2023-11-07

1 Master equation

$$\dot{\rho} = -i[H, \rho] + \mathcal{D}[\sqrt{\kappa}L]\rho$$

where the last term can be written as $\mathscr{L}\rho$

$$\mathcal{D}[A] = A\rho A^\dagger - \frac{1}{2}\{A^\dagger A\rho\}$$

We have to assume that the bath as no memory. The reason we model the bath as a lot of oscillators is that linear system are linear and dont remember how they got there.

We make the Markovian approximation :$\dot{\rho}$ only depends on $\rho(t)$ and not $\rho(t' < t)$

We also assume that the system is a state is a product state at every time.

Shrodinger equation matrix density flavor

$$\dot{\rho} = -i[H, \rho]$$

We got to the interaction frame with

$$U(t) = e^{i(H_{\text{sys}} + H_{\text{B}})}$$