



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
Geometric Functional Analysis and Probability Seminar

,Ziskind Building
on Thursday, May 05, 2016
at 11:00

Double feature room 155

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Recurrent Random Walks on a Strip: conditions for the CLT

Abstract:

This is joint work with Dima Dolgopyat. We prove that a recurrent random walk (RW) in i.i.d. random environment (RE) on a strip which does not obey the Sinai law exhibits the Central Limit asymptotic behaviour. Moreover, there exists a collection of proper subvarieties in the space of transition probabilities such that: (a) If the RE is stationary and ergodic and the transition probabilities are concentrated on one of sub-varieties from our collection then the CLT holds; (b) If the environment is i.i.d then the above condition is also necessary for the CLT to hold. In particular, the CLT holds for the quasiperiodic environments with Diophantine frequencies in the recurrent case and complement this result by proving that in the transient case the CLT holds for all strictly ergodic environments.