

Romuald ELIE

University of Paris Dauphine

Title: 'BSDE representation and numerical resolution of switching problems'

Abstract:

Switching control problems can be represented via multidimensional reflected BSDEs, whose particularity relies on the oblique directions of reflections of the solution on the boundary of the domain. We propose a discrete time scheme approximation for these BSDEs and control the corresponding approximation error. Via an alternative approach, we relate the solution of this multidimensional reflected BSDE to the solution of a one-dimensional constrained BSDE with jumps. This type of representation allows to consider more general switching problems and we also investigate their numerical approximation.

This talk is based on joint works with Jean-Francois Chassagneux and Idris Kharroubi.