

STANFORD PROBABILITY SEMINAR

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Monday, 10 January 2004

4:15pm (Refreshments at 4pm in the 1st Floor Lounge)

Sequoia Hall, Room 200

Scaling limits for the UST on the discrete torus

Abstract. The typical distance between two points in the uniform spanning tree (UST) on the complete graph K_m is on the order of $m^{1/2}$, and Aldous showed that a suitable scaling limit of the UST is the Brownian continuum random tree. We will show that for $d \geq 5$, the scaling limit of the UST on the discrete torus \mathbf{Z}_n^d is again the Brownian continuum random tree. This verifies a conjecture of Pitman.

In the talk we will describe the Brownian continuum random tree as well as explain Wilson's algorithm between the UST and loop-erased random walk. No previous familiarity with either of these topics will be assumed.

This is joint work with Yuval Peres.