

DIS 2015 - XXIII. International Workshop on Deep-Inelastic Scattering and Related Subjects

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XXIII International Workshop on
Deep-Inelastic Scattering and
Related Subjects

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The DVCS physics program at COMPASS

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A major part of the COMPASS-II program will be dedicated to the investigation of generalized parton distributions (GPDs)

and transverse momentum dependent parton distributions (TMDs), which aim for the most complete description of the partonic structure of the nucleon.

GPDs are experimentally accessible via lepton-induced exclusive reactions, in particular the Deeply Virtual Compton Scattering (DVCS)

and Deeply Virtual Meson Production (DVMP). At COMPASS, those processes are investigated using an high intensity

muon beam of 160 GeV and a 2.5 m-long liquid hydrogen target. In order to optimize the selection of exclusive reactions at those

energies, the target is surrounded by a new barrel-shaped time-of-flight system to detect the recoiling particles.

COMPASS-II covers the up to now unexplored x_{Bj} domain ranging from 0.01 to 0.15. The option to change simultaneously the charge and polarization of the muon beam allows to access the Compton form factor related to the dominant GPD H , and thus to provide new experimental constraints

on the theoretical GPD models in the intermediate x_{Bj} regime.

Moreover, the x_{Bj} -dependence of the nucleon transverse size is investigated via

the pure DVCS cross-section that can be extracted from the sum of cross-sections measured with positive and negative beam polarity.

Preliminary results of pilot measurements and projections on the achievable accuracies will be presented.

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