

## RHIC pC CNI Polarimeter: Experimental Setup and Physics Results

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Acceleration of polarized proton beams and experiments with them at RHIC require fast and reliable measurements of the polarization.

The polarimeter presented here uses very high figure of merit of the elastic pC scattering at very low momenta transfer since the cross section is large. Small (a few percent) analysing power of the reaction makes it necessary to collect about  $10^7$  events per measurement. A deadtimeless DAQ system for the polarimeter will be discussed. It is based on the waveform digitizer modules with "on-board" event analysis, resulting in typical polarization measurement times of several tens of seconds.

During winter 2001/2002 RHIC polarized run several dedicated data runs were taken by the polarimeter to extract the form of the analysing power dependence as a function of the momentum transferred at beam energies 24 and 100 GeV. This, dependence is extremely important for the theoretical understanding of the CNI process including the contribution of the spin-flip hadronic amplitude. The new data may become an input to some theoretical models predicting the energy dependence of the analysing power.