



TRT Alignment

wrt

InDetCosmics_2008_05

Reminder

- **InDetCosmics_2008_05** - Si Alignment using only Boff data
- Previous TRT Alignment done wrt **InDetCosmic_2008_03** – mix of Boff and Bon data (used for 1st and 2nd reprocessing)

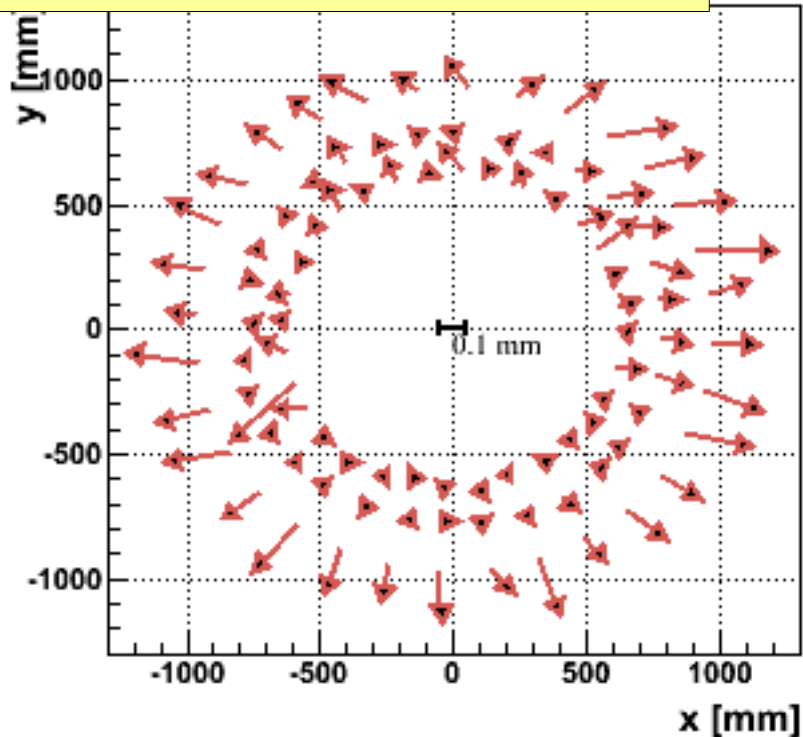
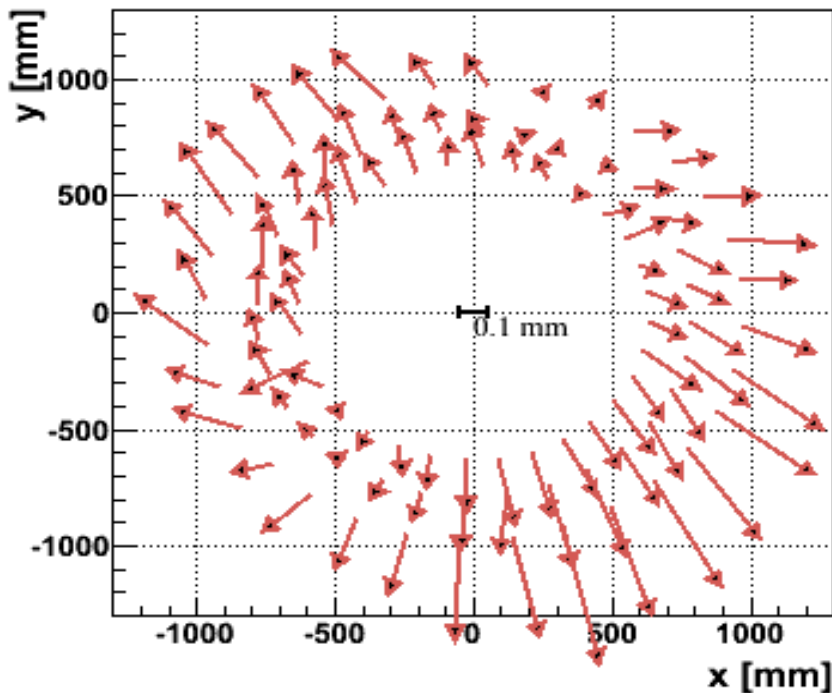
L1 Alignment:

$$Dx = -0.146 \text{ mm} \quad / \quad Dy = -0.160 \text{ mm}$$

$$\text{Rotx} = -0.300 \text{ mrad} \quad / \quad \text{Roty} = 0.369 \text{ mrad} \quad / \quad \text{Rotz} = 0.285 \text{ mrad}$$

