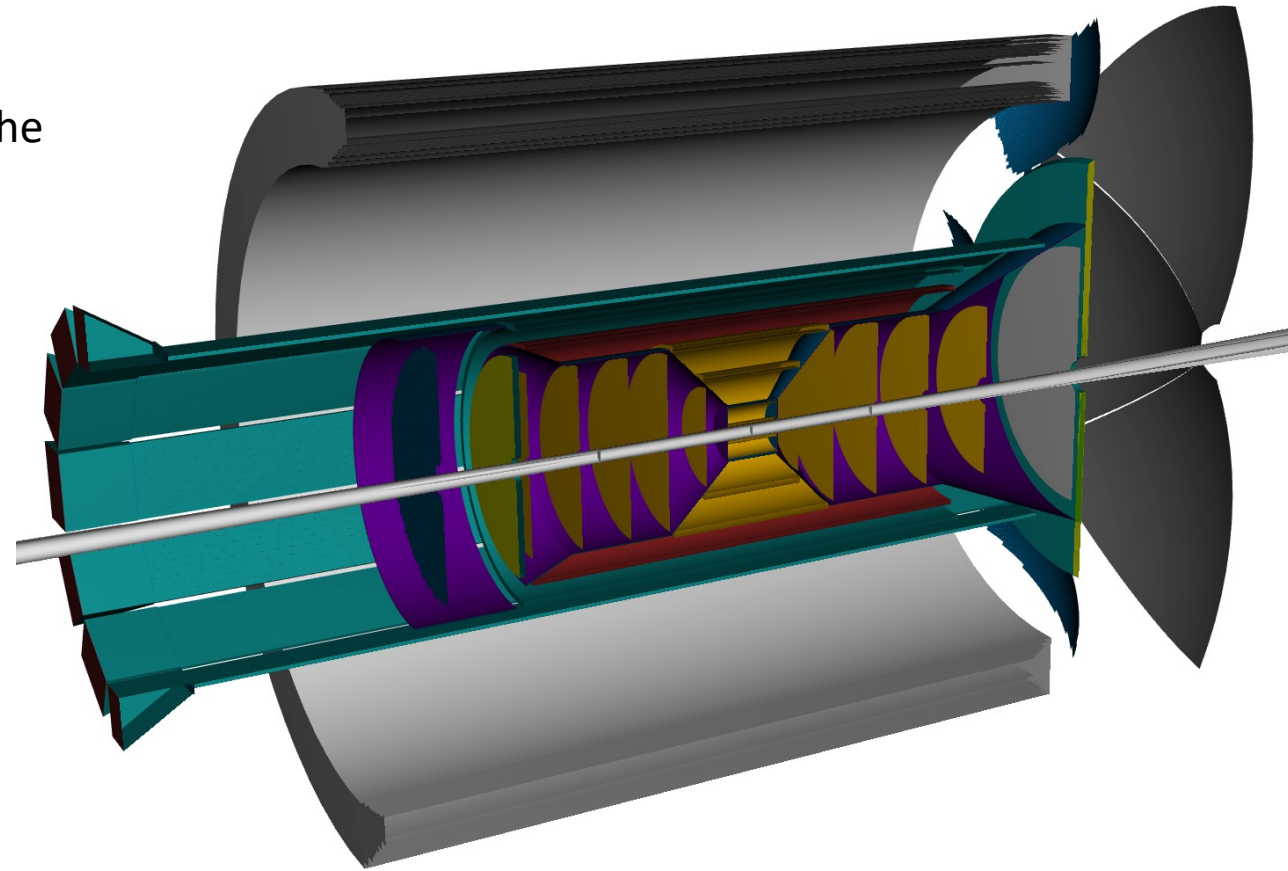


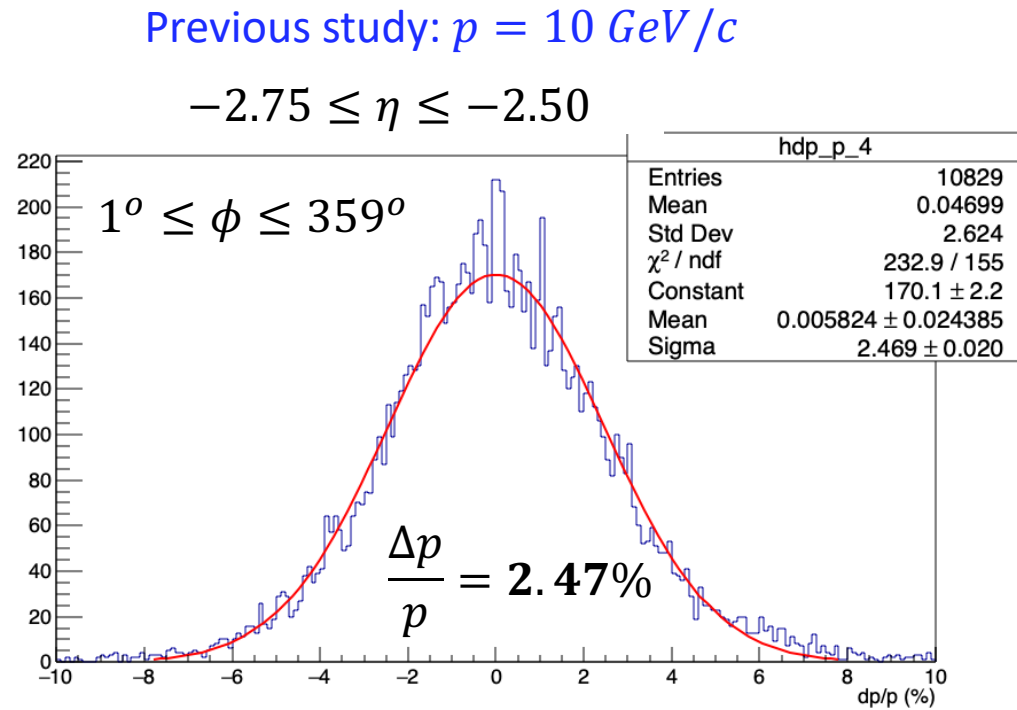
Track Propagation Study

- Detector configuration: Bryce Canyon
- Use [algorithms/tracking/TrackPropogation](#) and modified the [test plugin](#)
 - Propagate reconstructed track to pfRICH aerogel volume:
