

Unpolarized gluon parton distribution from lattice QCD in the continuum limit

We report a lattice QCD calculation of the nucleon gluon parton distribution function in the continuum-limit, employing large-momentum effective theory. The calculation is carried out on the 2+1 flavour CLQCD ensembles with three lattice spacings $a = \{0.105, 0.0897, 0.0775\}$ fm and pion mass of approximately 300 MeV, covering nucleon momenta up to 1.97 GeV. Distillation technique is applied to improve the signal of two-point correlators. We then use the state-of-the-art hybrid renormalization and one-loop perturbative matching scheme, and extrapolate the results to continuum limit and infinite momentum limit.

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