

Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

Título: Scheme for SDE/SPDE with singular drifts. .

Ludovic Goudenège

CNRS, Centrale-Supelec

Resumo:

The numerical schemes for the approximation of stochastic processes rely on classical temporal schemes for stochastic differential equations. In the case of stochastic partial differential equations, time and space discretizations must be considered to obtain a fully discretized scheme. In this talk, I will present implementations of numerical schemes for stochastic (partial) differential equations, in the case of singular drift and with fractional Brownian motion as additive noise. I will prove that we can define solutions using a regularization effect from the fractional noise. Next, I will demonstrate how this approach can be used to define solution for stochastic partial differential equations with additive space-time white noise. I will also present some numerical simulations of the stochastic heat equation with Dirac drift or penalization drift to obtain reflected nonnegative solution.