

XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



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Precision lattice calculation of the x -dependence of pion valence PDF

In this talk, we present a model-independent calculation of the x -dependence of pion valence PDF with the large-momentum effective theory approach. In this calculation we adopt the most up-to-date theoretical developments on the systematic corrections, which include the hybrid renormalization scheme that rigorously renormalizes the lattice matrix elements at both short and long distances, as well as the inverted two-loop matching kernel that allows for extraction of the PDF without any model assumption. Therefore, we are able to make predictions for the PDF within a range of $x \in [x_{\min}, x_{\max}]$ where the systematic uncertainties are under control, which is a firm step towards the stage of precision calculation.

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