

Benjamin Gess (MPI Leipzig and U Bielefeld) and **Benjamin Fehrmann** (MPI Leipzig):

Large deviations in interacting particle systems and stochastic PDE

Abstract:

In these talks we draw the link between large deviations in interacting particle systems and large deviations for certain classes of stochastic PDE. More precisely, we will revisit the large deviations of the zero range process around its hydrodynamic limit and show that the corresponding rate function is identical to the rate function appearing in (degenerate) stochastic PDE with conservative, nonlinear noise. The rigorous proof of this informal motivation is the main result presented here. This includes an intricate treatment of the corresponding nonlinear, degenerate skeleton PDE; an advection-diffusion PDE with coefficients of critical regularity.