

$$s = (k+p)^2 \simeq 4E_e E_P$$

$$t = (p-p')^2$$

$$u = (k'-p)^2$$

$$Q^2 = -(k-k')^2 = -(p-p')^2 = -t = -q^2$$

$$x = \frac{Q^2}{2(p \cdot q)} \simeq -\frac{t}{u+s} \quad 0 \leq x \leq 1$$

$$y = \frac{p \cdot q}{p \cdot k} \simeq \frac{u+s}{s} \quad 0 \leq y \leq 1$$

$$W^2 = (p+q)^2 = (p')^2 = m_p^2 + \frac{Q^2}{x}(1-x) \simeq s+t+u$$