FP7 Marie Curie ITN "Controlled systems" project

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Second order Reflected BSDE's and applications

Abstract: We present a class of reflected second order backward stochastic differential equations with a given lower càdlàg obstacle. We prove existence and uniqueness of the solution under a Lipschitz type assumption on the generator, and we investigate some links between our reflected 2BSDEs and non-classical optimal stopping problems. Finally, we show that reflected 2BSDEs provide a super-hedging price for American options in a market with volatility uncertainty.