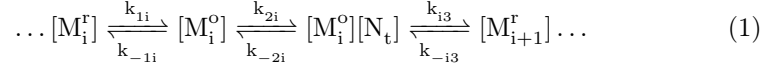
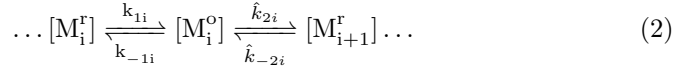


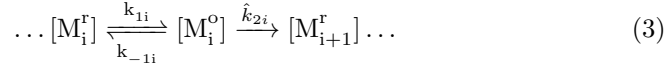
Original equation. k_2 and k_{-2} depend on the N_t concentration. The k_3 reaction produces a bi-product P that is not present initially. Therefore k_{-3} is initially zero.



Simplified equation



The parameters k_{-1i} and k_{1i} are known and are functions of i . The \hat{k} parameters should depend on a term ΔG_i . If I make the last step irreversible



the ODE system looks like this:

$$\begin{aligned} \frac{d[M_i^r]}{dt} &= k_{-1i}[M_i^o] + k_{2(i-1)}[M_{i-1}^o] - k_{1i}[M_i^r] \\ \frac{d[M_i^o]}{dt} &= k_{1i}[M_i^r] - (k_{-1i} + \hat{k}_{2i})[M_i^o] \\ \frac{d[M_{i+1}^r]}{dt} &= k_{2i}[M_i^o] - (\hat{k}_{-2i}[M_{i+1}^o] + k_{1(i+1)})[M_{i+1}^r] \end{aligned}$$