

1099-91-55

**Ruihua Liu\*** (rliu01@udayton.edu), 300 College Park, Mathematics Department, University of Dayton, Dayton, 45469-2316. *Optimal Investment and Consumption with Proportional Transaction Costs in Regime-Switching Model.*

This presentation is concerned with an infinite-horizon problem of optimal investment and consumption with proportional transaction costs in continuous-time regime-switching models. An investor distributes his wealth between a risky asset (a stock) and a risk-less asset (a bond) and consumes at a non-negative rate from the bond account. The market parameters (the interest rate, the appreciation rate and the volatility rate of the stock) are assumed to depend on a continuous-time Markov chain with finite number of states (also known as regimes). The objective of the optimization problem is to maximize the expected discounted total utility of consumption. For this optimal control problem, the Hamilton-Jacobi-Bellman (HJB) equation is given by a system of  $m_0$  coupled variational equalities where  $m_0$  is the total number of regimes. For a class of HARA (hyperbolic absolute risk aversion) type utility functions, we establish some fundamental properties of the value function and show that the value function is a viscosity solution of the HJB equation. We then treat a power utility function and derive qualitative properties of the optimal trading strategy and the value function. (Received January 20, 2014)