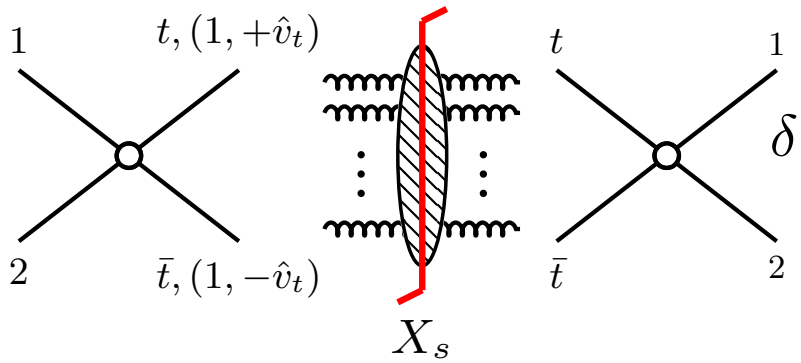
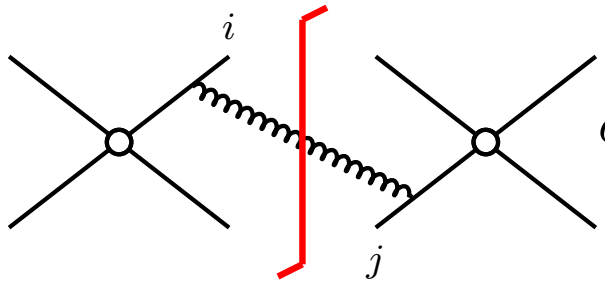
$$\int \mathrm{d}\phi\, \boldsymbol{S}(\vec{q}_T, \vec{v}_t, \mu) =$$

$$\sum_{X_s} f_{X_s}(\vec{q}\,'_T) \int_{X_s}$$



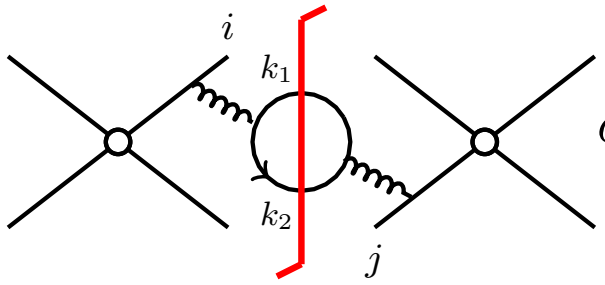
$$\delta\left(1 - \left|\textstyle\sum_i \vec{k}_{iT}\right|^2\right) \prod_i \delta^+(k_i)$$

$$= f_1(q'_T) \int \mathrm{d}^d k_1$$



$$\delta\left(1 - \vec{k}_{1T}^2\right)\delta^+(k_1)$$

$$+ f_2(q'_T) \int \mathrm{d}^d k_1$$



$$\delta\left(1 - |\vec{k}_{1T} + \vec{k}_{2T}|^2\right)\delta^+(k_1)\delta^+(k_2) + \ldots$$