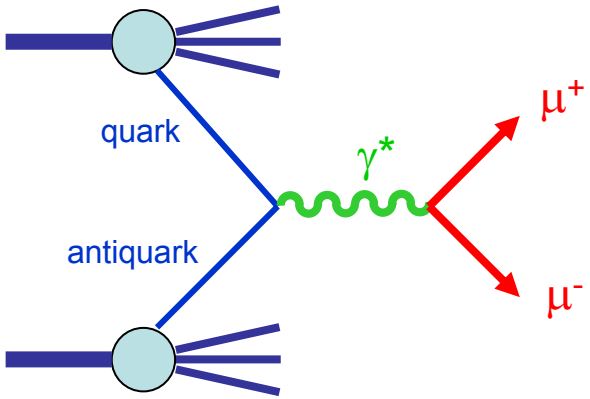
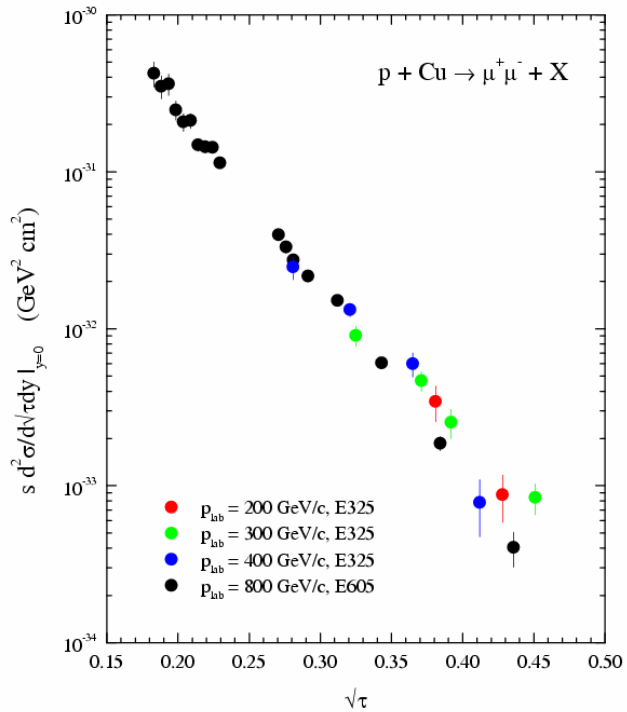
early history: the Drell-Yan process



$\tau = M_{\mu\mu}^2/s$

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

$$= \frac{4\pi\alpha^2}{3M^4}\mathcal{F}(\tau) \qquad \text{(scaling)}$$



"The full range of processes of the type $A + B \rightarrow \mu^+\mu^- + X$ with incident p,π, K, γ 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**