Existence and regularity of random attractors for evolution equations with rough noise

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In this talk, our objective is to demonstrate the existence and regularity of random pullback attractors for parabolic partial differential equations with rough multiplicative noise, assuming natural conditions on the coefficients. In order to achieve this goal, we will combine tools from rough path theory and random dynamical systems. An application of these concepts is a partial differential equation with rough boundary noise, for which flow transformations are not available.

The presentation will proceed as follows: First, random dynamical systems will be introduced and the difference to their deterministic counterpart will be discussed. Then, a brief overview of the theory of rough paths will be given, followed by the presentation of the main result and an outline of the proof.

This is based on a joint work with Alexandra Blessing.