update on 2016 data alignment

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✓ **Test of alignment achieved for run 7479 (no good run) with the FEE selected tracks on:**

- ◉ Curved tracks: run 7800 (~340K , some problems running python to SLAC)
- ◉ Straight tracks: run 8100 (~340K , some problems running python to SLAC)

✓ **It looks good but also some parameters have to be better tuned**

✓ **Purpose:provide a geometry which works for both curved and straight tracks**
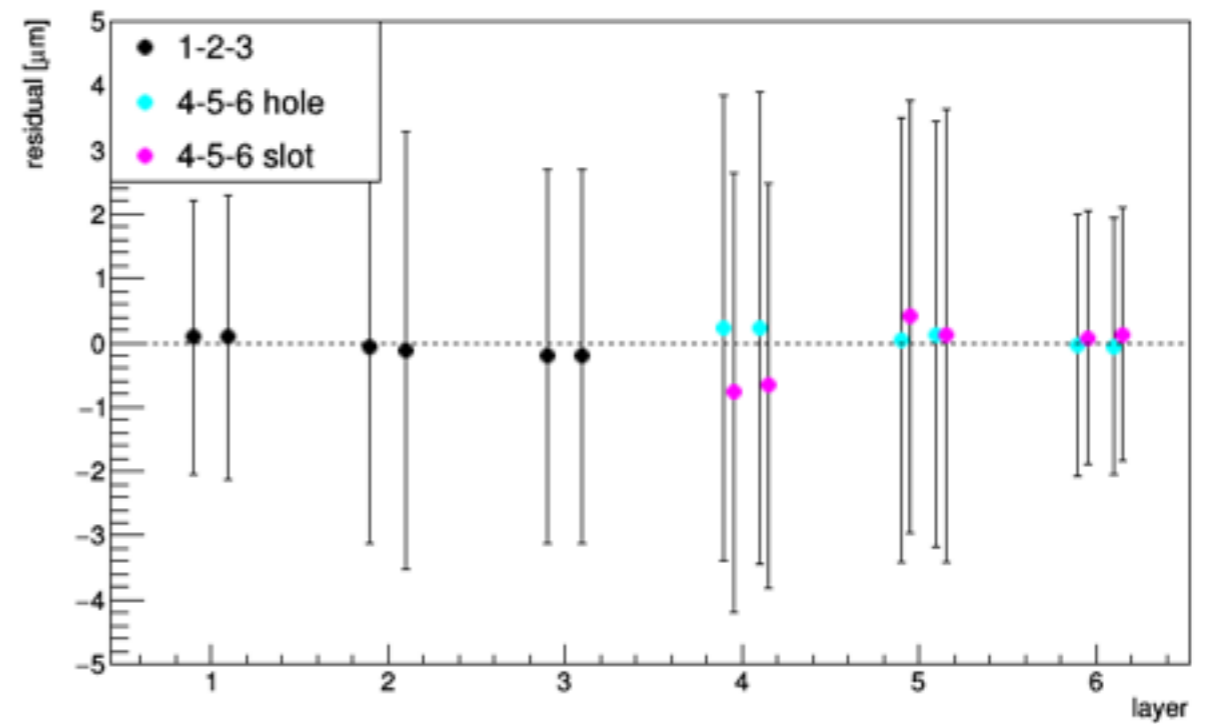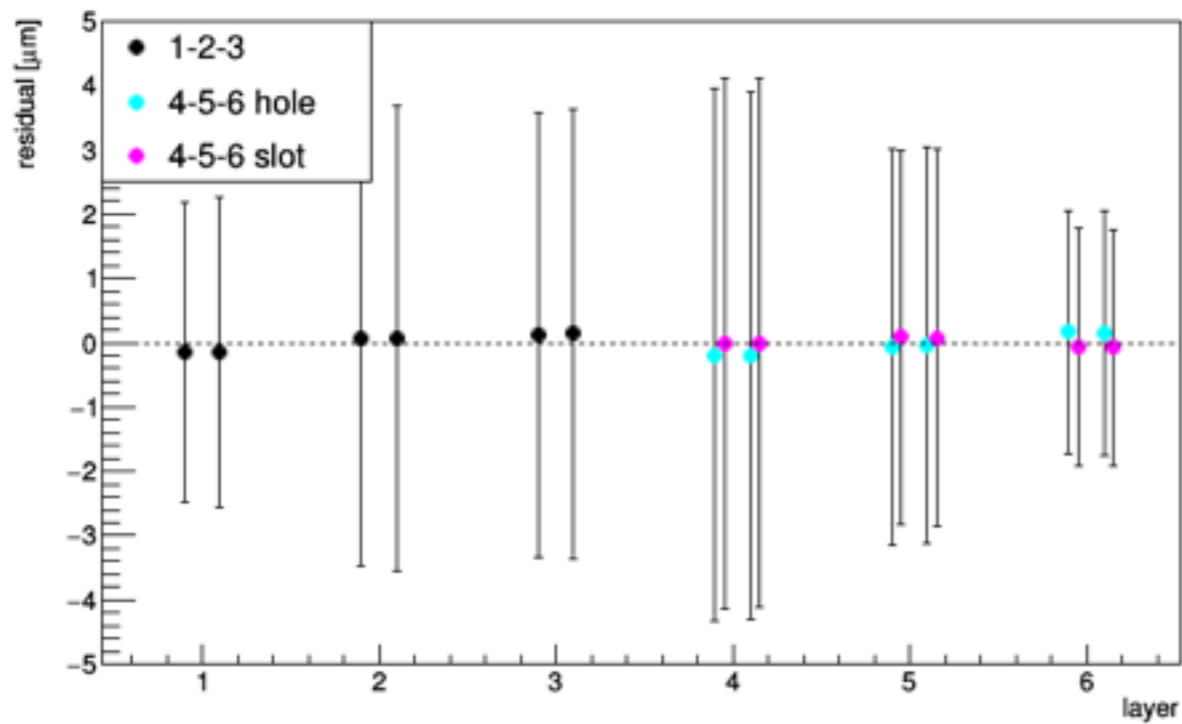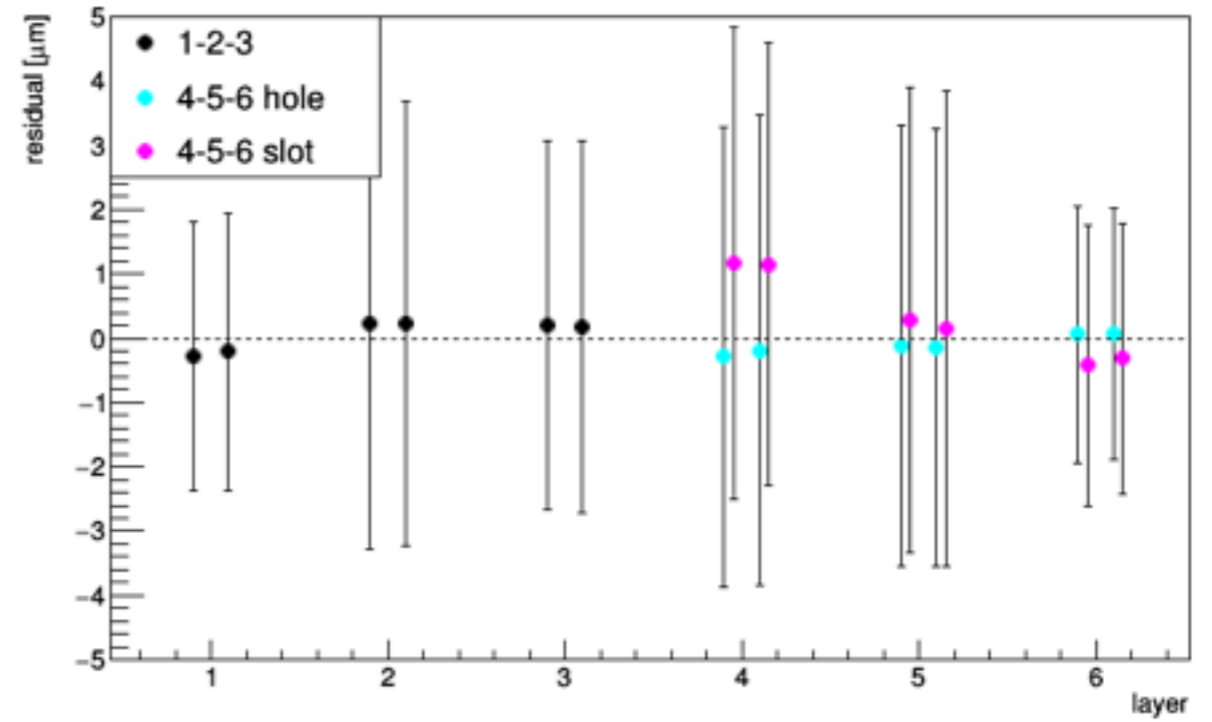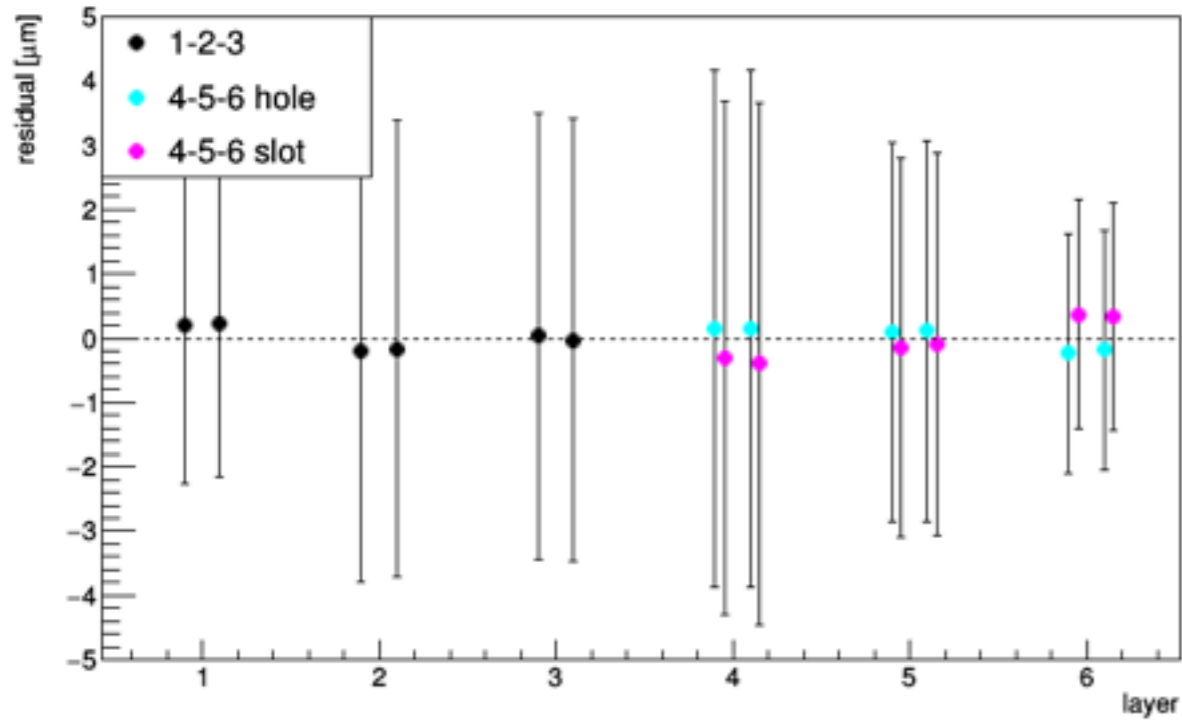
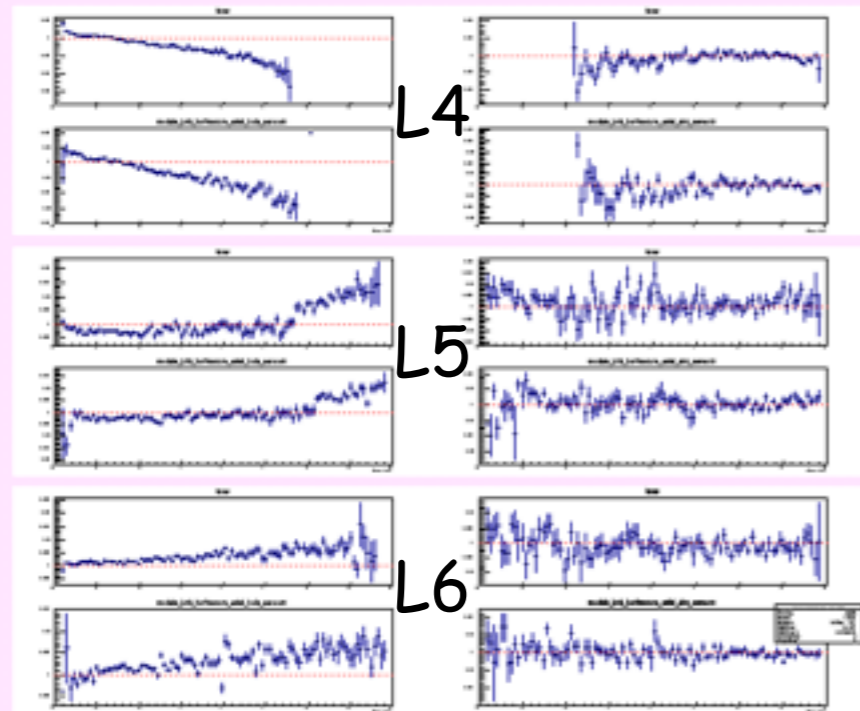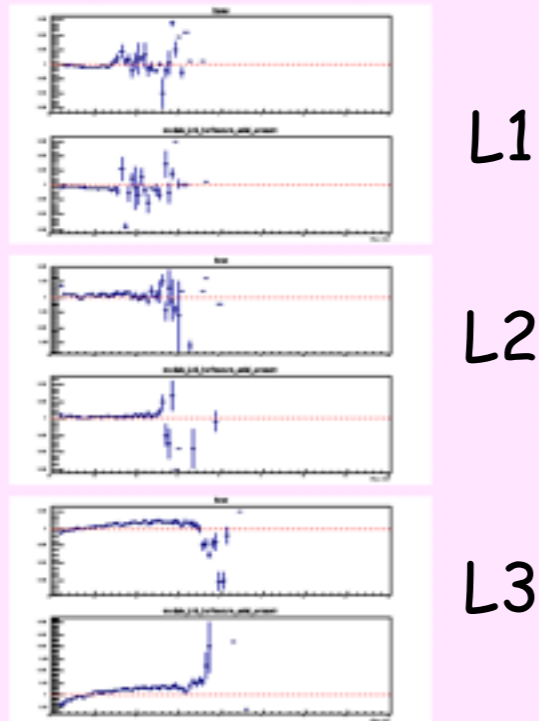# 2016 Data - GBL residuals

