Contribution ID: **379** Type: **Parallel Talk**

The parity-odd structure function of nucleon from Compton amplitude

Friday, 4 August 2023 09:40 (20 minutes)

The dominant contribution to the theoretical uncertainty in the extracted weak parameters of the Standard Model comes from the hadronic uncertainties in the electroweak boxes, i.e. $\gamma - W^{\pm}/Z$ exchange diagrams. A dispersive analysis relates the box diagrams to the parity-odd structure function, F_3, for which the experimental data either do not exist or belong to a separate isospin channel. Therefore a first-principles calculation of F_3 is highly desirable.

In this contribution, we report on the QCDSF/UKQCD Collaboration's progress in calculating the moments of the $F_3^{\gamma Z}$ structure function from the forward Compton amplitude at the SU(3) symmetric point. We extract the moments for a range of Q^2 values. A comparison to the Gross-Llewellyn Smith sum rule is given. Additionally, we estimate the power corrections by studying the Q^2 dependence of the moments.

Topical area

Structure of Hadrons and Nuclei

Primary author: CAN, K. Utku

Co-authors: HORSLEY, Roger; NAKAMURA, Yoshifumi; PERLT, Holger; RAKOW, Paul; SCHIERHOLZ, Gerrit; STÜBEN, Hinnerk; YOUNG, Ross; ZANOTTI, James

Presenter: CAN, K. Utku

Session Classification: Structure of Hadrons and Nuclei