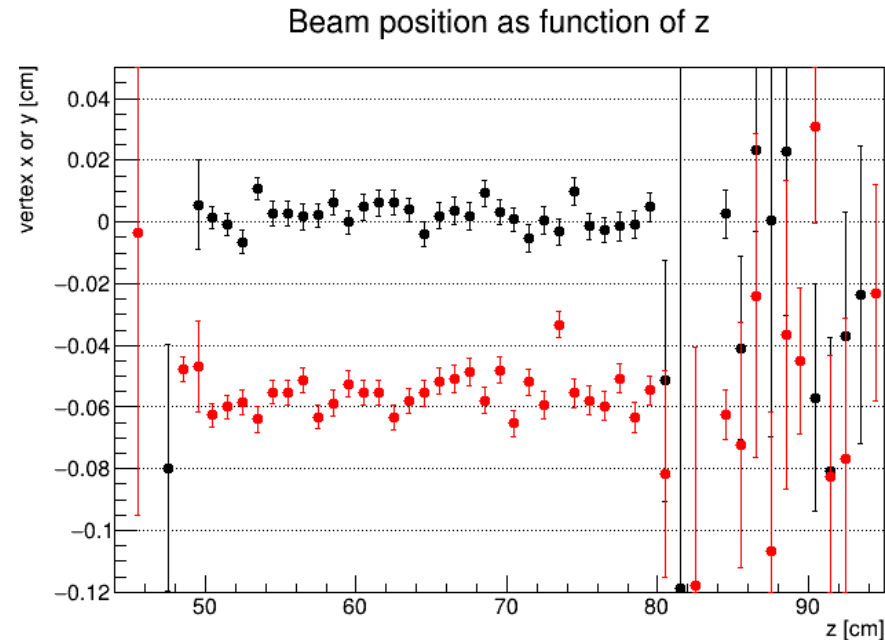# Chamber alignment update

Simon Taylor / JLab

- Removed 1.7 mm x-offset for CDC
- Fix misinterpretation of CDC rotation angles in ccdb:   $\varphi_y \rightarrow \varphi_x$, $\varphi_x \rightarrow -\varphi_y$
  - Also adjusted $\varphi_x$ to be consistent with survey number

Current ccdb:  $\varphi_x$=0.1389 mrad, $\varphi_y$=-0.175 mrad, $\varphi_z$=0.7854 mrad

My sqlite:        $\varphi_x$=0.3805 mrad, $\varphi_y$=0.1389 mrad, $\varphi_z$=0.7854 mrad
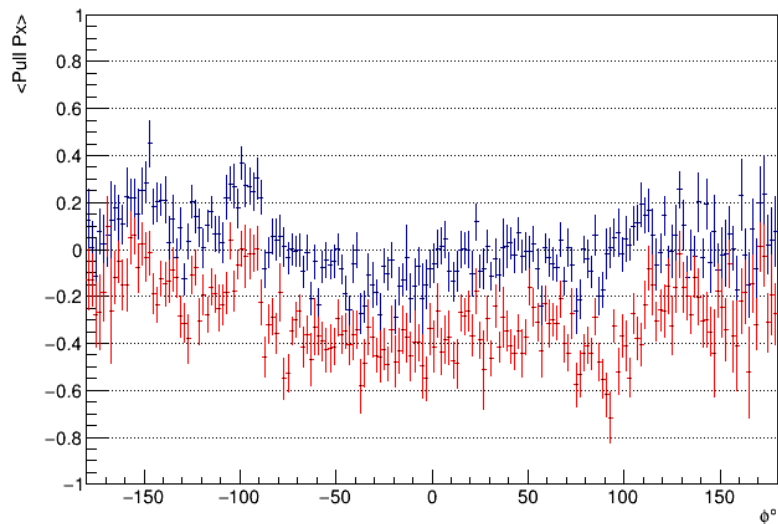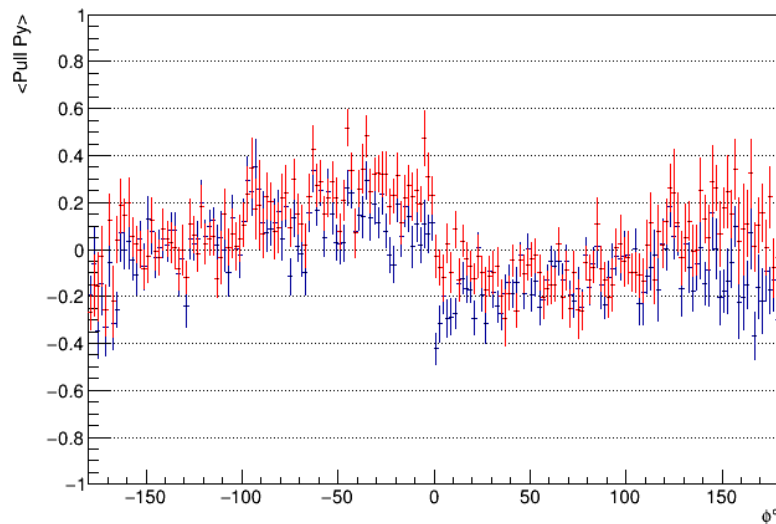
Using tracks in CDC only



