

1 asd

$$M_{ij} = k_{ji} - \delta_{ij} \sum_{k=1}^N k_{ik}$$

$$\frac{\prod k_{ij}}{\prod k_{ji}} = \exp\left(\frac{\Delta\mu}{T}\right)$$

$$X(t) \in \mathbb{N}$$

$$\frac{d}{dt}\langle X^k(t)\rangle = \sum_{x,y\in\mathbb{N}} p_x(t)w_{xy}\left(y^k-x^k\right)$$

$$w_{xy}=w_{\Delta x=y-x}=\sum_{(i\rightarrow j)\in R_{\Delta x}}p_i(t)k_{ij}$$

$$\langle X(t)\rangle = t \sum_{\Delta x, R_{\Delta x}} \Delta x p_i(t) k_{ij} \left(+ \langle X(0) \rangle \right)$$

$$\mathrm{Var}\left(X(t)\right) = t \sum_{\Delta x, R_{\Delta x}} \left(\Delta x\right)^2 p_i(t) k_{ij} \left(+ \mathrm{Var}\left(X(0)\right) \right)$$

$$\tau \sim \mathrm{Exp}(k_i)$$

$$j^* \sim \mathrm{WeightedSampling}\left(\frac{k_{ij^*}}{k_i}\right)$$

$$k_i := \sum_j k_{ij}$$

$$\frac{k_{DT}}{k_{TD}} = \frac{k_{DT}}{k_{TD}}\Big|_{eq.} \left(\frac{[T]}{[D]} \Big/ \frac{[T]}{[D]}\Big|_{eq.} \right) \tag{1}$$

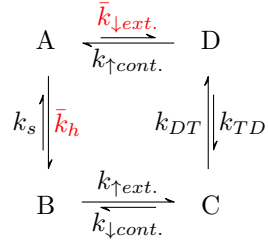
$$\Delta\mu \propto \log\left(\frac{[T]}{[D]}\Big/\frac{[T]}{[D]}\Big|_{eq.}\right)$$

$$r_{ATP} \propto \left(1 - \frac{[T]}{[D]} \Big|_{eq.} \Big/ \frac{[T]}{[D]}\right) k_h k_{\uparrow} k_{DT} \quad (2)$$

$$\langle v \rangle = \Delta x \cdot r_{ATP}$$

$$\mathcal{L} = \frac{1}{2}k \sum_{i=1}^{N-1} (h_i - h_0)^2 + \frac{1}{2}k'(h_N - h_0)^2 - \lambda \sum_{i=1}^N h_i \quad (3)$$

$$\Rightarrow \begin{cases} h_{i \neq N} = h_0 \frac{k-k'}{(N-1)k'+k}, \\ h_N = -(N-1)h_{i \neq N} \end{cases}$$



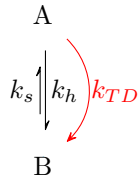
$$\Delta h = 2 \implies \Delta x = 10$$

$$r_{ATP} \propto \left(1 - \frac{[T]}{[D]} \Big|_{eq.} \Big/ \frac{[T]}{[D]}\right) \bar{k}_h k_{\uparrow ext.} k_{DT} k_{\uparrow cont.} \quad (4)$$

$$\langle v \rangle = \Delta x \cdot r_{ATP}$$

$$r_{ATP} \propto \left(1 - \frac{[T]}{[D]} \Big|_{eq.} \Big/ \frac{[T]}{[D]}\right) \prod k \quad (5)$$

$$\langle v \rangle = \Delta x \cdot r_{ATP}$$



$$\begin{cases} p_A \propto k_s k_{DT} + k_{\downarrow} k_s + k_{\uparrow} k_{DT} \\ p_B \propto k_h k_{\downarrow} + k_{DT} k_h + k_{TD} k_{\downarrow} \\ p_C \propto k_{\uparrow} k_{TD} + k_s k_{TD} + k_h k_{\uparrow} \end{cases} \quad (6)$$

$$\begin{cases} p_A \propto k_s \\ p_B \propto k_h + k_{TD} \end{cases} \quad (7)$$

$$k, k'$$

$$\begin{cases} \frac{d[\text{PT}]}{dt} = k_{on}^T[\text{P}][\text{T}] - k_{off}^T[\text{PT}] \\ \frac{d[\text{PD}]}{dt} = k_{on}^D[\text{P}][\text{D}] - k_{off}^D[\text{PD}] \\ \frac{d[\text{P}]}{dt} = k_{off}^T[\text{PT}] + k_{off}^D[\text{PD}] - (k_{on}^T + k_{on}^D)[\text{P}] \end{cases} \quad (8)$$