November 11th, 2019
KAP 414
2:00 P.M. – 3:00 P.M.

Professor Dylan Possamai
(Columbia University)

"A General Approach to Non-Markovian Time-Inconsistent Stochastic Control for Sophisticated Players"

Abstract: This paper is the first attempt at a general non-Markovian theory of time-inconsistent stochastic control problems in continuous-time. We consider sophisticated agents who are aware of their time-inconsistency and take into account in future decisions. We prove here that equilibria in such a problem can be characterized through a new type of multi-dimensional system of backward SDEs, for which we obtain wellposedness. Unlike the existing literature, we can treat the case of non-Markovian dynamics, and our results go beyond verification type theorems, in the sense that we prove that any equilibrium must necessarily arise from our system of BSDEs. If time permits, an application to contract theory will be presented. This is a joint work with Camilo Hernández, Columbia University.