Beam position as function of z

Proton pulls for φ events
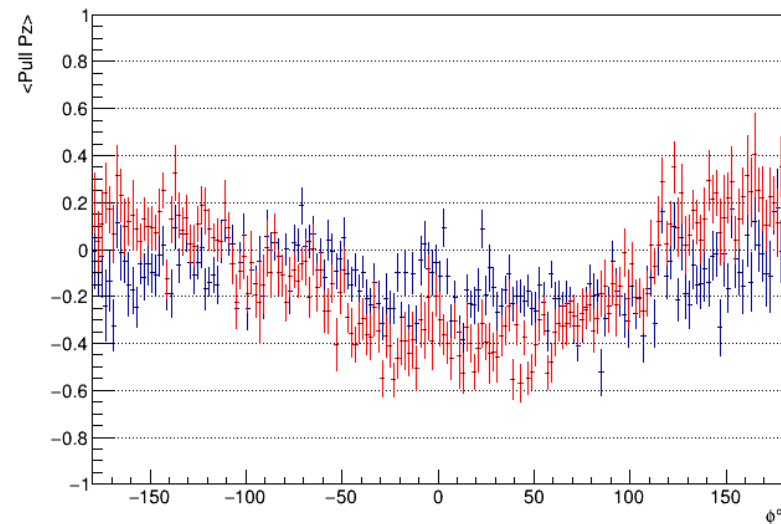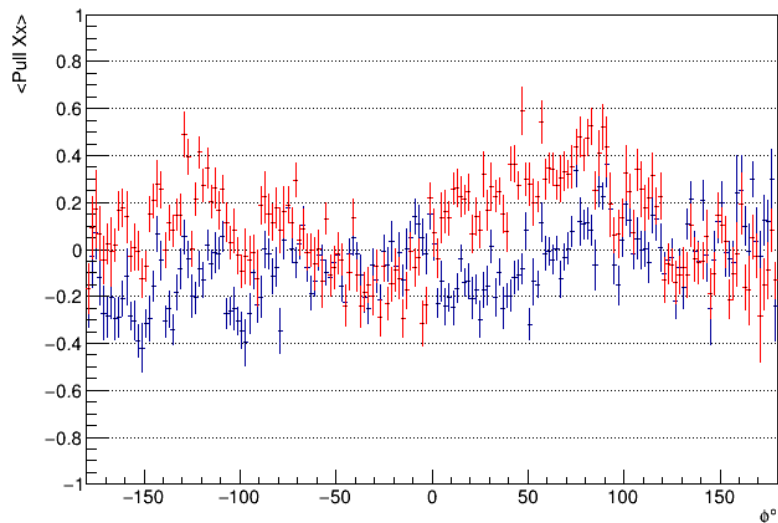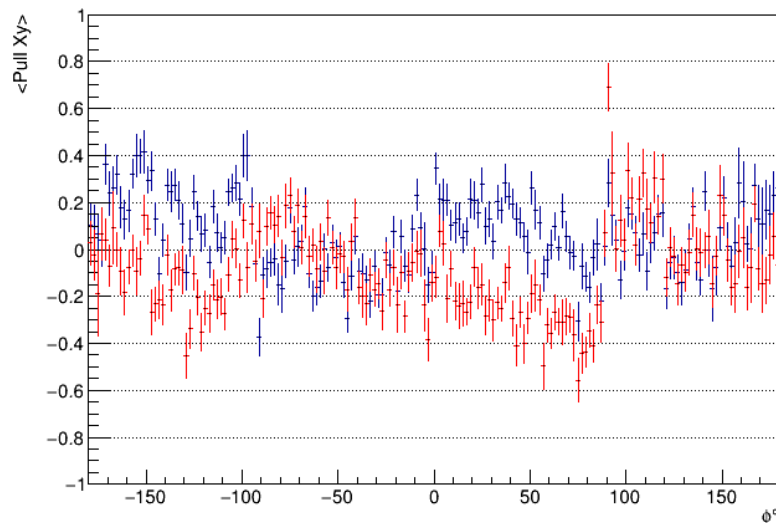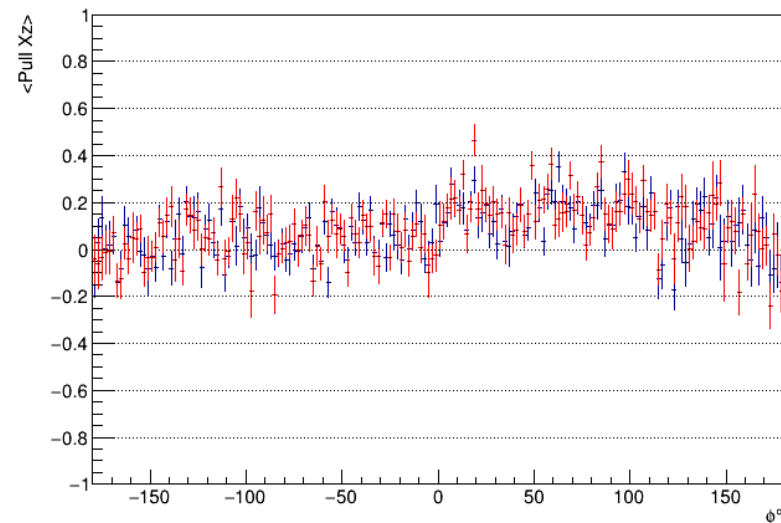
# Realignment of FDC relative to CDC

- Needed to tilt and offset FDC as whole to align to CDC
  - $\delta x = 0.043$ cm, $\delta y = -0.041$ cm, $\varphi_x = -0.1$ mrad, $\varphi_y = 0.575$ mrad, $\varphi_z = 3.49$ mrad (still working on this one...)

Benchmark from ccdb, B=0 runs:



