

# Measurements of longitudinal double-spin asymmetries of inclusive jet and dijet production at STAR

Amilkar Quintero for the STAR Collaboration  
Temple University, Philadelphia, PA, USA

In 2015, the STAR experiment concluded the collection of longitudinally polarized proton-proton collision data, mainly dedicated to study the gluon helicity distribution function ( $\Delta g(x)$ ) of the proton. This function can be accessed by measuring the longitudinal double-spin asymmetry ( $A_{LL}$ ) of inclusive jet and dijet production in proton-proton collisions. Measurements at  $\sqrt{s} = 200$  GeV and 510 GeV were taken to maximize the kinematic coverage in momentum fraction ( $x$ ) down to  $x \sim 0.01$ . The wide acceptance of the STAR experiment permits the reconstruction of jets with different topological configurations to better constrain the shape of the gluon helicity function. In this talk, we present the results of STAR  $A_{LL}$  measurements in proton-proton collisions at  $\sqrt{s} = 200$  GeV and 510 GeV, at mid-pseudorapidity ( $|\eta| < 1$ ) and intermediate-pseudorapidity ( $-0.8 < \eta < 1.8$ ). These results are compared with the latest QCD global analyses.