Stochastic optimal control problems and parabolic equations in Banach spaces.

Federica Masiero*

Abstract

We consider stochastic optimal control problems in Banach spaces, related to nonlinear controlled equations with dissipative non linearity. These problems are treated via the backward stochastic differential equations approach, that allows also to solve in mild sense Hamilton Jacobi Bellman equations in Banach spaces. We apply the results to controlled stochastic heat and wave equations with cost functional well defined on continuous functions, and to delay equations in spaces of p-integrable functions.

*Dipartimento di Matematica, Politecnico di Milano, Piazza Leonardo da Vinci, 32, 20133 Milano, Italy; masiero@mate.polimi.it