



Contribution ID: 251

Type: not specified

## Using Longitudinally Polarized Proton+Proton Collisions To Constrain the Polarized Gluon Distribution Through Di-jet Measurements at $\sqrt{s} = 510$ GeV at STAR

*Wednesday, 5 April 2017 17:20 (20 minutes)*

The production of jets from polarized p+p collisions at STAR is dominated by quark-gluon and gluon-gluon scattering. The di-jet double spin asymmetry ( $A_{LL}$ ) is sensitive to the polarized gluon distribution ( $\Delta G$ ). Di-jets are also advantageous because the parton momentum fraction,  $x$ , of initial partons may be reconstructed to first order from the final state measurements. Both jet (PRL 115,092002) and di-jet (arXiv:1610.06616)  $A_{LL}$  measurements at  $\sqrt{s} = 200$  GeV have helped to constrain  $\Delta G$  in the range  $0.05 < x < 0.3$ . In 2012, data were collected at  $\sqrt{s} = 510$  GeV in order to probe lower values of  $x$ , these data are consistent with the  $\sqrt{s} = 200$  GeV results in the overlapping  $x_T$  region. Jet and di-jet preliminary  $A_{LL}$  results have been released and will soon be incorporated into theoretical fits. In 2013, high luminosity data, with an estimated  $250 \text{ pb}^{-1}$  of integrated luminosity were collected at  $\sqrt{s} = 510$  GeV. These data have a figure of merit  $\approx 3$  times that of the 2012 data. An update on the di-jet  $A_{LL}$  measurement will be presented using polarized p+p data collected at STAR during 2013.

**Primary author:** SURROW, Bernd (STAR)

**Presenter:** SURROW, Bernd (STAR)

**Session Classification:** WG6 Spin and 3D Structure

**Track Classification:** WG6) Spin and 3D Structure