After realignment, using only FDC tracks (Run 30300):
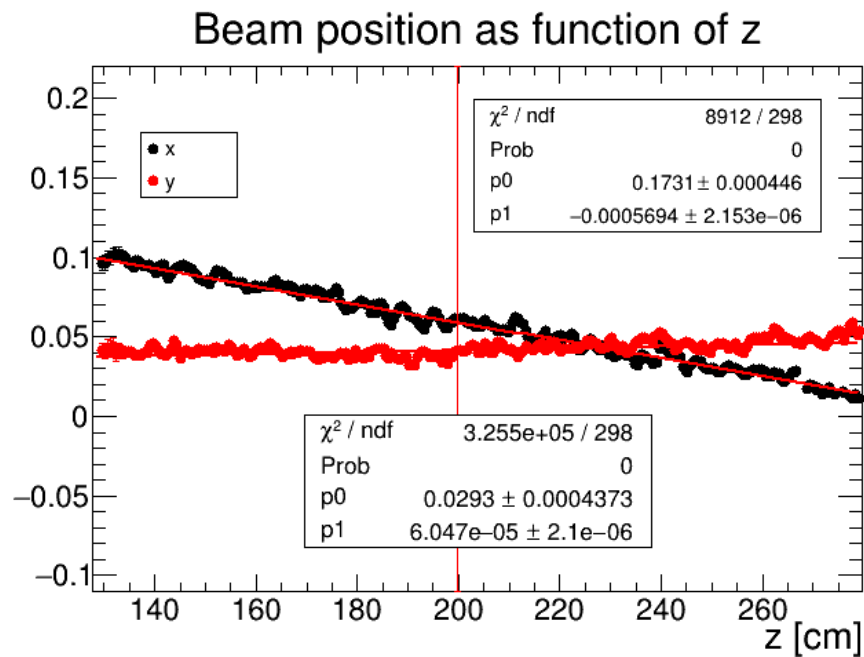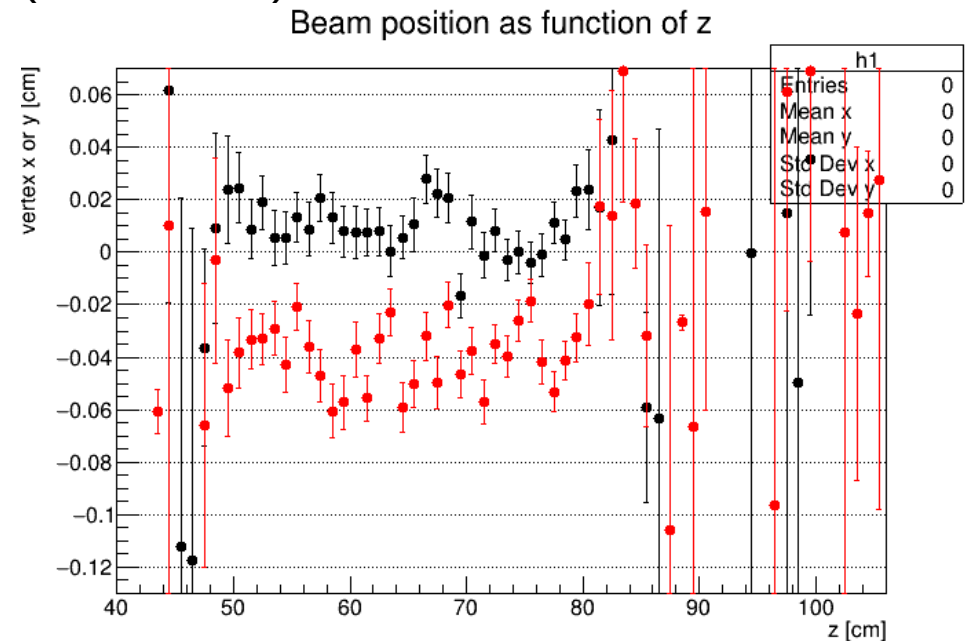