

Exclusive π^0 muoproduction at COMPASS

Hard Exclusive Meson Production (HEMP) and Deeply Virtual Compton Scattering (DVCS) are very promising reactions to access Generalized Parton Distributions (GPDs). Such exclusive measurements were performed at COMPASS in 2016 and 2017 at the M2 beamline of the CERN SPS using the 160 GeV muon beam scattering off a 2.5 m long liquid hydrogen target surrounded by a barrel-shaped time-of-flight system to detect the recoiling target proton. 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.

Exclusive π^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 preliminary results of the exclusive π^0 production cross section and its dependence on the squared four-momentum transfer and on the azimuthal angle between the scattering plane and the π^0 production plane. The COMPASS data will provide further input to constrain GPDs, in particular chiral-odd (“transversity”) GPDs.

Submitted on behalf of a Collaboration?

Yes

Author: LAVICKOVA, Karolina (Czech Technical University in Prague (CZ))

Presenter: LAVICKOVA, Karolina (Czech Technical University in Prague (CZ))

Session Classification: WG1: Structure Functions and Parton Densities

Track Classification: WG1: Structure Functions and Parton Densities