Anita Behme

(TU Dresden)

Title:

"Markov-modulated generalized Ornstein-Uhlenbeck processes"

Abstract:

The generalized Ornstein-Uhlenbeck process has been introduced in 1988 by de Haan and Karandikar as continuous-time analogue to discrete-time solutions of certain random recurrence equations. Since then, this process has become a permanent tool in stochastic modelling appearing in numerous applications such as finance and insurance.
Also dating back to the 80s, Markov-switching models have become a popular tool in finance and other areas.
In this talk, we will derive a Markov-switching version of the generalized Ornstein-Uhlenbeck following the approach of de Haan and Karandikar. That is, we define the so-called Markov-modulated generalized Ornstein-Uhlenbeck process as continuous-time analogue to discrete-time solutions of Markov-modulated random recurrence equations. We will also consider some properties of our new class of processes and discuss possible applications.