Modèle théorique

TDSE

$$i\hbar \frac{\partial}{\partial t} \boxed{\Psi(\boldsymbol{R}, \boldsymbol{r}, t)} = \left[\hat{\mathcal{H}}_0 + V_{int}\right] \boxed{\Psi(\boldsymbol{R}, \boldsymbol{r}, t)}$$

Hamiltonien sans champ

$$\begin{cases} \hat{\mathcal{H}}_0 = \hat{T}_n + \dfrac{1}{R} + V_{12}(r_1 - r_2) + \displaystyle\sum_{i=1,2} \hat{h}_i \\ \hat{h}_i = -\dfrac{\hbar^2}{2m}\nabla_i^2 + V_{en}(\boldsymbol{R}, \boldsymbol{r}_i) \end{cases}$$

Interaction

$$\begin{cases} V_{int}(r_1, r_2, t) = -e\,(r_1 + r_2) \cdot \boldsymbol{E}(t) \\ \boldsymbol{E}(t) = E_0\, f(t) \cos(\omega t + \boxed{\varphi})\, \hat{e} \end{cases}$$

CEP

$\lambda = 800\,\text{nm}$

$\hbar\omega \sim 1,55\,\text{eV}$

$\tau \leq 12\,\text{fs}$

$I \leq 8.10^{14}\,\text{W/cm}^2$