

CDC Straw Deformations

How am I extracting the values?

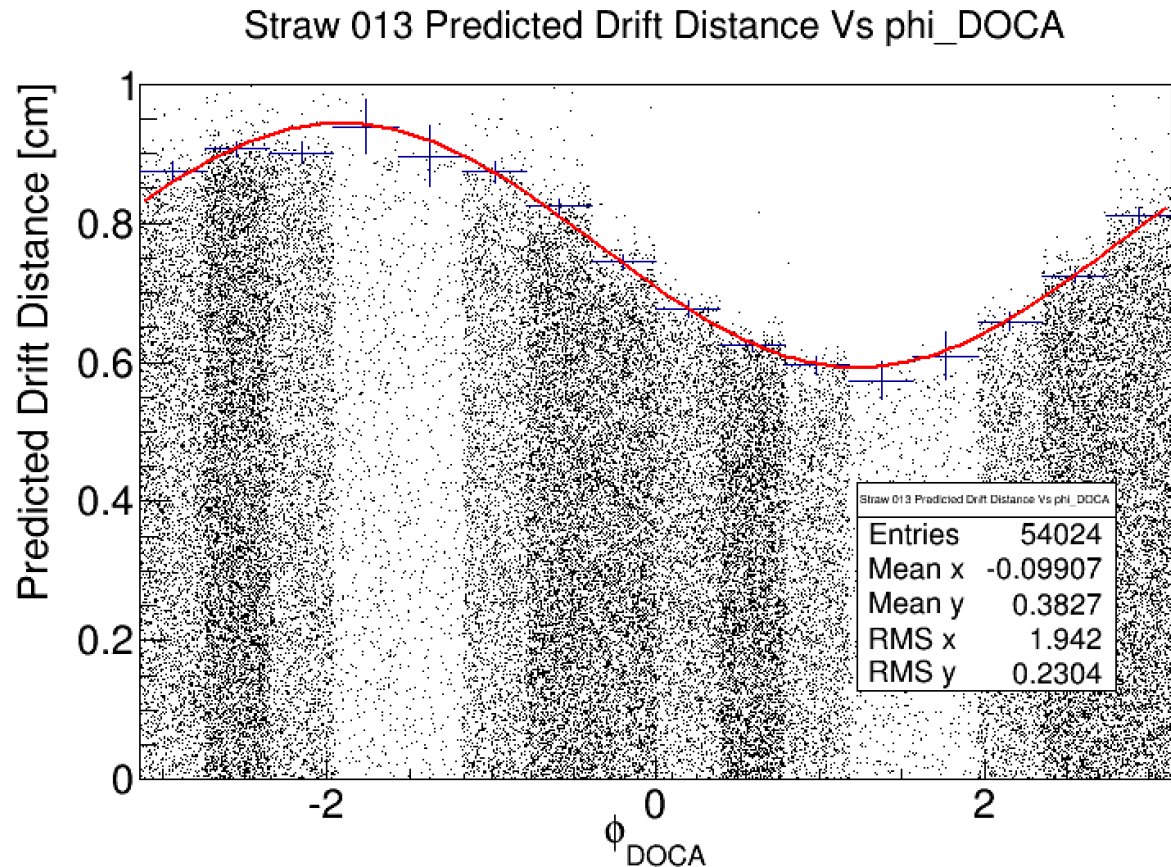
- Look at the distance predicted by the track fit as a function of the angle of the DOCA. If there is a hit recorded in the straw, mark that location.
- Biased fits (saves time). Cut on z within 20 cm of CDC center.

- Fit with:

$$c_0 + c_1 \sin(x + c_2)$$

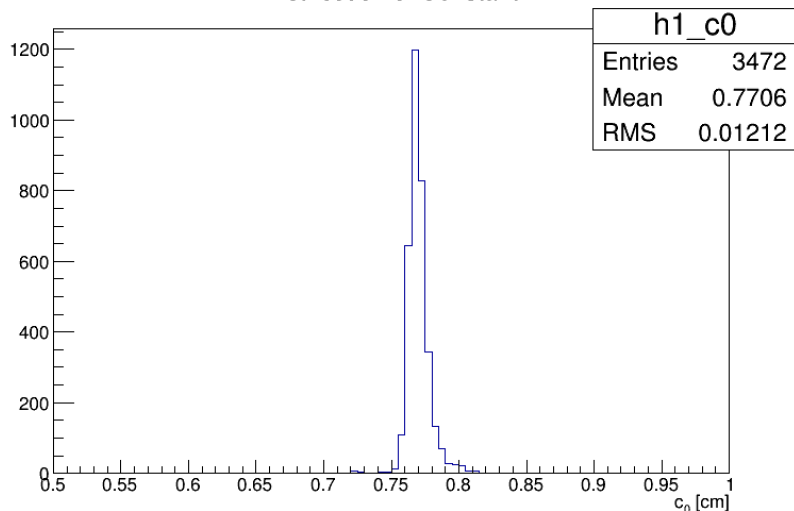
This gives us the amplitude and the direction of the deformation.

