

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



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Extracting the partonic structure of colourless exchanges at the Electron-Ion Collider

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Inclusive Diffractive Deep Inelastic Scattering ($ep \rightarrow eXp$) is mediated by the t -channel exchange of net-colourless strongly interacting objects related to mesons and to the pomeron. The high performance beam-line proton spectrometers and central detector components that are included in detector designs for the future Electron Ion Collider will lead to measurements of this process to unprecedented precision. The varying planned centre of mass energies and expected wide range of experimental acceptance are well suited to studying both the pomeron and the sub-leading meson contributions. By applying QCD fits based on the DGLAP equations to the x and Q^2 dependences of simulated EIC data, we assess the obtainable precision on the partonic structure of the exchange. Using information from the ξ and t dependences, we interpret this in terms of separate contributions from the pomeron and sub-leading mesons, estimating the achievable improvements in precision on both compared with existing knowledge.

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

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