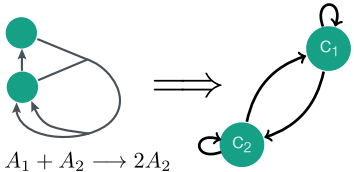
CRN



k_1: $A_1 + A_2 \longrightarrow 2A_2$

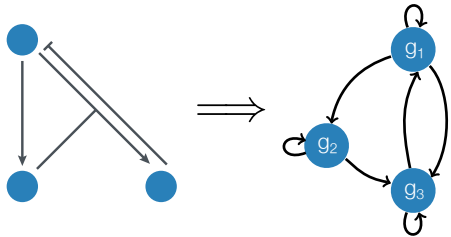
k_2: $A_2 \longrightarrow A_1$

$$\begin{aligned}\frac{dc_1}{dt} &= -k_1c_1c_2 + k_2c_2\\ \frac{dc_2}{dt} &= k_1c_1c_2 - k_2c_2\end{aligned}$$

$k_\mu: \sum_{i=1}^{N} r_{\mu i}A_i \longrightarrow \sum_{i=1}^{N} p_{\mu i}A_i$

$$\frac{dc_i}{dt} = \sum_{\mu=1}^{M} k_\mu \prod_{j=1}^{N} (c_j)^{r_{\mu j}}(p_{\mu i} - r_{\mu i})$$

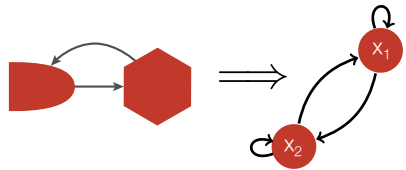
GRN



$$\begin{aligned}\frac{dg_1}{dt} &= k_{1s}\cdot\frac{1}{1+k_{13}g_3} - k_{1d}g_1\\ \frac{dg_2}{dt} &= k_{2s}\cdot\frac{k_{21}g_1}{1+k_{21}g_1} - k_{2d}g_2\\ \frac{dg_3}{dt} &= k_{3s}\cdot\frac{k_{31}g_1}{1+k_{31}g_1}\cdot\frac{k_{32}g_2}{1+k_{32}g_2} - k_{3d}g_3\end{aligned}$$

$$\frac{dg_i}{dt} = k_{is}\prod_{j=1}^{N}\frac{k_{ija}g_j^{n_{ija}}}{1+k_{ija}g_j^{n_{ija}}}\frac{1}{1+k_{ijr}g_j^{n_{ijr}}} - k_{id}g_i$$

ERN



$$\begin{aligned}\frac{dx_1}{dt} &= ax_1 - bx_1x_2\\ \frac{dx_2}{dt} &= -cx_2 + bx_1x_2\end{aligned}$$

$$\frac{dx_i}{dt} = r_ix_i + \sum_{j=1}^{n} b_{ij}x_ix_j$$