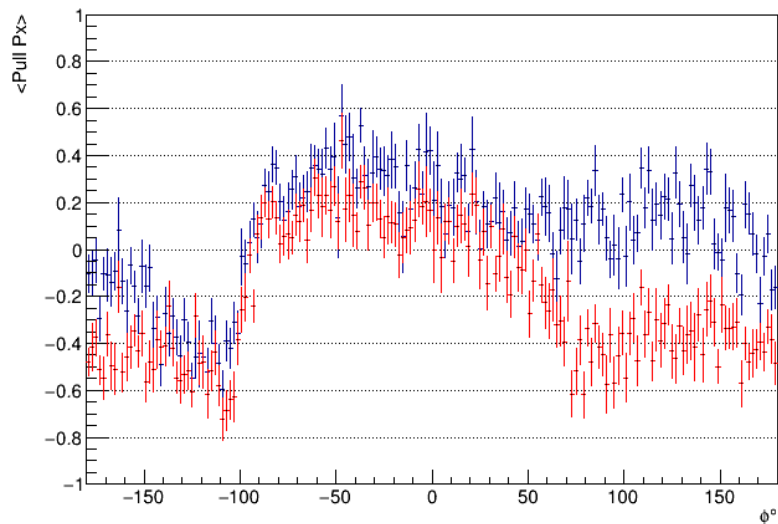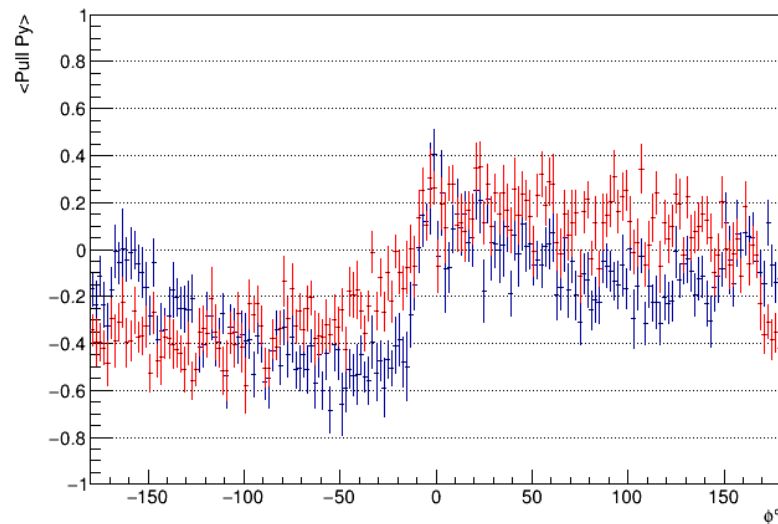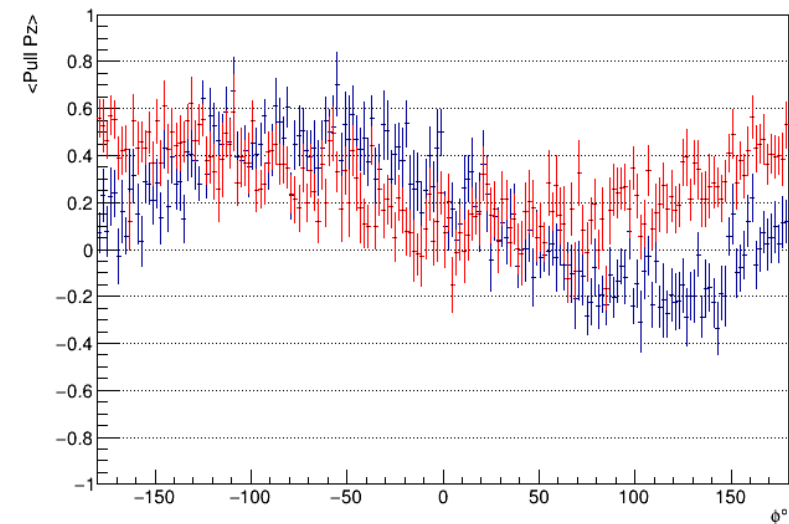
# K⁻ pulls for φ events

