

Abstract Submitted  
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**Longitudinal Double-Spin Asymmetry Measurements in p+p and Their Limitation by Systematic Uncertainty in Relative Luminosity** ANDREW MANION, PHENIX Collaboration, PHENIX COLLABORATION — We present longitudinal double-spin asymmetries  $A_{LL}$  in neutral  $\pi^0$  production in the PHENIX detector at RHIC. This measurement has been shown to constrain the gluon spin contribution to the proton,  $\Delta G$ . We will also discuss the main systematic uncertainty, which originates from the relative luminosity of the different spin states in RHIC, and new ways to possibly understand the source of this uncertainty.

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