Numerical Methods for Finance

MMF2021   Workshop Syllabus   Fall 2008

This workshop aims to build on the material taught in MMF2021 and will cover some of the latest numerical methods for options pricing. We develop numerical methods in Matlab for pricing of European, American and barrier options under Black-Scholes-Merton, Merton jump-diffusion and Kou jump-diffusion models. The emphasis will be on actual implementation of the methods with applications to fitting volatility smiles/surfaces and parameter estimation.

Instructor: Vladimir Surkov `vsurkov@cs.toronto.edu`

Web Page: http://www.cs.toronto.edu/∼vsurkov/teaching/mmf2021w

Hours: Thursdays 10:45AM-11:30AM

Methods Covered:

- Convolution quadrature method

- FFT-based method

- Monte Carlo method

- Finite Differences method

- Fourier Space Time-stepping method