

Mehdi Christian Talbi

Curriculum Vitae

Université Paris-Cité
Laboratoire de Probabilités, Statistiques et Modélisation
8 Place Aurélie Nemours, 75013 Paris, France
✉ mtalbi@lpsm.paris

Research interests

Stochastic control, mean field games, contract theory, deep learning, mathematical finance...

Experience

- 2023-present **Assistant professor (maître de conférences)**, Université Paris-Cité, Paris
- 2022-2023 **Postdoctoral researcher**, ETH Zürich, Zürich
- 2019-2022 **PhD student and teaching assistant**, École polytechnique, Palaiseau
- 2018 **Quantitative analyst intern**, BNP Paribas, London, six months off-cycle internship

Education

- 2019-2022 **PhD, Applied Mathematics**, Institut Polytechnique de Paris, Palaiseau
- 2015-2019 **“Élève-normalien” (recruited on competitive exam) at École Normale Supérieure Paris-Saclay**, ENS Paris-Saclay (formerly ENS Cachan), Cachan
- 2018 **MSc Probability and Finance, Applied Mathematics**, École polytechnique/Sorbonne université, Paris
- 2016 **BSc, Mathematics**, ENS Paris-Saclay and Université Paris-Diderot, Paris

Grants

- 2025 **Recipient of the PEPS JCJC (French national center for scientific research) funding**, Project “Optimal stopping and systems of interacting agent”, 6,000€

Academic visits

- May. 2025 **ETH Zürich, Zürich**, invited by Dylan Possamaï (FIM guest)
- Apr. 2025 **NYU Shanghai, Shanghai**, Invited by Mathieu Laurière
- Mar. 2025 **New York University, New York**, Invited by Nizar Touzi
- Feb. 2024 **ETH Zürich, Zürich**, invited by Dylan Possamaï
- Jul. 2023 **University of California, Berkeley, Berkeley**, invited by Thibaut Mastrolia
- 2018-2019 **University of Southern California, Los Angeles**, one year pre-doctoral research internship, part of my degree at ENS Paris-Saclay, Invited and supervised by Jianfeng Zhang

Scientific activities

Preprints

7. Khabou, M. & Talbi, M. Markov approximation for controlled Hawkes Jump-Diffusions with general kernels. *Preprint ArXiv:2507.11294* (2025).
6. Possamaï, D. & Talbi, M. Optimal control of Volterra-integral diffusions and application to contract theory. Available at: <https://mctalbi.github.io/> (2024).

Accepted papers

5. Possamaï, D. & Talbi, M. Mean field games of optimal stopping: master equation and weak equilibria. *Applied Mathematics and Optimization* (to appear).
4. Talbi, M. A finite-dimensional approximation for partial differential equations on Wasserstein space. *Stochastic Processes and their Applications* **177**, 104445 (2024).
3. Talbi, M., Touzi, N. & Zhang, J. From finite population optimal stopping to mean field optimal stopping. *Annals of Applied Probability* **34**, 4237–4267 (2024).
2. Talbi, M., Touzi, N. & Zhang, J. Viscosity solutions for obstacle problems on Wasserstein space. *SIAM Journal on Control and Optimization* **61**, 1712–1736 (2023).
1. Talbi, M., Touzi, N. & Zhang, J. Dynamic programming equation for the mean field optimal stopping problem. *SIAM Journal on Control and Optimization* **61**, 2140–2164 (2023).

