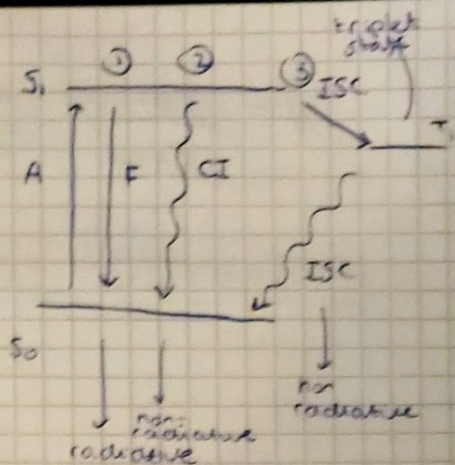


17-06-25

jablonski diagrams

decay fluorescence ①  
energy transfer ③  
FRET

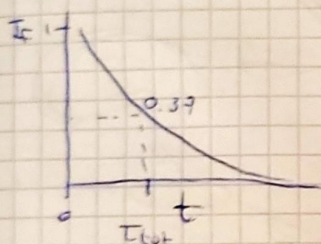


- Higher states decay very fast, so it all happens between  $S_0/S_1$
- decay based on probability, fastest process wins

constants  $k_f$ ,  $k_{isc}$ ,  $k_{et}$  (rates)

$$\phi_f = \frac{k_f}{\sum k_i} \quad \tau_i = \frac{1}{k_i}$$

lifetime



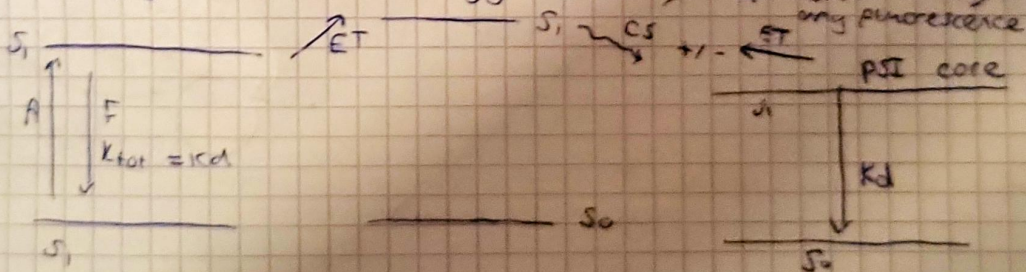
$$\frac{P_t}{P_0} = e^{-\frac{t}{\tau_{tot}}} \quad \tau_{tot} = \frac{1}{\sum k_i}$$

If  $t = \tau_{tot} = e^{-1} = 0.37$

high  $k$  = more probability

ex chl a + chl b  $\rightarrow$  sum of two graphs

Chlorophyll with lowest energy state



LHCI

RC

PSI core

$$\tau = \frac{1}{k_{rad} + k_{nr} + k_{et}} \approx \tau_{et}$$

very small





$$\phi = \frac{K_{ET}}{K_{TOT}} = \frac{\tau_{TOT}}{\tau_{ET}} = 1$$

# ANIMATION CONCEPT

