

Numerical Simulation of Stochastic Differential Equations

Des Higham
University of Strathclyde

Abstract

Stochastic differential equations arise in mathematical models of physical systems which possess inherent noise and uncertainty. Such models have been used with great success in a variety of application areas, including biology, epidemiology, mechanics, economics and finance. This course will give a gentle introduction to SDEs and their numerical simulation, without assuming a background in probability theory. The treatment will be at the level of the widely-used article

D. J. Higham, An algorithmic introduction to numerical simulation of stochastic differential equations, *SIAM Review*, Education Section, 43, 2001, 525-546, with extra material on applications, including finance and physics.