



Statistical Sciences
UNIVERSITY OF TORONTO

SEMINAR

January 28th, 2016 at 3:30pm

**Refreshments at 3:10pm*

Sidney Smith Hall, Room 2106

Speaker: Yu-Jui Huang, Dublin City University

Hosts: Jamie Stafford

Time-Consistent Stopping

We study stopping problems for diffusion processes, under non-exponential discounting. Our framework particularly captures decreasing impatience, a phenomenon well-documented in Behavioral Finance. Since non-exponential discounting induces time inconsistency, one should not naively employ optimal stopping times from classical theory, but rather look for equilibrium stopping policies under a game-theoretic setting. We provide a precise definition of subgame perfect Nash equilibriums in an intertemporal game among current and future selves. For time-inconsistent stopping problems, this is the first time a formulation of equilibrium is established in continuous time. Fixed-point iterations are carried out to search for equilibriums. Under appropriate conditions, the iteration is decreasing and converges to an equilibrium. More importantly, the fixed-point iteration reveals a clear connection between a naive agent (who applies optimal stopping times) and a sophisticated one (who employs equilibrium policies). This connection is new in the literature of time-inconsistent problems.