

假定：

$$\begin{aligned} & \frac{i\hbar}{\alpha} \lim_{\varepsilon \rightarrow 0} \frac{\Phi[\chi'] - \Phi[\chi]}{\varepsilon}; \chi'(t) = \chi(t - \varepsilon) \\ & = \int dt \left[ \frac{1}{2m} \left( \frac{-i\hbar}{\alpha} \cdot \frac{\delta}{\delta \chi(t)} \right)^2 \right. \\ & \quad \left. + V(\chi(t)) \right] \Phi[\chi] \end{aligned}$$


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結論：

$$\begin{aligned} & m \frac{d^2}{dt^2} \int D\chi \Phi[\chi] \chi(t) \Phi[\chi] \\ & = - \int D\chi \Phi[\chi] V'(\chi(t)) \Phi[\chi] \end{aligned}$$

where

$$V'(x) = \frac{d}{dx} V(x)$$