order parameters:

- pion decay constant $F_\pi = 93$ MeV

- quark condensate $\langle \bar{q}q \rangle = \frac{1}{2}\langle 0|\bar{\psi}_L\psi_R + \bar{\psi}_R\psi_L|0\rangle$

to relate them consider the operator identity:

$$[Q_i^A, [Q_j^A, H_{QCD}]] = \delta_{ij} m\bar{\psi}\psi = H_\chi$$

take the matrix element with the vaccum state $|0\rangle$ and insert a complete set of exited states $|n\rangle$

$$\sum_n 2E_n |\langle n|Q_i^A|0\rangle|^2 = -2m\langle \bar{q}q\rangle \quad \text{EWSR}$$

saturating $|n\rangle$ by single pion states

$$m_\pi^2 F_\pi^2 = -2m\langle \bar{q}q\rangle \quad \text{GOR}$$

with $m = 6$ MeV

$$\langle \bar{q}q\rangle = -(240\,\text{MeV})^3 = -1.8\,\text{fm}^{-3}$$