Mathematical Finance
Dylan Possamaï

Recall 13

Model for instantaneous forward rate models

1. What is the HJM model? What is the dynamics of a zero-coupon bond in the HJM model? Can you prove it?
2. What can you say about the absence of arbitrage in the HJM model?
3. Can you give a sufficient condition for the short rate r in the HJM model to be an Itô process?
4. Is the short rate r in the HJM model a Markovian diffusion?

Pricing and hedging in Gaussian models

1. What is the price of a cap and of a swaption in the Gaussian HJM model?

Market formulas

1. What is the market practice to price caps?
2. What is the market practice to price swaptions?

Libor market model

1. What is the Libor market model? What are its advantages?
2. What is the forward Libor measure?

Log normal Libor market model

1. What is the Log normal Libor market model? What are its advantages?