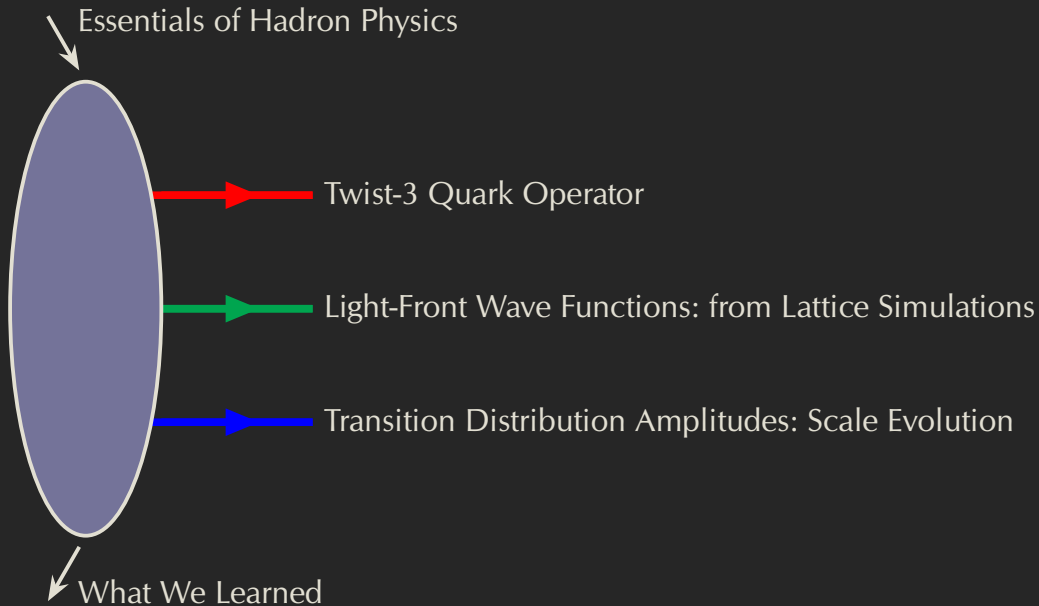


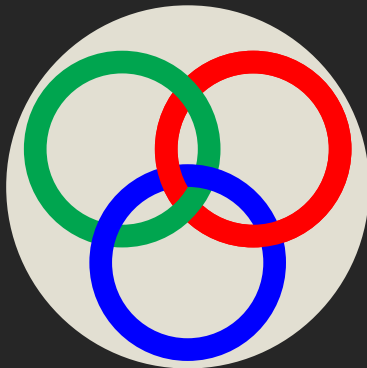
Quarks, with an Extra Twist

Andrea Schiavi

Supervisors: Barbara Pasquini, Simone Rodini



Quarks:



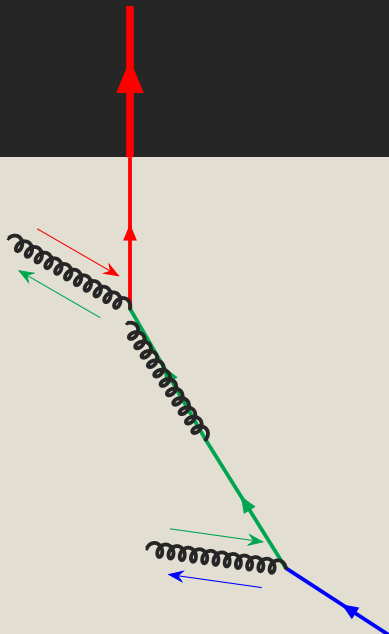
Hadrons:

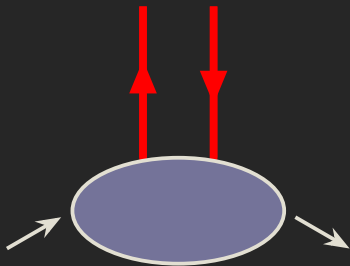
Mesons

Baryons

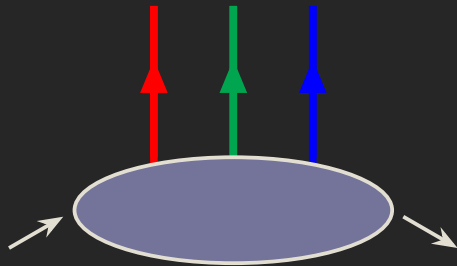
Antiquarks:



