

An Overview of Financial Modeling and Derivative Pricing

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**Wednesday, October 29, 2025
16:00-17:00h on campus in M.G.005
Analysis & Geometry Seminar, Antwerpen**

This seminar provides an overview of financial modelling and derivative pricing, two fundamental topics in financial mathematics. In the first part, we will illustrate how stochastic differential equations can capture the main empirical features of financial time series, introducing some classical models widely used in practice. The second part begins with a motivating example of a derivative contract and proceeds to introduce the Fundamental Theorem of Asset Pricing, leading to the concept of risk-neutral valuation. Finally, we will show how the Feynman–Kac theorem links pricing to the solution of a dynamic problem governed by the infinitesimal generator of the underlying process