2023-11-14

$$H_x = (\omega_r + \chi\sigma_z)\, a^\dagger a + \frac{\omega_q + \chi}{2}\sigma_z$$

$$|\psi(0)\rangle = (c_e\,|e\rangle + c_g\,|g\rangle) \otimes |\alpha\rangle$$

$$|\psi(t)\rangle = c_e\,|e, \alpha_e\rangle + |g, \alpha_g\rangle$$

$$\frac{d}{dt}\langle a\rangle = \frac{\mathrm{d}}{\mathrm{d}t}\,\mathrm{Tr}(\rho a) = \mathrm{Tr}(\dot{\rho} a)$$

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