

Elise BONHOMME

Département de Mathématique, CP 214
Office: NO, 7th floor, room 2NO7.203
Université Libre de Bruxelles
Boulevard du Triomphe
1050 Bruxelles, Belgium

Born on September, 04, 1996
Châtenay-Malabry, France
elise.bonhomme@universite-paris-saclay.fr
elise.bonhomme@ulb.be
06.33.00.98.43

<https://www.imo.universite-paris-saclay.fr/fr/perso/elise-bonhomme/>

EDUCATION

2023-Currently: Postdoctoral position at the Université Libre de Bruxelles (Belgium), supervised by Prof. A. Gloria and M. Duerinckx.

2020-2023: Ph.D student at the Laboratoire de Mathématiques d'Orsay, Université Paris-Saclay

« *Variational methods applied to discrete and evolutionary brittle damage models* », supervised by Prof. J-F. Babadjian.

Defense on the 8th of November. Rapporteurs: A. Garroni, A. Gloria.

Jury members: J.-F. Babadjian, B. Buet, A. Chambolle, A. Garroni, F. Iurlano, B. Merlet.

2020: Master's Degree in Mathematics: Analyse Modélisation Simulation, Université Paris-Saclay, High honours

2019: Agrégation externe de Mathématiques: selective teaching contest in the French educational system, national rank: 13

Master Degree "Formation à l'enseignement supérieur en Mathématiques", Université Paris-Saclay, Honours

2017: Bachelor's Degree in Fundamental and Applied Mathematics, Université Paris-Saclay, Honours

SCHOLARSHIPS

2020-2023: MESRI ministerial doctoral allowance,

2017, 2020: Master's merit scholarships,
granted by the Fondation Mathématique Jacques Hadamard

RESEARCH ACTIVITIES

Research interests:

- Calculus of Variations, Differential Partial Equations, Geometric Measure Theory
- Applications to Continuum Mechanics: linear elasticity, homogenization, brittle damage, fracture, plasticity, free discontinuity problems.

Articles:

- J.-F. Babadjian, E. Bonhomme: **Discrete approximation of the Griffith functional by adaptive finite elements** - Preprint February 2022, arXiv:2202.12152v1, accepted in SIAM Journal on Mathematical Analysis.
- E. Bonhomme: **Perfect plasticity versus damage: an unstable interaction between irreversibility and Γ -convergence through variational evolutions**, Preprint June 2023, arXiv:2306.08452, Submitted.

Presentations:

Previous Talks:

- September 2023: **Séminaire au GT CalVa** - Paris-Cité
- June 2023: **Geometrical trends in Applied Analysis** - Mulhouse
- May 2023: **Congrès National SMAI 2023, LAMIA** - Le Gosier
- April 2023: **Compensated Compactness and Applications to Materials**, BIRS Workshop - Banff

- December 2022: **Jeunes Mathématiciens en Géométrie et Analyse** - Mulhouse
- November 2022: **Inauguration de la Fédération de Mathématiques de CentraleSupélec** - Gif-sur-Yvette
- July 2022: **Conference on Calculus of Variations in Lille, 3rd edition** - Laboratoire Paul Painlevé, Lille
- June 2022: **45ème Congrès National d'Analyse Numérique, CANUM 2020** - Evian-les-Bains
- April 2022: **Séminaire du Groupe de Travail des Thésards du LJLL** - LJLL, Jussieu
- December 2021: **Séminaire des Doctorants ANEDP/ANH d'Orsay** - LMO, Université Paris-Saclay
- December 2021: **Rencontre en Calcul des Variations à Nancy** - Université de Lorraine

Futur Talks:

- October 2023: **Journée de rentrée de l'EDMH**, IHES - Orsay
- October 2023: **Séminaire EDP**, Institut Élie Cartan de Lorraine - Nancy
- November 2023: **Séminaire d'Analyse**, Université catholique de Louvain - Louvain-la-Neuve
- December 2023: **New perspective on Shape and Topology Optimization**, ESI workshop - Viennes
- December 2023: **BMS Young Scholar Day**, ULB - Bruxelles

WORK GROUP

Between 2021 and 2023, I co-organized a work group of Calculus of Variations, between the universities of Paris-Saclay, Paris-Cité and Paris-Dauphine.
(<https://indico.math.cnrs.fr/category/424/>)

Co-organization of the **Journée de rentrée 2023 du GT CalVa** at Université Paris-Cité, on Monday the 16th of January, for a day of talks on different topics in Calculus of Variations.

Co-organization of the event **Journée de fin d'année du GT CalVa** at the LMO, on Monday the 20th of June, for a day of talks on various topics in Calculus of Variations.

TEACHING (2020-2023)

Tutorials at the Laboratoire de Mathématiques d'Orsay, Université Paris-Saclay (64h/year):

- Differential Calculus and Optimization, 3rd year Bachelor students
- Analysis for Physicists, 2nd year Bachelor students

Creation of tutorials' contents, homeworks, interrogations and exams subjects - corrections - tutoring sessions.

DIVERSE

Computer Skills
Languages

Python
English (Fluent), French (Native)