1135-93-1615 **Guangliang Zhao*** (dr.gzhao@gmail.com), **Zhixin Yang**, **Quan Yuan** and **Leyi Wang**.

Controllability in Term of Mean Reaching Time for Markovian Switching Diffusion System.

For systems of switching diffusions, a concept of controllability is proposed by using the finite expected value of the first reaching time (or mean reaching time) to an arbitrarily small open set of the terminal point. A necessary and sufficient condition is obtained utilizing positive recurrent. A verification criterion is provided by using Liapnov functions, and a matrix form criterion if the system is linear. Finally, a simulation example is provided to show that when coupled with regime switching, the hybrid system of uncontrollable ODEs could be controllable. (Received September 23, 2017)