Seminar of Probability and Stochastic Process

Tuesday, 25th January, from 11h15 to 12h15
MA A1 10, EPFL, Ecublens

Dr. Jean-Christophe Mourrat

EPFL

Homogenization and random walks

Abstract:

To a given divergence form differential operator on Z^d, one can associate a random walk. We assume that the coefficients of the operator form a field of independent and identically distributed random walks. In this case, we know that, if looked from sufficiently far away, the operator looks like a differential operator with constant coefficients. On the probabilistic side, the random walk $in random environment$ satisfies an invariance principle. An important problem is to compute numerically the coefficients of the limit operator. We will first see how some spectral analysis permits to link this problem with natural probabilistic questions of speed of convergence to equilibrium of Markov chains. We will then study new numerical schemes to compute these coefficients $joint work with A. Gloria$.

Date of last change: Tue, 18 Jan 2011 13:37:50, by Le CHEN