Do this with cosmics and field-on beam data.

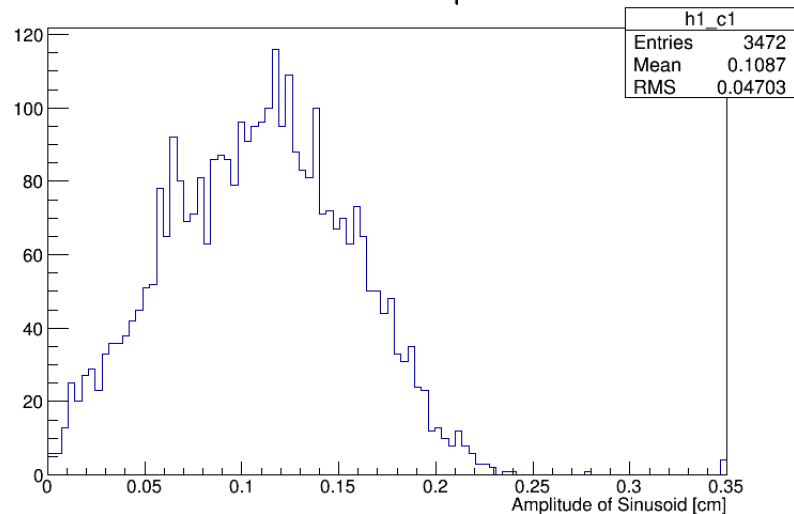


Cosmics

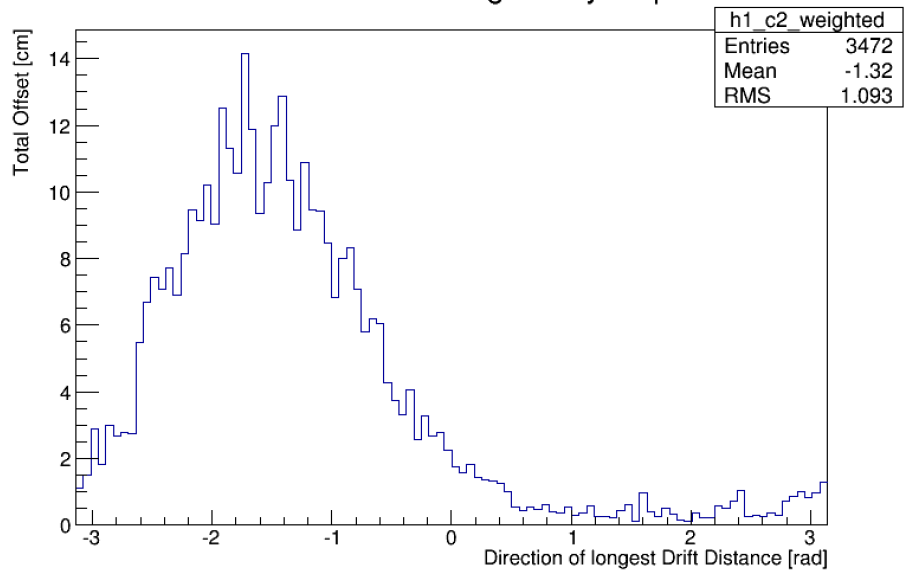
Distribution of Constant



Distribution of Amplitude



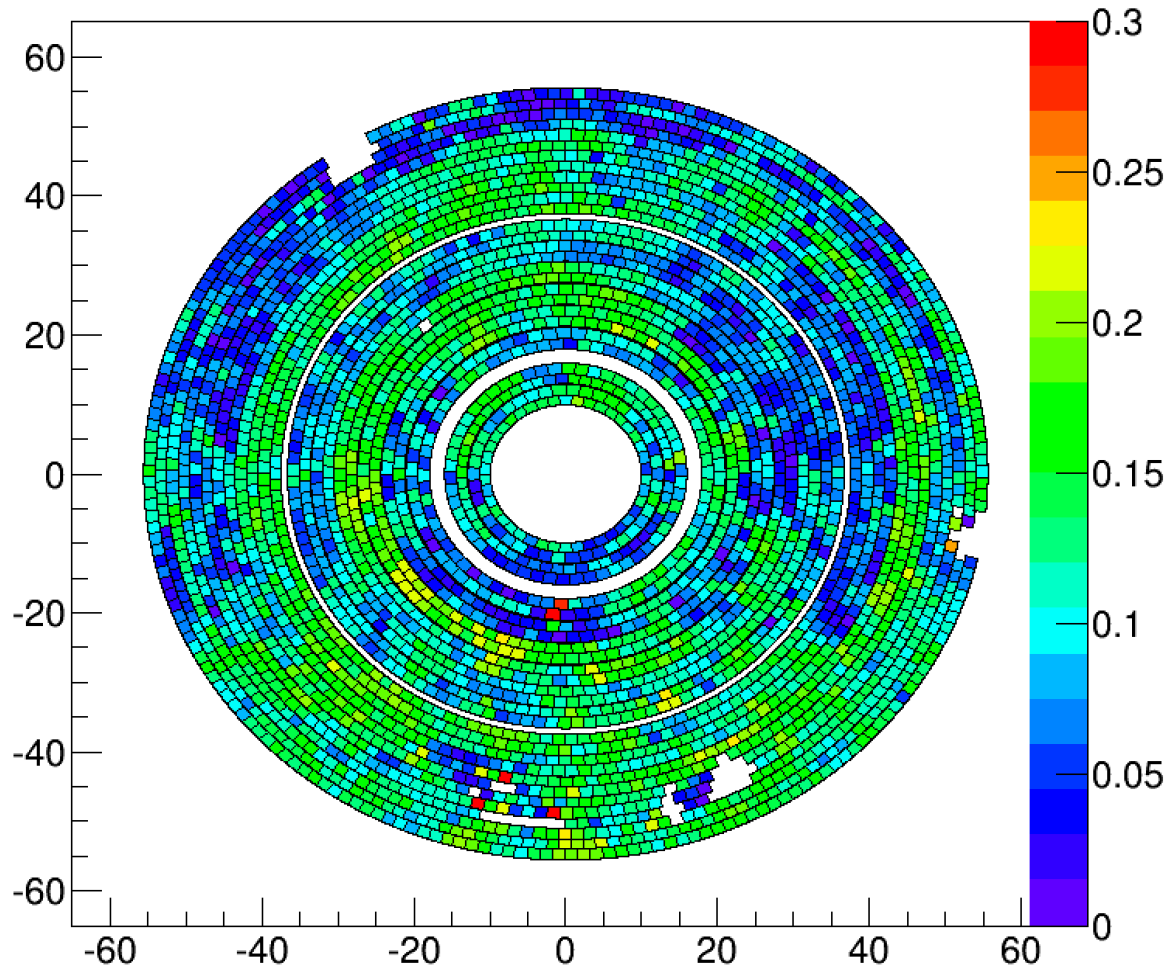
Distribution of Phase weighted by Amplitude



Most of our deformation is pointing downwards.