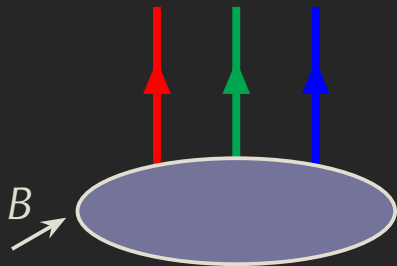




$$\delta_{ij} \bar{q}_i q_j$$

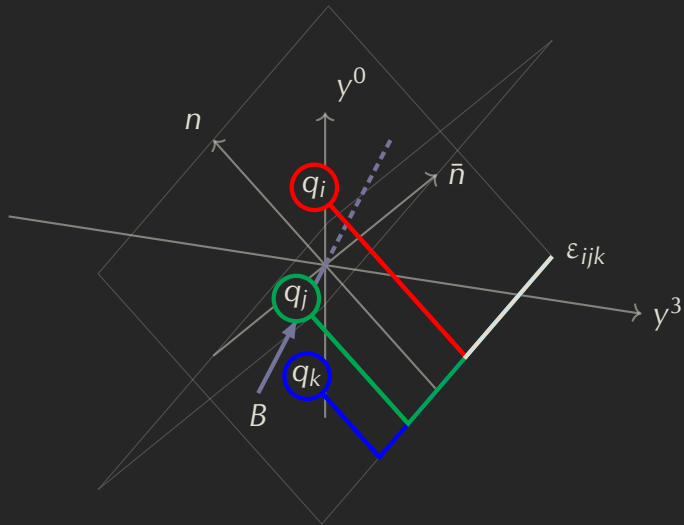


$$\varepsilon_{ijk} q_i q_j q_k$$

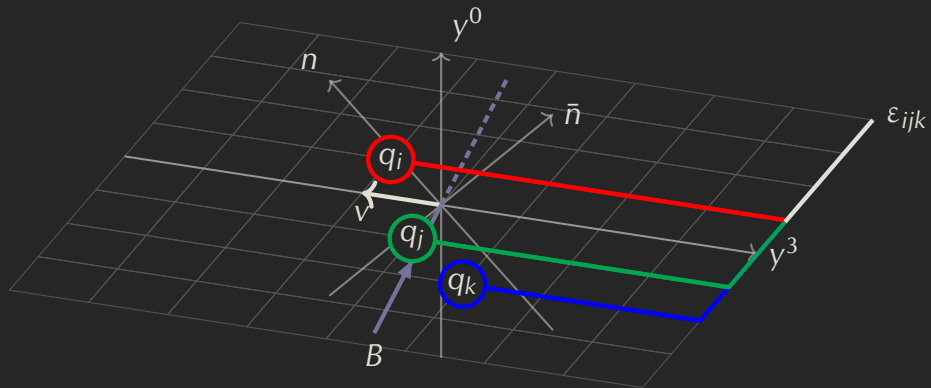


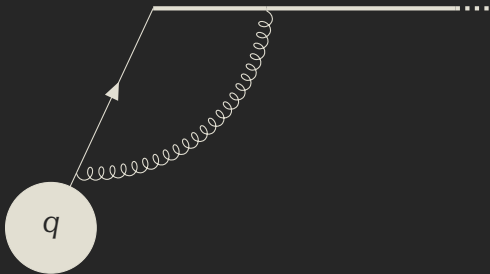
LFWF

$$\langle 0 | \varepsilon_{ijk} q_i q_j q_k | B \rangle$$



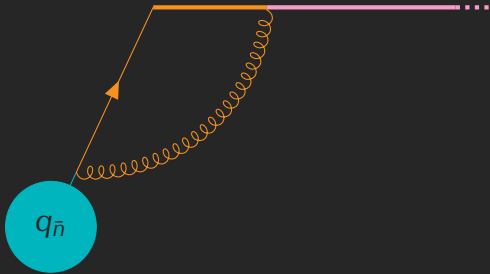
$$\langle 0 | \epsilon_{ijk} q_i q_j q_k | B \rangle$$





