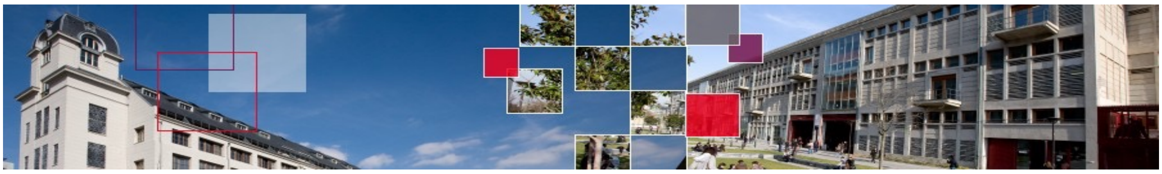

Université Paris Cité

MASTER 2nd year 2025-2026

M2MO Random modeling, Finance & Data science

UNIVERSITÉ PARIS 1 PANTHÉON SORBONNE

ENSAE IP PARIS · CentraleSupélec · MINES ParisTech · TELECOM ParisTech

Partner Institutions

FUNDAMENTAL COURSES

C. Labbé	**Stochastic calculus & diffusion models**	N. Cunéo	**Markov Chains**
C. Lévy-Leduc	**Data modeling & statistical inference**	A. Fischer	**Introduction to Machine learning**

GROUP QUANTITATIVE FINANCE

S. Crépey	**Fundamentals of derivatives modeling**
B. Bruder	**Financial products**
M. Talbi	**Stochastic control in finance**
O. Guéant	**Algorithmic trading**
B. Bruder	**Quantitative assets management**
S. Crépey	**Advanced derivatives modeling**
Z. Grbac	**Advanced interest rates modeling**
S. Crépey, M.C. Quenez, and B. Saadeddine	**Nonlinear methods in finance: BSDEs and XVA analysis**
Julien Guyon	**VIX derivatives and advanced calibration methods**

GROUP EMERGING MARKETS & TECHNOLOGIES

P. Gruet	**Energy markets**
P. Tankov, T. Roncalli	**Green finance**
L. Bertucci, M. Jeunesse	**Blockchain and decentralised finance**
A. Jacquier	**Quantum Computing in finance**

GROUP RISKS IN FINANCE

N. Frikha, B. Hassani	**Risks: regulation, measure & management**
J.D. Fermanian	**Copulas & financial applications**

GROUP COMPUTER SCIENCE

O. Carton	**C++**

GROUP NUMERICAL & COMPUTATIONAL METHODS

O. Guéant	**Monte Carlo methods**
O. Guéant	**Advanced probabilistic numerical methods in Finance**
Y. Achdou, O. Bokanowski	**PDE & numerical methods**

GROUP DATA SCIENCE

S. Clémençon	**Statistical learning**
G. Garrigos	**Optimization for learning**
C. Lévy-Leduc, L. Massoulard and M. Abdel-Sayed	**Data science projects**
A. Celisse	**Modern approaches for dimension reduction**
S. Delattre	**Reinforcement learning**
I. Giulini	**Deep learning**
B-E. Chérief Abdellatif	**Statistics in high dimension**

GROUP STATISTICS & MACHINE LEARNING IN FINANCE

J.M. Bardet	**Financial time series**
A. Gloter, A. Kebaier	**Statistics of processes for finance**
J.Y. Audibert	**Prediction & sequential investments**
E. Löcherbach	**Point processes & applications in finance**
H. Pham, J.D. Fermanian	**Machine learning for finance**

REQUIRED LEVEL : Master 1 with strong mathematical background, Engineering school

M2 MO

DIRECTORS: Stéphane CREPEY & Olivier GUEANT (Université Paris Cité), Eva LOCHERBACH (Paris 1)

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Université Paris Cité (ex Paris Diderot), UFR de Mathématiques, **Secretary Master 2**, 75205 PARIS CEDEX 13 Building Sophie Germain, Bureau 1011, 1er étage, Tél. 01 57 27 93 06, **courriel**: secretariat-m2mo@math.univ-paris-diderot.fr