

**Measurement of longitudinal single-spin asymmetries for W^\pm boson production
in polarized $p + p$ collisions at $\sqrt{s} = 510$ GeV at RHIC**

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February 13, 2015

W^\pm boson production in longitudinally polarized $p + p$ collisions provides unique and clean access to the individual helicity polarizations of quarks and antiquarks in the colliding protons. Due to maximal violation of parity in the W boson production W bosons couple to left-handed quarks and right-handed anti quarks and hence offer direct probes of their respective helicity distributions in the nucleon. These can be observed in measured large parity-violating longitudinal single-spin asymmetries, A_L for W boson production.

In 2013 the STAR experiment has collected an integrated luminosity of ~ 300 pb $^{-1}$ at $\sqrt{s} = 510$ GeV with an average beam polarization of $\sim 54\%$, which is more than 3 times larger than the total integrated luminosity of previous year. The preliminary results of W A_L from dataset collected during 2013 running period will be presented.