

Quantum circuits, random redistribution mechanisms, and random walks in random environment

Guillaume Barraquand

Several classes of probabilistic models can be studied through the lens of random walks in random environment (RWRE). We will discuss in particular (simple instances of) random quantum circuits, as well as the Kipnis-Marchioro-Presutti model for energy redistribution in chains of harmonic oscillators. I will explain why these models are studied, and how exactly they are related to RWRE. Then I will review recent developments about the connections between RWRE and KPZ universality.