

Abstract Submitted  
for the HAW05 Meeting of  
The American Physical Society

**Polarization Measurement of 100GeV Proton Beams at RHIC with CNI  $\bar{p}C$  Polarimeter** ITARU NAKAGAWA, RIKEN, CNI POLARIMETER COLLABORATION — The polarization measurement through elastic ( $\bar{p},C$ ) reaction plays a crucial role in the polarized proton beam operation of Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. The analyzing power of the reaction reaches its maximum in the Coulomb Nuclear Interference (CNI) region ( $0.001 < t < 0.01$  (GeV/c)<sup>2</sup>), although it is still as small as 4%. Despite the size of asymmetry, a few percent statistical accuracy can be achieved within 20 seconds at proton beam intensity of  $60 \times 10^{11}$ , because of a large reaction cross section. The polarimeter thus serves realtime feedbacks to an accelerator tuning and experiments. The polarimeter consisted of ultra thin ( $3.5 \mu\text{g}/\text{cm}^2$ ) carbon ribbon targets and six silicon strip detectors per beam. Each detector is segmented into 12 strips with 2 mm pitches. Independent measurements of total 72 channels will provide a chance of detailed systematic studies. In this talk, I will describe recent upgrades and improvements of the polarimeter and analysis for Run05.

Itaru Nakagawa  
RIKEN

Date submitted: 25 May 2005

Electronic form version 1.4