

Abstract Submitted  
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**Probing Sea Quark Polarization in the Proton With  $A_L$  in the  $W \rightarrow \mu$  Decay Channel**<sup>1</sup> MICHAEL BEAUMIER, University of California, Riverside — The Relativistic Heavy Ion Collider (RHIC) is the only polarized hadron collider in the world - it offers us a unique opportunity to study nucleon spin structure. In this talk, I will present a study how we constrain the contribution of sea-quark polarization to the proton spin in the context of PHENIX's W-Physics program. This year, the W-Physics program at PHENIX has accumulated  $240 pb^{-1}$  of longitudinally polarized p+p data at  $\sqrt{s} = 510$  GeV. I will describe the analysis of this data set, focusing on PHENIX's forward muon detectors at  $1.2 < |\eta| < 2.2$ , and discuss how we exploit the kinematics of the  $W \rightarrow \mu$  decay in order to learn about sea-quark polarization with  $A_L$ .

<sup>1</sup>In Collaboration with PHENIX

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