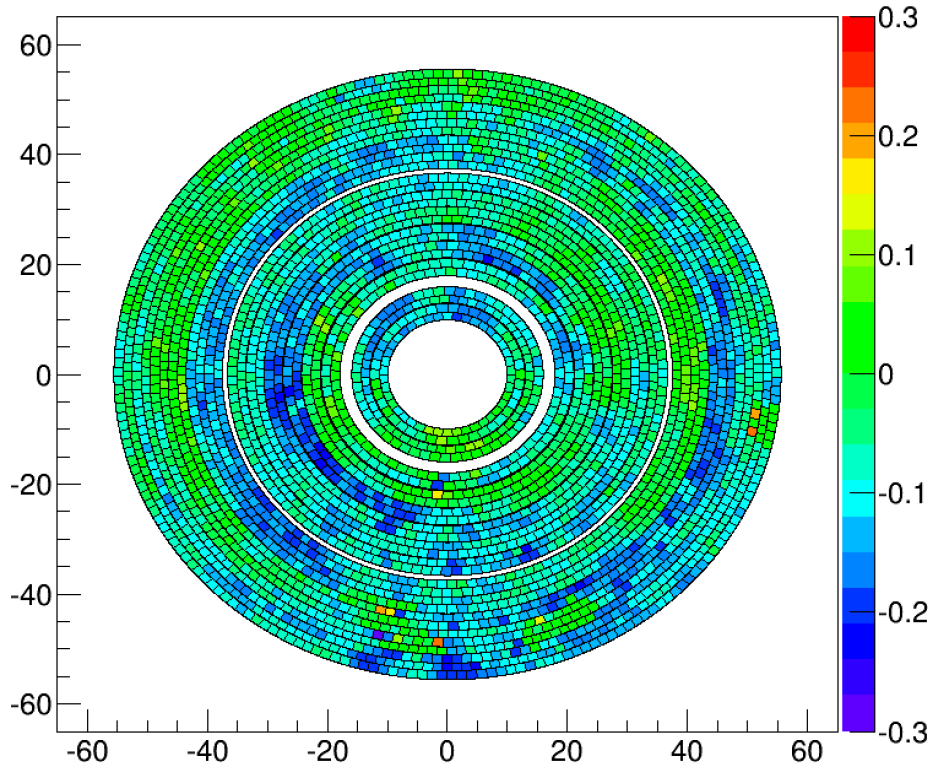
Cosmics

Amplitude of Sinusoid

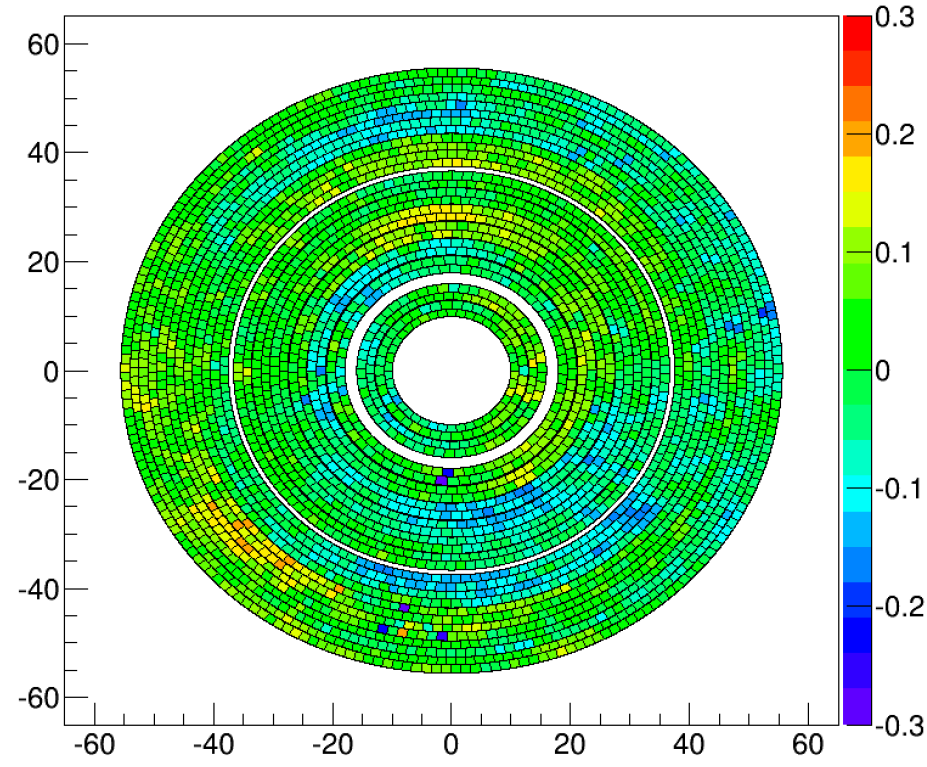


Cosmics

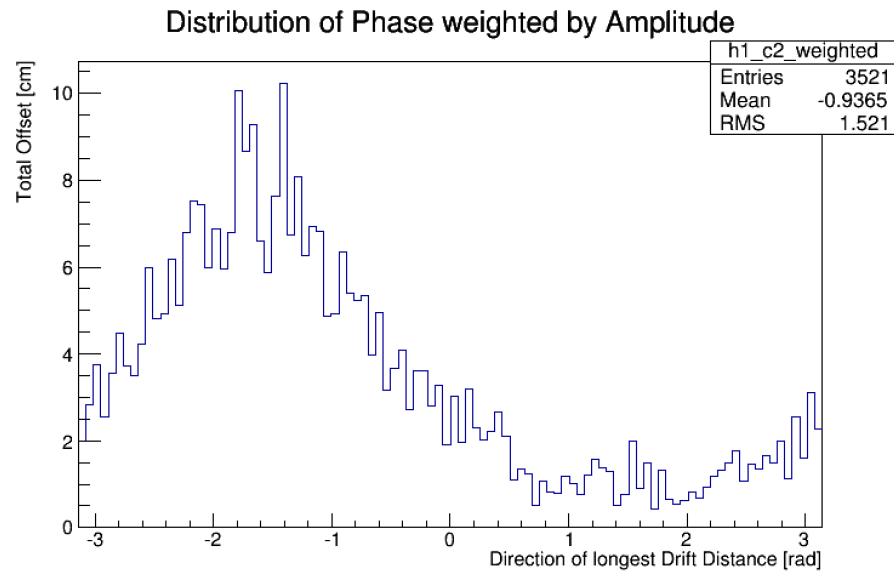
