model. Supervisors: Prof. Gerardo Oleaga (*UCM*), Miguel Carillon Alvarez (*Banco Santander*).

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## Upcoming events

Aug, 2023 **Contributrion in a minisymposia**, *ICIAM conference*, Tokyo, Japan  
Minisimposya: "Geometric methods in machine learning and data analysis"

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## Languages

English - (comparable to) C1 level  
writing

English - (comparable to) C1 level  
speaking

French - beginner  
writing

French - (comparable to) A1 level  
speaking

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## Programming languages

C++ Sufficient  
Mat lab Good  
ASM Sufficient

January 3, 2024

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