

Improving the lifetime of carbon micro-ribbons in the RHIC CNI Polarimeter*

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During polarized proton operation at the Relativistic Heavy Ion Collider (RHIC), the polarization of the stored beam is measured using p-Carbon elastic scattering in the Coulomb Nuclear Interference (CNI) region. The carbon targets for the CNI polarimeter are 50 nm thick, 25 mm long and <10 um wide. As the beam luminosity in RHIC has increased, the lifetime of the carbon micro-ribbons has decreased dramatically. The decrease in lifetime has resulted in a need to replace the targets during the long experimental run period. In order to avoid this additional work load and lost beam time, an effort was made to better understand the failure mechanism and what can be done to mitigate it. The results of these studies will be presented.

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