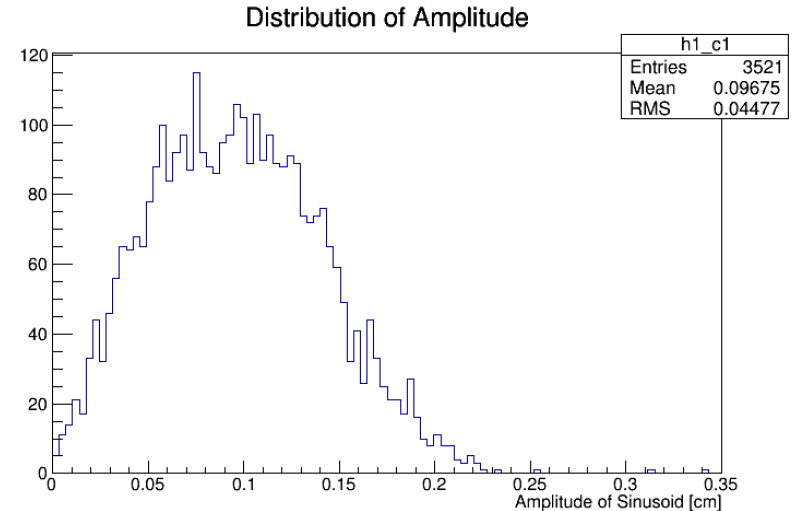
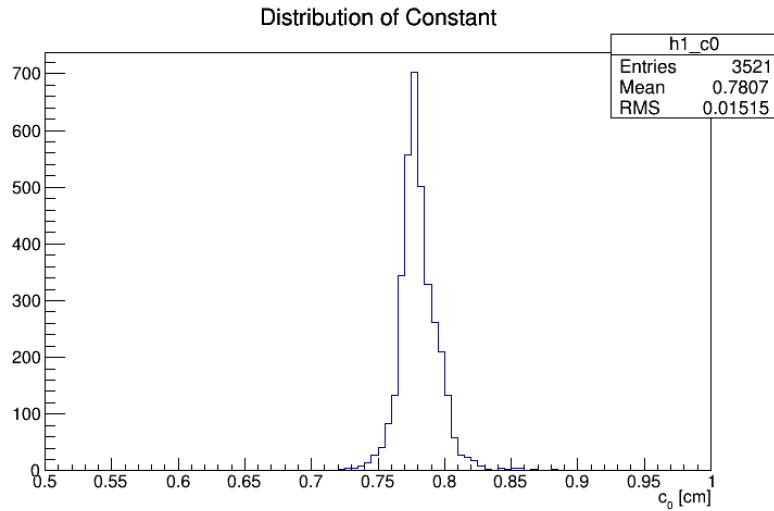
Projection of displacement on vertical axis



