

Inn'formal Probability Seminar

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“Harnack inequality and one-endedness of the uniform spanning tree on unimodular random graphs.”

Abstract

This talk is concerned with the geometry of the (wired) Uniform Spanning Tree (UST) on an infinite graph, and in particular with a property called one-endedness, which says that the removal of a finite subset does not produce multiple infinite clusters. The question of the one-endedness for the UST is the analogue of the question of percolation at criticality. It was conjectured by Aldous and Lyons that the UST is one-ended on all non-trivial “unimodular” random rooted graphs.

I will discuss two joint works in which we show that for unimodular random graphs, there is an connection/equivalence between one-endedness of the UST and (a) existence and uniqueness of the potential kernel, (b) existence and uniqueness of harmonic measure from infinity, (c) a new anchored Harnack inequality. Using this equivalence, we will prove the conjecture by Aldous and Lyons.

Based on joint works with Nathanaël Berestycki and Tom Hutchcroft.

Tuesday | 09.05.2023 | 14:15

SR 734 | civil engineer building