

## Current position

2022- **Postdoc**, *Max Planck Institute für Mathematik in den Naturwissenschaften in Leipzig*, in Felix Otto's research group.

## Previous position

2019-2022 **PhD in mathematics**, *Université Savoie Mont Blanc et Università degli Studi di Brescia*, with Dorin Bucur and Alessandro Giacomini.

Subject: *Free discontinuity problems of Robin type*.

## Preprints

- 2022 A free discontinuity approach to optimal profiles in Stokes flows, avec Dorin Bucur, Antonin Chambolle, Alessandro Giacomini, Mickaël Nahon.
- 2022 Sharp inequalities for Neumann eigenvalues on the sphere, avec Dorin Bucur et Eloi Martinet.
- 2022 Boundary behaviour of Robin problems in non-smooth domains, with Dorin Bucur, Alessandro Giacomini.
- 2021 Stability of isoperimetric inequalities for Laplace eigenvalues on surfaces, avec Mikhail Karpukhin, Iosif Polterovich, Daniel Stern.

## Papers

- 2022 Shape optimization of a thermal insulation problem, Dorin Bucur, Carlo Nitsch, Mickaël Nahon, Cristina Trombetti, *Calc. Var. Partial Differential Equations*, 61 (2022), no. 5, Paper No. 186.
- 2022 Existence and regularity of optimal shapes for spectral functionals with Robin boundary, *Journal of Differential Equations*, 2022, vol. 335, p. 69-102.
- 2021 Degenerate free discontinuity problems and spectral inequalities in quantitative form, Dorin Bucur, Alessandro Giacomini, Mickaël Nahon, *Arch. Ration. Mech. Anal.* Volume 242, Number 1, 2021, Pages 453–483.
- 2020 Stability and instability issues of the Weinstock inequality, Dorin Bucur, Mickaël Nahon, *Transactions of the American Math. Soc.* Volume 374, Number 3, March 2021, Pages 2201-2223.
- 2020 A new continuum theory for incompressible swelling materials, Pierre Degond, Marina A. Ferreira, Sara Merino-Aceituno, Mickaël Nahon, *Multiscale Model. Simul.* 18 (2020), no. 1, 163–197.

## Conferences and talks

- 2022 **Spectral geometry in the clouds**.
- 2022 **Séminaire d'analyse**, Institut de mathématiques de Toulouse.
- 2022 **Séminaire d'analyse**, Institut de mathématiques de Bordeaux.
- 2022 **Workshop -Regularity Theory for Free Boundary and Geometric Variational Problems II**, Università di Pisa.
- 2022 **Conference on Calculus of Variations in Lille - 3rd edition**.
- 2022 **45eme Congrès National d'Analyse Numérique - CANUM 2020**.
- 2022 **Seminar of the Jean Kuntzmann Laboratory**.
- 2022 **Séminaire Compréhensible - Institut Fourier**.
- 2022 **Journée de l'ANR SHAPO at Autrans**.
- 2021 **Rencontre en Calcul des variations GDR CALVA & ANR SHAPO at Nancy**.
- 2021 **Spectral geometry in the clouds**.
- 2021 **Rencontres doctorales Lebesgue 2020**.
- 2021 **ANR SHAPO virtual seminar**.
- 2020 **Phd Students Seminar**, Université Savoie Mont Blanc.

2019 **EDPs<sup>2</sup> discussion group**, Université Savoie Mont Blanc.

2017 **Séminaire de la détente mathématique**, Maison des mathématiques et de l'informatique de Lyon.

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## Intershships

2019 **Problems in nonlocal minimal surfaces**, *Université Claude Bernard Lyon 1*, Study of the minimization of non-local functionals, under the direction of Olivier Druet.

2017 **Tumor growth without Darcy's law**, *Imperial College London*, Development and analysis of a new model of swelling cellular tissues that does not use Darcy's law of flow through porous medium, under the direction of Pierre Degond and Sara Merino Aceituno.

2016 **Curvature of manifolds and global topological consequences**, *Institut Élie Cartan de Lorraine*, Study of the theory of Riemannian manifold under the angle of the interaction between different notions of curvature and global topology, under the direction of Damien Mégy.

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## Teaching experience

2020-2021 Teaching activities at Université Savoie Mont Blanc; general mathematics in first year, numerical method in fourth year, algebra and geometry in M1 MEEF (preparation for CAPES).

2019-2020 Teaching activities at Université Savoie Mont Blanc; general mathematics in first year, numerical method in second year, algebra and geometry in M1 MEEF (preparation for CAPES).

2018 Tutoring of undergrads students, oral examinations in second year at lycée La Martinière Monplaisir in Lyon.

2015-2018 Volunteer weekly tutoring with the association ENSeigner at the ENS de Lyon, at high school level.

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## Education

2018 **Agrégation externe de mathématiques**, *A national examination for civil service in the French public education system*, Numerical Science option.  
*Ranked 1<sup>st</sup> among 1529 candidates.*

2015–2019 **Licence 3 de mathématiques, Master de mathématiques avancées et Master FEADÉP**, *École Normale Supérieure de Lyon.*  
*Equivalent to a mathematics B.Sc. and M.Sc.*

2013–2015 **Classe Préparatoire aux Grandes Écoles**, *Lycée Michel de Montaigne, Bordeaux.*  
*Two-year preparation for the entrance exams of the Grandes Ecoles*