Noise in machine learning Vasicek interest rate model calibration with Gaussian processes

João Beleza Sousa

Lisbon Superior Engineering Institute, Portugal

Abstract

Gaussian processes for machine learning can be used to calibrate the Vasicek interest rate model under the risk neutral measure. Calibrating the model for one particular zero coupon bond does not require any modification of the Vasicek model. However, to calibrate the model for a set of zero coupon bonds, noise must be assumed in the observed zero coupon bond prices.

In this paper we introduce noise in the Vasicek interest rate model calibration with Gaussian processes for machine learning.

Keywords

Vasicek interest rate model, Arbitrage free risk neutral measure, Interest rate model calibration, Gaussian processes for machine learning, Zero coupon bond prices.

References

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