

## Relative polarization measurements of proton beams using a thin carbon target at RHIC

*Monday 14 September 2015 15:00 (30 minutes)*

Polarization measurements of the proton beams at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory are integral for performing spin-dependent measurements. Proton-Carbon polarimeters monitor the beam polarization at RHIC using the asymmetry observed in carbon nuclei elastically scattered by the polarized proton beam. The very thin carbon targets are inserted into the proton beams for a few minutes, providing a statistical uncertainty of 2-3%. Several such measurements are taken during a fill, which provides information on the polarization time dependence. In addition, since the thickness of the carbon ribbon is narrower than the size of the beam, the transverse polarization bunch profile is measured. The pC polarimeters are the main tool used to monitor the polarization for RHIC rings. They allow us to observe the polarization at injection energies, the polarization losses during energy and rotator ramps, as well as measure the tilted polarization vector. The recent RHIC Run 15 p-C polarimeter performance and new analysis developments will be presented.

**Primary author:** Dr WEBB, Grant (Brookhaven National Laboratory)

**Presenter:** Dr WEBB, Grant (Brookhaven National Laboratory)

**Session Classification:** Session 2