Karlstad Applied Analysis Seminar (2020)

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Stochastic differential equations with oblique reflection on non-smooth time-dependent domains

Abstract

The study of reflected stochastic differential equations (RSDE) can be motivated by many different applications, such as turbulence in confined spaces, modelling of regulated financial markets, and queuing theory. General results on existence and uniqueness of RSDE in non-smooth time-independent domains were derived by Dupuis and Ishii in 1993. In this talk, we consider a suitable class of non-smooth time-dependent domains and verify existence and uniqueness of strong solutions to RSDE with oblique reflection on such domains. The approach is based on the Skorohod problem (SP) and the well-known connection between solutions to SP and RSDE.