
NATHAN GLATT-HOLTZ, Indiana University

On Long Time Accuracy for Stochastic Partial Differential Equations Under Approximation.

We are interested in the question of the long time accuracy of solutions of nonlinear stochastic partial differential equations (SPDEs) under various approximations. We will present a powerful and quite general framework which addresses such questions. It centers on 1) proving a (parameter uniform) contraction of the Markovian dynamic in an appropriate Wasserstein metric 2) establishing the accuracy of approximations over a finite time window. Our main paradigmatic application for this approach concerns the numerical approximation of the stochastically driven Navier-stokes equations where the question of long time accuracy was open.