curved tracks

straight tracks

2016 Data curved tracks:
u residual vs u

bottom
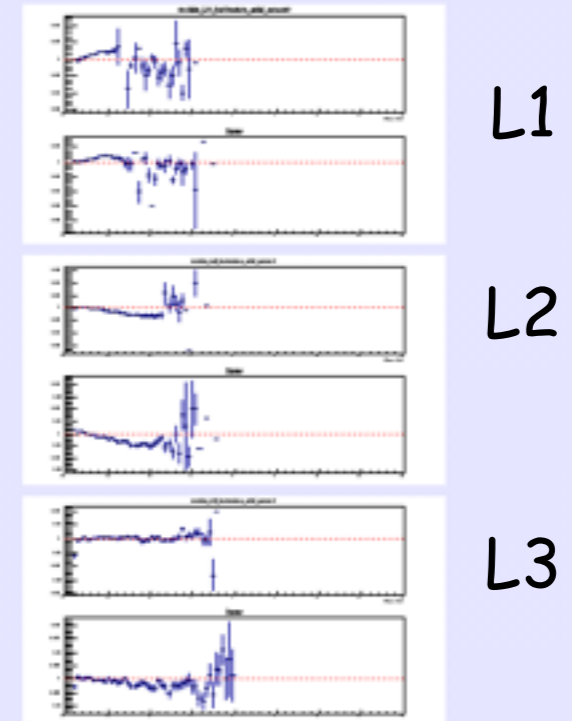
top

L1

L2

L3

L4

L5

L6

