

High frequency data and order books

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Course : 18 hours - TP : 6 hours

Objectives

This course is intended for students interested in the empirical study, mathematical modelling and numerical simulation of modern financial markets, known as "order-book" markets. These markets, which make up the vast majority of equity, index and derivatives markets, have a single entry point, the order book, which lists all the interests expressed by market participants in a transparent and visible manner to all operators. These order books have been the subject of scientific studies for some twenty years and, of course, are of fundamental practical interest to the market.

Outline

Lecture 1 : Electronic financial markets, order books organized markets
Lecture 2 : Stylized statistical facts about order books
Lecture 3 : Financial modeling I: Introduction to point processes
Lecture 4 : Financial modeling II: Introduction to point processes
Lecture 5 : Mathematical properties of order books models
Lecture 6 : TP Simulation of order books I
Lecture 7 : TP Simulation of order books II
Lecture 8 : Investment strategies, optimal execution, *market making*
Lecture 9 : exam

Bibliography

Limit order books, F. Abergel, M. Anane, A. Chakraborti, A. Jedidi, I. Muni Toke, Cambridge university press + notes de course en anglais