 - $R_{\min} = 46 \text{ mm}$, $R_{\max} = 630 \text{ mm}$, $Z = -1200 \text{ mm}$
- About binning and simulations
 - Simulate π^- at fixed p, ϕ, θ
 - Spread in distribution gives resolution



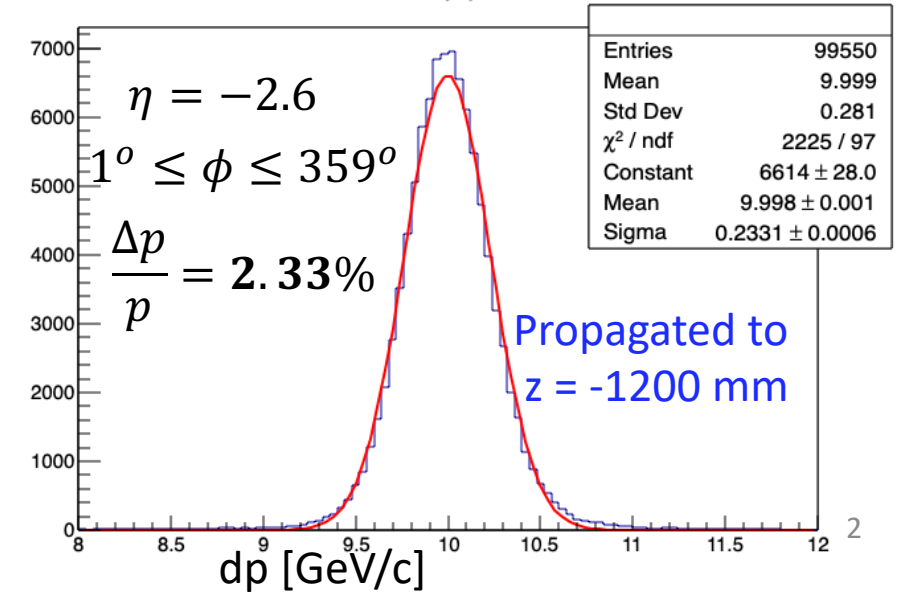
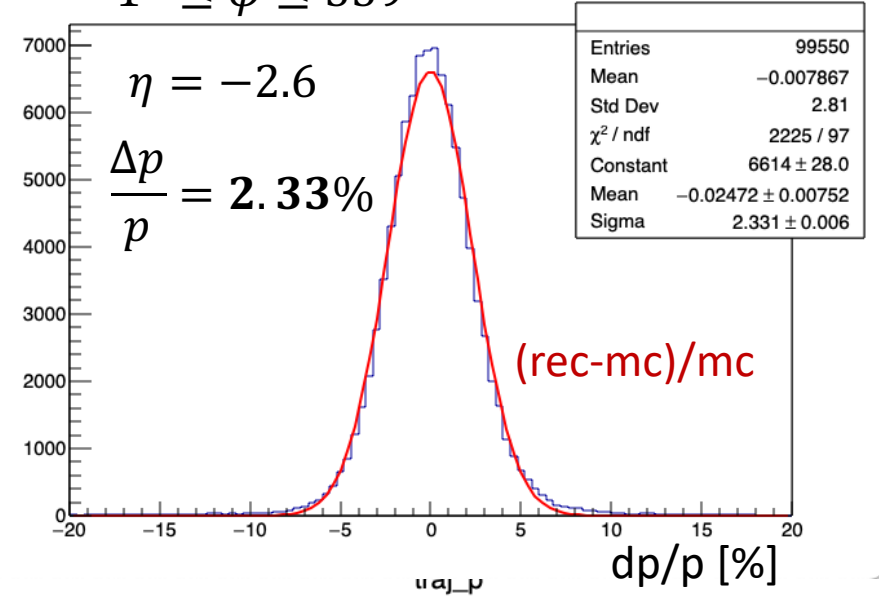
Momentum Consistency Check

