

INTERNATIONAL RESEARCH TRAINING GROUP

Stochastic Models of Complex Processes

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Speaker

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Title

L^p solution theory of BSDEs with time delayed generators

Abstract: We deal with the theory of BSDEs with time delayed generators introduced by Delong and Imkeller (2010). These BSDEs are characterized by generators which typically depend on the past of the value and the control component up to current time. Assuming Lipschitz type assumptions on these path dependent generators, Delong and Imkeller establish an L^2 space characterization of BSDE solutions. We amend this with an L^p space theory and discuss the various obstacles which had to be overcome to achieve this goal. We then apply our results to study the case of a time delayed backward equation with a Markovian terminal condition and derive representation formulas for the BSDE solution which are analogous to those for BSDEs with standard (non-time delayed) generators. This is a joint work with Gonçalo dos Reis (École Polytechnique) and Anthony Réveillac (HU Berlin).

Location: MA 041, Straße des 17. Juni 136, TU Berlin