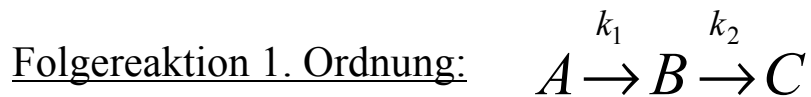


Vorlesung PC II - Übersicht 4

Kinetik und Quantenchemie



Differentialgleichungen: $\frac{d[A(t)]}{dt} = -k_1 \cdot [A(t)]$

$$\frac{d[B(t)]}{dt} = k_1 \cdot [A(t)] - k_2 \cdot [B(t)]$$

$$\frac{d[C(t)]}{dt} = k_2 \cdot [B(t)]$$

Anfangsbedingungen: $[A(0)] = [A_0] \quad [B(0)] = [C(0)] = 0$
 $\rightarrow [A_0] = [A(t)] + [B(t)] + [C(t)]$

Lösungen:

$$[A(t)] = [A_0] \cdot e^{-k_1 t}$$

$$[B(t)] = \frac{[A_0]k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t})$$

$$[C(t)] = \frac{[A_0]}{k_2 - k_1} (k_2(1 - e^{-k_1 t}) - k_1(1 - e^{-k_2 t}))$$