

$$\int_{\mathcal{F}} d\mu \left[\tau_2^{-\lambda/2} \sum_{P_L, P_R} \rho(P_L \sqrt{\tau_2}, P_R \sqrt{\tau_2}) \, q^{\frac{1}{4} P_L^2} \, \bar{q}^{\frac{1}{4} P_R^2} \right] \Phi(\tau)$$