Electronic Markets

ECTS : 3

Description du contenu de l'enseignement :

This course is a presentation of financial markets, trading mechanisms and their evolution dedicated to advancing the understanding and practice of electronic markets. A particular attention will be dedicated to optimal trading and execution technics but also on the use of algo trading strategies by market participants (who do what).

Session 1: Definitions, Evolution of financial markets & regulation, Traders/investors and algo trading businesses (Execution, Market Making, Investing)

Session 2: Algorithms type, objectives, uses and users

Session 3: Orders, strategies, trading platforms and smart orders rooters

Session 4: Tradinc Cost (TCA) and Performance Analyses

Session 5: Using algos for investing and market making

Session 6: Introduction to execution Algo + Around the Almgren-Chriss model

Session 7: Dynamic programming and trading strategies

Session 8: Limit order book and market making

Session 9: Reinforcement learning and beyond

Compétence à acquérir :

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Mode de contrôle des connaissances :

Group project: report + defense (individual evaluation)

Bibliographie, lectures recommandées :

- Almgren R. and N. Chriss. Optimal execution of portfolio transactions. Journal of Risk, 3(2):5–39, 2000.
- Bacidore, J. R., 2020, Algorithmic Trading Method: A practitioner's guide, TBG Press New York, 229 pages.
- Chan E., Algorithmic Trading- Winning Strategies and Their Rationale, Wiley, 2013, 207 pages.
- Guéant O., 2016, The Financial Mathematics of Market Liquidity: From Optimal Execution to Market Making, Chapman and Hall, 302 pages.
- Kissell, R., 2020 Algorithmic Trading Method: Applications Using Advanced Statistics, Optimization, and Machine Learning Techniques, Academic Press Inc, 2nd Edition, 612 pages.
- Lehalle C. A. and S. Laruelle, 2018, Market Microstructure in Pratice, World Scientific, 2nd Edition, 339 pages.
- Johnson B, 2010, Algorithmic Trading & DMA, Myeloma Press, 574 pages.
- Sutton, R.S., Barto, A.G.: Reinforcement Learning: An Introduction. Adaptive computation and machine learning, MIT Press, Second edn. (2018).