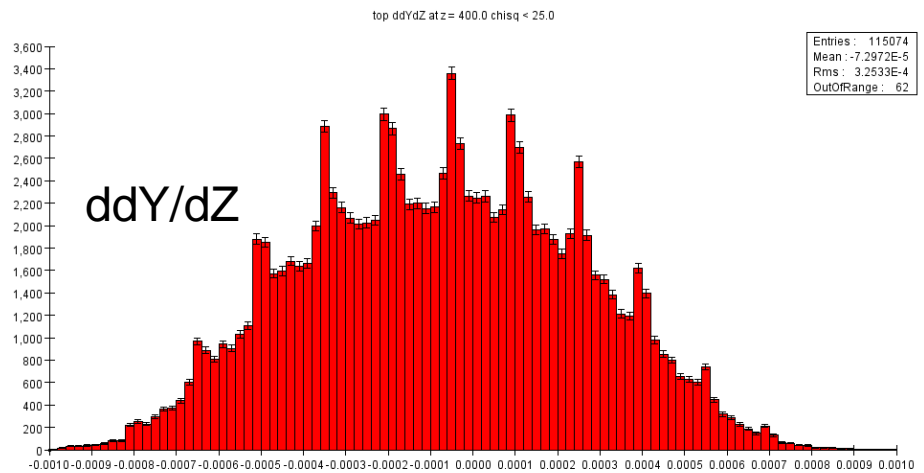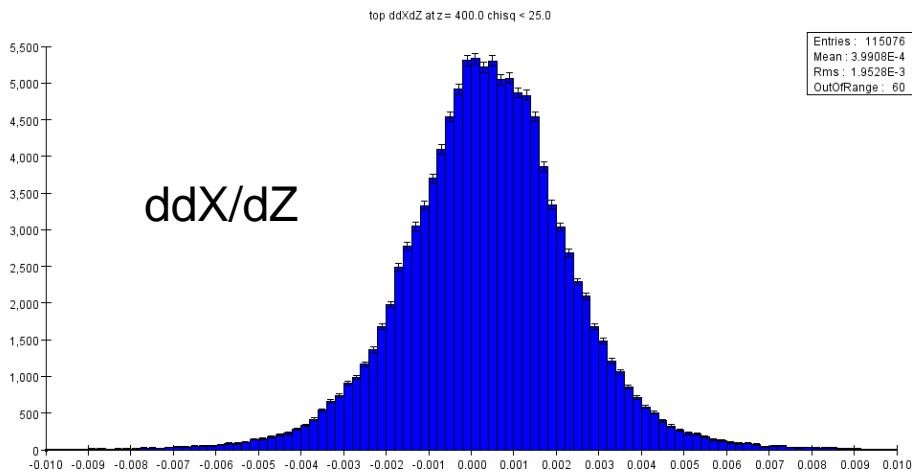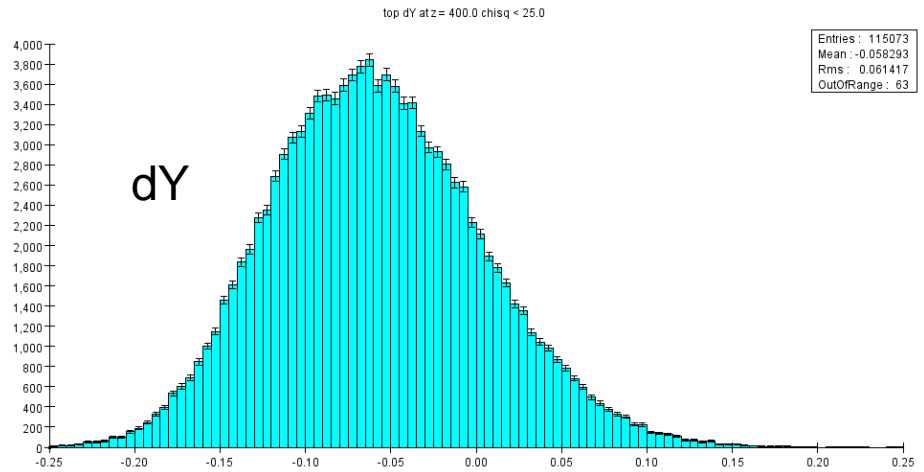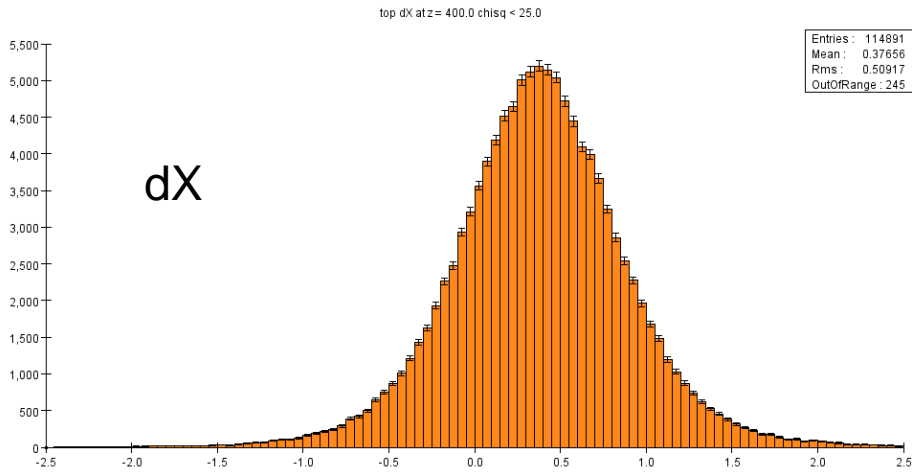# Straight Track Alignment

