

**January 27<sup>th</sup>, 2020**

**KAP 414**

**2:00 P.M. – 3:00 P.M.**

**Professor Wei Yan**  
(University of Central Florida)

**“Mean-field Stochastic Optimal Control with  
Recursive Cost Functional”**

**Abstract:** In this talk we introduce a characterization of the value functions and optimal strategies for a class of mean-field optimal control problems with recursive cost functionals. The problem is motivated mainly by the recent results on mean-field optimal control problems and the time-inconsistent problems involving conditional expectations. Comparing to the existing works, we consider more general cases, where the cost functional is recursive so that the associated backward SDEs are of McKean-Vlasov type.

We will compare the problem with classical stochastic optimal control problem to identify the main technical issues, and then characterize the optimal control by an HJB equation, for which the value function is proved to be the unique viscosity solution. Some possible applications in mathematical finance will also be discussed.