- Consistent momentum resolution compared to previous study



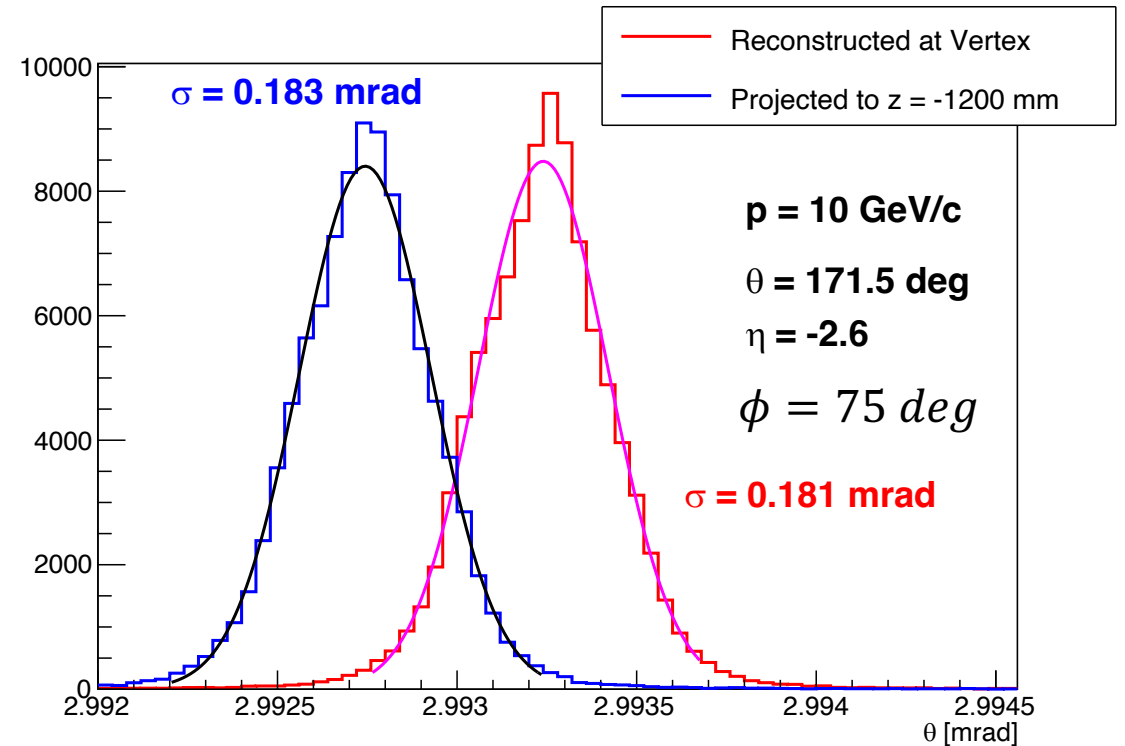
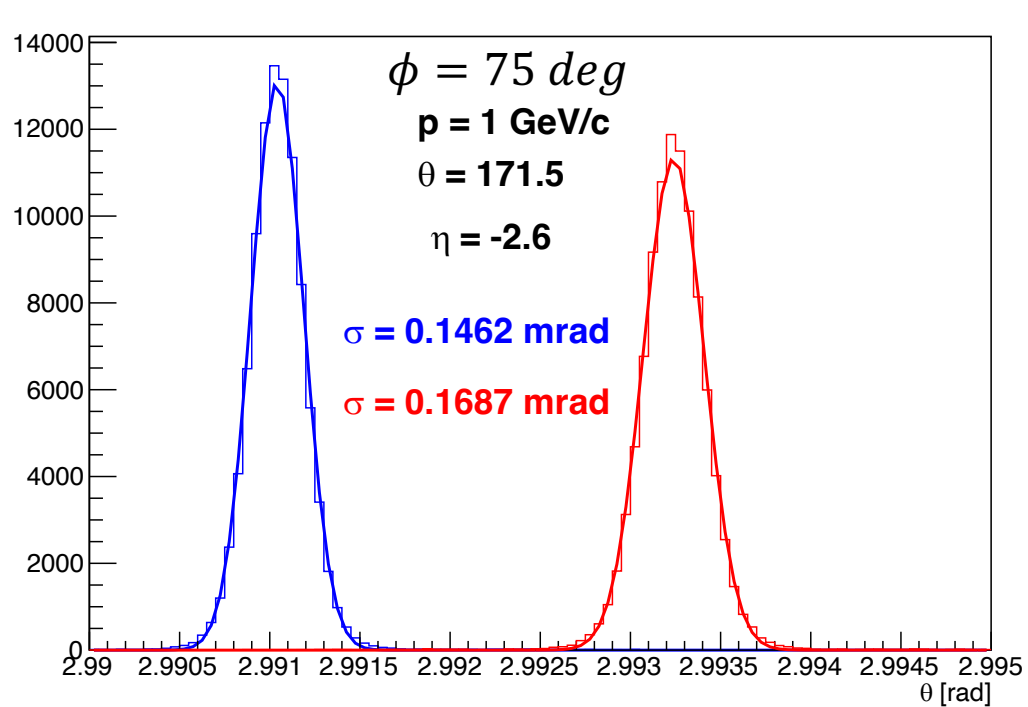
Propagation study: $p = 10 \text{ GeV}/c$

