ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO A TALK

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"On recent results in filtering theory for jump-diffusion SDEs"

N.0.27 Friday, 26 June 2026 1:00 p.m.

Abstract
In filtering theory one seeks to analyze the conditional expectation of a signal process, given an observation process. In some cases it is possible to prove the existence of the conditional density, by solving a related stochastic partial differential equation (SPDEs). However, if both, signal and observation, are given by SDEs driven by discontinuous noise, the analysis of such SPDEs can be challenging. In this talk, I will present methods to prove existence of a conditional density to such systems, as well as give conditions to ensure a certain spatial (Sobolev) regularity of the conditional density. If time permits, I will give an outlook on future work. This is based on joint work with Alexander Davie and Istvan Gyongy.

Michaela Hitz and the Department of Statistics look forward to seeing you at the talk!