

Where's the Target

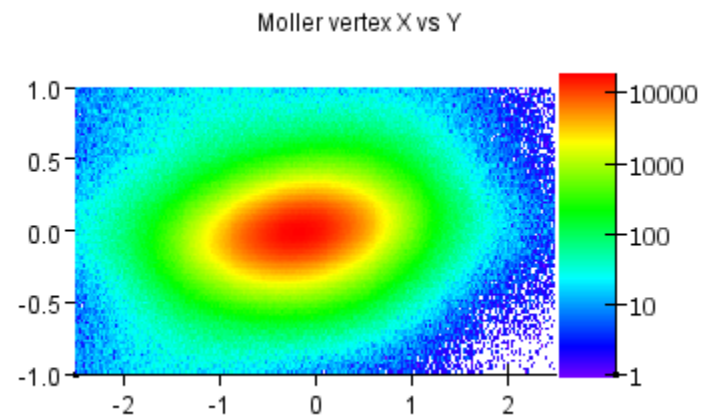
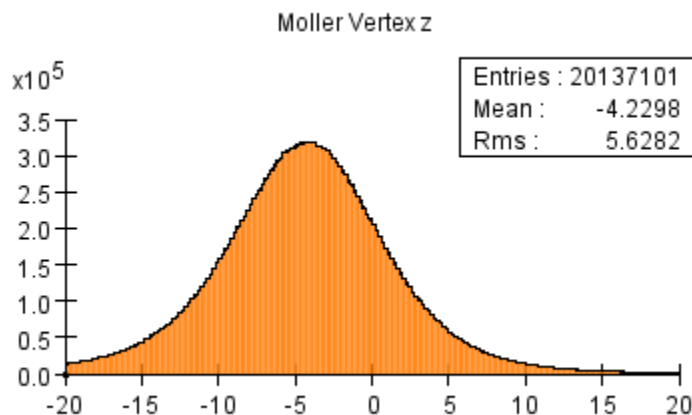
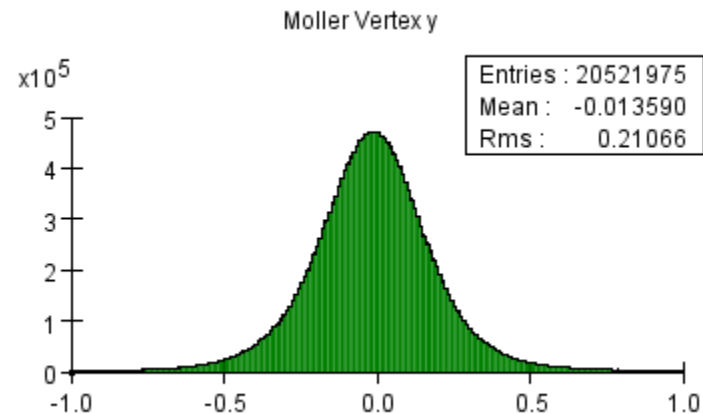
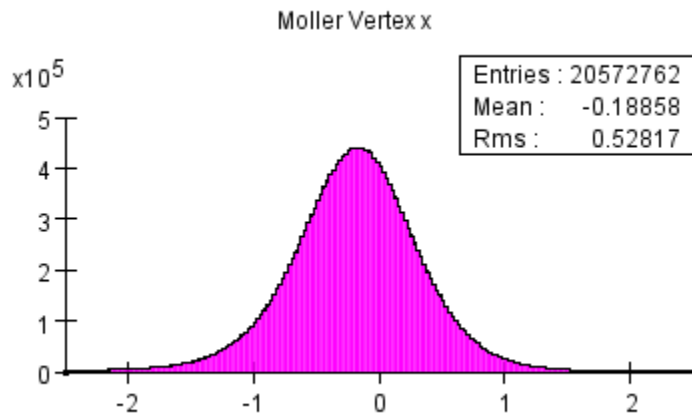
Norman Graf (SLAC)