$1^\circ \leq \phi \leq 359^\circ$ mcp)/mcp



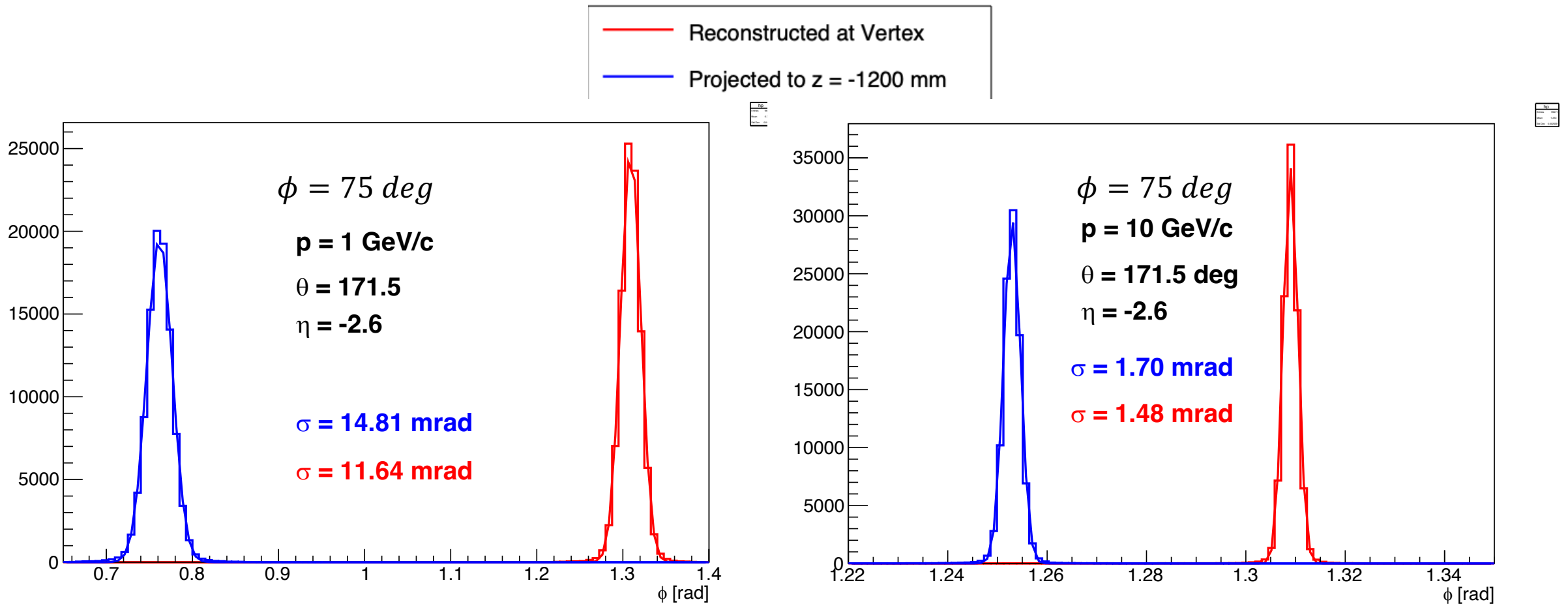
Angle Distribution Comparison: $\Delta\theta$

