

Subgaussian Rates of Convergence in First Passage Percolation

Ken Alexander, University of Southern California

In first passage percolation with time constant μ , for the passage time from the origin to $(n, 0, \dots, 0)$, the discrepancy between the passage time and its asymptotic approximation $n\mu$ can be divided into two parts: the random part is the passage time minus its mean, and the nonrandom part (which is nonnegative) is the mean minus $n\mu$. We show that if the passage time has a finite exponential moment, then the nonrandom part is $o(n^{1/2})$.