

# DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 205

Type: **Parallel talk**

## Deeply Virtual Compton Scattering and Hard Exclusive $\pi^0$ Muoproduction at COMPASS

*Tuesday, 28 March 2023 10:50 (20 minutes)*

We will present COMPASS measurements of Deeply Virtual Compton Scattering and of exclusive  $\pi^0$  production on the proton using 160 GeV polarized  $\mu^+$  and  $\mu^-$  beams at the CERN SPS impinging on a 2.5m long liquid hydrogen target. The target was surrounded by a barrel-shaped time-of-flight system to detect the recoiling target protons. The scattered muons and the produced real photons were detected by the COMPASS spectrometer, which was supplemented by an additional electromagnetic calorimeter for the detection of large-angle photons.

We will show the charge-spin average DVCS cross section differential in the squared four-momentum transfer to the proton, which is mainly sensitive to the GPD H and is expected to be sensitive to the transverse extension of partons in the proton. COMPASS allows for a first access to the Bjorken-x domain of sea quarks. Exclusive  $\pi^0$  production is the main source of background for the DVCS measurement, while it provides complementary information for the parametrization of GPDs. We will report on results for the exclusive  $\pi^0$  production cross section and its dependence on the squared four-momentum transfer and on the azimuthal angle between the scattering plane and the  $\pi^0$  production plane. This reaction is aiming to constrain GPDs, in particular chiral-odd (“transversity”) GPDs.

### Submitted on behalf of a Collaboration?

Yes

### Participate in poster competition?

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