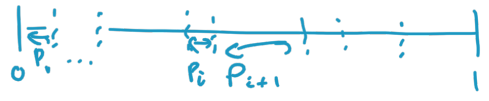
Gillespie:

- Goes through time on an event-by-event timeframe.

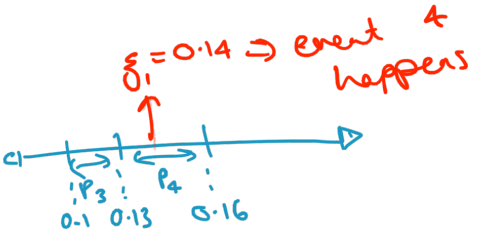
- Have a number of potential events that can happen with probability p_i each,

  [i = event.)

- If you line all of these up & normalise by the sum: $\sum_i p_i$



generate a uniform random variable $\xi_1 \in U[0,1]$ & where this lies on the line determines which event happens.



- This event happens after a time

$$\Delta\tau = \frac{1}{\sum p_i} \ln\left(\frac{1}{\xi_2}\right)$$

for $\xi_2 \in U[0,1]$.

- Update system based on event & repeat for next event. ☺