

# Premia 14

## Monte Carlo Methods

Topics:

Monte Carlo Simulation

Pseudo Random Generator

Quasi Monte Carlo Methods

Monte Carlo for Barrier Option

Competitive Monte Carlo methods for Asian Options

Monte Carlo methods for American Options

A quantization method for Pricing and Hedging American Options

Malliavin Calculus for European options

Malliavin Calculus for Asian Option in a Pure Jump Model

Malliavin Calculus for American Option Pricing

Variance reduction and Robbins-Monro Algorithm

Variance reduction and Longstaff-Schwartz Algorithm

Ninomiya Victoir Scheme for Asian Options in Heston Model

Kusuoka-Ninomiya-Ninomyia Scheme for Asian Options in Heston Model

Ninomiya Victoir Scheme for Asian Options in Heston Model:Stage Rapport

Functional Quantization for Asian Options in Heston Model

Functional Stochastic Approximation Scheme for American Option Pricing

Monte Carlo option pricing for tempered stable (CGMY) processes

Monte Carlo option pricing for swing options using a Malliavin approach

Exact retrospective Monte Carlo computation of arithmetic average Asian options

Adaptive stratification for Asian options

A second-order discretization scheme for the CIR process: application to the Heston model

Numerical algorithms for backward differential equations

Primal Dual algorithm for American options

Upper bound for bermudan swaptions in the LMM Model

Survey of Monte Carlo methods for the Heston model

Cubature on Wiener space in infinite dimension. Application to HJM-equations

Robust Adaptive Importance Sampling for Normal Random Vectors

Polynomial processes and their applications to mathematical Finance

Exact and high order discretization schemes for Wishart processes

Connecting discrete and continuous lookback under exponential Lévy model

Simulation of Lookback Options under Infinite Activity Lévy Model

Pricing of Exotic Options under Infinite Activity Lévy Model

Pricing in Garch models

Pricing and hedging American-style options: a simple simulation-based approach

Iterative Construction of the Optimal Bermudan Stopping Time

Estimating the Delta of Options by the Likelihood Ratio Method

Gamma Expansion of the Heston Stochastic Volatility Model

Pricing Convertible Bonds with Call Protection

High order discretization schemes for stochastic volatility models