

1125-60-994

Antonio Auffinger (tuca@northwestern.edu), 2033 Sheridan Road, Department of Mathematics, Northwestern University, Evanston, IL 60208, and **Si Tang*** (sitang@galton.uchicago.edu), 5747 S. Ellis Avenue, Department of Statistics, University of Chicago, Chicago, IL 60637. *On the time constant of high dimensional first passage percolation.*

The talk focuses on the behavior of the time constant $\mu(e_1)$ in first passage percolation on \mathbb{Z}^d in high dimension. We prove that if the passage times have finite mean, then

$$\lim_{d \rightarrow \infty} \frac{\mu(e_1)d}{\log d} = \frac{1}{2a},$$

where $a \in [0, \infty]$ is a constant that depends only on the behavior of the distribution of the passage times at 0. For the same class of distributions, we also prove that the limit shape is not an Euclidean ball, nor a d -dimensional cube or diamond, provided that d is large enough. (Received September 13, 2016)