$$\hbar g_0(\hat{b}^\dagger + \hat{b})\hat{a}^\dagger\hat{a}$$

$$|\bar{\alpha}_c| \gg 1$$

$$\hbar G(\delta\hat{a}^\dagger + \delta\hat{a})(\hat{b}^\dagger + \hat{b})$$

$$\Delta = -\omega_m$$

$$\Delta = +\omega_m$$

$$\hbar G(\delta\hat{a}^\dagger\hat{b} + \hat{b}^\dagger\delta\hat{a})$$

$$\hbar G(\delta\hat{a}^\dagger\delta\hat{b}^\dagger + \hat{b}\delta\hat{a})$$