Workshop in Stochastic Analysis and Applications

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Asymptotic Independence via Malliavin-Stein Method.

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Abstract

How to quantify the distance between the joint measure of a two-dimensional random vector and the product measure induced by its marginals? In this talk we consider this question in the context of a Markov process (the KPZ fixed point), where the first coordinate of the vector is given by an observable of the initial condition, and the second one is an observable of the process at a later time. To attack this question we will use tools from Malliavin calculus and Stein's Method, which will allow us to get a precise space-time scaling behavior for asymptotic independence.