Design of the RHIC p-Carbon CNI Polarimeter [1]

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Abstract. A new polarimeter based on proton carbon elastic scattering in the CNI (Coulomb Nuclear Interference) region has been proposed for RHIC and one pC CNI polarimeter has been installed in the blue ring of RHIC. It consists of ultra-thin carbon targets and six silicon detectors. All elements are in a 1.6 meter target chamber. It is a simple, compact, and cost effective polarimeter. In the design of the polarimeter, there some concerns about the accelerator impact due to the target chamber, such as impedance impact of the target chamber, beam loss impact on the super conducting magnets. This paper summarizes the analysis to answer those questions .

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