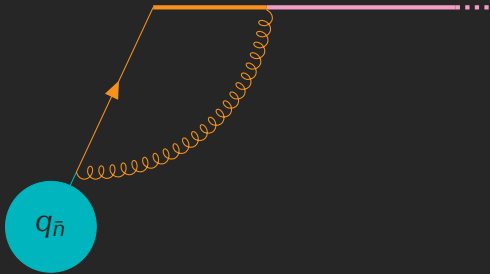
$$q \mapsto \textcolor{brown}{q} + q_{\bar{n}} + q_{\textcolor{violet}{v}}$$

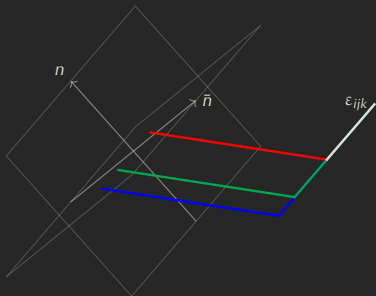
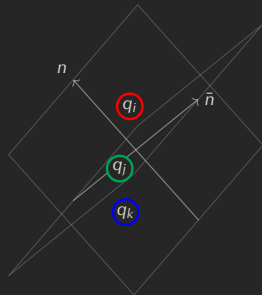
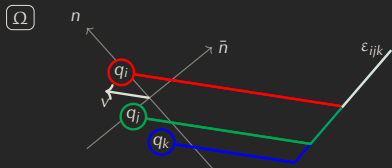
$$A^\mu \mapsto \textcolor{brown}{A}^\mu + A_{\bar{n}}^\mu + A_{\textcolor{violet}{v}}^\mu$$

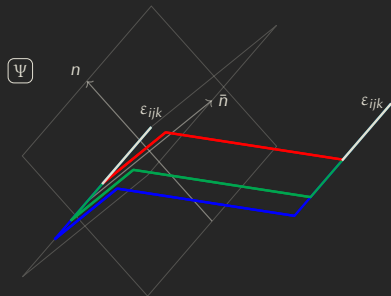
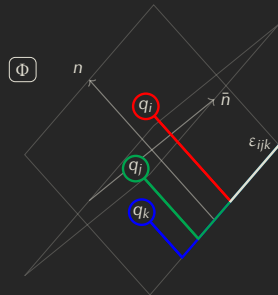
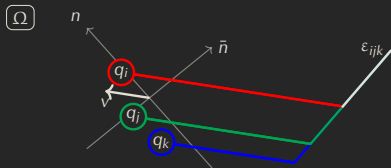


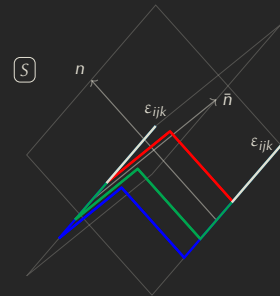
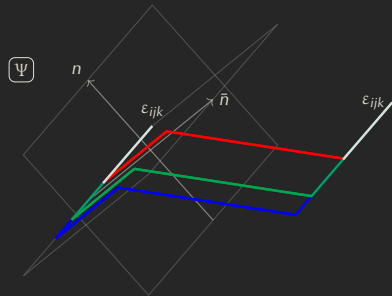
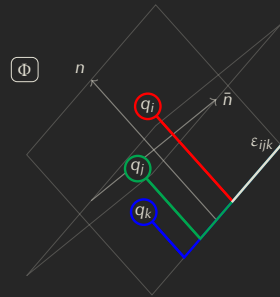
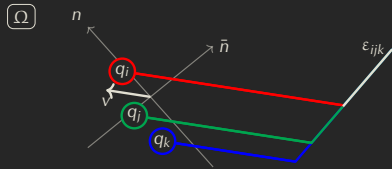
$$q \mapsto \textcolor{brown}{q} + q_{\bar{n}} + q_{\textcolor{violet}{v}}$$

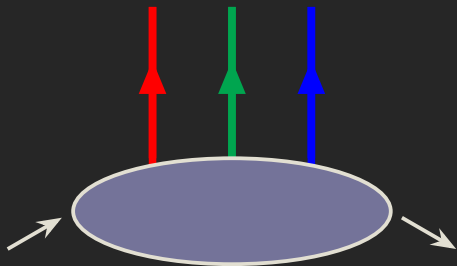
$$A^\mu \mapsto \textcolor{brown}{A}^\mu + A_{\bar{n}}^\mu + A_{\textcolor{violet}{v}}^\mu$$

