

# Raffaele Grande

## Education

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- **January 2017 - June 2021** *PhD student at Cardiff University*  
Supervisor: Dr. Federica Dragoni
- **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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- **September 2021 - February 2022** *Research associate at Cardiff University - Founded by EPSRC*
- **March 2022 - January 2023** *Research associate at University of Bristol*
- **February 2023 - present** *Postdoctoral researcher at UTIA (research institute affiliated to Czech Academy of Sciences), Prague*

## 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
- F. Dragoni, R. Grande. *Optimal control approach to Riemannian approximation for the horizontal mean curvature flow*. Preprint in preparation
- F. Dragoni, R. Grande. *Riemannian approximation for horizontal mean curvature flow: a stochastic approach*. Preprint in preparation
- N. Dirr, R. Grande. *Horizontal mean curvature flow and its asymptotic rescaling in the Heisenberg group*. 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

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Research interests:

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

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

- **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

## Talks and Posters \_\_\_\_\_

- **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
- **November 2021** - *Stochastic control problems and evolution by horizontal mean curvature flow* - Università di Padova - Online Talk
- **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
- **May 2018** *An introduction to Horizontal Mean Curvature Flow* - Welsh mathematics colloquium, Gregynog - Talk

## 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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