

4.1 Discrete random variable

1. *Random deposition:* A mirror is plated by evaporating a gold electrode in vacuum by passing an electric current. The gold atoms fly off in all directions, and a portion of them sticks to the glass (or to other gold atoms already on the glass plate). Assume that each column of deposited atoms is independent of neighboring columns, and that the average deposition rate is d layers per second.

(a) What is the probability of m atoms deposited at a site after a time t ? What fraction of the glass is not covered by any gold atoms?

(b) What is the variance in the thickness?
