



Contribution ID: 43

Type: **Oral presentation**

Nucleon Charges and Sigma Terms from $N_f = 2 + 1$ QCD

Monday 26 July 2021 13:30 (15 minutes)

We report on the recent progress of our analysis into nucleon sigma terms, as well as the singlet axial and tensor nucleon charges. These are extracted from the CLS gauge configurations, which utilise the Lüscher-Weisz gluon action and the Sheikholeslami-Wohlert fermion action with $N_f = 2 + 1$ fermions, with pion masses ranging from the physical value up to 410 MeV, and lattice spacings covering a range between 0.09fm and 0.04fm. We have employed a variety of methods to determine the necessary correlation functions, including the sequential source method for connected contributions, and the truncated solver method for disconnected contributions. Extrapolation to the physical point involves leading order discretisation, chiral, and finite-volume effects.

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Session Classification: Hadron Structure

Track Classification: Hadron Structure