Phase transitions in self-interacting random walks

Gady Kozma   gady.kozma@weizmann.ac.il
Weizmann institute of science, Rehovot, Israel

Abstract

The talk will explore the topic of self-interacting walks where varying some natural parameter leads to drastic changes in the behaviour of the process. Example include linearly- and once-reinforced random walk and self-avoiding walk. Two results will be discussed in detail:

1. On any graph with bounded degrees, linearly-reinforced random walk has a recurrent phase. Here the parameter is the initial weights. Joint work with Omer Angel and Nicholas Crawford.
2. On $\mathbb{Z}^d$, $d \geq 2$, self-avoiding walk in a domain weighted by β^{len} has a space-filling phase. Joint work with Hugo Duminil-Copin and Ariel Yadin.

All terms without exception will be defined in the talk.

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