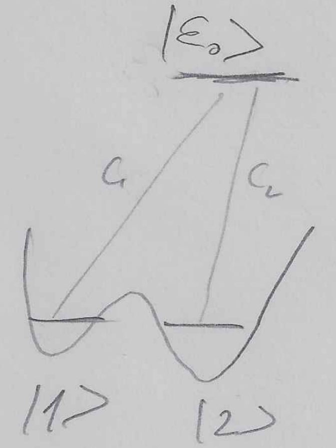
1346 double well (2013 B)

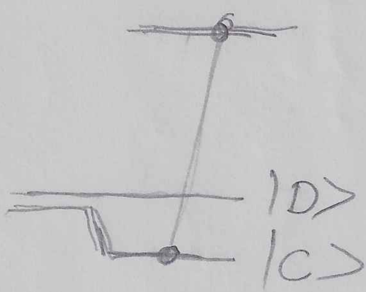


(1) $$|D\rangle = \frac{1}{\sqrt{\cdots}}\left(c_2|1\rangle - c_1|2\rangle\right)$$

(2) $$|C\rangle = \frac{1}{\sqrt{\cdots}}\left(c_1|1\rangle + c_2|2\rangle\right)$$

$$\langle 0|H|C\rangle = \sqrt{c_1^2 + c_2^2}$$

(3) $$\Delta \equiv \frac{c_1^2 + c_2^2}{\varepsilon_0} \qquad E_D = 0 \qquad E_C = -\Delta$$



(4) $$H_{eff} = \begin{pmatrix} -\frac{c_1^2}{\varepsilon_0} & c_0 - \frac{c_1 c_2}{\varepsilon_0} \\ c_0 - \frac{c_1 c_2}{\varepsilon_0} & -\frac{c_2^2}{\varepsilon_0} \end{pmatrix}$$

(5) $$\varepsilon_0 = \frac{c_1 c_2}{c_0} \Rightarrow$$ particle is localized in a single site

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המצב בסוף תהליך אדיאבטי של sweep

if $c_0 \neq 0 \Rightarrow |\psi\rangle = |1\rangle - |2\rangle$

if $c_0 = 0 \Rightarrow |\psi\rangle = |C\rangle$