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Title: Algorithmic and High Frequency Trading: Data, Models & Methods

Abstract:

With the availability of high frequency financial data, new areas of research in stochastic modeling and stochastic control have opened up. This short course will introduce the basic concepts, questions and methods that arise in this domain. We will begin with a look at some of the empirical aspects of high frequency financial data, develop stochastic optimal control methods for solving optimal execution, market making and pairs trading problems and demonstrate how to solve those problems using the principles of dynamic programming. Tentative topics include:

Program:

- Market Microstructure
- Optimal Execution
- Market Making
- Pairs Trading