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*

Seminar and Conference Presentations

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

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, Netherland — 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, 2024

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**.

Working papers

1. Grégoire Szymanski, Tetsuya Takabatake (2024): Asymptotic Efficiency for Mixed Fractional Brownian Motion.
2. Timothée Fabre, Adele Ravagnani, Emmanouil Sfendourakis and Grégoire Szymanski (2025): Simulation of sparse limit order books using neural networks.
3. Carsten Chong, Marc Hoffmann, Mathieu Rosenbaum and Grégoire Szymanski (2025): Rough Volatility at the Microstructure Scale.

Scientific Responsibilities

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

Co-Organizer — 2024
FinML Workshop - Mathematical Insights from Markets, Control, and Learning — *Aussois, France*

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) 2024
Lecture and Exercises, University of Luxembourg

Logiciels mathématiques (Master of Mathematics) 2024
Lecture and Exercises, University of Luxembourg

Students

Karel Moryoussef 2024
Bachelor's project, Ecole Polytechnique *Palaiseau, France*

Adan Fhima 2025
Bachelor's thesis, University of Luxembourg *Esch-sur-Alzette, Luxembourg*

Karel Moryoussef 2025
Bachelor's thesis, University of Luxembourg *Esch-sur-Alzette, Luxembourg*

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*