- Similar resolution in polar angle when measured at the projected plane and the vertex

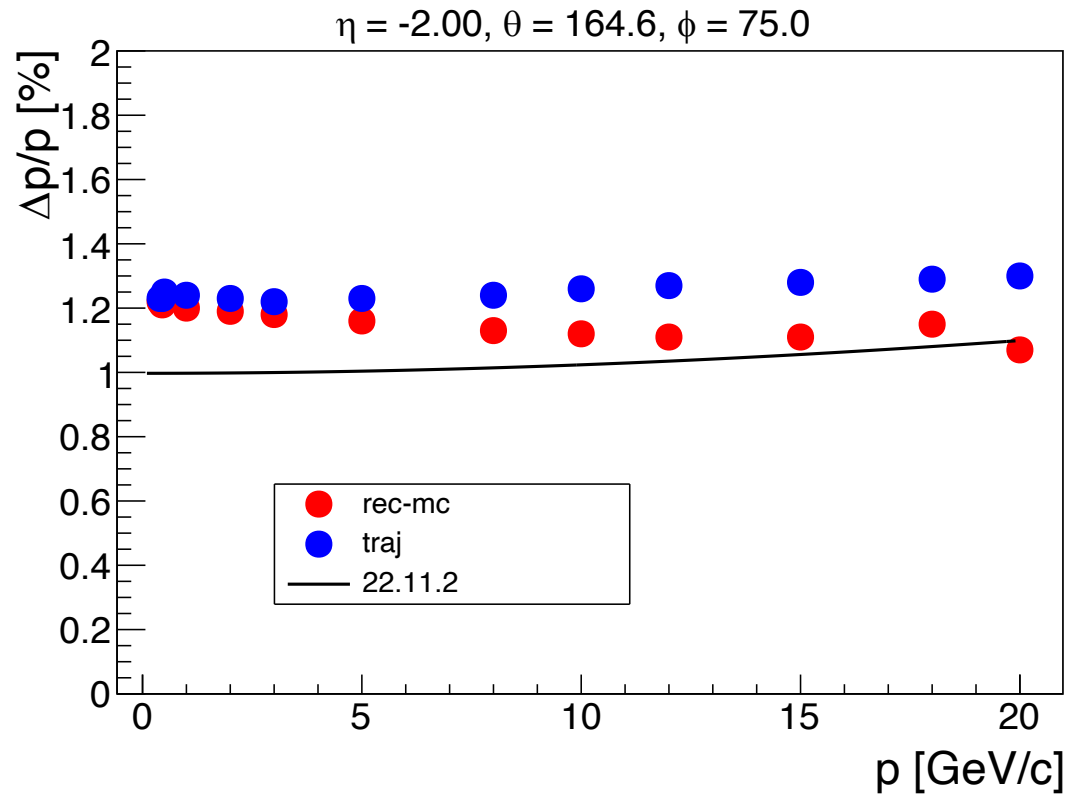


Angle Distribution Comparison: $\Delta\phi$

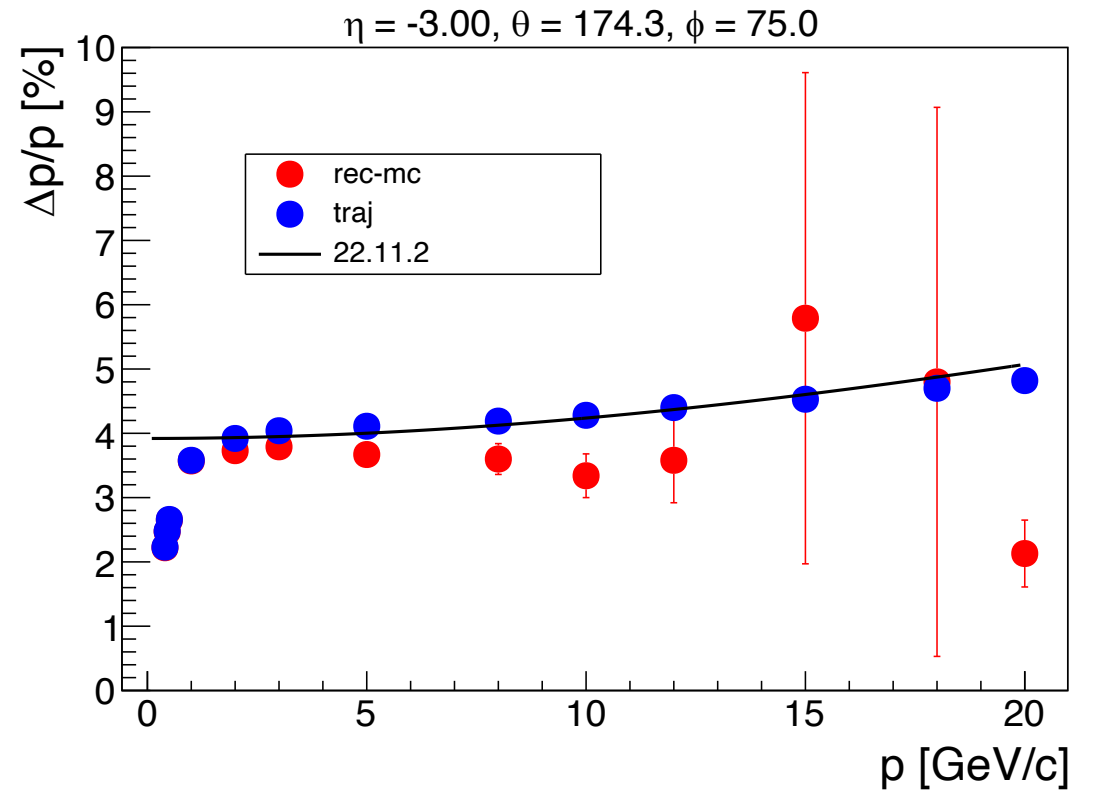
