1 T2

$$X_i = X_{i-1} + k_d C_{A_0} \left((1 - X_{i-1})^2 - X_{i-1}^2 / k_e \right) \Delta t$$

$$-r_A = k_d \left(C_{A\,0}^{\alpha+\beta}(1-X)^{\alpha}(\theta_B - X)^{\beta} - \frac{C_{A\,0}^2 X^2}{K_e} \right)$$

$$\frac{\mathrm{d}X}{\mathrm{d}V} = \frac{-r_A}{F_{A0}}$$