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Systems of quadratic growth backward SDEs in general filtration with no driving martingale

Wednesday, August 14, 2024 11:00 AM (30 minutes)

Let (Ω, \mathcal{F}, P) be a complete probability space and $\mathbb{F} := (\mathcal{F}_t)$ be a filtration on (Ω, \mathcal{F}, P) satisfying usual conditions. Let T > 0, ν be a natural number, and ξ be an \mathbb{R}^{ν} -valued \mathcal{F}_T -adapted random vector. We shall present the existence results for the following system of quadratic growth (with respect to M) backward SDEs of the form $\langle \text{begin}\{\text{equation}\}$ $Y^j_j_t=\langle xi^j_j+\langle int_t^TdF^j(s,Y,M)-\langle int_t^TdM^j_s, \langle quad j=1, \langle dots, \langle nu, \rangle \rangle$ $\langle \text{end}\{\text{equation}\}$ where for any pair $(Y,M) \in S^2_{\mathbb{F}}(0,T) \times \mathcal{M}^2_0(0,T)$ the mapping $\langle \text{begin}\{\text{equation}\}$ $[0,T] \langle ni s \rangle \langle nmapping \rangle \langle nmapping \rangle \rangle$ is a finite variation continuous \mathbb{F} -adapted process with F(0,Y,M) = 0. Then some application will be presented.

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