Pull Px for K+

Pull Py for K+

Pull Pz for K+

Pull Xx for K+

Pull Xy for K+

Pull Xz for K+

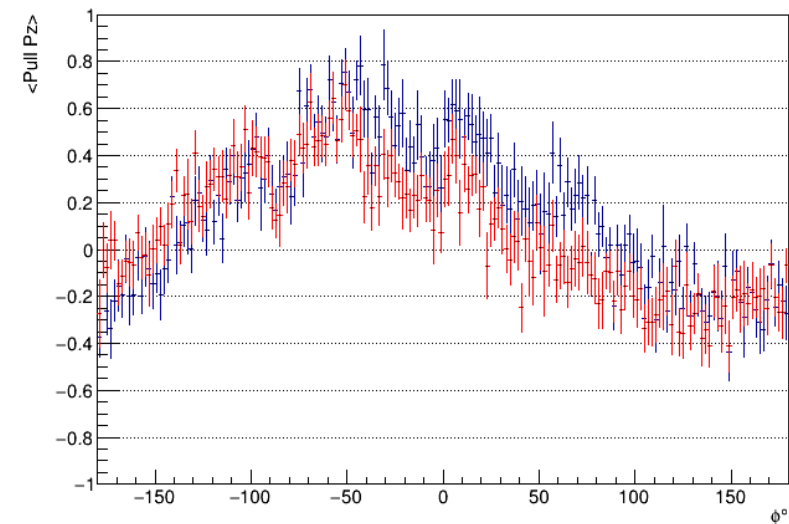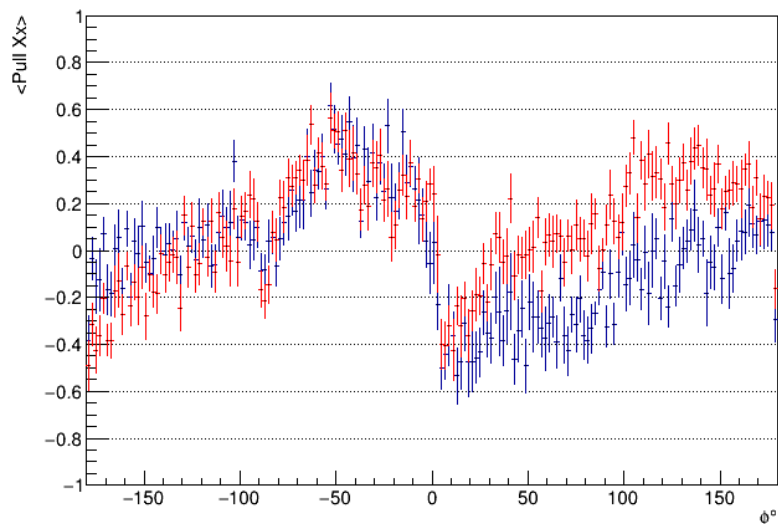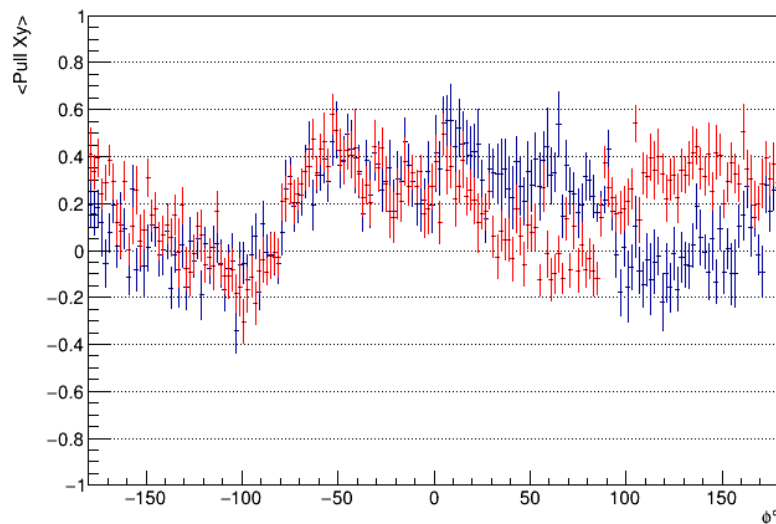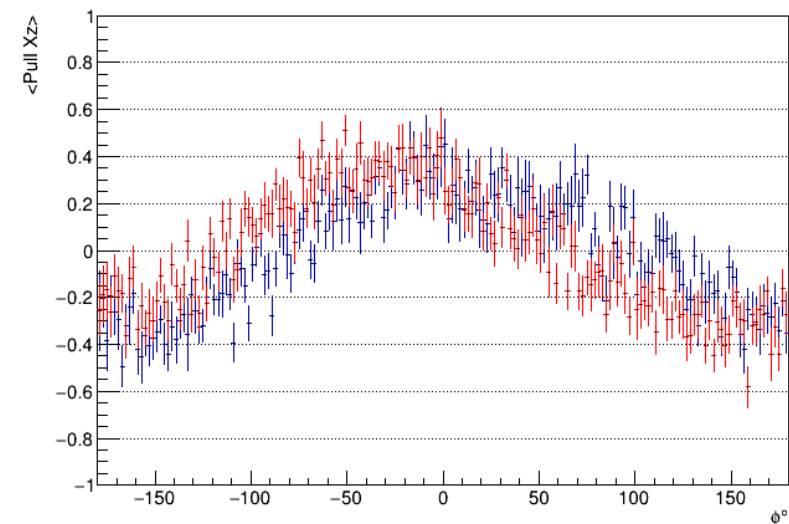