HPS Weekly SVT Meeting

May 15, 2017

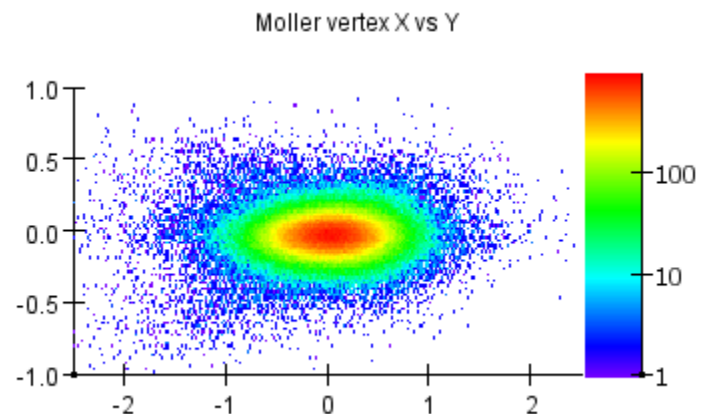
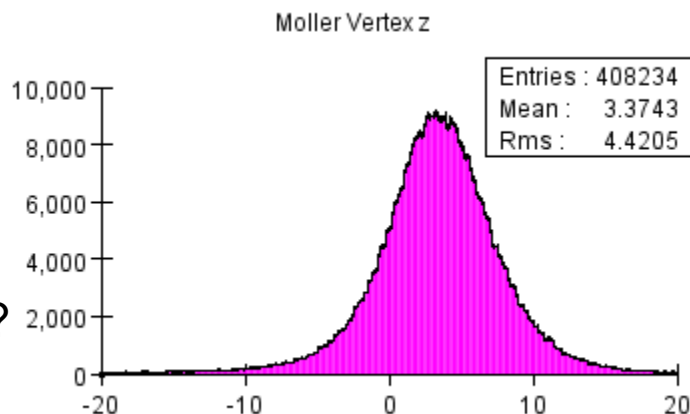
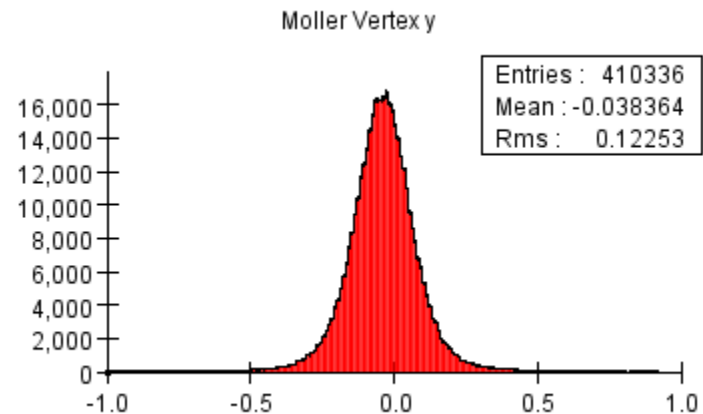
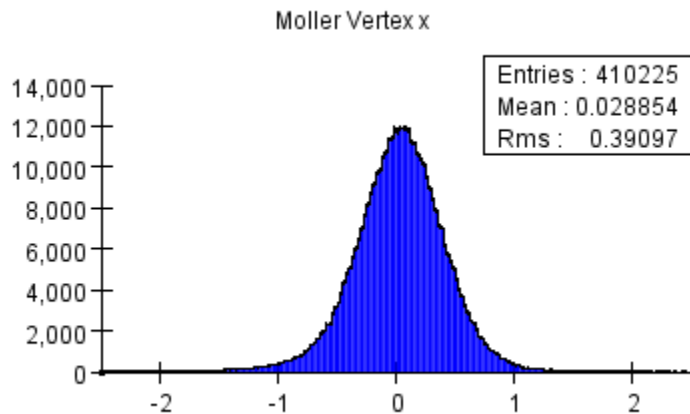
2015 Møller Position

■ Where is the Beam & Target?



2016 Møller Position

Where is the Beam & Target?



What!?
+3!!!!

That's 8mm different from 2015!

