

Abstract Submitted
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Lattice Parton Distribution Functions at Physical Pion Mass¹

HUEY-WEN LIN, Michigan State Univ, LP3 COLLABORATION — We present the first lattice results on isovector unpolarized, longitudinally and transversely polarized parton distribution functions (PDFs) at physical pion mass. The PDFs are obtained using the large-momentum effective field theory (LaMET) framework where the full Bjorken- x dependence of finite-momentum PDFs, called “quasi-PDFs”, can be calculated on the lattice. The quasi-PDF nucleon matrix elements are renormalized nonperturbatively in RI/MOM-scheme. We demonstrate the current state-of-the-art of the 2+1+1-flavor lattice data at physical pion mass with lattice spacing 0.09 fm and volume $(5.76 \text{ fm})^3$.

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