8.701

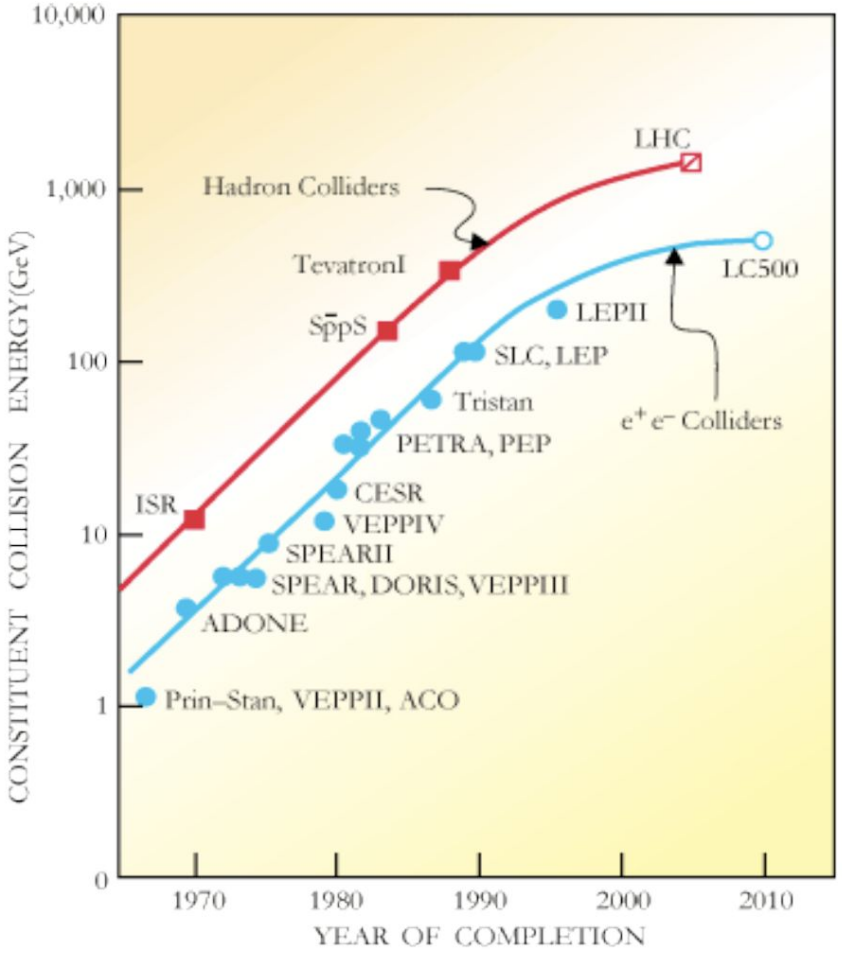
Introduction to Nuclear and Particle Physics

Markus Klute - MIT

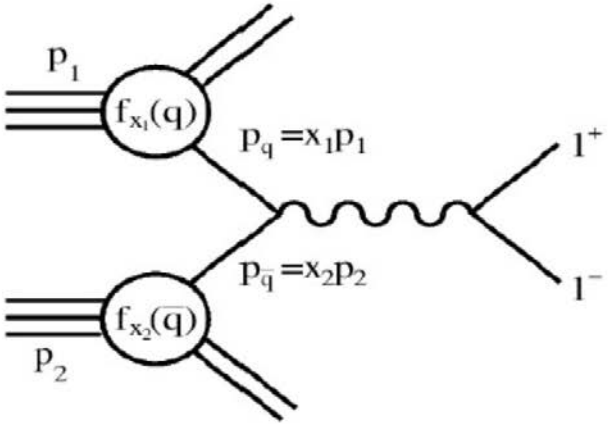
5. QCD

5.6 Hadron Colliders

Historic View



Cross Section Factorization



$$\frac{d\sigma}{dQ^2} = \sum_{q,\bar{q}} \int dx_1 \int dx_2 \left\{ q(x_1)\bar{q}(x_2) + \bar{q}(x_1)q(x_2) \right\} \hat{\sigma}_0 \, \delta(Q^2 - \hat{s})$$

Hadronic cross section

Parton distribution functions

Partonic cross section

8.701 Introduction to Nuclear and Particle Physics
Fall 2020