

STANFORD PROBABILITY SEMINAR

Marek Biskup, UCLA

Monday, 25 April 2005

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

Sequoia Hall, Room 200

Scaling limit of simple random walk on supercritical percolation clusters

Abstract. We consider a simple random walk on the (unique) infinite cluster C_∞ of bond percolation in \mathbf{Z}^d , $d \geq 2$. At each unit of time the walk picks one of its $2d$ neighbors at random and attempts to move to it, but the move is suppressed if the respective edge is not present in C_∞ . We will show that, in almost every realization of C_∞ , the path of this walk scales to d -dimensional Brownian motion under the “usual” scaling of space and time. The proof is based on analysis of the “corrector” which is an additive term that makes the position of the walk a martingale. Based on joint work with Noam Berger.