Density and tube estimates for diffusions under Hörmander-type conditions

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Place **Campus Kirchberg, room C02**

Abstract We recall some classical results on the regularity of solutions of stochastic differential equations in hypoelliptic framework. We consider then three specific models satisfying hypoellipticity conditions of Hörmander 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.