Norman Graf (SLAC)

September 25, 2018

Straight Line Fits

- Fit strips to straight lines in L1-3 and L4-6, compare slopes and intercepts at z=400 (roughly midway between layer 3 & 4.
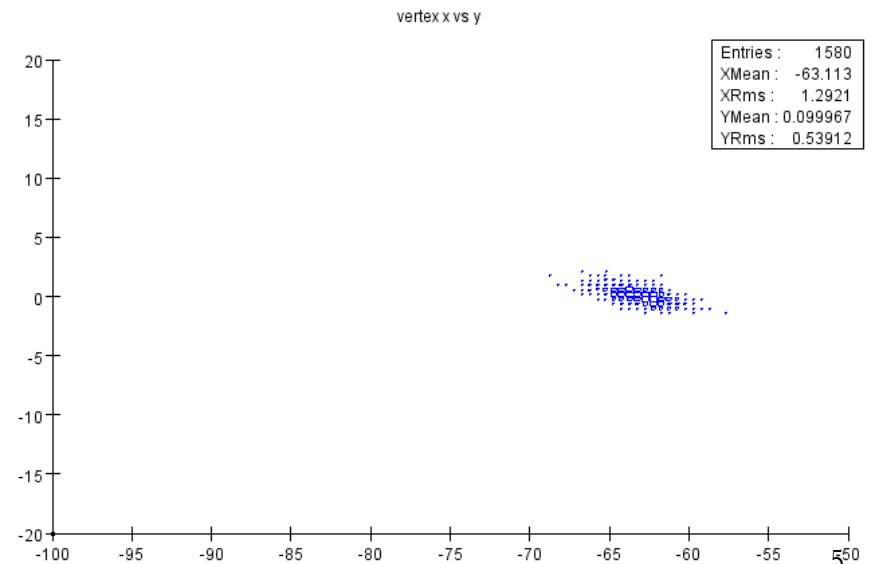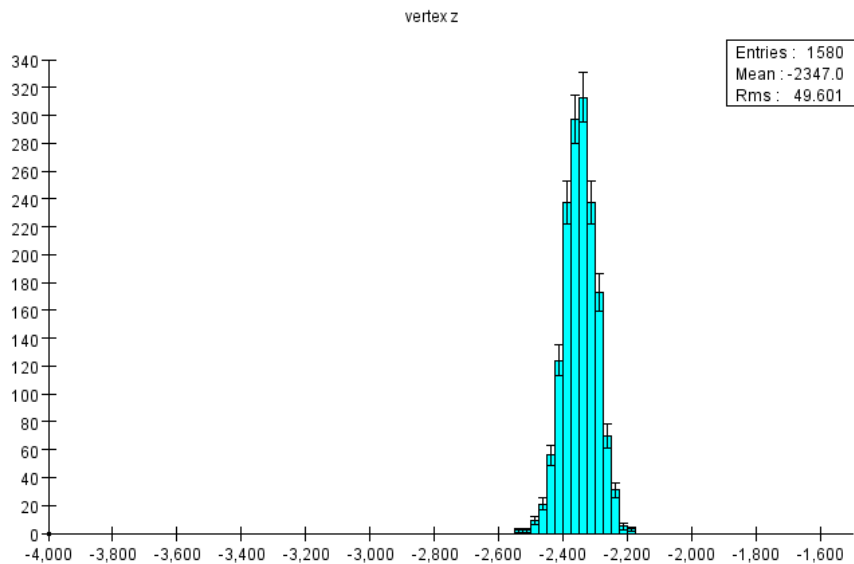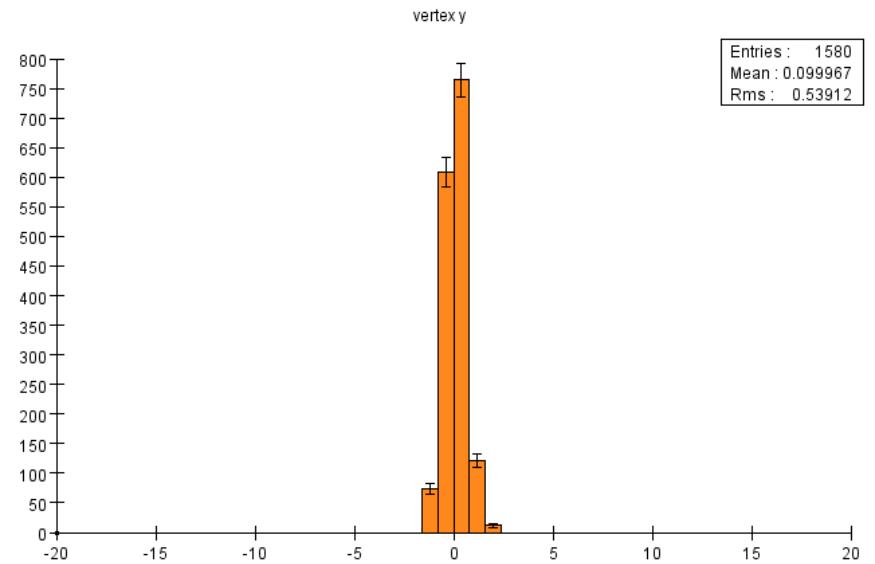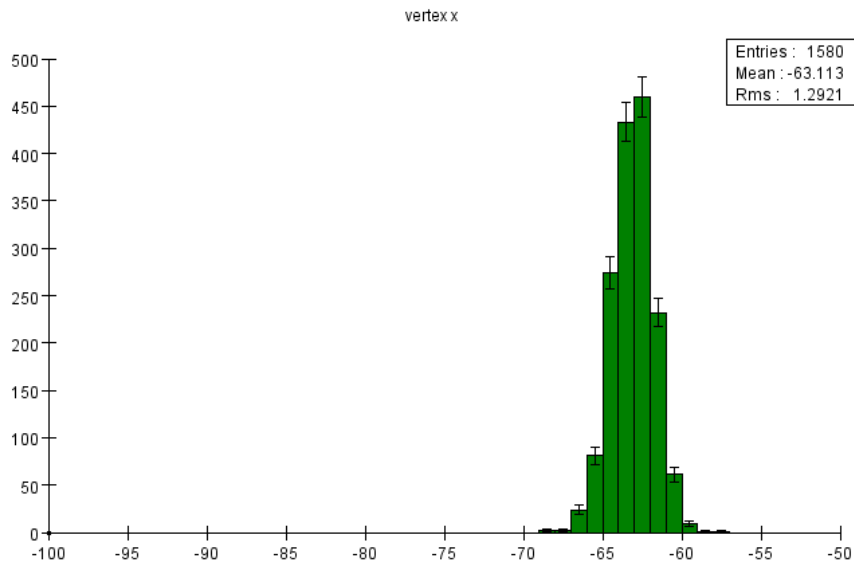