Determining the target z position

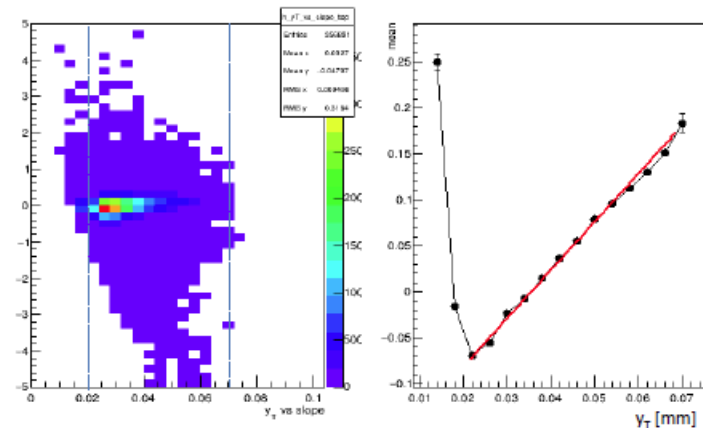
- Plot track Y position versus slope.
- Extract target Z position from slope of linear fit.
- From Alessandra's collaboration meeting talk:

- Information on target coordinates:
 $y_T(x_T)$ vs slope correlation for FEE tracks

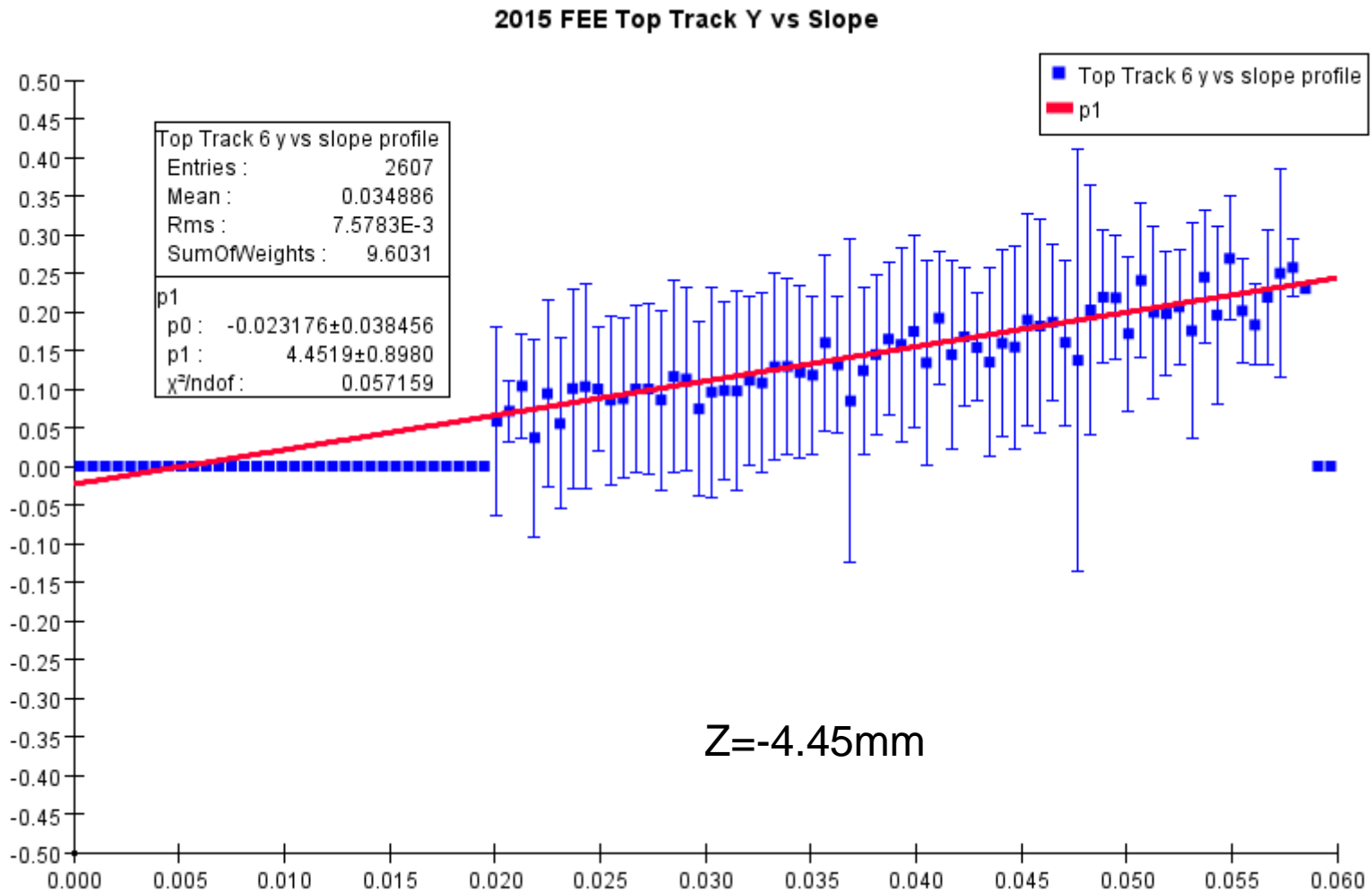
$$y_T \Big|_{z=0} = \underbrace{y_{tgt}}_{p_0} - \underbrace{z_{tgt}}_{-p_1} \cdot \tan \lambda$$

