Rough Evolution Equations
Solving Stochastic PDEs almost without Stochastics

Robert Hesse, Friedrich Schiller University Jena

In this talk we present a pathwise approach to investigate parabolic stochastic evolution equations driven by rough multiplicative noise. To this aim we give a short introduction on rough path theory which is based on the Hölder regularity of the driving noise. As main examples we introduce a Brownian motion and a fractional Brownian motion.
With the help of the algebraic framework provided by the rough paths theory we give meaning to a rough integral. Further, we derive the existence and uniqueness of a local-in-time mild solution for rough evolution equations by a fixed point argument. Finally, we demonstrate how one can use concatenation techniques in order to obtain a global-in-time solution.
This talk is based on a joint work with Alexandra Neamţu (University of Konstanz).