

# Raffaele Grande

## Education

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- **January 2017 - December 2021** *PhD diploma at Cardiff University*  
Supervisor: Prof. Federica Dragoni and Prof. Nicolas Dirr
- **September 2014 - July 2016** *Master in Mathematics at Università del Salento*  
Supervisors: Prof. Diego Pallara and Prof. Enrico Valdinoci (WIAS institute - University of Western Australia)
- **September 2011 - July 2014** *Bachelor degree in Mathematics at Università del Salento*  
Supervisor: Prof. Diego Pallara

## Organiser

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- **April 2022** *1-day workshop on Calculus of Variations and Nonlinear PDEs.* Cardiff

## Experience

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- **February 2023 - present** *Postdoctoral researcher at UTIA (research institute affiliated to Czech Academy of Sciences), Prague*
- **March 2022 - January 2023** *Research associate at University of Bristol*
- **September 2021 - February 2022** *Research associate at Cardiff University - Founded by EPSRC*

## Publication list

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- N. Dirr, F. Dragoni, R. Grande. *Asymptotics for optimal controls for horizontal mean curvature flow*, *Nonlinear Analysis*, vol 202, 2021
- R. Grande. *Stochastic representation for viscosity solution of level set equation for approximated Riemannian mean curvature flow*, *Nonlinear Differential Equations and Applications*, vol 29, 2022
- G.Chiriatti, M.Fasiello, R.Grande, E.Pascali. *Self referred equations with an integral boundary condition*. Preprint, 2024, doi: 10.13140/RG.2.2.15455.84644/1 (paper on Researchgate)
- G.Citti, F.Dragon, N.Dirr, R. Grande, A.Sarti. *Horizontal mean curvature flow and its asymptotic rescaling in the Heisenberg group*. Ready for submission
- F. Dragon, R. Grande. *Riemannian approximation for horizontal mean curvature flow: a stochastic approach*. Preprint in preparation
- R.Grande, S.Kroemer, M.Kruzik, G.Tommasetti, *Homogenization of elastic materials with rigid magnetic inclusions*. Preprint in preparation
- G.Di Fratta, R.Grande, V. Slastikov. *The magnetization of a material and its evolution by mean curvature flow*. Work in progress

Name: Raffaele Grande  
Nationality: Italian  
DOB: 14/02/1993  
Telephone:  
+393341553227  
Personal email:  
raffaele.grande@live.it

Affiliation: Ústav teorie  
informace a automatizace  
(Czech Academy of  
Sciences)

Office address: Pod  
Vodárenskou věží 1143,  
Praha

ORCID: 0000-0002-8896-  
8563

WoS Number: GPP-  
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Scopus: [https://www.scopus.com/  
authid/detail.uri?authorId  
=57218511532](https://www.scopus.com/authid/detail.uri?authorId=57218511532)

Research interests:

- Nonlinear PDEs
- Geometric evolutions
- Stochastic optimal control
- Magnetoelasticity

## Research visits \_\_\_\_\_

- **November 2023** Visiting at Padova, University of Padova, with prof. Annalisa Cesaroni
- **May 2022** Visiting at Naples, University of Naples “Federico II”, with Prof. Giovanni di Fratta
- **March 2019** Visiting at Paris, Centre d’analyse et de mathématique sociales, with Prof. Alessandro Sarti for research project
- **June 2018** Visiting at Paris Dauphine with Prof. Pierre Cardaileguet for research project
- **March 2016 - May 2016** Visiting at Weierstrass institute with Prof. Enrico Valdinoci for research master thesis

## Selected talks and posters \_\_\_\_\_

- **November 2023** *Stochastic control problems and evolution by horizontal mean curvature flow* - Padova
- **July 2023** *Stochastic control problems and evolution by horizontal mean curvature flow* - Cardiff University
- **March 2023** *Stochastic control problems and evolution by horizontal mean curvature flow* - Utia - Prague
- **November 2022** *Mean curvature flow and ferromagnetic materials* - Cardiff University
- **May 2021** *Convergence results for horizontal mean curvature flow and related stochastic controlled dynamics* - University of Jyväskylä - Online talk
- **April 2021** *Stochastic control problems and evolution by horizontal mean curvature flow* - British Mathematical Colloquium - Online talk
- **November 2020** *Convergence results for horizontal mean curvature flow and related stochastic controlled dynamics* - Cardiff University - Talk
- **May 2019** *Horizontal mean curvature flow and mean field equation in  $\mathbb{H}^1$*  - TU Dresden - Dresden (Germany) - Talk
- **June 2018** *An introduction to Horizontal Mean Curvature Flow* - SIAM student chapter conference - Bath University - Poster

## Teaching experience \_\_\_\_\_

- **October 2022 - December 2022** Exercises classes for the module “Analysis 1” - Year 1, University of Bristol
- **October 2019 - December 2019** Exercises classes for the module “Foundations of mathematics 1” - Year 1, Cardiff University
- **October 2018 - December 2018** Exercises classes for the module “Foundations of mathematics 1” - Year 1, Cardiff University
- **August 2018** Marking of the exam “Foundation of mathematics 2”, Cardiff University
- **February 2018-April 2018** Exercises classes for the module “Elementary differential equations” - Year 1, Cardiff University

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