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Recent results from proton polarimetry at RHIC OLEG EYSER, Brookhaven National Laboratory, CNI POLARIMETRY TEAM — The Relativistic Heavy Ion Collider (RHIC) has successfully collided polarized proton beams with momenta as high as 255 GeV/c and polarizations around P=60%. The polarization of the proton beams is measured through spin dependent elastic scattering off a polarized hydrogen jet target and similarly monitored with Carbon fiber targets several times through a stored RHIC fill of a few hours duration. With recent advancements in beam luminosities, the largely increased data sets have enabled unprecedented possibilities to study systematic effects in the polarimeters. We will discuss details of different background contributions, properties of the polarized beams, and their implications on systematic uncertainties. This is vital input for spin-dependent measurements at RHIC and extends the polarized world data on polarized elastic proton-proton scattering significantly.

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