

The Forward-backward Stochastic Heat Equation: Numerical Analysis and Simulation

Andreas Prohl

I discuss strong convergence with optimal rates for a spatial discretization of the backward stochastic heat equation, and the forward-backward stochastic heat equation from linear-quadratic stochastic optimal control. A full discretization based on the implicit Euler method for a temporal discretization, a least squares Monte-Carlo method, and the new stochastic gradient descent method are then proposed, and simulation results are reported.

This is joint work with T. Dunst (Universität Tübingen).