

2024 Meeting on Lattice Parton Physics from Large Momentum Effective Theory (LaMET2024)



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Towards Hybrid-Renormalized Gluon Parton Distribution Function from LaMET

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We present the first attempt at using the hybrid-ratio renormalization scheme on gluon quasi-lightfront correlators from lattice quantum chromodynamics with $a \approx 0.12$ fm at pion masses $M_\pi \approx 310$ and 690 MeV. We measured over 1.2 million two-point correlators and used momentum smearing and aggressive gauge link smearing for the gluon operator to obtain a reasonable level of signal up to a hadron boost momentum of 2.14 GeV. We compare the gluon matrix elements to those reconstructed from the CT18 global fit gluon PDF using the hybrid-ratio matching kernel.

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