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## Education

- 10/2021- **PhD candidate**, *Linear Monge-Kantorovich Problem on the Line and Markov Transformation of Gaussian Processes*, supervised by Nicolas Juillet and Augustin Fruchard  
Université de Haute-Alsace, Mulhouse (France)
- 2021 **Master degree in probability**  
UFR de Mathématique et d'Informatique, Strasbourg (France)
- 2019 **Agrégation de Mathématiques (option A)**, *National competitive examination for mathematics teaching (secondary and university level)*  
UFR de Mathématique et d'Informatique, Strasbourg (France)
- 2014-2017 **Bachelor of Science in Mathematics**  
UFR de Mathématique et d'Informatique, Strasbourg (France)
- 2014 **Baccalauréat Scientifique, with AbiBac option**, *joint French and German High-school degree (Baccalauréat and Abitur)*  
Lycée Leclerc, Saverne (France)

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## Preprints

- Preprint 2. **A. Ley** *Decomposition of optimal transports and entropic regularization for the  $L^1$  Monge-Kantorovich problem on the real line*, <https://hal.science/hal-05051713v1>
- Preprint 1. **A. Ley** *On the Markov transformation of Gaussian processes*, <https://hal.science/hal-04724163v1> (submitted)

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## Scientific Presentations (with talk)

### Conferences

- 01/2024 **Opening conference (home affiliation)**, *Decomposition for the  $L^1$  transport problem on the real line*, opening conference of the ANR project SOCOT  
Gunsbach (France)
- 09/2023 **Conference**, *Decomposition of optimal transport plan for the distance cost on the real line*, New Monge Problems and Applications  
Université Gustave Eiffel, Paris (France)

### Seminars

- 06/2025 **Internal seminar**, *Décomposition des plans de transport optimaux et sélection entropique pour le problème de Monge-Kantorovich linéaire sur la droite*, Stochastic calculus seminar of the IRMA institute  
Strasbourg (France)
- 05/2025 **Invited seminar**, *Decomposition of optimal transport plans and entropic selection problem for the  $L^1$  Monge-Kantorovich problem on the real line*, Seminar of the Mathematical Finance and Probability Theory Group  
Vienna (Austria)
- 01/2025 **Invited seminar**, *A brief introduction to Free Probability and Optimal Transport*, Noncommutative Geometry and Topology Group  
Prague (Czech Republic)\*

- 06/2023 **Internal seminar**, *A brief introduction to optimal transport*, IRIMAS seminar  
University of Haute-Alsace, Mulhouse (France)
- [Young researcher events](#)
- 06/2023 **Young researcher seminar**, *A structure result for solutions to an optimal transport problem*, MAThEOR Days (annual meeting of young researchers from Strasbourg and Mulhouse)  
Sewen (France)
- 05/2023 **PhD seminar**, *A gentle introduction to entropic optimal transport*, Centre for Mathematical Sciences  
Lund (Sweden)
- 12/2022 **PhD seminar**, *A brief introduction to entropic optimal transport*, *Insalate di Matematica*  
University of Milano-Bicocca, Milan (Italy)\*
- 06/2022 **PhD seminar**, *Entropic optimal transport*, IRMA  
Strasbourg (France)
- 04/2022 **PhD seminar**, *An introduction to entropic optimal transport*, IRIMAS  
University of Haute-Alsace, Mulhouse (France)
- [Working Group](#)
- 2021–2023 **Working group**, *Optimal transport working group (7 presentations on various topics)*  
University of Haute-Alsace, Mulhouse (France)

