

# 1. FEYN

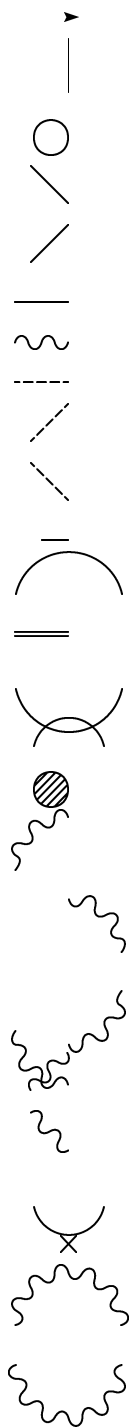
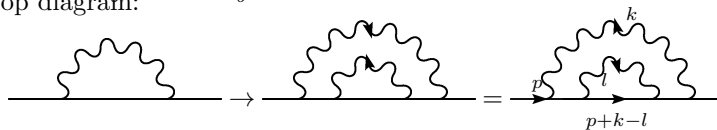
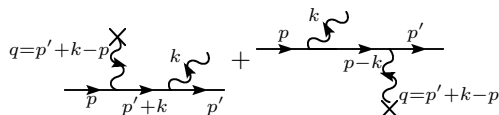


Figure 1 shows three Feynman diagrams illustrating the interaction of a photon with a fermion line. The first diagram shows a fermion line with an incoming line labeled 'a' and an outgoing line labeled 'b', with a wavy line labeled  $\mu, c$  attached. The second diagram shows a fermion line with an incoming line labeled 'a' and an outgoing line labeled 'b', with a wavy line labeled  $\mu, c$  attached. The third diagram shows a fermion line with an incoming line labeled 'a' and an outgoing line labeled 'b', with a wavy line labeled  $\mu, c$  attached. The third diagram is labeled with the expression  $ig\gamma_\mu(T^c)_{ab}$ .

Two-loop diagram:



Bremsstrahlung:



OPE:

$$\begin{aligned}
-i\Sigma_{\text{ope}} = & \left[ \text{---}\!\!\!\rightarrow\!\!\!\text{---} + \text{---}\!\!\!\text{---}\!\!\!\text{---} + \dots \right] 1 \\
& + \left[ \text{---}\!\!\!\times\!\!\!\text{---} + \text{---}\!\!\!\times\!\!\!\text{---} + \dots \right] \langle \bar{\psi} M \psi \rangle \\
& + \left[ \text{---}\!\!\!\text{---}\!\!\!\text{---} + \dots \right] \langle G_{\mu\nu}^a G_{\mu\nu}^a \rangle
\end{aligned}$$

Complete vertex:

$$\begin{aligned}
\text{---} \bigcirc \text{---} &= \text{---} \rightarrow \text{---} + \text{---} \text{---} \text{---} + \text{---} \text{---} \text{---} \text{---} + \dots \\
&= \sum_{n=0}^{\infty} \text{---} \rightarrow (\text{---} \text{---} \text{---})^n \text{---} \\
&= \frac{\text{---} \rightarrow}{1 - (\text{---} \text{---} \text{---})}.
\end{aligned}$$