early history: the Drell-Yan process

\[ \tau = M_{\mu\mu}^2/s \]

\[
\frac{d^2\sigma}{dM^2} = \frac{4\pi\alpha^2}{3M^4} \int_0^1 dx_1 dx_2 \delta(x_1 x_2 - \tau) \sum_a e_a^2 f_a(x_1) f_{\bar{a}}(x_2) \\
= \frac{4\pi\alpha^2}{3M^4} F(\tau) \quad \text{(scaling)}
\]

“The full range of processes of the type \( A + B \rightarrow \mu^+\mu^- + X \) with incident \( p, \pi, K, \gamma \) etc affords the interesting possibility of comparing their parton and antiparton structures” (Drell and Yan, 1970)

(nowadays) … and to study the scattering of quarks and gluons, and how such scattering creates new particles