

Abstract Submitted  
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**Measurement of Longitudinal Single-Spin Asymmetries at Forward Rapidity for W Boson Production in Polarized proton+proton Collisions at s=510 GeV at STAR** AMANI KRISHNA, Temple university, STAR COLLABORATION — The production of  $W^{-(+)}$  bosons in polarized proton collisions provides an ideal tool to study the spin-flavor structure of the proton sea quark distributions profiting from the parity violating nature of weak interactions.  $W^{-(+)}$  bosons are produced in  $\bar{u} + d$  ( $\bar{d} + u$ ) annihilation and can be detected through their leptonic decay mode. The STAR experiment has the ability to detect charged leptons  $e^{-(+)}$  at mid and forward rapidity regions. In this analysis we focus on the forward region ( $1 < \eta < 2$ ). The analysis status of the measurement of the longitudinal single-spin asymmetries at forward rapidity for W boson production will be presented based on a data sample collected in 2013 corresponding to an integrated luminosity  $\sim 250 \text{ pb}^{-1}$  with an average beam polarization  $\sim 54 \%$ .

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