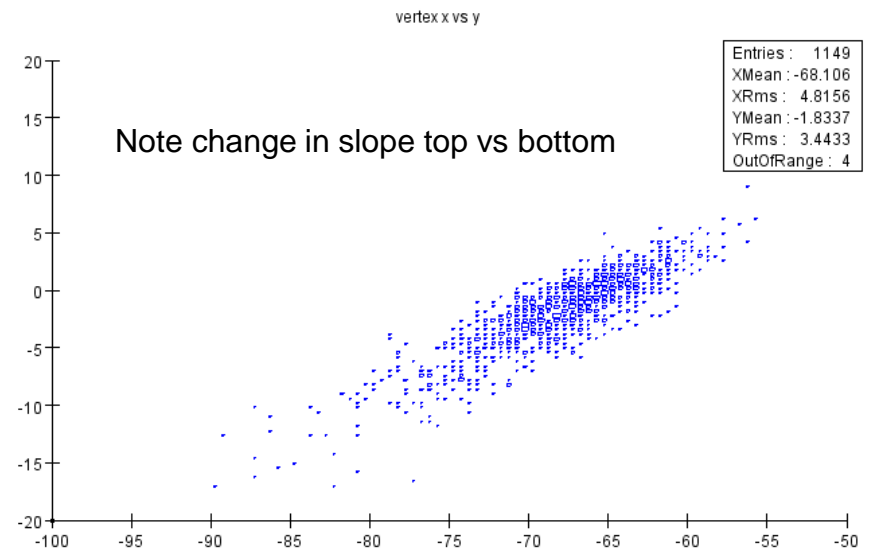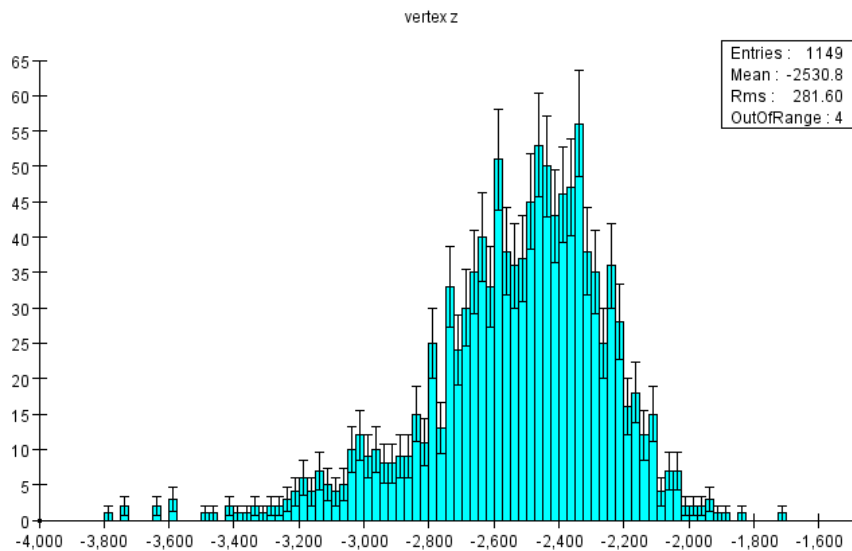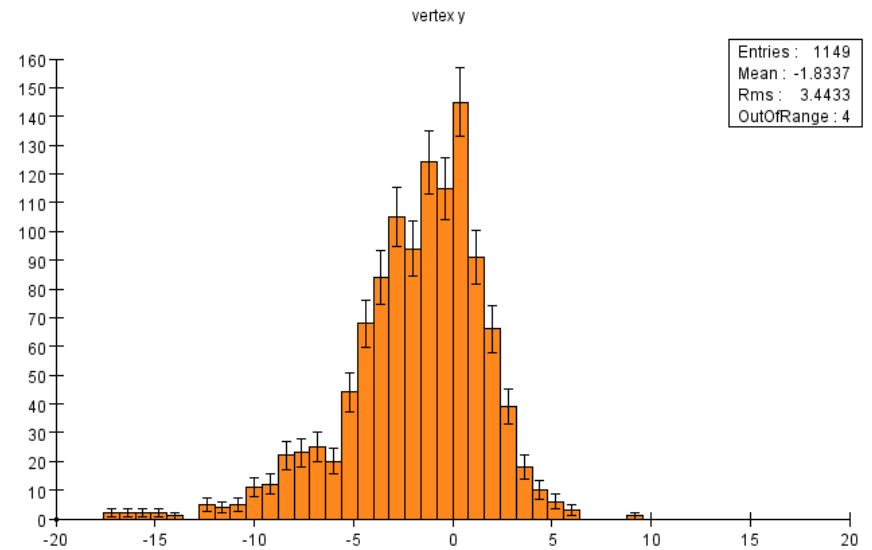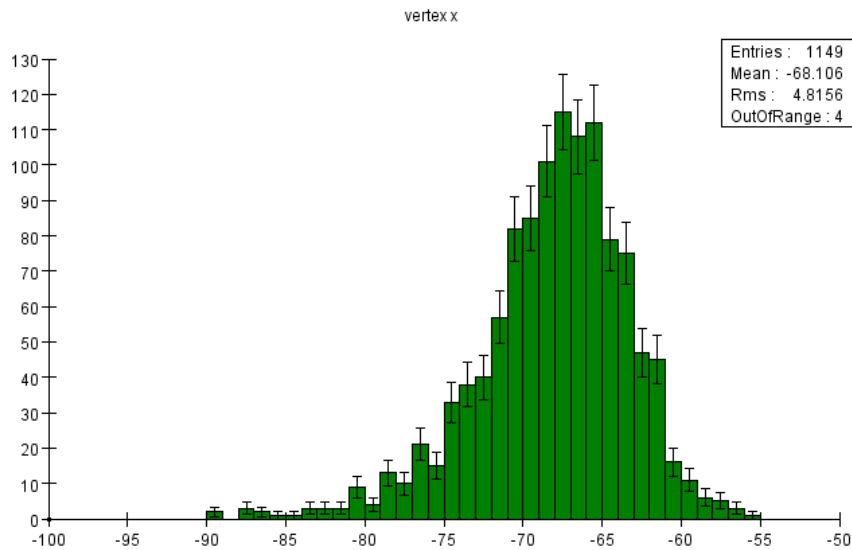
Slopes and Intercepts