Top tracks:

$p_0 = -0.185$ mm, $p_1 = 5.23$ mm

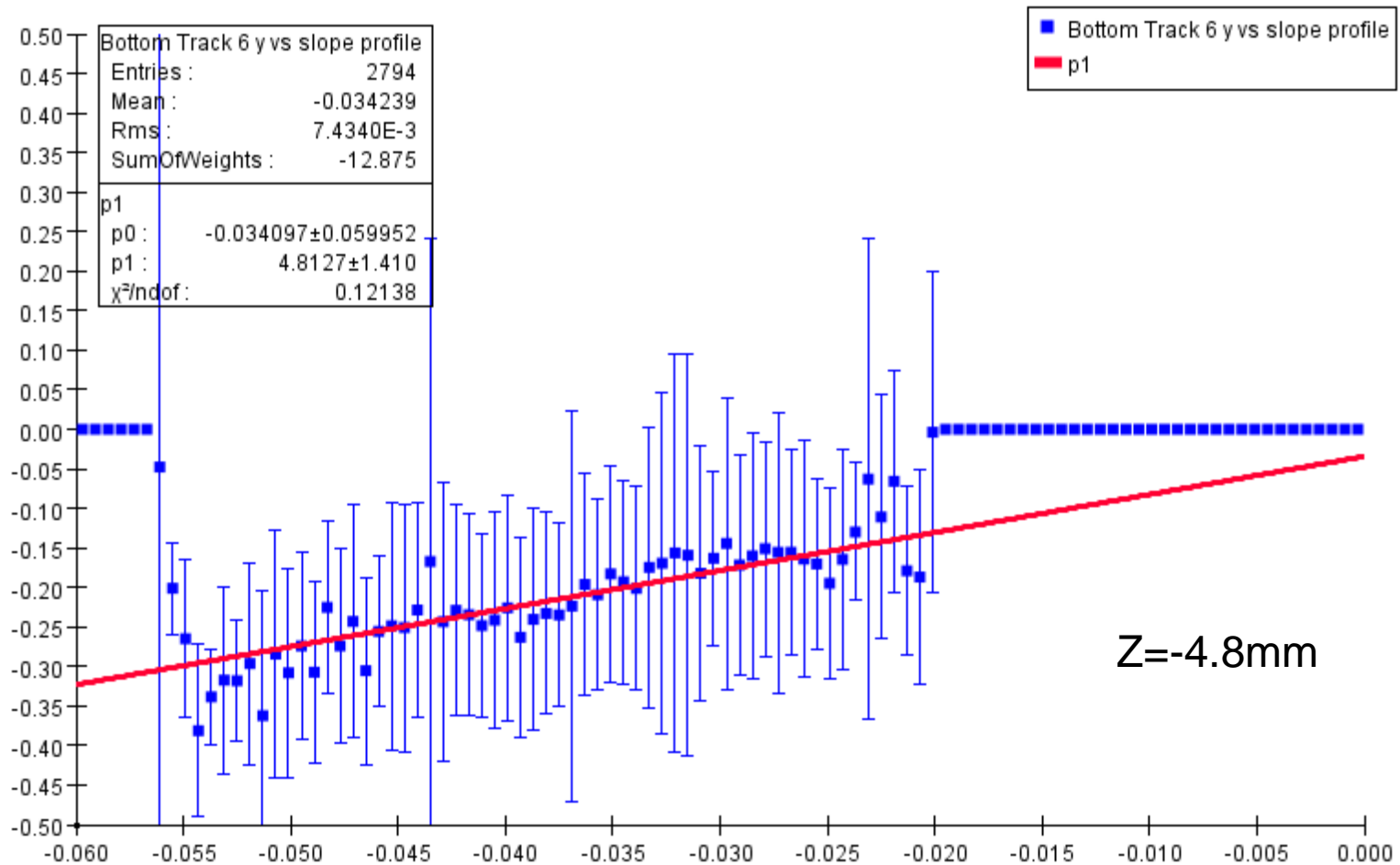


Repeat for 2015 FEE (Run 5772 Top)

