

Valence parton distribution of pion from lattice QCD at physical point

Tuesday 7 December 2021 08:55 (20 minutes)

We present the first lattice calculation of pion valence parton distribution using matching formula at NNLO level. We use the Wilson-Clover fermion on three 2+1 flavor HISQ ensembles of lattice spacings $a = 0.04, 0.06$ and 0.076 fm, with two pion mass including the physical one. Two unitary Domain-Wall calculations at physical point are also presented. This allows us to control the continuum limit, quark mass effects as well as the chiral symmetry. Our analysis use ratio-based schemes to renormalize the equal-time bilocal quark-bilinear matrix elements. We extract first few moments model independently and reconstruct the x -dependent PDF.

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Session Classification: Session I