Séminaire de Probabilités et Statistiques

Mardi 15 décembre à 14h
Salle de Conférences

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Density and tube estimates for diffusions under Hormander-type conditions

We recall some classic results on the regularity of solutions of stochastic differential equations in hypoelliptic framework. We consider then three specific models satisfying hypoellipticity conditions of Hormander type. Using some Malliavin Calculus techniques recently developed to deal with degenerate problems, we find exponential bounds for the probability that the diffusion remains in a small tube around a deterministic path up to a given time, estimates for the density of the law of the solution, estimates for the derivatives of the density.