Straight Track Vertexing

- Instead of simply projecting back in z and plotting x-y, wrote code to vertex the straight tracks.

- Take ensembles of tracks from top, and separately from the bottom, and vertex them.

- Test on MC, apply on data from run 8100

Straight Track Vertexing (MC)

Straight Track Vertexing (data)

Note change in slope top vs bottom
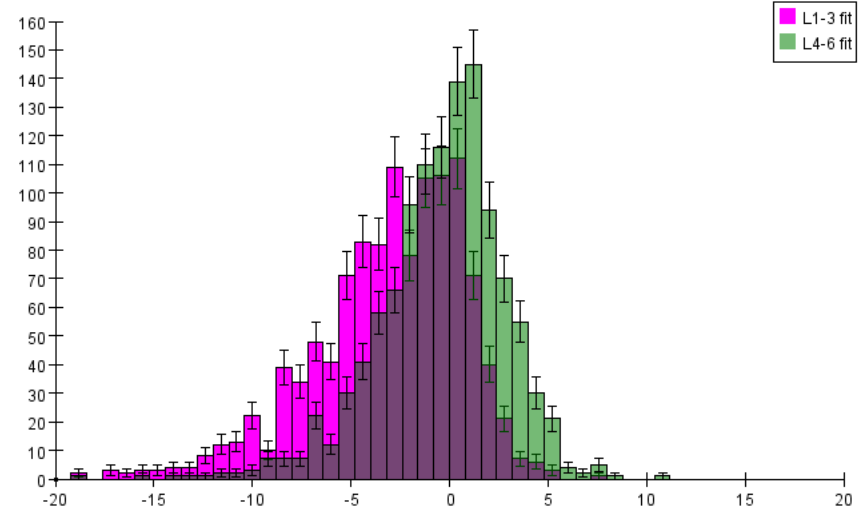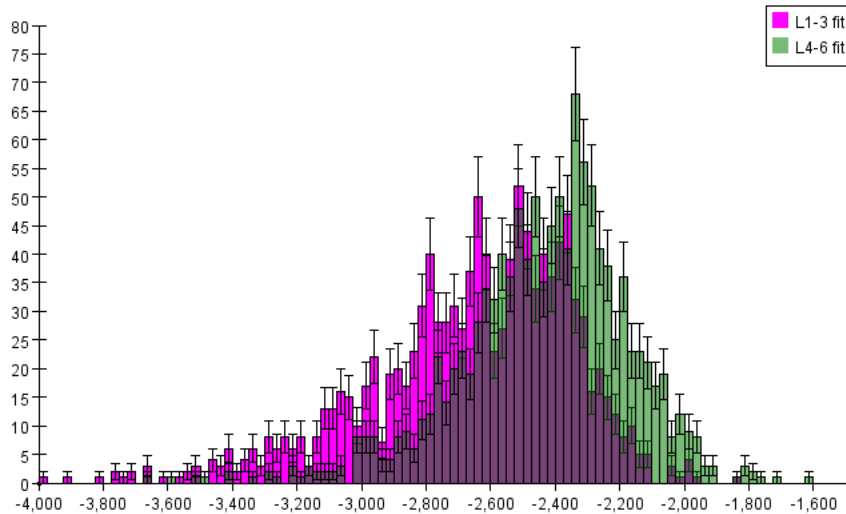
Vertexing (data top L13/L46)

