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A model for pion collinear parton distribution function and form factor.

Tuesday, 28 March 2023 17:30 (20 minutes)

Using the light-front wave functions (LFWFs) overlap representation, we built a theoretical model for the pion state, that parametrizes different pion parton distribution functions. The model is constructed with two sets of parameters, that can be fitted separately by performing two independent fits: one for the collinear, and one for the transverse direction.

At present, we have been able to fit observables sensible to the pion collinear parton distribution function (PDF), and the existing experimental data of the pion electromagnetic form factor.

Moreover, there is some work in progress in the direction to compute the pion generalized parton distributions (GPDs) and to predict the values of certain observable seinsible to pion GPDs. In future, we plan to fit also the experimental data sensible to the pion transverse momentum dependent parton distribution functons (TMDs).

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

No

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