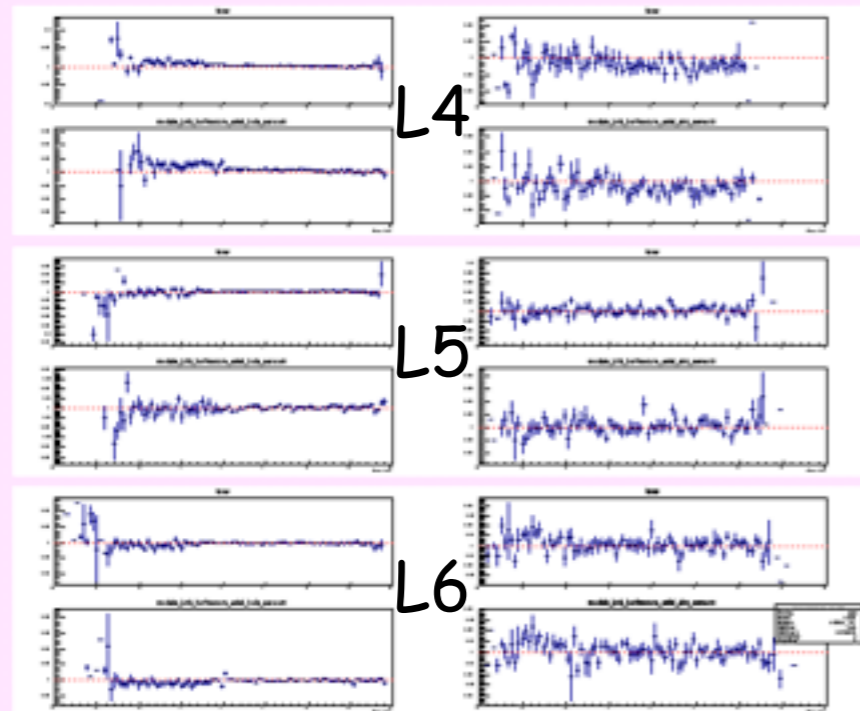hole   slot

L1

L2

L3

L4

L5

L6
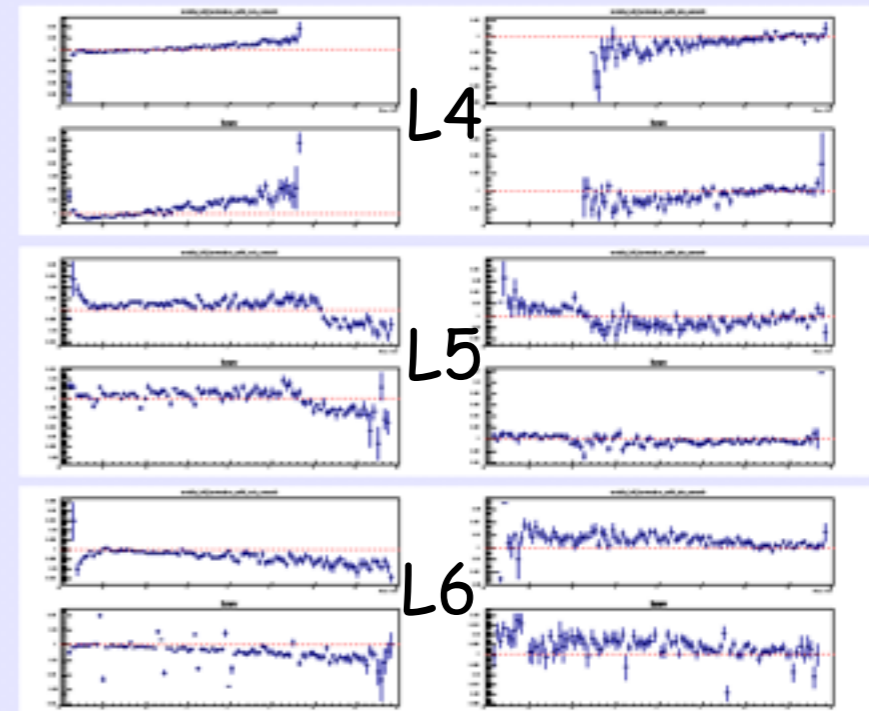
hole   slot

2016 Data straight tracks:
