Sarai Hernandez-Torres
Technion

The chemical distance of random interlacements in the low intensity regime.

Abstract:

Random interlacements (RI) is a Poissonian soup of doubly-infinite random walk trajectories on \( \mathbb{Z}^d \). A parameter \( u > 0 \) controls the intensity of the Poisson point process. In a natural way, the model defines a long-range percolation on the edges of \( \mathbb{Z}^d \). We thus obtain the random interlacements graph, composed of those edges traversed by a trajectory in RI. This talk focuses on the chemical distance of the random interlacements graph in dimensions \( d \geq 5 \). In this setting, I will present a proof of novel upper and lower asymptotic bounds on the chemical distance for \( u << 1 \). This is a joint work with E. Procaccia and R. Rosenthal.