8100 top L13 L14 vertex x
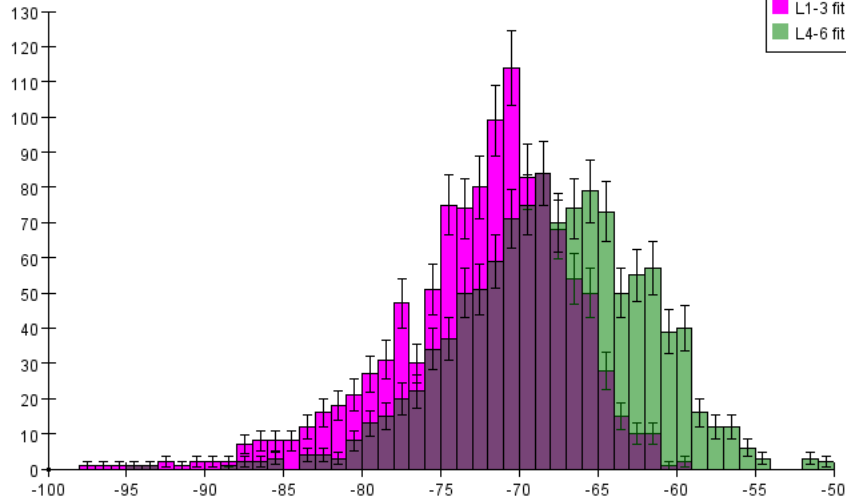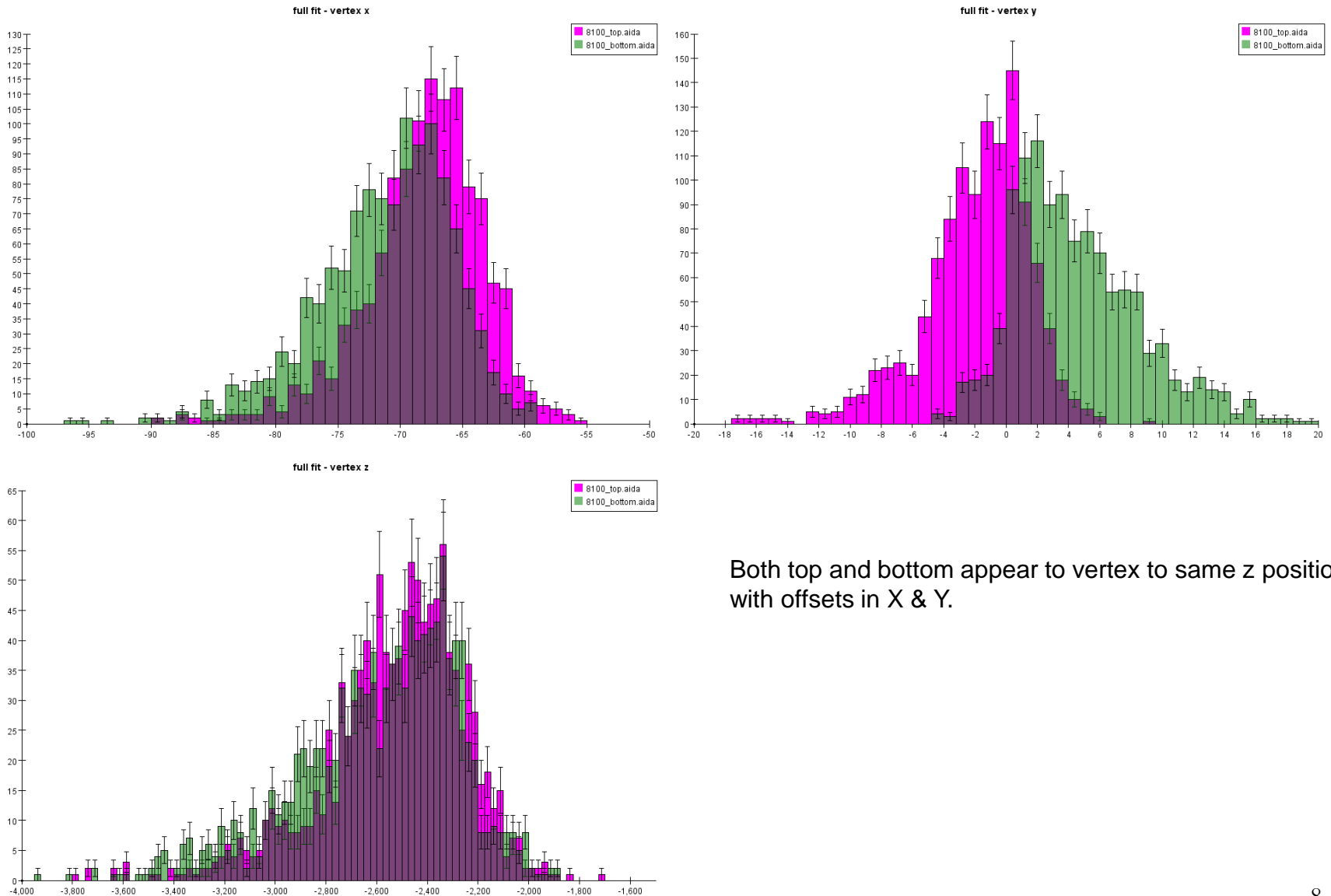

8100 top L13 L14 vertex y

8100 top L13 L14 vertex z

Note change in slope top vs bottom

Vertexing (data top/bottom)

Both top and bottom appear to vertex to same z position with offsets in X & Y.

Status

- Most of the tools and data are now in place. Proceeding deliberately to understand and correct the field-off straight tracks.

- Implementing corrections to SVT angles around X and Y axes to get L13/L46 slopes and intercepts to agree and also top/bottom vertices to agree.

- Will then test on FEE to check momentum calibration, alignment and target position.

- Working on documentation.

- Working on run requirements to make sure we have sufficient quantity and types of calibration/alignment data early on.