

Generalized parton distribution of pions at the forthcoming electron-ion collider.

The advent of the Electron-Ion Collider (EIC) is pushing the frontiers of hadron physics. Importantly, generalized parton distributions are expected to be accessible within an unprecedented accuracy. This work takes advantage of this context to present the first exploratory study on the access of pion GPDs at the EIC. Relying on state-of-the-art models for the pion's GPDs, we tackle the effect of scale-evolution up to a Q^2 -regime accessible in experiment, and elaborate on its manifestations in observable quantities. More precisely, we compute event-rates and beam-spin asymmetries for the Sullivan process. The analysis of these results confirms the expectation for pion GPDs to be accessible at the EIC. Remarkably, we find evidence on the dominant role played by gluons in the description of pion's structure and identify a sign inversion in the beam-spin asymmetries to be clear manifestation of this phenomenon both at an experimental and theoretical level.

Authors: MORGADO CHÁVEZ, Jose Manuel (Universidad de Huelva); Dr BERTONE, Valerio (C.E.A. Paris-Saclay); DE SOTO, Feliciano (Pablo de Olavide University); Dr DEFURNE, maxime (CEA-Saclay); MEZRAG, Cédric; MOUTARDE, Hervé; RODRIGUEZ QUINTERO, José (University of Huelva); SEGOVIA, Jorge

Presenter: MORGADO CHÁVEZ, Jose Manuel (Universidad de Huelva)