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Gluon parton distribution function from Lattice QCD.[1]
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The parton distribution functions (PDFs) are process-indenpendent information of the quark and gluon inside the hadron. Even though gluon PDF could be obtained from the global fit of the experimental data and dominates at the small x region, gluon PDF studies from theoretical side are much fewer then quark PDF. We present the results to access the x-dependence of the gluon unpolarized PDF inside nucleon using lattice QCD. The lattice calculation is carried out for the gluon PDF matrix element with the nucleon momentum up to 2.16 GeV, lattice spacing a=0.12 fm, pion mass 220 MeV, 310 MeV and 690 MeV. The matrix elements are extrapolated to the physical pion mass and then compared with the Fourier transform of the global fit CT18 of the gluon PDF.

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