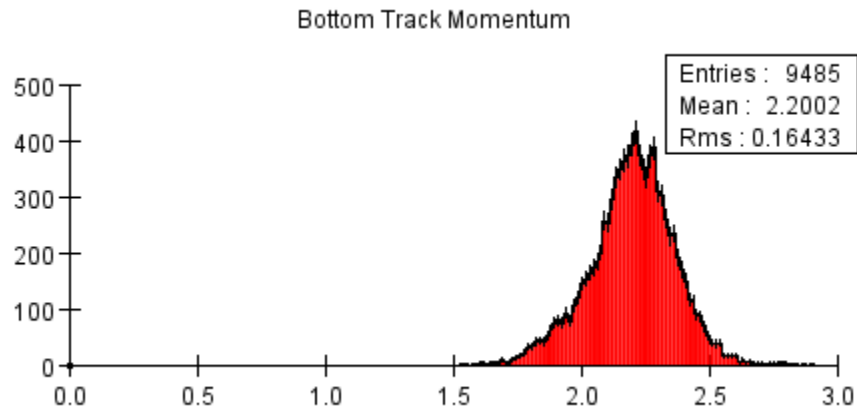
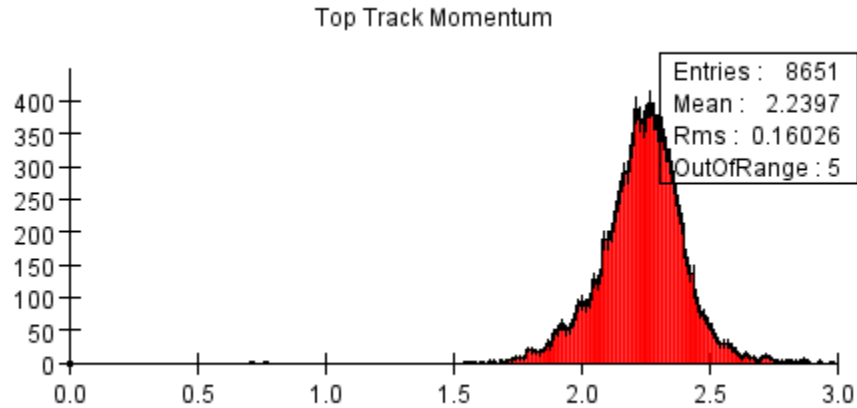


Repeat for 2015 FEE (Run 5772Bottom)