Projection of displacement on horizontal axis



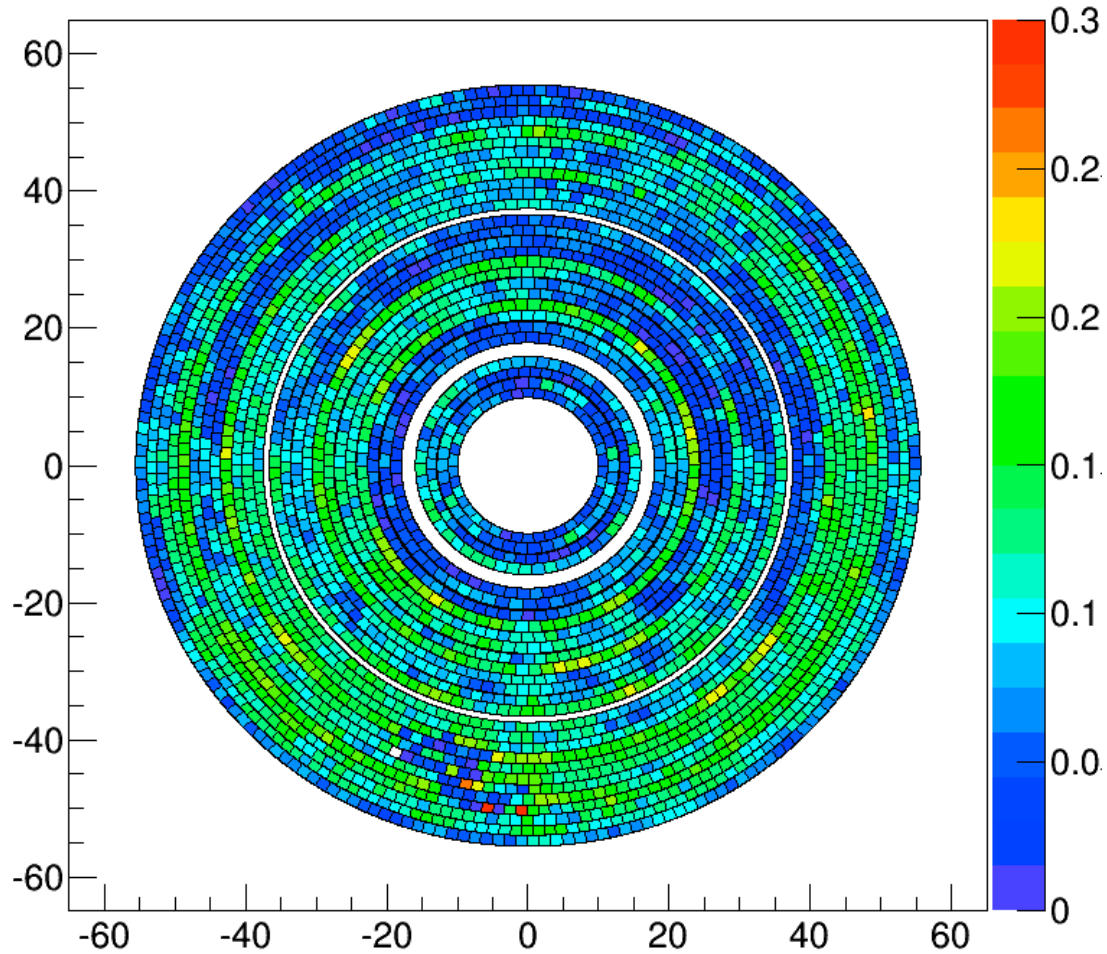
Beam data



Most of our deformation is pointing downwards.

