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Random walk reflected off of infinity

Friday, August 1, 2025 3:00 PM (1 hour)

Consider an infinite graph on which simple random walk is transient. I will discuss how to define a version of the random walk which is reflected upon reaching (possibly many) infinite ends of the graph. We then apply this process to study random planar maps in the universality class of supercritical Liouville quantum gravity (LQG), with central charge c in (1,25). Such random planar maps are infinite, with uncountably many ends. We define a version of the Tutte embedding for such maps under which they conjecturally converge to LQG, and introduce phase transition conjectures for free uniform spanning forest and critical percolation depending on the central charge of the model.
This is joint work with Ewain Gwynne.

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