u residual vs u
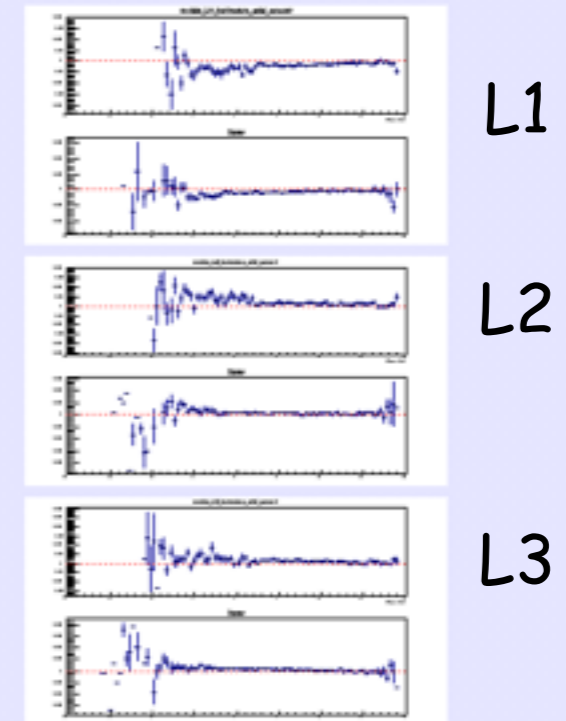
bottom

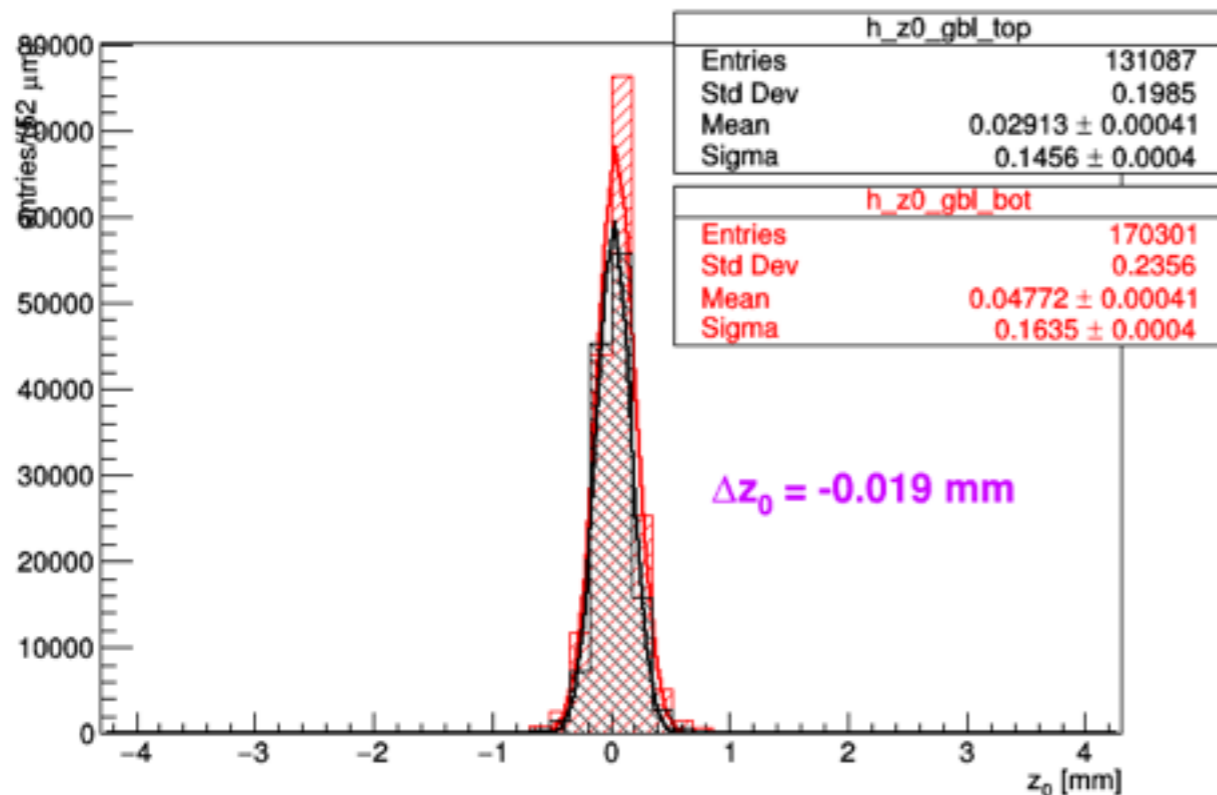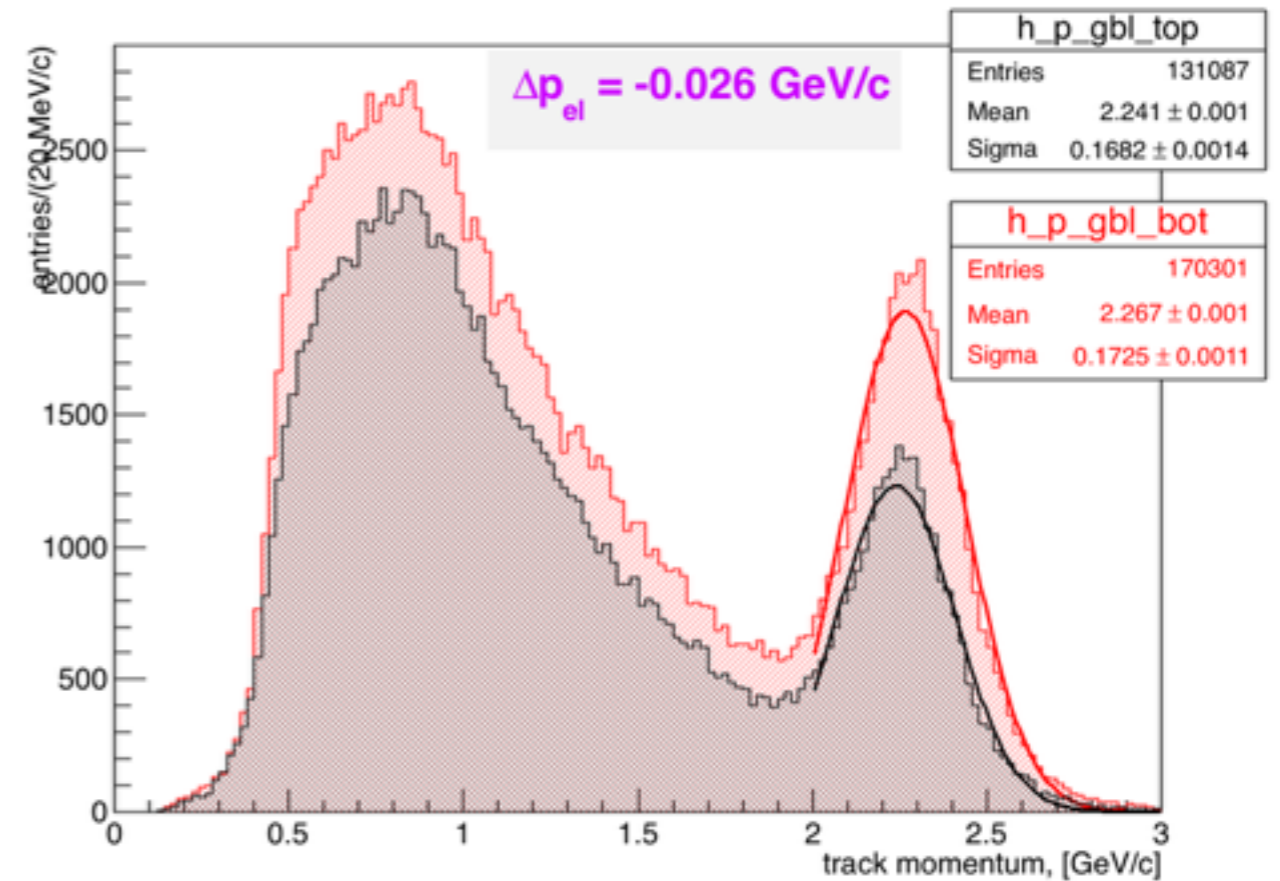**top**

