# Grégoire Szymanski

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## Education

**PhD under the supervision of M. Rosenbaum and M. Hoffmann** Oct. 2024
*Ecole Polytechnique, CMAP* *Palaiseau, France*

**Diplôme de l'ENS in Mathematics** Sept. 2021
*Ecole Normale Supérieure* *Paris, France*

**Master El Karoui – Master of Science in quantitative finance** Sept. 2020
*Sorbonne Universités* *Paris, France*

**Licence degree in Mathematics and computer science** Sept. 2018
*Ecole Normale Supérieure* *Paris, France*

## Academic positions

**Postdoc under the supervision of M. Podolskij** Sept. 2024 – Sept. 2027
*University of Luxembourg, Department of Mathematics* *Esch-sur-Alzette, Luxembourg*

**Graduate Student under the supervision of M. Rosenbaum and M. Hoffmann** Sept. 2021 – Sept. 2024
*Ecole Polytechnique, CMAP* *Palaiseau, France*

## Other Positions

**Consultant (freelance)** 2022 – 2024
*Various industrial projects* *Paris, France*

**Undergraduate Research Assistant** Feb. 2021 – Sept. 2021
*Ecole Polytechnique, CMAP* *Palaiseau, France*

**Quantitative analyst intern** June 2020 – Dec. 2020
*BNP Paribas* *London, UK*

**Research internship** Feb. 2019 – June 2019
*University of Helsinki* *Helsinki, Finland*

**Research internship** June 2017 – July 2017
*Paris Diderot* *Paris, France*

## Publications and preprints

1. Grégoire Szymanski (2024): Optimal estimation of the rough Hurst parameter in additive noise. **Stochastic Processes and their Applications**.
2. Carsten Chong, Marc Hoffmann, Yanghui Liu, Mathieu Rosenbaum and Grégoire Szymanski (2023): Statistical inference for rough volatility: Minimax Theory. **The Annals of Statistics**.
3. Carsten Chong, Marc Hoffmann, Yanghui Liu, Mathieu Rosenbaum and Grégoire Szymanski (2023): Statistical inference for rough volatility: Central limit theorems. **The Annals of Applied Probability**.
4. Bruno Durin, Mathieu Rosenbaum and Grégoire Szymanski (2023): The two square root laws of market impact and the role of sophisticated market participants. **Submitted for publication**.
5. Grégoire Szymanski and Tetsuya Takabatake (2023): Asymptotic Efficiency for Fractional Brownian Motion with general noise. **Submitted for publication**.
6. Raphael Maillet and Grégoire Szymanski (2024): Estimation of the invariant measure of a multidimensional diffusion from noisy observations. **Submitted for publication**.
7. Youssef Ouazzani Chahdi, Mathieu Rosenbaum and Grégoire Szymanski (2024): A theory of passive market impact. **Submitted for publication**.
8. Grégoire Szymanski and Wei Xu (2025): Mean-Field Limits for Nearly Unstable Hawkes Processes. **Submitted for publication**.

9. Youssef Ouazzani Chahdi, Nathan De Carvalho and Grégoire Szymanski (2026): Trading with market resistance and concave price impact. **Submitted for publication**.
10. Florian Bourgey, Mathieu Rosenbaum, Patrick Noble, Grégoire Szymanski and Ingi Petursson (2026): The Quadratic Rough Heston+ Model for Short-Dated Options. **Submitted for publication**.

