

April 23th, 2018

KAP 414

2:00 P.M. – 3:00 P.M.

Qi Feng

(University of Connecticut)

“Integration by Parts and Quasi-Invariance of Horizontal Wiener Measure on Foliated Manifolds”

Abstract: In this talk, I will present a new result on quasi-invariance of horizontal Wiener measure on totally geodesic foliations (this generalized the Carmen- Martin theorem and quasi-invariance of Wiener measure on Riemannian manifold, Driver (1992)), as well as Clark-Ocone formulas and integration by parts formula. As consequences, we can get various functional inequalities (i.e. Log- Sobolev, concentration inequalities, etc.). This is a new result in the sub- Riemannian setting, thus shed light to models with a sub-Riemannian structure in math finance. In particular, I will mention the potential applications to Greek evaluations by using Malliavin calculus and large deviation principle (asymptotic expansion) in the sub-Riemannian context.