

Maxwell-Bloch equations 2:

$$\partial_t a(t) = i(\omega - \Omega + i\frac{\gamma_C}{2})a(t) + i\frac{g}{2}\pi(t)$$

$$\partial_t \pi(t) = -\gamma'(1 + i\alpha)\pi(t) - ig a(t) n(t)$$

$$\partial_t n(t) = -g \operatorname{Im} \{ \pi^*(t) a(t) \} - \gamma (n(t) - n_0).$$

Mit: $a(t) := E(t) \sqrt{\epsilon_0 V / (\hbar \omega)}$

$$\pi(t) := N_{at} (u + iv)$$

$$n(t) := N_{at} w$$

$$\alpha := \delta / \gamma' = (\omega - \omega_0) / \gamma'$$

$$g := d_{eg} \sqrt{\hbar \omega / (\epsilon_0 V)} / \hbar$$