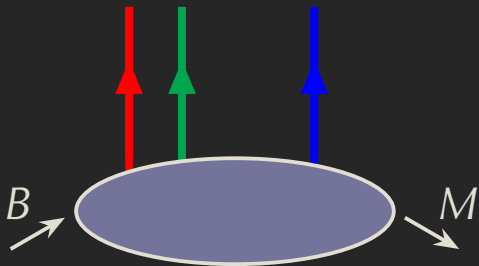










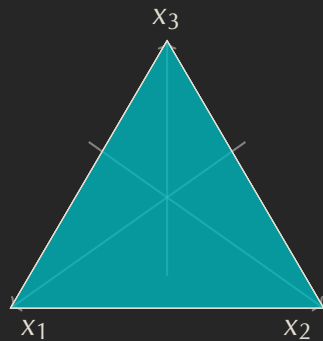
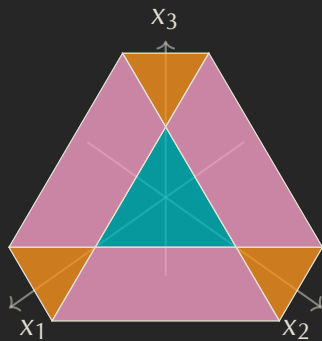
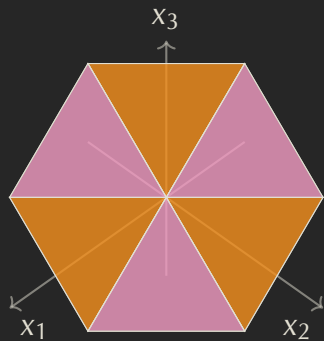


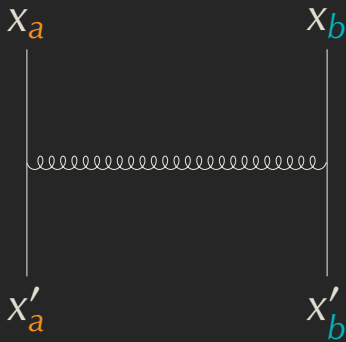
$$x_1 + x_2 + x_3 = 2\xi$$

$$\langle M | \varepsilon_{ijk} q_i q_j q_k | B \rangle$$

TDA

$$x_1 + x_2 + x_3 = 2\xi$$



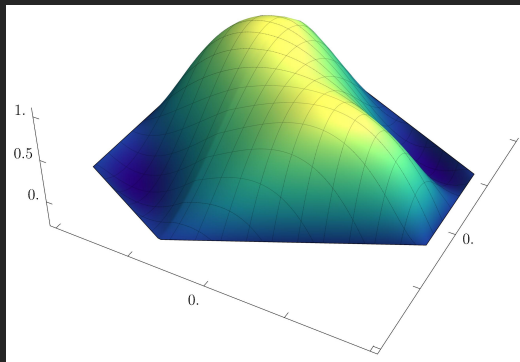


$$\mu \frac{\partial}{\partial \mu} \text{TDA}(x_a, x_b, \mu) \sim H(x_a, x_b; x'_a, x'_b) \otimes' \text{TDA}(x'_a, x'_b, \mu)$$

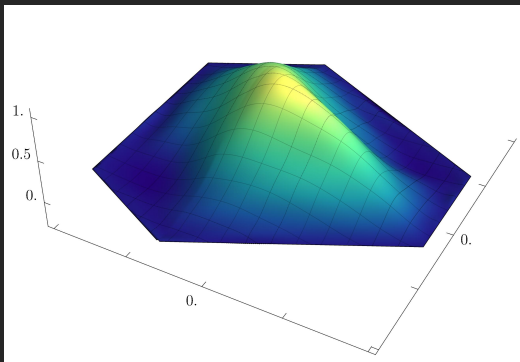
$$\mu \frac{\partial}{\partial \mu} C_{ij}(\mu) \sim \sum_{mn} H_{ijmn} C_{mn}(\mu)$$

$$\boxed{\text{TDA}(x_a, x_b, \mu) = \sum_{ij} C_{ij}(\mu) P_i(x_a) Q_j(x_b)}$$

$$\mu \frac{\partial}{\partial \mu} \text{TDA}(x_a, x_b, \mu) \sim H(x_a, x_b; x'_a, x'_b) \otimes' \text{TDA}(x'_a, x'_b, \mu)$$



1 GeV



10 GeV

