PIMS / AMI Seminar

Thursday, August 2, 2012
3:30 p.m.
CAB 365

"Explicit solutions to BSDEs and utility maximization in multivariate affine stochastic volatility models"

Dr. Anja Richter
ETH Zurich

Abstract

Over the past few years quadratic Backward Stochastic Differential Equations (BSDEs) have been a popular field of research. However there are only very few examples where explicit solutions for these equations are known. In this talk we consider a rich and flexible class of quadratic BSDEs involving affine processes and show that their solution can be reduced to solving a system of generalized Riccati ordinary differential equations. We then demonstrate how these results provide analytically tractable solutions to the problem of utility maximization and indifference pricing in several multivariate affine stochastic volatility models. We give examples in the Heston and Barndorff-Nielsen-Shephard setting. In particular we calculate the quantity of the power utility indifference value of change of numeraire.