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Precision lattice calculation of the x -dependence of pion valence PDF YONG ZHAO, Brookhaven National Laboratory, XIANG GAO, Tsinghua University and Brookhaven National Laboratory, SWAGATO MUKHERJEE, Brookhaven National Laboratory — 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. This is a firm step towards the stage of precision calculation of both meson and nucleon PDFs.

Yong Zhao
Brookhaven National Laboratory

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