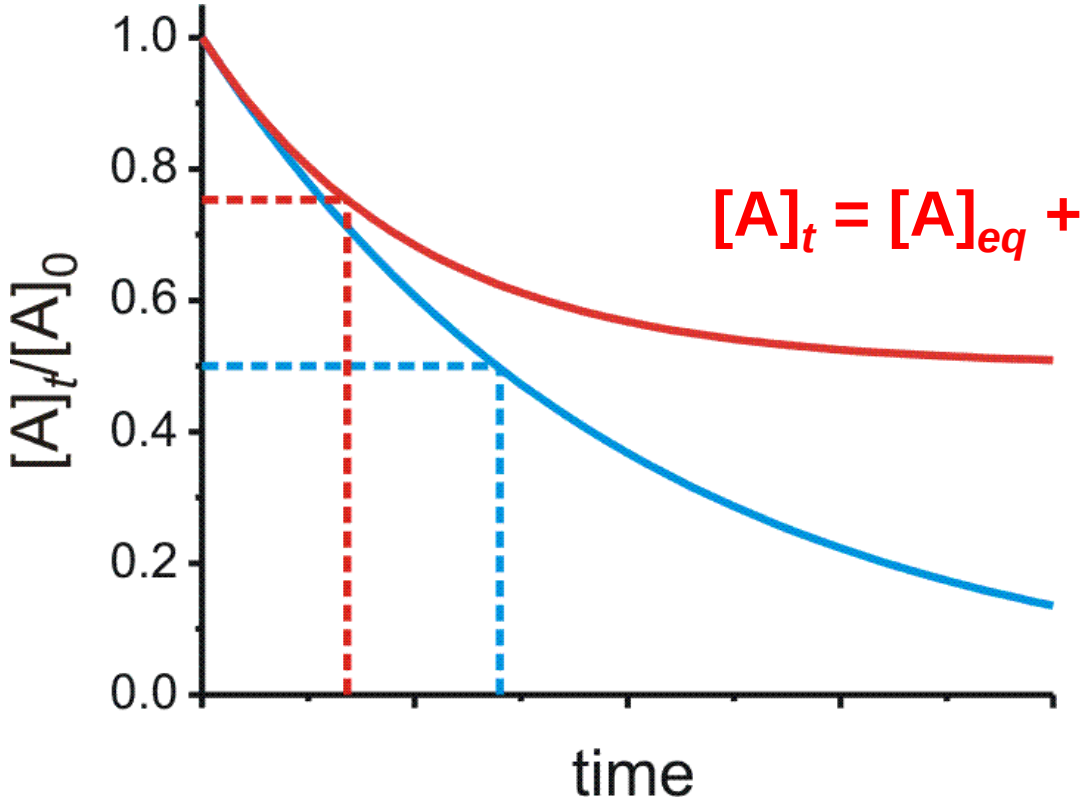
Equilibrium Kinetics

$A \xrightarrow{k_1} P$ vs. $A \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} P$

(for $k_1 = k_{-1}$, $[A]_{eq}/[A]_0 = 0.5$)



$$[A]_t = [A]_{eq} + ([A]_0 - [A]_{eq})e^{-(k_1 + k_{-1})t}$$

$$t_{1/2} = \frac{0.693}{k_1 + k_{-1}}$$

$$[A]_t = [A]_0 e^{-k_1 t}$$

$$t_{1/2} = \frac{0.693}{k_1}$$