L1

L2

L3

L4

L5

L6

L1

L2

L3

L4

L5

L6
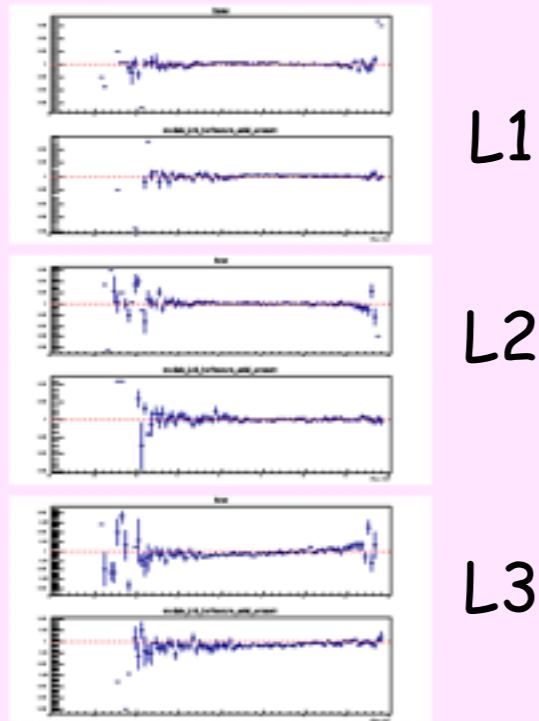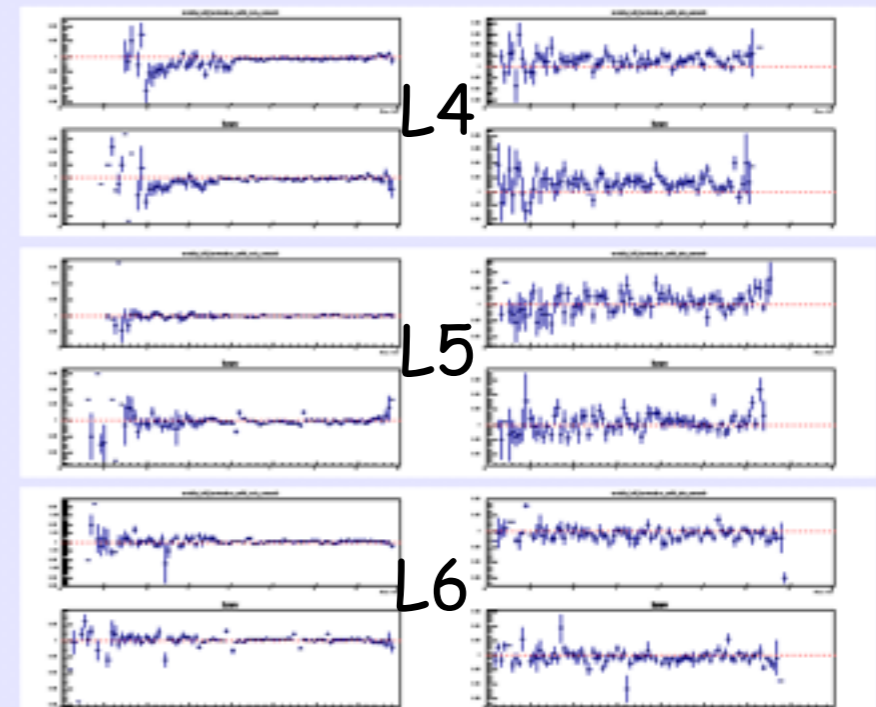
hole   slot

hole   slot

2016 data global alignment

h_d0_gbl_top	
Entries	131087
Std Dev	0.6417
Mean	-0.3152 ± 0.0014
Sigma	0.5076 ± 0.0014

h_d0_gbl_bot	
Entries	170301
Std Dev	0.6787
Mean	-0.3079 ± 0.0014
Sigma	0.5448 ± 0.0013