- Larger azimuthal resolution measured at projected plane compared to vertex
 - Difference increases at lower momentum



Comparison: Momentum Resolution



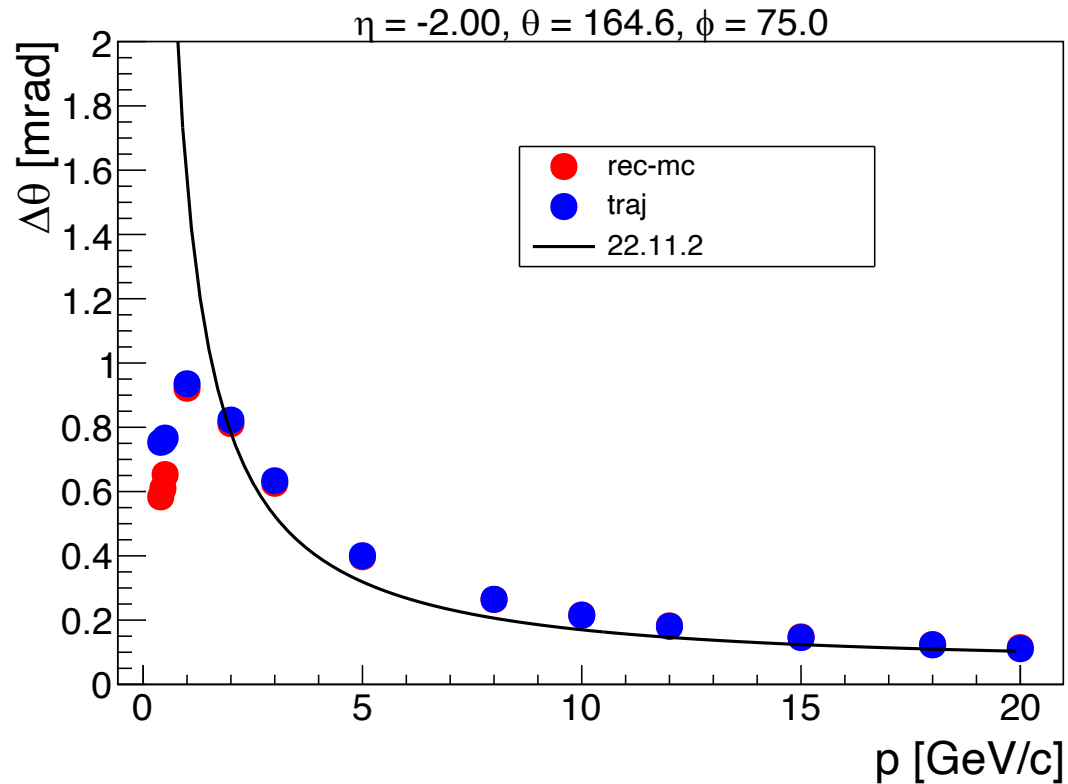
22.11.2 parameterization eta bin:
 $-2.0 < \eta < -1.75$



