MATH MINICOURSE

Ballisticity and Large Deviations of Random Walks in Random Environment

SPEAKER: Alejandro F. Ramírez, NYU Shanghai

TIME: 3:00pm-4:00pm, Mondays, October 26- November 9, 2020

VENUE: Room 611, Pudong Campus, NYU Shanghai, 1555 Century Avenue

Abstract

We will discuss recent results about ballisticity and large deviations of random walks in random environments (RWRE) on Z^d. Firstly we will present the RWRE model, review the literature and explain the relation between directional transience and ballisticity, introducing the ballisticity conditions. In the second session we will prove the equivalence between the ballisticity conditions (T) and (T'). Finally, we will show the relevance of the intensity of the disorder in order to give a description of the regimes when the quenched and the averaged large deviation rate functions agree. These talks are based on joint works with E. Guerra and with R. Bazaes, C. Mukherjee and S. Saglietti.

Biography

Alejandro Ramírez is a Visiting Professor of Mathematics at NYU Shanghai. Prior to joining NYU Shanghai, Ramírez also holds an appointment as Professor at the Universidad Católica de Chile. At the beginning of his career he held positions at Ecole Polytechnique, Palaiseau, and Ecole Polytechnique Fédérale de Lausanne. His research is centered in topics within probability theory. In particular, random walks and interacting particles systems.