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Precision Measurement of the Longitudinal Double-Spin Asymmetry for Dijet Production at Intermediate Pseudorapidity in Polarized Proton+Proton Collisions at 200 GeV

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Measurements of the longitudinal double-spin asymmetry, A_{LL} , by the STAR experiment have contributed significantly to our understanding of the gluon helicity distribution, $\Delta g(x)$, inside the proton. Results from the 2009 inclusive jet measurement, when included into global analyses, indicated substantial positive polarization for gluons with partonic momentum fraction x greater than 0.05. In addition to the inclusive jets, analyses of dijet production extending to higher pseudorapidity (up to $\eta \sim 1.8$) provide better constraints on the x dependent behavior of $\Delta g(x)$. Recently, STAR published several new results at midrapidity (up to $\eta \sim 1.0$) using the $p + p$ data collected in 2012, 2013 and 2015 at both $\sqrt{s} = 510$ and 200 GeV. These new results confirm the previous findings and provide additional constraints in the largely unexplored region of $x < 0.05$. In this talk, the preliminary results of the A_{LL} for dijet production at intermediate pseudorapidity (up to $\eta \sim 1.8$) based on 2015 data, with twice the figure-of-merit of the 2009 data, will be presented. This result will be compared with the published ones, and its potential impact on $\Delta g(x)$ will be discussed.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

No

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