$\Delta d_0 = -0.007$ mm

h_p_gbl_top	
Entries	131087
Mean	2.241 ± 0.001
Sigma	0.1682 ± 0.0014

h_p_gbl_bot	
Entries	170301
Mean	2.267 ± 0.001
Sigma	0.1725 ± 0.0011

$\Delta p_{el} = -0.026$ GeV/c

h_z0_gbl_top	
Entries	131087
Std Dev	0.1985
Mean	0.02913 ± 0.00041
Sigma	0.1456 ± 0.0004

h_z0_gbl_bot	
Entries	170301
Std Dev	0.2356
Mean	0.04772 ± 0.00041
Sigma	0.1635 ± 0.0004

$\Delta z_0 = -0.019$ mm

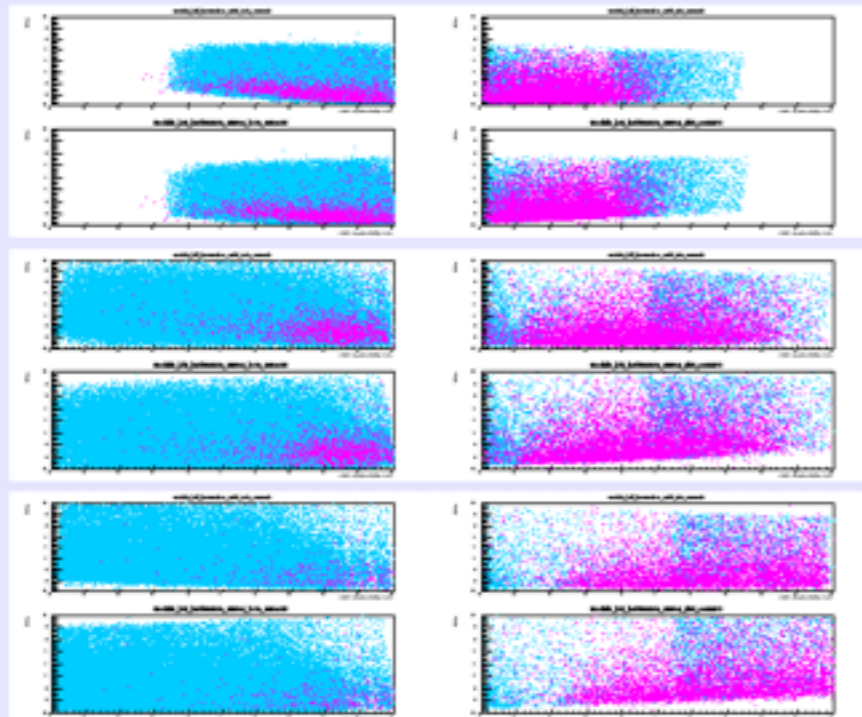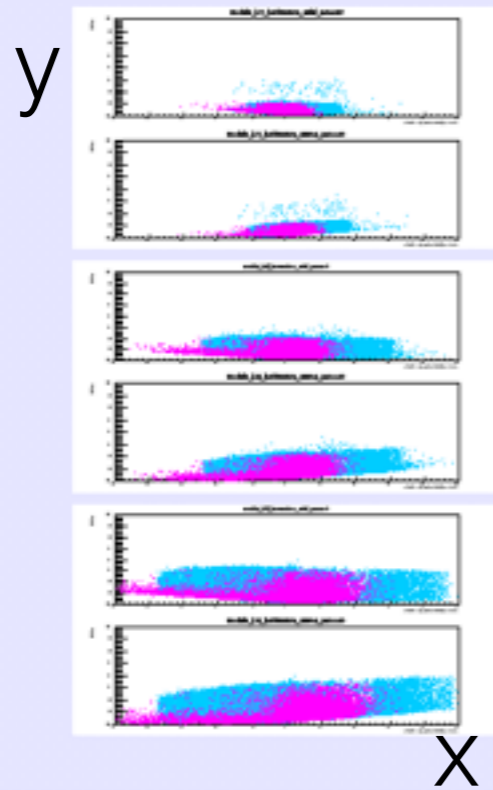## TOP INEFFICIENCY !!!!
(also seen for 2015 data - see Alessandra slides 01/21/2018)

T/B difference
$\Delta d0 = 7 \mu m$
$\Delta z0 = 19 \mu m$
$\Delta E = 0.026$ GeV/c

2016 data global alignment

pink pos tracks

same tail of 2015 data

🤔