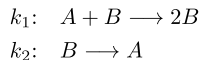
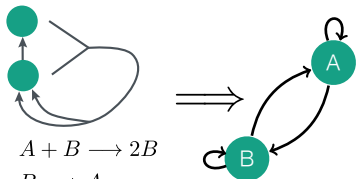


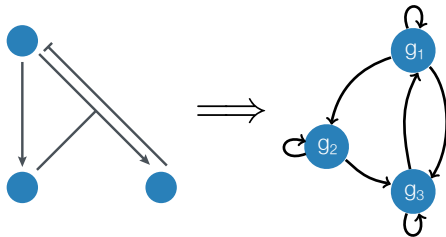
CRN



$$\begin{aligned} \frac{d[A]}{dt} &= -k_1[A][B] + k_2[B] \\ \frac{d[B]}{dt} &= k_1[A][B] - k_2[B] \end{aligned}$$

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

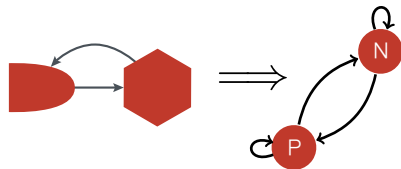
GRN



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

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

ERN



$$\begin{aligned} \frac{dN}{dt} &= aN - bNP \\ \frac{dP}{dt} &= -cP + bNP \end{aligned}$$

$$\frac{dN_i}{dt} = r_i N_i + \sum_{j=1}^n a_{ij} N_i N_j$$