Talks in international conferences and workshops

- Sep. 2025 Stochastic and Computational Finance, Lisbon, Portugal.
- Jul. 2025 SIAM Conference on Financial Mathematics and Engineering, Miami, United States.
- Apr. 2025 Workshop on Mean Field Games, Optimal Control, and Machine Learning, Shanghai, China.
- Aug. 2024 Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum, Germany.
- Jul. 2024 12th Bachelier World Congress, Rio de Janeiro, Brazil.
- Jun. 2024 BIRS workshop on New Trends and Challenges in Stochastic Differential Games, Kelowna, Canada.
- Jan. 2024 23rd annual Society for the Advancement of Economic Theory conference, Santiago, Chile.
- Aug. 2023 10th International Congress on Industrial and Applied Mathematics, Tokyo, Japan.
- Jun. 2023 11th General AMaMeF Conference, Bielefeld, Germany.
- Jun. 2023 SIAM Conference on Financial Mathematics and Engineering, Philadelphia, United States.
- May. 2023 BIRS workshop on Applications of Stochastic control to Economics and Finance, Banff, Canada.
- Apr. 2023 Workshop on Stochastic control and Risk, Hammamet, Tunisia.
- Mar. 2023 16th German Probability and Statistics Days, Essen, Germany.
- Jan. 2023 15th Bachelier colloquium in mathematical finance and stochastic calculus, Métabief, France.
- Jun. 2022 9th colloquium on BSDEs and mean field systems, Annecy, France.
- Aug. 2021 6th Berlin workshop for Young Researchers in mathematical finance, online.
- Jun. 2021 Summer school on Distributed Control: Decentralization and Incentives, Luminy, France.
- Sep. 2020 13th European Summer School in financial mathematics, Vienna, Austria.

Talks in seminars

- Dec. 2024 Probability seminar, École polytechnique, Palaiseau, France.
- Oct. 2024 Mathematical finance colloquium, University of Southern California, Los Angeles, United States.
- Aug. 2024 Financial mathematics seminar, UC Berkeley, Berkeley, United States.
- Apr. 2024 Financial mathematics seminar, Princeton University, Princeton, United States.
- Mar. 2024 GT Méthodes stochastiques et finances, Écoles des Ponts, Champs-sur-Marne, France.
- Feb. 2024 Seminar in financial and insurance mathematics, ETH Zürich, Zürich, Switzerland.
- Nov. 2023 Bachelier seminar, Institut Henri Poincaré, Paris, France.
- Oct. 2023 Seminar Mathrisk Inria-LPSM, Inria Paris, Paris, France.
- Jun. 2023 Mathematical finance seminar, Humboldt Universität, Berlin, Germany.
- Mar. 2023 LPSM financial and actuarial mathematics seminar, Sorbonne Université, Paris, France.
- Dec. 2022 Seminar in financial and insurance mathematics, ETH Zürich, Zürich, Switzerland.
- Jan. 2022 Seminar in financial & actuarial mathematics, University of Michigan, online.

Oct. 2021 PhD seminar in mathematical finance, Sorbonne Université, Paris, France.

Apr. 2021 GT Modèles stochastiques en finance, École polytechnique, Palaiseau, France.

Referee activities

Invited reviewer for: *Annals of Applied Probability*, *Annales de l'Institut Henri Poincaré*, *Applied Mathematics and Optimization*, *Journal of Optimization Theory and Applications*, *Transactions of the AMS*, *SIAM Journal on Control and Optimization*, *Stochastic Processes and their Applications*, *Mathematical Control and Related Fields*, *ESAIM: Control, Optimisation and Calculus of Variations*

Teaching activities

Classes

- 2024-present Stochastic control in finance (Université Paris-Cité, MSc) : lecturer.
- 2023-present Mathematical finance (Université Paris-Cité, MSc): teaching assistant.
- 2023-present Monte Carlo methods for finance (Université Paris-Cité, MSc): teaching assistant.
- 2023-present Actuarial science (Université Paris-Cité, MSc): teaching assistant.
- 2023-2024 Fundamental analysis and algebra (Université Paris-Cité, BSc): teaching assistant.
- 2022-2023 Mathematical finance and stochastic calculus (ETH Zürich, MSc): surrogate lecturer.
- 2020-2022 Introduction to Python (École polytechnique, MSc): teaching assistant.
- 2019-2022 Stochastic calculus in finance (École polytechnique, MSc): teaching assistant for Python sessions.
- 2019-2022 Introduction to statistics (École polytechnique, BSc): teaching assistant.

Supervised students

Supervision of the Bachelor theses (École polytechnique) of: Martin Ponchon (2020), Anaëlle Touré (2020), Diego Gomez (2021), Makram Loughman (2021), Reine Dayekh (2022), Ahmed Wakrim (2022).

Support classes

- 2016-2017 Support classes in mathematics and physics at Institut Villebon-Chapark, Université Paris-Sud.

Languages

- French** Mother tongue
- English** Full professional working proficiency
- German** Elementary proficiency

Programming skills

Mainly Python (including Tensorflow for deep learning methods), some notions in C++.