



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

Room 290C ,Ziskind Building
on Thursday, Jan 05, 2017
at 11:00

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Walking within growing domains: recurrence versus transience

Abstract:

When is simple random walk on growing in time d -dimensional domains recurrent? For domain growth which is independent of the walk, we review recent progress and related universality conjectures about a sharp recurrence versus transience criterion in terms of the growth rate. We compare this with the question of recurrence/transience for time varying conductance models, where Gaussian heat kernel estimates and evolving sets play an important role. We also briefly contrast such expected universality with examples of the rich behavior encountered when monotone interaction enforces the growth as a result of visits by the walk to the current domain's boundary. This talk is based on joint works with Ruojun Huang, Ben Morris, Yuval Peres, Vladas Sidoravicius and Tianyi Zheng.