

Current 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 Boundary behaviour of Robin problems in non-smooth domains, with Dorin Bucur, Alessandro Giacomini, Mickaël Nahon.
2021 Stability of isoperimetric inequalities for Laplace eigenvalues on surfaces, with Mikhail Karpukhin, Iosif Polterovich, Daniel Stern.

Papers

- 2022 Shape optimization of a thermal insulation problem, with Dorin Bucur, Carlo Nitsch, Cristina Trombetti, accepted in *Calculus of Variations and Partial Differential Equations*.
2022 Existence and regularity of optimal shapes for spectral functionals with Robin boundary conditions, accepted in *Journal of Differential Equations*.
2021 Degenerate free discontinuity problems and spectral inequalities in quantitative form, with Dorin Bucur, Alessandro Giacomini, Mickaël Nahon, published in *Arch. Ration. Mech. Anal.*, 242(1):453–483, 2021.
2020 Stability and instability issues of the Weinstock inequality, with Dorin Bucur, Mickaël Nahon, published in *Transactions of the American Math. Soc.* Volume 374, Number 3, March 2021, Pages 2201-2223.
2020 A new continuum theory for incompressible swelling materials, with Pierre Degond, Marina A. Ferreira, Sara Merino-Aceituno, Mickaël Nahon, published in *Multiscale Modeling and Simulation*, 2020, Vol. 18, No. 1 : pp. 163-197

In preparation

- 2022 Shape optimization in Stokes fluids, with Dorin Bucur, Antonin Chambolle, Alessandro Giacomini, Mickaël Nahon.
2022 Regularity of a free boundary problem with transmission conditions, with Bozhidar Velichkov.

Conferences and talks

- 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 **EDPs² discussion group**, Université Savoie Mont Blanc.
2017 **Séminaire de la détente mathématique**, Maison des mathématiques et de l'informatique de Lyon.

Internships

- 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.

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

Education

- 2018 **Agrégation externe de mathématiques**, *A national examination for civil service in the French public education system*, Numerical Science option.
Ranked 1st 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