Universidad Carlos III de Madrid
Department of Mathematics

COLLOQUIA

Monday, May 26, 2013.

Javier de Frutos
(Universidad de Valladolid)

Parameter estimation and calibration in finance: A Reduced Bases Function Approach with GARCH models

Abstract:

This talk analyzes the possibility of the use of the reduced basis method to decrease the computing time needed to calibrate the mathematical models used in the valuation of financial derivatives. It is well known, that the variability of volatility with time is an important factor in order to have a models that produce theoretical prices closer to the observed prices than the Black-Scholes method. This observation is particulary pertinent when one tries to pricing long maturity contracts. In this paper we work with GARCH models in which case estimation of a large number of different parameters are needed. Furthermore the calibration has to be repeated frequently either to incorporate new information in the market or because a large number of different products based on different assets have to be valuated. The method presented reduces considerably the computing time without a substantial increment of the estimation error. We will start by presenting GARCH type models for the valuation of financial derivatives and a brief introduction to some computational methods. Finally, we deal with the market calibration problem.

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Default Data

Time 11:00 to 12:00
Location Room 2.2.D08
Building Sabatini (2nd Floor)

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