

# Data Compression with Helix Fitter, ATO-168

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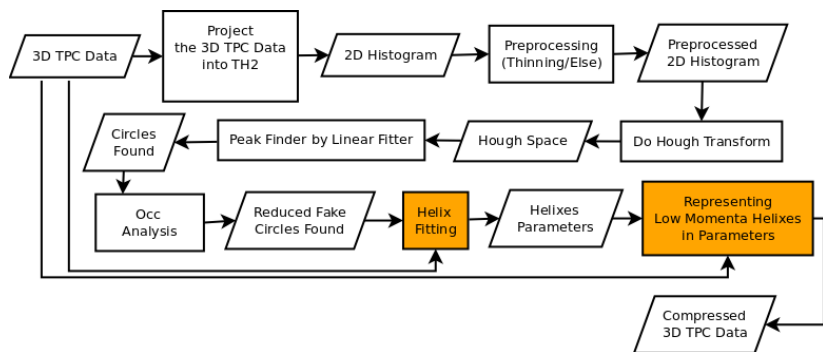
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Current Status

TODO

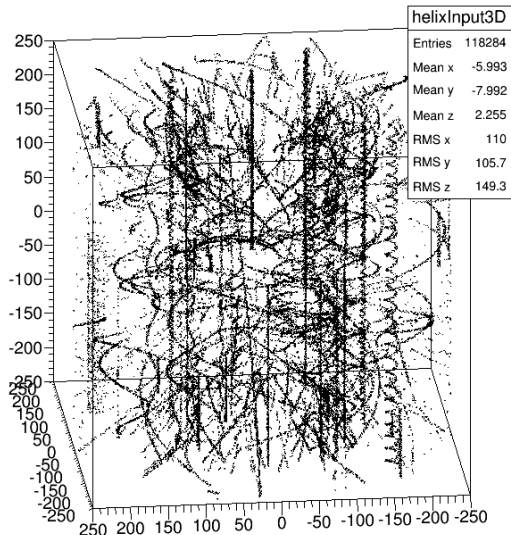


# Data Compression Flowchart

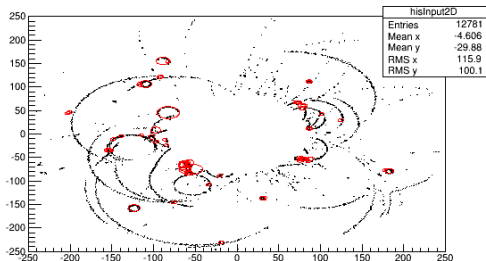
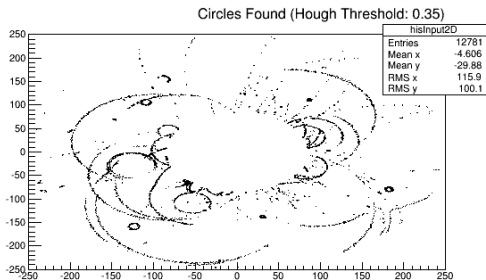


# TPC 3D Monte Carlo Raw Data

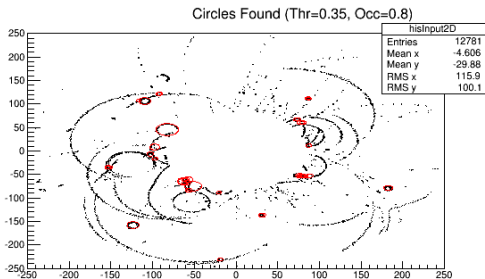
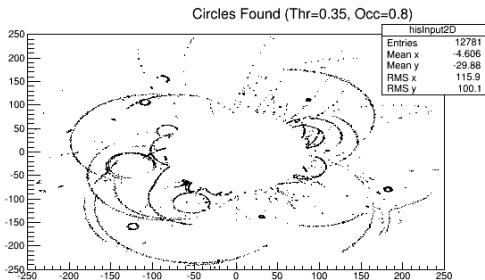
helixInput3D



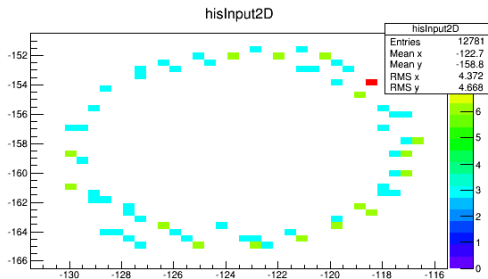
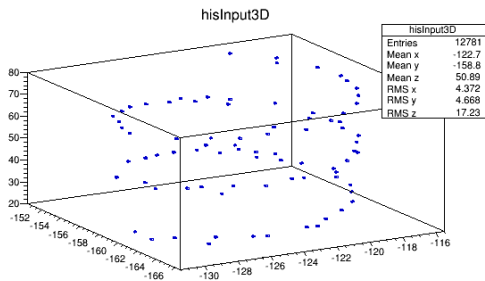
# Circle Found threshold 0.35 at Hough Space



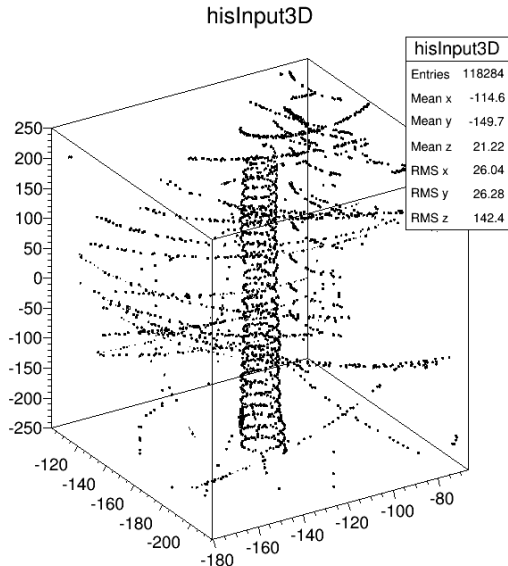
# Circle Found threshold 0.35 at Hough Space with Occ $\geq$ 0.80



# One Circle One Helix

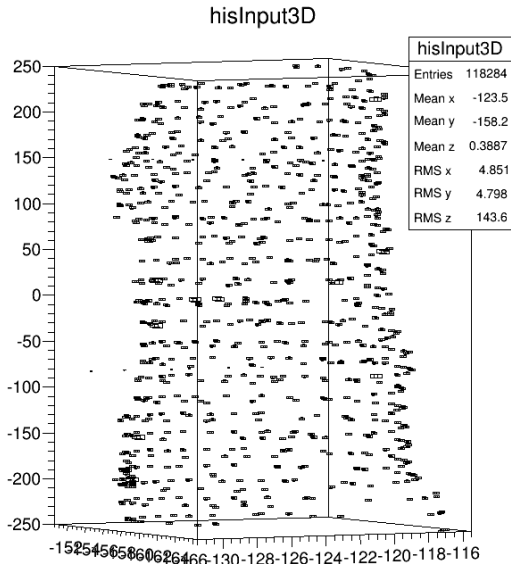


# Helix in Full 3D





# Helix in Full 3D Zoom



# Helix Fitting

- ▶ Global Fit (Least Square) – A priori knowledge
- ▶ Extended Kalman Fitter for Helix – Costly, Adaptable to non-uniform
- ▶ Reimann Fitter – Linear
- ▶ Challenge: distorted circle/helix due background data.

## Reiman Fitter

We could combine line fitter in Reimann sphere and Hough voting to fit a Helix.

# Thank You