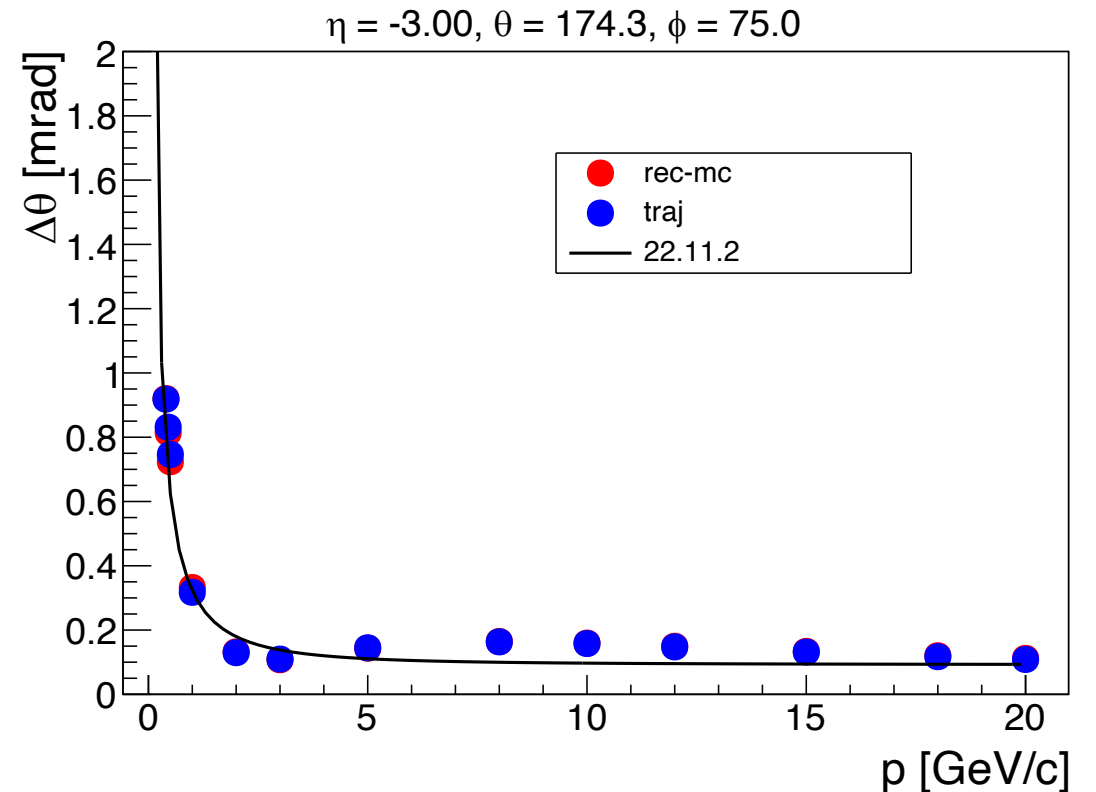
22.11.2 parameterization eta bin:
 $-3.25 < \eta < -3.00$

➤ Projected resolutions similar to those wrt vertex

Comparison: $\Delta\theta$ Resolution



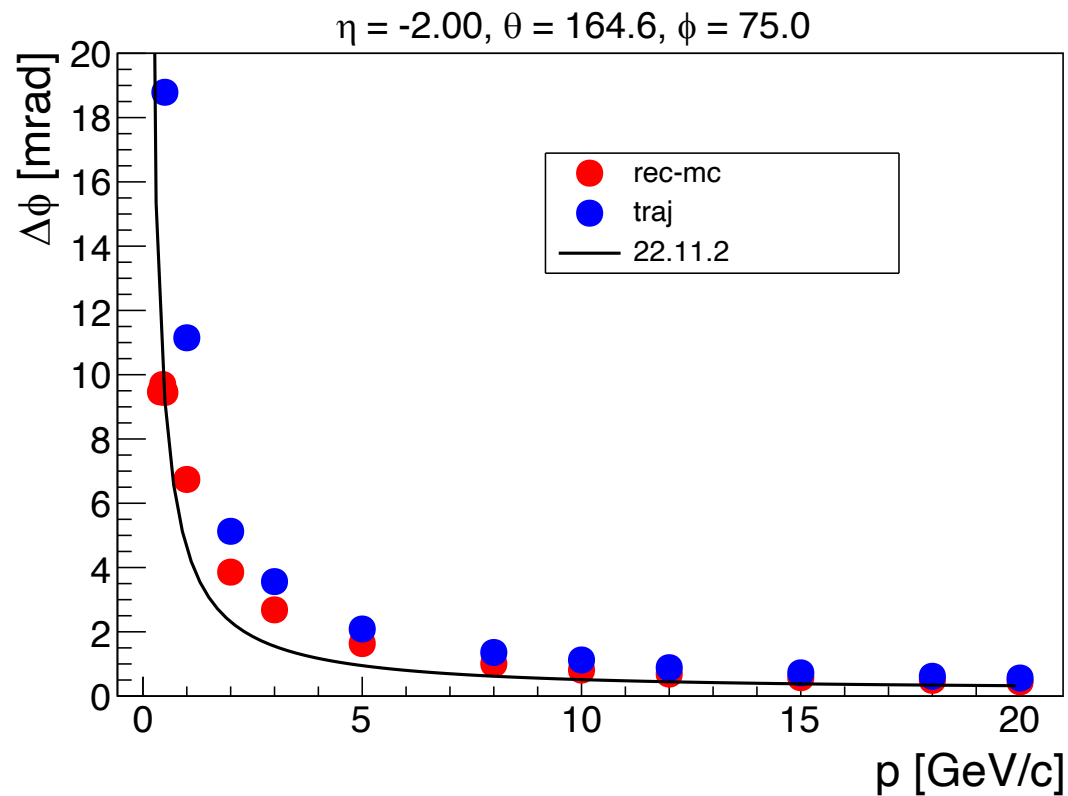
22.11.2 parameterization eta bin:
 $-2.0 < \eta < -1.75$