2015 FEE Bottom Track Y vs Slope

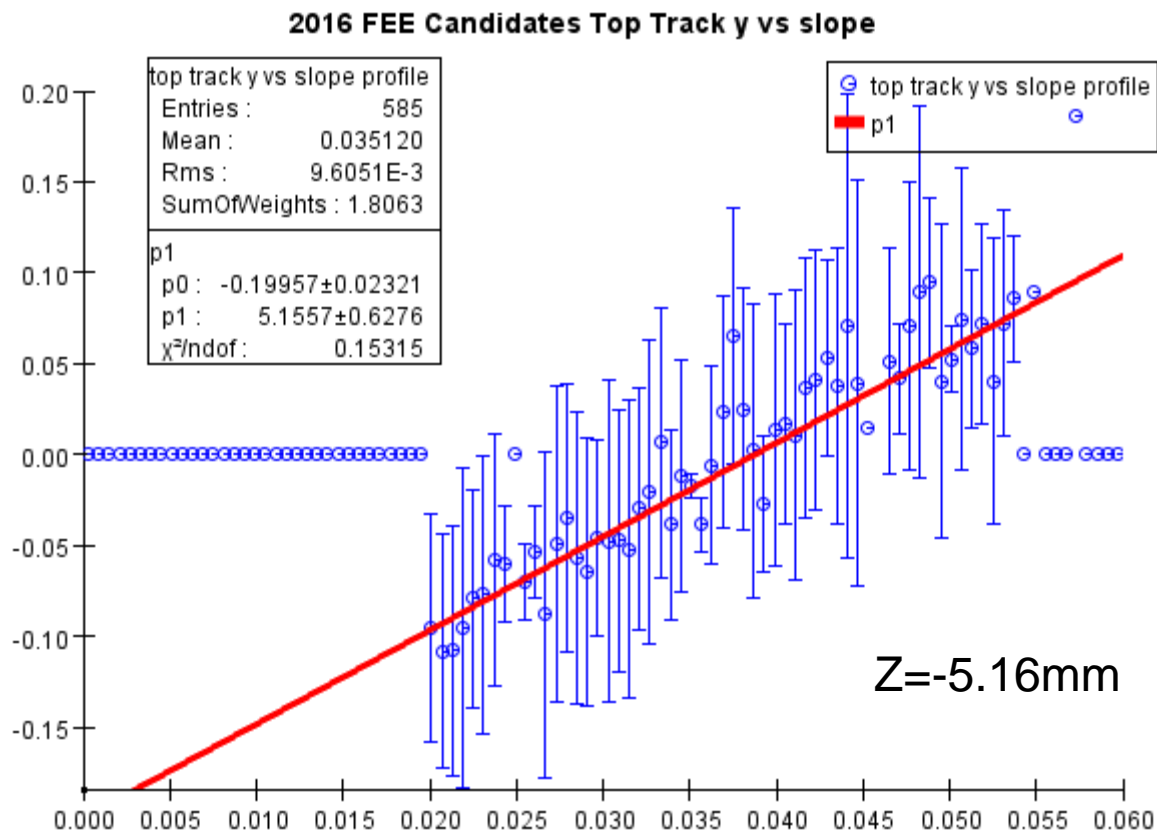


2016 FEE candidates



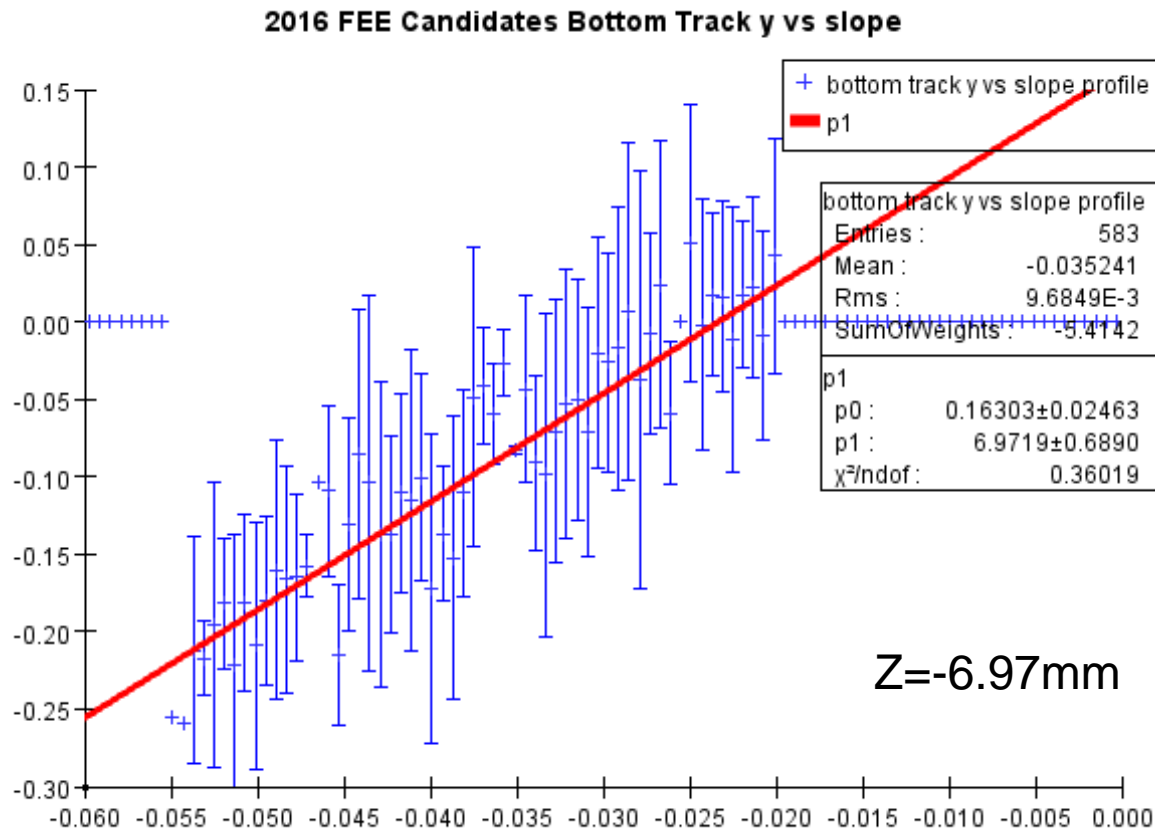
2016 FEE candidates Top

■ Top Profile Plot



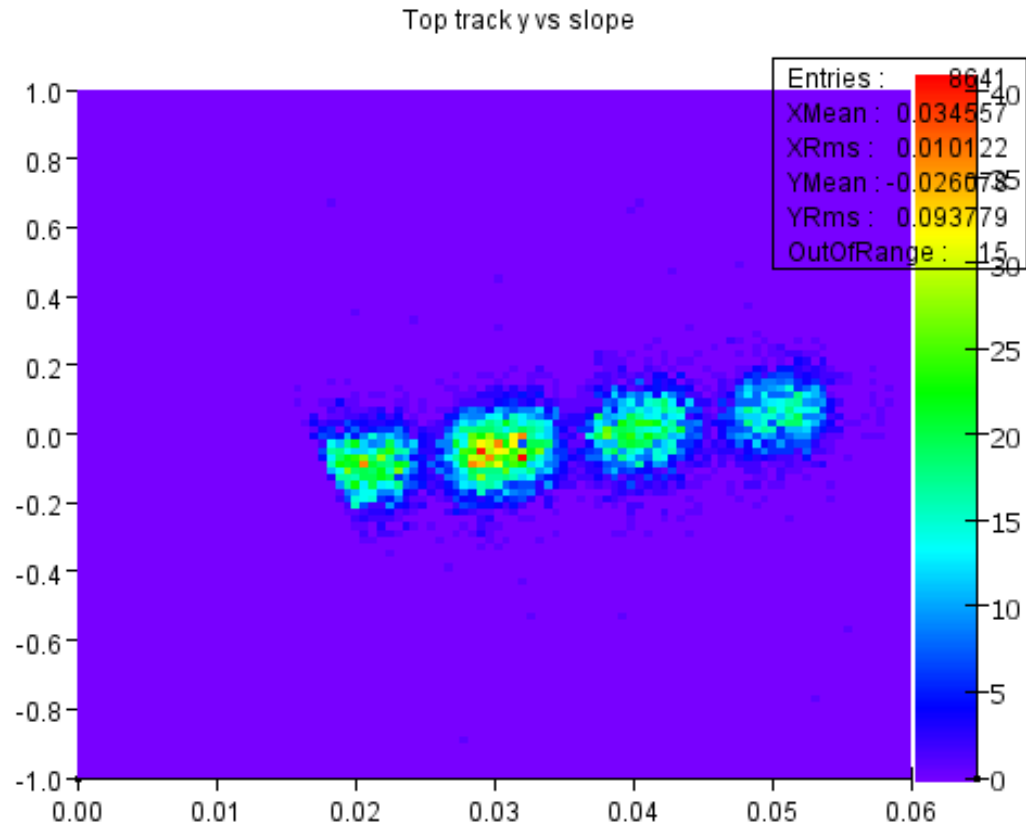
