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BSDE formulation of combined regular and singular stochastic control problems

Friday, 31 August 2018 14:00 (30 minutes)

In this talk, we study a class of combined regular and singular stochastic control problems that can be expressed as constrained BSDEs. In the Markovian case, this reduces to a characterization through a PDE with gradient constraint. But the BSDE formulation makes it possible to move beyond Markovian models and consider path-dependent problems. We also provide an approximation of the original control problem with standard BSDEs that yield a characterization of approximately optimal values and controls.

This is a joint work with Bruno Bouchard and Patrick Cheridito.

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