## Seminar and Conference Presentations

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| **Ceremade Winter School**, Domaine de la Tour, Saint Pierre Canivet, France | Feb. 27 – March 04, 2022 |
| **Dynstoch 2022**, Institut Henri Poincaré, Paris, France | June 29 – July 1, 2022 |
| **StatMathAppli 2022**, La Villa Clythia, Fréjus, France | Aug. 29 – Sept. 2, 2022 |
| **Séminaire des jeunes chercheurs du Ceremade**, Université Paris Dauphine, Paris, France | Oct. 13, 2022 |
| **Groupe de travail des thésards du LPSM**, Jussieu, Paris, France | Nov. 7, 2022 |
| **Séminaire des doctorants du CMAP**, Ecole Polytechnique, Palaiseau, France | Feb. 22, 2023 |
| **Groupe de Travail du CERMICS**, École des Ponts, Palaiseau, France | May. 15, 2023 |
| **Workshop on modeling with Hawkes processes: Theory, Statistics and Applications**, Institute of Mathematics of the Polish Academy of Sciences, Warsaw, Poland | May 29 – June 2, 2023 |
| **Summer School on Big Data and Finance**, Centre Paul Langevin, Aussois, France | June 12 – June 16, 2023 |
| **ICIAM 2023**, Waseda University, Tokyo, Japan | Aug. 21 – Aug. 25, 2023 |
| **Seminar**, Beijing Institute of Technology, Beijing, China | Sept. 21, 2023 |
| **Séminaire des doctorants du CMAP**, Ecole Polytechnique, Palaiseau, France | Nov 22, 2023 |
| **Séminaire des doctorants du Ceremade**, Université Paris Dauphine, Paris, France | Nov 23, 2023 |
| **EFFI France-Japan seminar**, Le Mans Université, Le Mans, France | Dec. 5, 2023 |
| **Matinée recherche CFM**, Capital Fund Management, Paris, France | March 12, 2024 |
| **SMSA 2024**, TU Delft, Delft, Netherlands | March. 13 – March 15, 2024 |
| **Third year PhD students' Day**, Université Paris Dauphine, Paris, France | March 26, 2024 |
| **FinML Workshop**, Centre Paul Langevin, Aussois, France | Sept. 23 – Sept. 27, 2024 |
| **Prob&Stat Seminar**, University of Luxembourg, Esch-sur-Alzette, Luxembourg | Oct. 17, 2024 |
| **Luxembourg Workshop in Stochastic Analysis**, University of Luxembourg, Esch-sur-Alzette, Luxembourg | Feb. 12, 2025 |
| **SoFiE Conference**, ESSEC Campus of Cergy, Cergy, France | June 9 – June 12, 2025 |
| **SIAM Conference on Financial Mathematics and Engineering**, , Miami, FL, USA | July 15 – July 18, 2025 |
| **Mathematical Finance Seminar**, Columbia University, New York, NY, USA | Sept. 4, 2025 |
| **Young Researchers in Stochastic Analysis and Stochastic Geometric Analysis**, Bernoulli Center, EPFL, Lausanne, Switzerland | Sept. 23–26, 2025 |
| **IMS International Conference on Statistics and Data Science 2025**, , Sevilla, Spain | Dec 15-18, 2025 |
| **2nd Dolomites Winter School, Mean-field systems in finance, neurosciences and AI**, Centro Congressi - Folgarida and Madonna di Campiglio, Folgarida, Italy | Jan. 11-16, 2026 |
| **KCL mathematical finance seminar**, King's College London, London, UK | March 2, 2026 |
| **Séminaire sur les processus de Hawkes du LPSM**, Sorbonne Université, Paris, France | March 9, 2026 |

## Scientific Responsibilities

**Reviewer** Since 2022
*The Annals of Applied Probability, Quantitative Finance, SPA, and Electronic Journal of Statistics*

**Co-Organizer of the FinML Workshop - Mathematical Insights from Markets, Control, and Learning** 2024
*with Lorenzo Croissant and Antonio Ocello* *Aussois, France*

**Co-Organizer of the AMART Seminar - Applied Mathematics and Related Topics at the University of Luxembourg** 2025-2026
*with Lorenzo Cristofaro and Francesca Pistolato* *Esch-Sur-Alzette, Luxembourg*

## Teaching Experience

**Mathematics** (High School, TALENS section) 2018 – 2019
Lecture and Exercises, ENS

**How to write mathematics** (Bachelor $1^{st}$ year) 2021 – 2022
Lecture and Exercises, Ecole Polytechnique

**Processus stochastiques** (M2 Mathématiques pour les Sciences du Vivant) 2021 – 2022
Exercises, Ecole Polytechnique

**Probabilistic models in finance** (Master of Mathematics) Since 2024
Lecture and Exercises, University of Luxembourg

**Logiciels mathématiques** (Master of Mathematics) 2025
Lecture and Exercises, University of Luxembourg, Esch-sur-Alzette, Luxembourg

**Continuous Time Models in Mathematical Finance** (Master of Mathematics) Since 2025
Exercises, University of Luxembourg

**Bayesian statistics** (Master of Mathematics) Since 2025
Exercises, University of Luxembourg

## Students

**Master's students**
*Ilya Ilchenko, Attilio Pitelli, Anubhav Roy*

**Bachelor's students**
*Karel Moryoussef, Adan Fhima, Catia Alves Pires*

## Visiting

**University of Hiroshima** Aug – Sept. 2023
*Invited by* ***Tetsuya Takabatake*** *Hiroshima, Japan*

**Hong Kong University of Science and Technology** Sept. 2023
*Invited by* ***Carsten Chong*** *Hong Kong, China*

**Beijing Institute of Technology** Sept. 2023
*Invited by* ***Wei Xu*** *Liangxiang, China*