2016 FEE candidates Bottom

■ Bottom Profile Plot



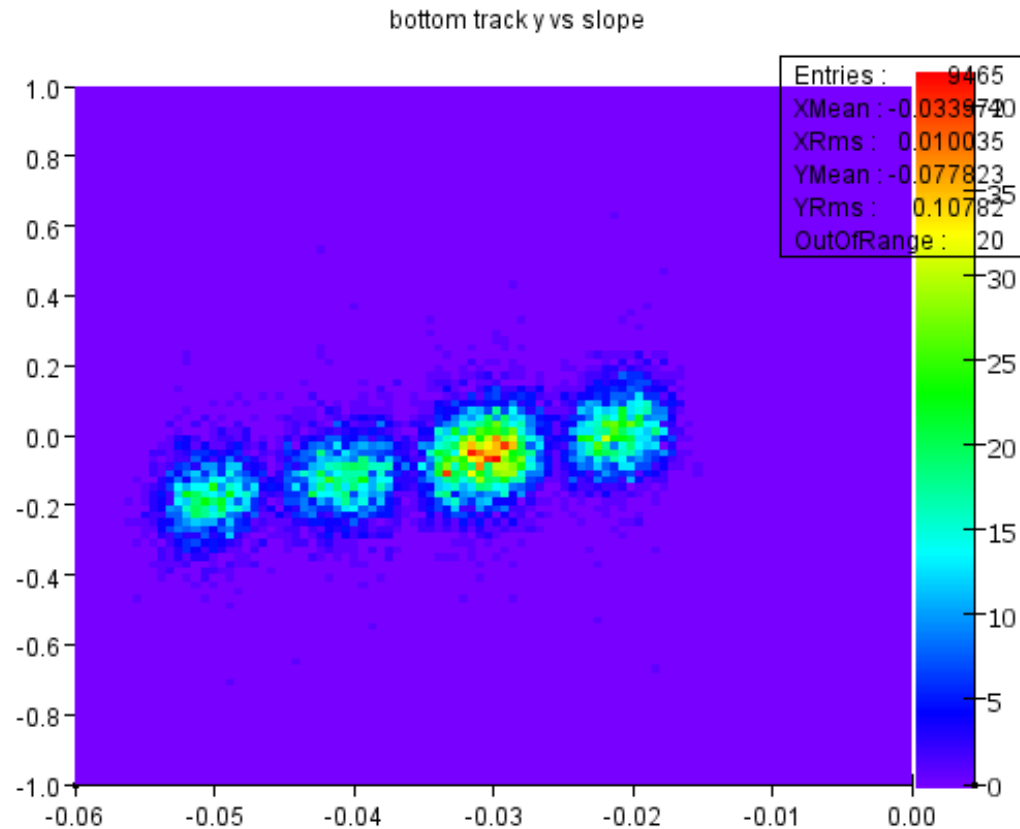
2016 FEE candidates Bottom

■ Top Scatter Plot



2016 FEE candidates Bottom

■ Bottom Scatter Plot



Summary

- 2016 FEE candidates give a target z position roughly in agreement with the 2015 values.
- Re-reconstructing the 2016 field-off, FEE and Møller data with the latest alignment geometry.
- Analysis of these events ongoing.
- Still some peculiarities...