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Självständigt arbete i matematik
Matematiska institutionen
Stockholms universitet

Anders Österling: Diffusion equation and Monte Carlo

Sammanfattning

Introducing the Brownian motion in the way of Einstein and Wiener we find the connection between a Wiener Process and the Heat Diffusion PDE. We solve the PDE analytically for some boundary conditions and then use the connection to the Wiener Process to solve more complex BVP's using Monte Carlo simulations in Matlab.