

Invariance of  $C_0$  under permutations of arguments

- reason for labeling arguments as such.

①

$$C_0(q^2, p_2^2, p_1^2; m_0, m_1, m_2) = C_0(q^2, p_1^2, p_2^2; m_0, m_2, m_1)$$

can switch  
last two  
arguments.

$$C_0(\bar{p}_1^2, \bar{p}_3^2, \bar{p}_2^2; \bar{m}_3^2, \bar{m}_2^2, \bar{m}_1^2)$$

Ellis: can switch  $\bar{p}_2^2 \leftrightarrow \bar{p}_3^2$  and  $\bar{m}_1^2, \bar{m}_2^2$

corr.  $p_2^2 \leftrightarrow q^2$  and  $m_0^2 \leftrightarrow m_1^2$

$$\bar{p}_1^2 \rightarrow \bar{p}_2^2 \quad \bar{m}_1^2 \rightarrow \bar{m}_2^2$$

$$\bar{p}_2^2 \rightarrow \bar{p}_3^2 \quad \bar{m}_2^2 \rightarrow \bar{m}_3^2$$

$$\bar{p}_3^2 \rightarrow \bar{p}_1^2 \quad \bar{m}_3^2 \rightarrow \bar{m}_1^2$$

corr:

$$p_1^2 \rightarrow q^2 \quad m_0^2 \rightarrow m_1^2$$

$$q^2 \rightarrow p_2^2 \quad m_1^2 \rightarrow m_2^2$$

$$p_2^2 \rightarrow p_1^2 \quad m_2^2 \rightarrow m_0^2$$

②

$$C_0(q^2, p_2^2, p_1^2; m_0, m_1, m_2) = C_0(p_1^2, q^2, p_2^2; m_2, m_0, m_1)$$

cyclic invariance.

∴ I can switch ANY pair of corresponding argument.