On the bounded variation of the flow of stochastic differential equation

Mohamed Erraoui,Youssef Ouknine
Faculté des Sciences Semlalia
Département de Mathématiques
Université Cadi Ayyad
BP 2390, Marrakech, Maroc

We consider a stochastic differential equation, driven by a Brownian motion, with non Lipschitz coefficients. We consider the class **V** which is larger than Sobolev space and got a sufficient condition for a solution of stochastic differential equation to belong to the class **V**. As a consequence we prove that the corresponding flow is, almost surely, almost every where derivable with respect to initial data. The result is a partial extension of the paper of N. Bouleau and F. Hirsch: On the derivability, with respect to the initial data, of the solution of a stochastic differential equation with Lipschitz coefficients .