\* Presentation held online

## Participation in conferences and research schools (without a talk)

- 11/2024 **Workshop**, *Young Mathematicians in Geometry and Analysis*, 2 days  
Université de Haute-Alsace, Mulhouse (France)
- 09/2024 **Workshop** in Calculus of Variations, 5 days.  
Haussdorf Center für Mathematik, Bonn (Germany)
- 06/2024 **Colloquium**, *GDR Calva meeting*, workshop in Calculus of Variations, 5 days  
Polytech Lille, Lille (France)
- 06/2023 **Workshop**, *Young Mathematicians in Geometry and Analysis*, 2 days  
Universität Freiburg, Freiburg (Germany)
- 12/2022 **Workshop**, *Young Mathematicians in Geometry and Analysis*, 2 days  
Université de Haute-Alsace, Mulhouse (France)
- 07/2022 **Summer school**, *Transport in Physics, Biology and Urban traffic*, CEMRACS (1 week)  
Centre International de Rencontres Mathématiques (CIRM), Luminy (France)
- 06/2022 **Summer school**, *PIMS- IFDS- NSF Summer School on Optimal Transport*, 10 days  
University of Washington, Seattle (USA)
- 05/2022 **Seminar**, *Journées de probabilités 2022*, one week  
VVF d'Orbey (France)
- 03/2022 **Conference**, *Les sciences dans tous les sens : sœurs jumelles ou sœurs ennemies ?*  
Université de Haute-Alsace, Mulhouse (France)
- 01/2022 **Masterclass**, *Maths+Econ+Code*, one week of lectures on applications of optimal transport in economy (with coding)\*
- 12/2021 **Colloquium**, *GDR Calva meeting*, workshop in Calculus of Variations, 3 days  
Institut Elie Cartan de Lorraine (IECL), Nancy (France)

- 11/2021 **Conference**, *Schrödinger Problem and Mean-field PDE Systems: Computational and Theoretical Advances*, one week  
Centre International de Rencontres Mathématiques (CIRM), Luminy (France)

\* Presentation followed online

## Teaching experience

- Spring 2025 **Recitation in differential equation**,  $2 \times 36h$ , Third year of Bachelor in mathematics (CAPES and degree in applied mathematics)
- Spring 2025 **Recitation in statistics (with Minitab)**,  $2 \times 22h$ , Third year of Bachelor in biology
- Fall 2024 **Recitation in statistic and R software**,  $1 \times 36h$ , Third year of Bachelor for a teaching degree in mathematics (CAPES)
- Fall 2024 **Recitation in statistic and R software**,  $4 \times 12h$ , Third year of bachelor in Computer Science
- Spring 2023-  
Spring 2024 **Lecturer in probability**,  $2 \times 22h$ , Second year of Engineering School and selective bachelor promotion (ENSCMU and L2 renfort)
- Spring 2022-  
Spring 2023 **Lecturer in differential calculus**,  $2 \times 28h$ , First year of Engineering School (ENSCMU in 2021 and ENSISA in 2022)
- Spring 2022-  
Spring 2023 **Recitations in probability and statistics**,  $2 \times 12h$ , Third year of Bachelor in chemistry and physics
- Fall 2021 **Recitations in probability**,  $2 \times 12h$ , First year of a two-year college course (B.U.T.)
- Fall 2021- Fall  
2022 **Recitations in probability (linear model)**,  $2 \times 12h$ , Fourth year of an Engineering degree (ENSISA)

## Additional Activities

### Administrative and Representative Roles

- 2022–2024 **Elected member**, *Research Committee of the University*  
University of Haute-Alsace, Mulhouse (France)
- 2022–2024 **Elected member**, *Board of the IRIMAS Laboratory*  
University of Haute-Alsace, Mulhouse (France)
- 2022–2024 **Elected member**, *Disciplinary Commission*  
University of Haute-Alsace, Mulhouse (France)

### Scientific Event Organization

- 07/2024 **Conference co-organizer**, *MAThEOR Days*, conference for PhD students and young researchers from Alsace and surroundings  
University of Haute-Alsace and University of Strasbourg, Sainte-Marie-aux-Mines (France)
- 06/2023 **Conference co-organizer**, *MAThEOR Days*, conference for PhD students and young researchers from Alsace and surroundings  
University of Haute-Alsace and University of Strasbourg, Sewen (France)
- 2021–2022 **Founder and organizer of a PhD seminar**, creation of a weekly interdisciplinary seminar associated with the IRIMAS laboratory

### Science Outreach

- 10/2023 **Public science event**, *Fête de la science*  
Mulhouse (France)
- 11/2022 **Public talk**, *Conférence mathématique*, on Magic Squares and the Hungarian algorithm (general audience)  
University of Haute-Alsace, Mulhouse (France)

- 2022–2023    **Math workshop**, *MATh.en.JEANS* (6 months)  
Middle School “Bel-Air”, Mulhouse (France)
- 06/2022    **Public event**, *Nuit des jeux mathématiques*, mathematical games for a general audience  
Fonderie, Mulhouse (France)
- 03/2022    **Math workshop**, 2-hour session in a primary school  
School “Les Lilas”, Cernay (France)

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## Technical skills and languages

Languages	<b>French (native), English (fluent), German (fluent)</b>
Programming and Software	<b>L<sup>A</sup>T<sub>E</sub>X, Python, Excel, R, Minitab.</b>