

abstract

Joint Princeton Mathematical Physics Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

In first passage percolation, we place i.i.d. non-negative weights on the nearest-neighbor edges of \mathbb{Z}^d and study the induced random metric. A long-standing conjecture gives a relation between two "scaling exponents": one describes the variance of the distance between two points and the other describes the transversal fluctuations of optimizing paths between the same points. This relation is sometimes referred to as the "KPZ relation." In a recent breakthrough work, Sourav Chatterjee proved this conjecture using a strong definition of the exponents. I will discuss work I just completed with Tuca Auffinger, in which we introduce a new and intuitive idea that replaces Chatterjee's main argument and gives an alternative proof of the relation. One advantage of our argument is that it does not require a certain non-trivial technical assumption of Chatterjee on the weight distribution.