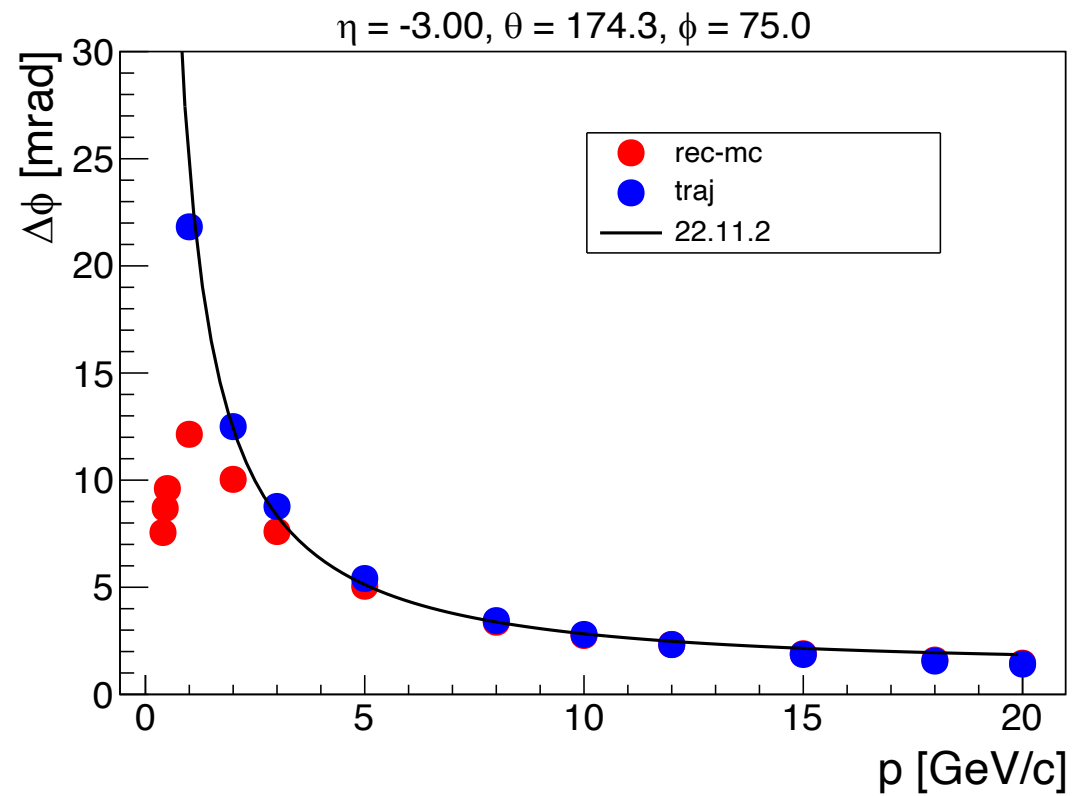
22.11.2 parameterization eta bin:
 $-3.25 < \eta < -3.00$

➤ Projected resolutions similar to those wrt vertex

Comparison: $\Delta\phi$ Resolution



22.11.2 parameterization eta bin:
 $-2.0 < \eta < -1.75$



22.11.2 parameterization eta bin:
 $-3.25 < \eta < -3.00$

➤ Projected resolutions similar to those wrt vertex