Parameter Estimation in Finance Using Radial Basis Function Methods

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ABSTRACT

Given time series market observations for a price process, the parameters in an assumed underlying model can be determined through maximum likelihood estimation. Transition probability densities need to be estimated between each pair of data points. We show that Gaussian radial basis function approximation of the Fokker-Planck equations for the densities leads to a convenient mathematical representation. We present numerical results for one and two factor interest rate models.