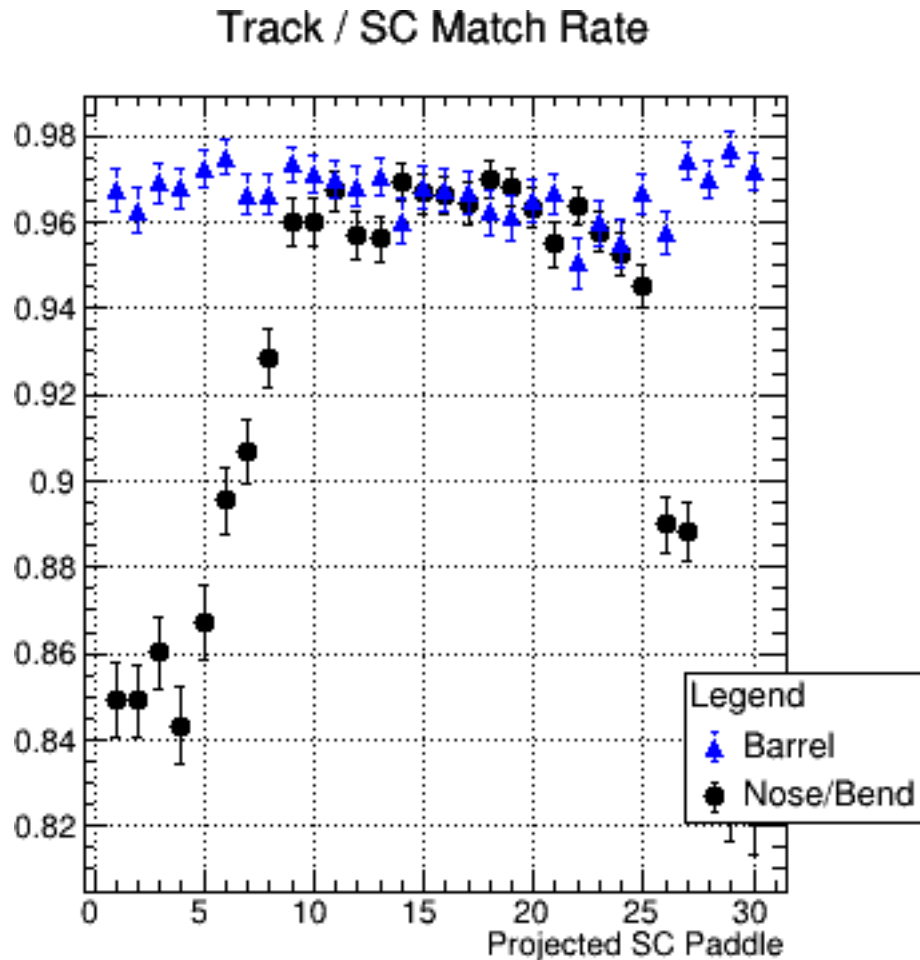# Matching to SC

- Naomi's φ filtered events for runs 30958, 30961, 30964, 30965

Using ccdb for chamber alignment and SC geometry

Using new alignment and adjusted SC geometry (needed non-zero yaw angle)