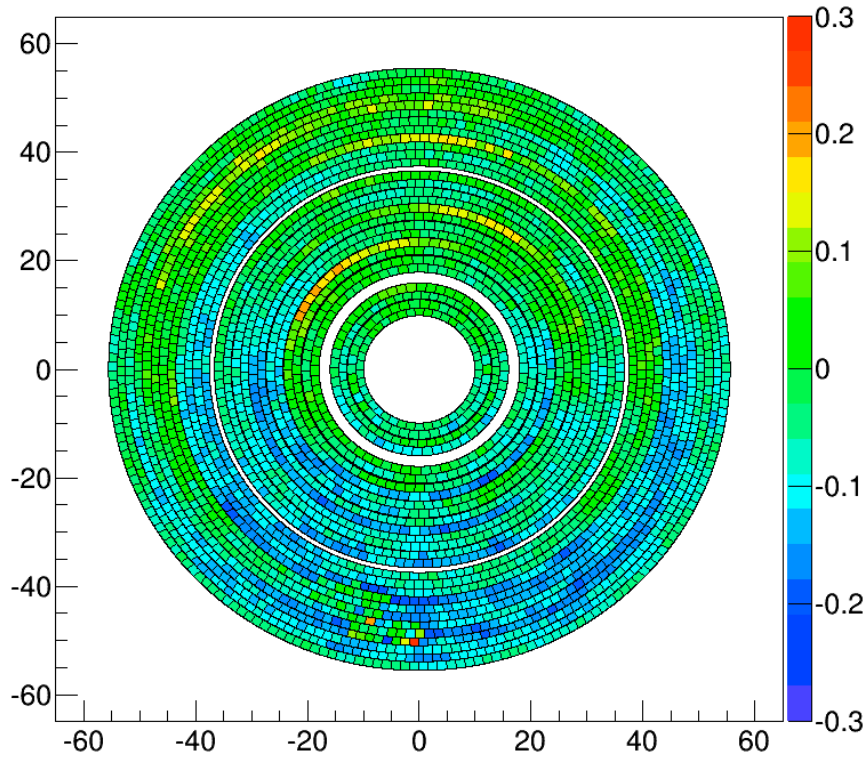
Beam data

Amplitude of Sinusoid

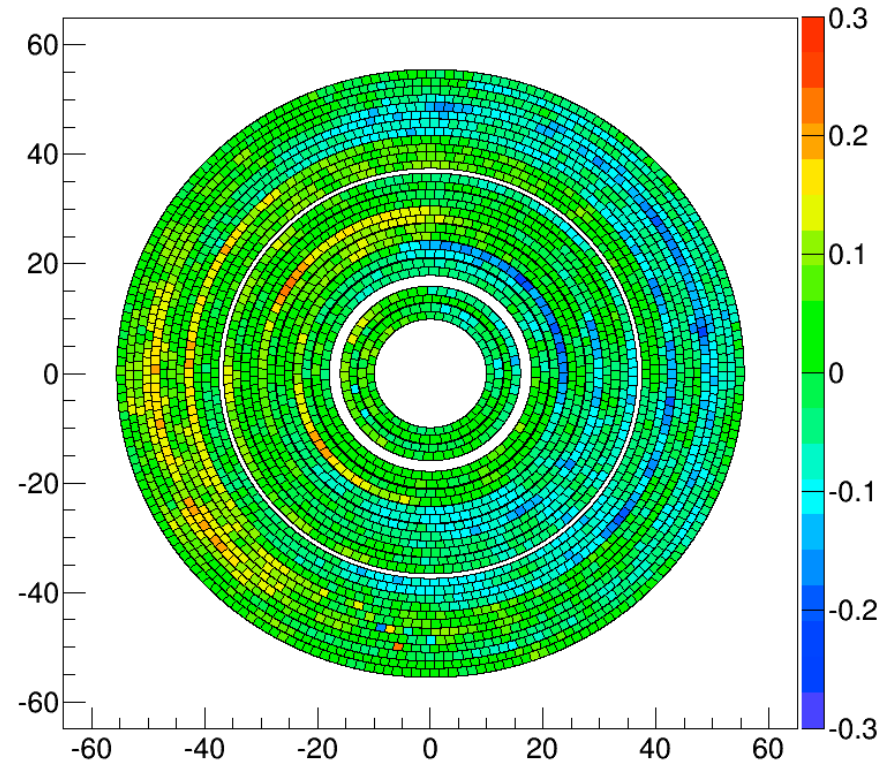


Beam data

Projection of displacement on vertical axis



Projection of displacement on horizontal axis

