Théorie des perturbations dépendante du temps (Suite)

$$U_I^{(n)}(t) = \left(\frac{1}{i\hbar}\right)^n \int_0^t \cdots \int_0^{t_n-1} W_I(t_1) \cdots W_I(t_n) \mathrm{d}t_1 \cdots \mathrm{d}t_n$$

$$\begin{aligned}\mathcal{P}_{i\to f} &= \left| \langle \varphi_f | \sum_n^\infty U_I^{n+1}(t) \, |\varphi_i\rangle \right|^2 \\ &\approx \left| |\varphi_f\rangle \, U_I^{(0)}(t) \, |\varphi_i\rangle \right|^2\end{aligned}$$

$$\begin{aligned}&= \frac{1}{\hbar^2} \left| \langle \varphi_f | \int_0^r e^? W(t_1) e^? \, |\varphi_i\rangle \right|^2 \\ &= \frac{1}{\hbar^2} \left| \int_0^t \frac{\exp(???????)}{\exp(?????)} W_{??} \, |?????\rangle \, \mathrm{d}t \right|^2\end{aligned}$$

Pertubations oscillantes (monochormatique)

$$W(t) = \frac{W}{2} e^{i\omega t} + \frac{W^*}{2} e^{-i\omega t}$$

$$\mathcal{P}_{i\to f}(t) = \frac{1}{\hbar^2} \left| \int_0^t e^{???????????????} W_{f?} \mathrm{d}t_1 + \int_0^t e^{????????????????????????} \frac{W_{fi}^\dagger}{2} \right|^2$$