

Abstract Submitted  
for the DNP07 Meeting of  
The American Physical Society

**Transverse Spin Dependent Identified Hadron Cross-sections in  $p^\uparrow+p$  Collisions at  $\sqrt{s} = 62.4$  and 200 GeV** J.H. LEE, FLEMMING VIDE-BAEK, Brookhaven National Laboratory, BRAHMS COLLABORATION — Transverse spin dependence of particle production, Single Spin Asymmetries (SSAs), at the energy regime where pQCD is applicable are expected to be negligibly small in the lowest-order QCD approximation, whereas experimentally large SSAs have been observed at high Feynman- $x(x_F)$ . Recently, new measurements of SSAs have been available from semi-inclusive deep-inelastic scattering and  $p^\uparrow+p$  at RHIC providing more insight into the fundamental mechanisms of SSAs as well as the relevant hadron structure. The BRAHMS experiment at RHIC has unique capabilities to explore the high- $x_F$  kinematic region with particle identification. Measurements of cross-sections and single spin asymmetries of identified charged hadrons,  $\pi^\pm$ ,  $K^\pm$ ,  $p$ , and  $\bar{p}$ , from transversely polarized proton collisions at  $\sqrt{s} = 62.4$  and 200 GeV are presented. The results are discussed in the context of theoretical models based on pQCD. The energy and flavor dependent SSAs combined with the cross-sections at high- $x_F$  bring new insight into the perturbative Quantum Chromodynamical description of partonic dynamics at RHIC.

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Date submitted: 02 Jul 2007

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