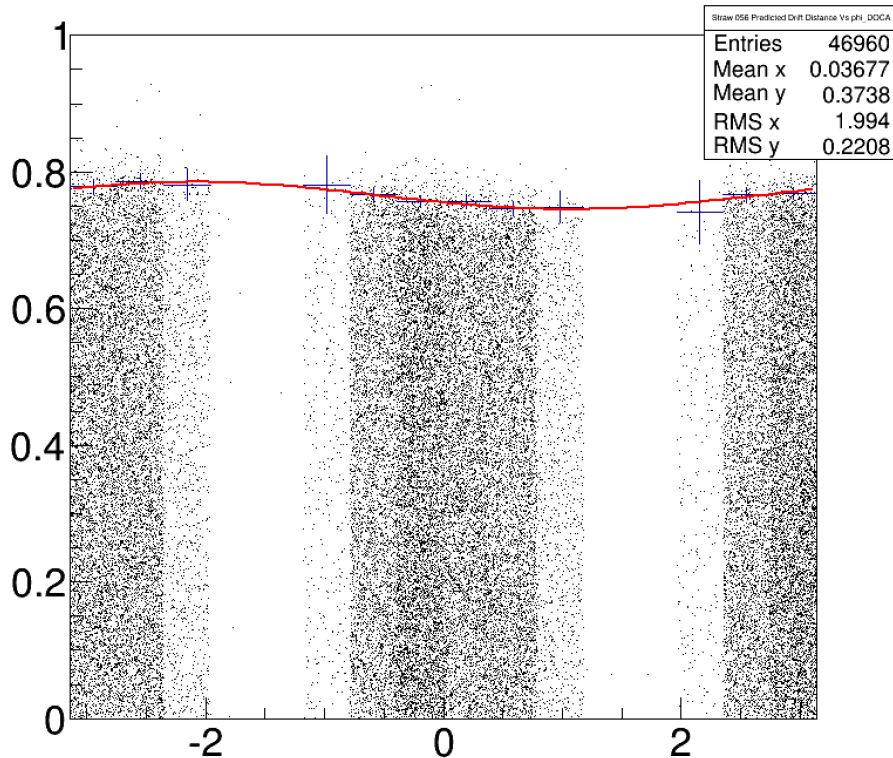


Good Straw - Ring 28

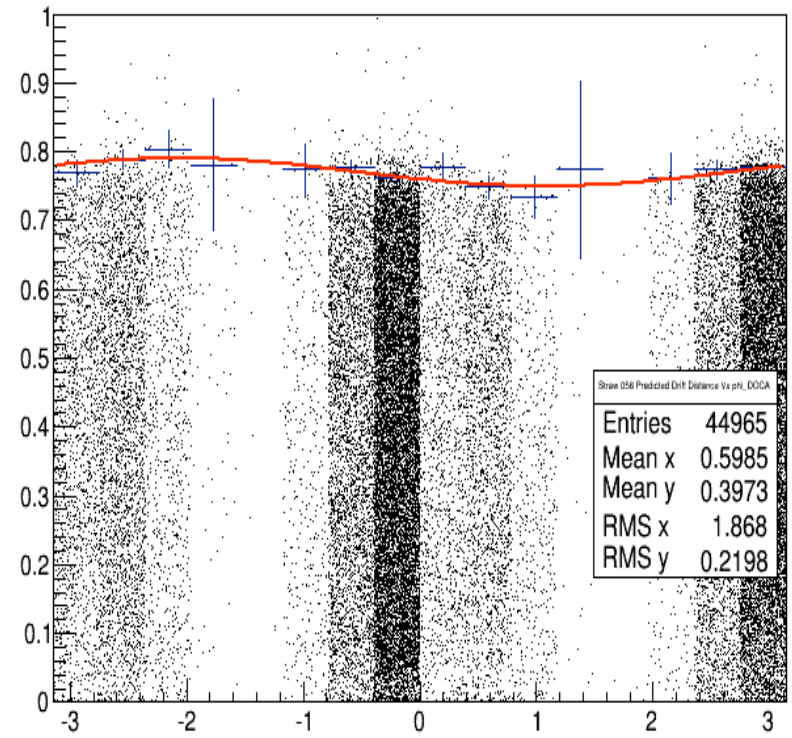
Cosmics

Beam

Straw 056 Predicted Drift Distance Vs phi_DOCA



Straw 056 Predicted Drift Distance Vs phi_DOCA

