

$$\chi_{e1}(t) = \sqrt{2} \frac{\hbar\omega_0}{m_e c^2} a_{01} \gamma_{e1}(t)$$

$$\frac{d\gamma_{e1}(t)}{dt} = \frac{2\alpha_f c}{3\bar{\lambda}_c} \chi_{e1}^2(t) g_1(\chi_{e1})$$

$$\mathcal{F}_{\pi/\sigma}^{NLC}(\gamma_{ph}) = \int_0^{\tau_1} dt \cdot \frac{\mathcal{F}_{\pi/\sigma}^{NLC}(\chi_{e1}(t), \gamma_{ph})}{\gamma_{e1}}$$