

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



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Type: **Parallel talk**

On the evidence for different widths of pion and proton transverse momentum distributions

Thursday, 30 March 2023 10:50 (20 minutes)

In this analysis, we report a comparison of transverse momentum dependent parton distribution functions (TMDPDFs) between pions and protons through a simultaneous extraction of collinear and transverse degrees of freedom in the pion. We extract proton TMDPDFs along with pion TMDPDFs from low transverse-momentum dependent fixed-target Drell-Yan data as well as collinear pion PDFs from Drell-Yan and leading neutron data, marking the first analysis of its kind. We observe a very distinctive behavior of the conditional expectation value of the transverse separation of quarks for a given x . We provide some possible explanation of the phenomena and new avenues for further explorations.

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

No

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