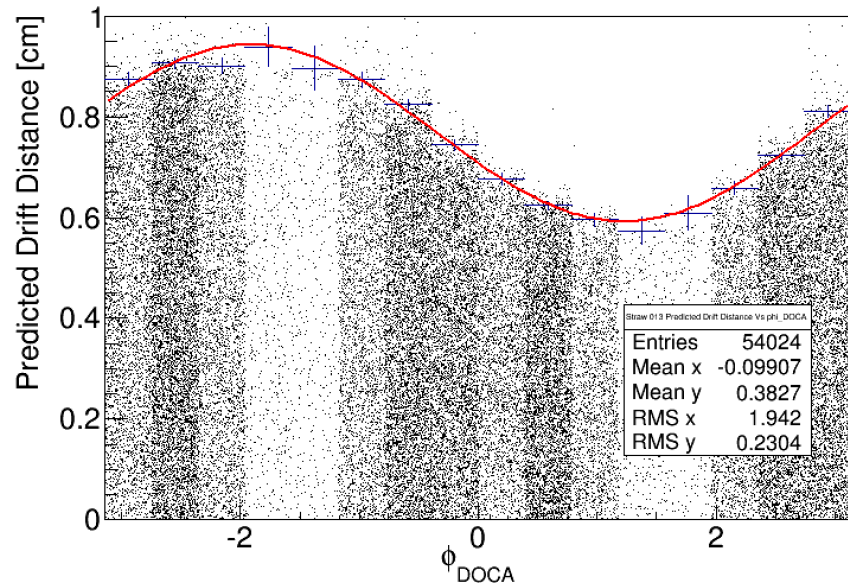


Bad Straw - Ring 10

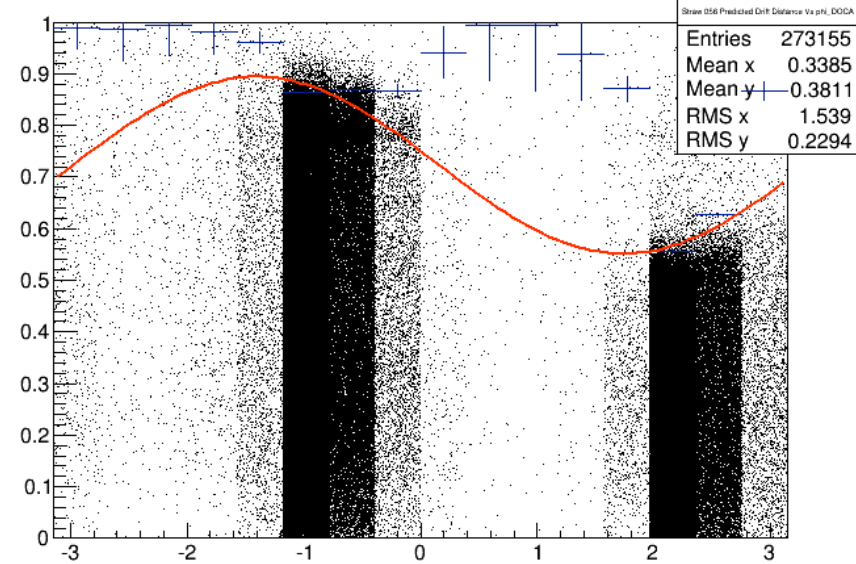
Cosmics

Beam

Straw 013 Predicted Drift Distance Vs phi_DOCA



Straw 056 Predicted Drift Distance Vs phi_DOCA



Good straw residuals

