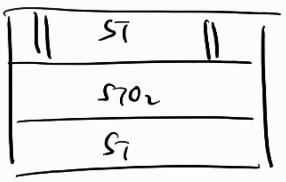
Markovian dynamics : Master eq에 의해 기술될 수 있는 decay,

⇒ Master eq는 Markovian approximation으로 유도할 수 없는 경우,

⇒ Non-Markovian dynamics

HF Vapor release ⇒

LHQ SiO_2



TLS는 electric dipole, elastic dipole.

Qubit, phonic

Qubit decay : Γ_q.

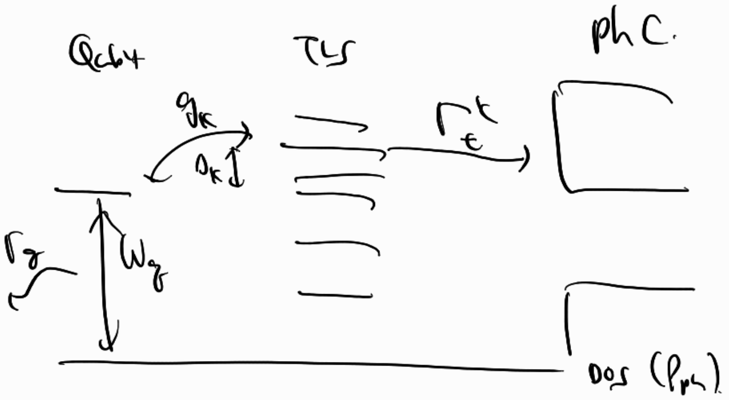
$$\Gamma_1 = \Gamma_q + \sum_k \Gamma_{qe}^k$$

$$\Gamma_{qe}^k = \frac{2 g_k^2 \Gamma_m}{\Gamma_m^2 + \Delta_k^2}$$

why?

$$\Gamma_m = \frac{\Gamma_q + \Gamma_\epsilon^k}{2}$$

$|g_k| < \Gamma_m$ regime 에서...



Hole Burning → TLS bath 확인, → propagation 측정.

Fermi limit → Purcell limit.

Mergeman 기준 $g \propto \frac{1}{\sqrt{V}}$.

TLS의 DOS ∝ V.