

Stochastic Analysis Seminar (SAS)
Monday April 14, 2008 12:30pm - 1:20pm
Bendheim Center Classroom

Speaker: Josselin Garnier (Universite Paris 7)

Title: Interacting particle systems for the analysis of rare events

Abstract:

I will present an interacting particle system approach for the simulations and analysis of Markov chains in rare event regimes. The particle system is theoretically studied through a genealogical tree interpretation of Feynman-Kac path measures. The algorithmic implementation of the particle system is presented. An estimator for the probability of occurrence of a rare event is proposed and its variance is computed, which allows to compare and to optimize different versions of the algorithm. Applications and numerical implementations are discussed.

This is a joint work with Pierre Del Moral (INRIA Bordeaux, France).