

Project 2: Size of a random walk

Yuan Yuxuan u6772166

August 12, 2019

1 Project

In our code, the step size is set to be 1.

Below is one example random walk of 100 steps:

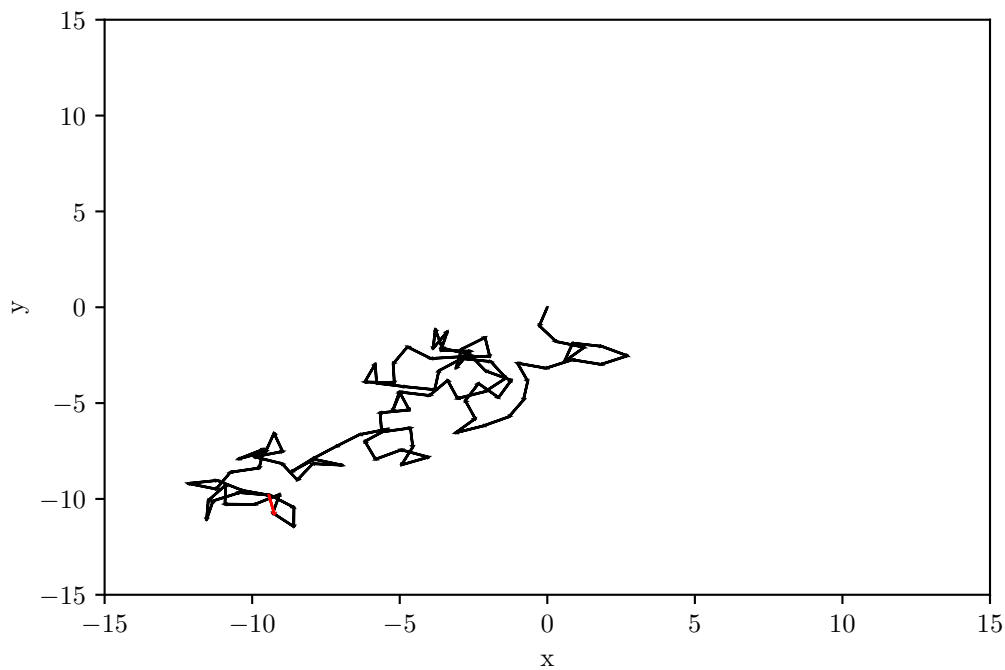


Figure 1: example random walk of 100 steps

Below is the log-log plot of root-mean square size versus total number of steps. I take average of 10 walks. From the equation $\langle x^2 \rangle = 4Dt$ we know that the slope in log-log plot should be 0.5, and it is consistent with our plot.

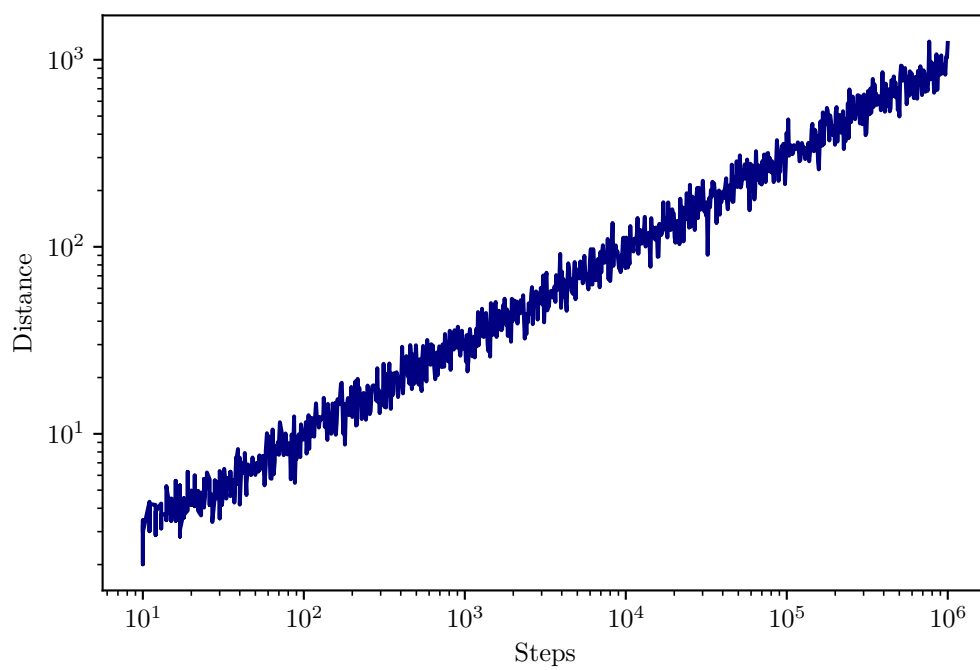


Figure 2: log-log plot of root-mean square size versus total number of steps