L2 Alignment: TRT-Only

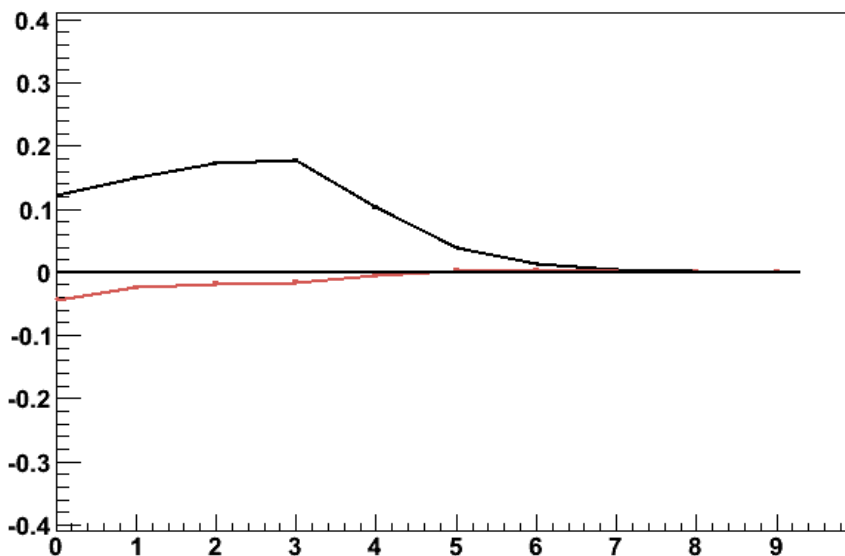
Both TRT-Only & Si +TRT



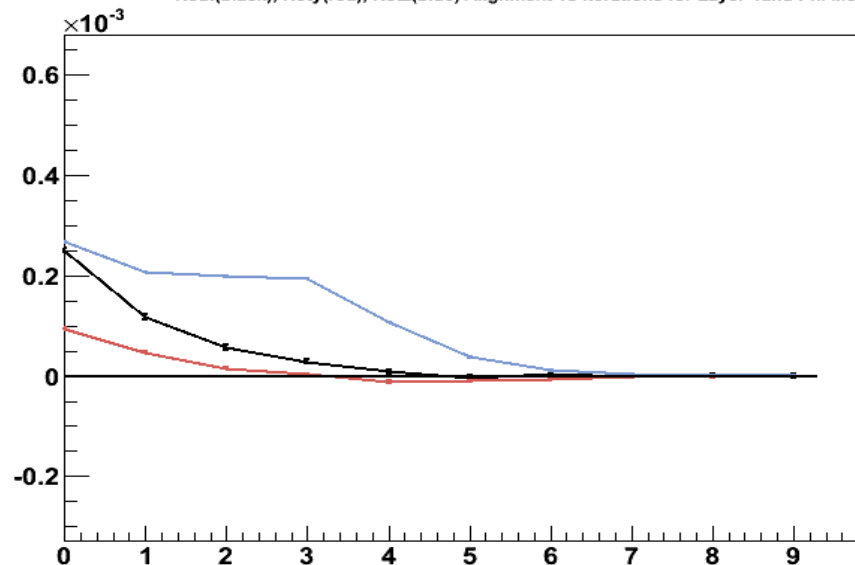


L1 Alignment Wrt Boff Constants

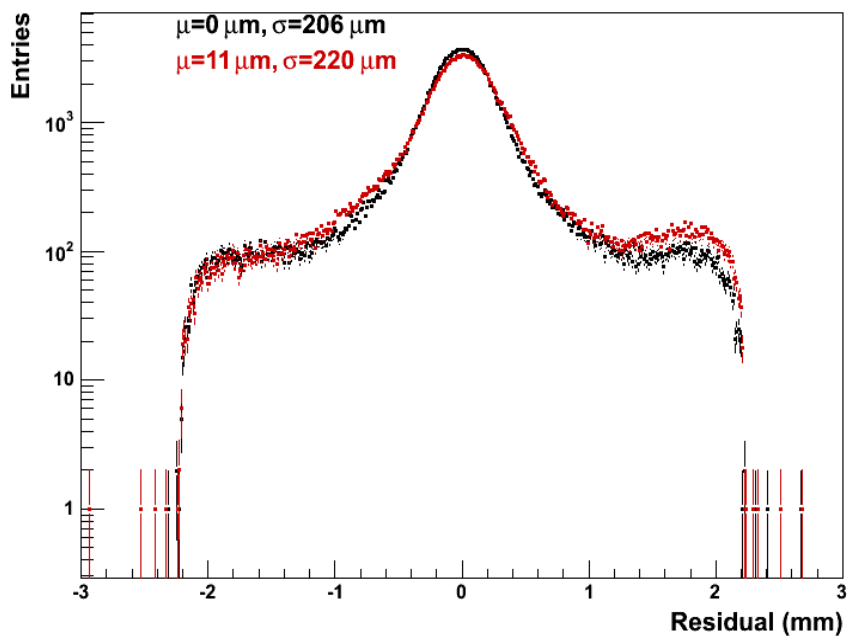
Dx (black) and Dy (red) Alignment vs Iterations for Layer-1and Phi Module0



Rotx(black), Roty(red), Rotz(blue) Alignment vs Iterations for Layer-1and Phi Module0

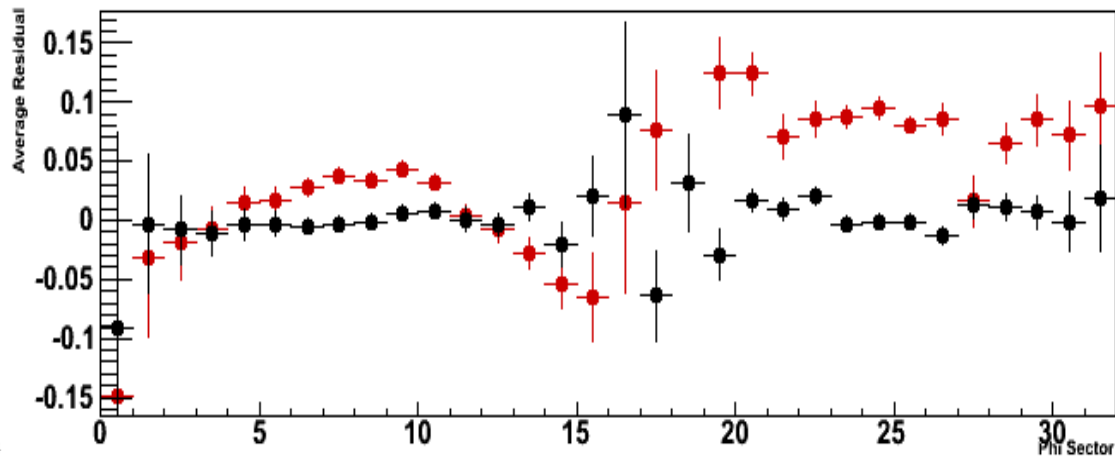


UnBiased Residual for the TRT Barrel



Before / After L1 Alignment

Average Residual vs Phi Sector for TRT Barrel Layer0





L1 Alignment Differences

InDet_Cosmic_2008_03:

L1 Alignment:

$$D_x = -0.146 \text{ mm} \quad / \quad D_y = -0.160 \text{ mm}$$

$$\text{Rot}_x = -0.300 \text{ mrad} \quad / \quad \text{Rot}_y = 0.369 \text{ mrad} \quad / \quad \text{Rot}_z = 0.285 \text{ mrad}$$

InDet_Cosmic_2008_05:

L1 Alignment:

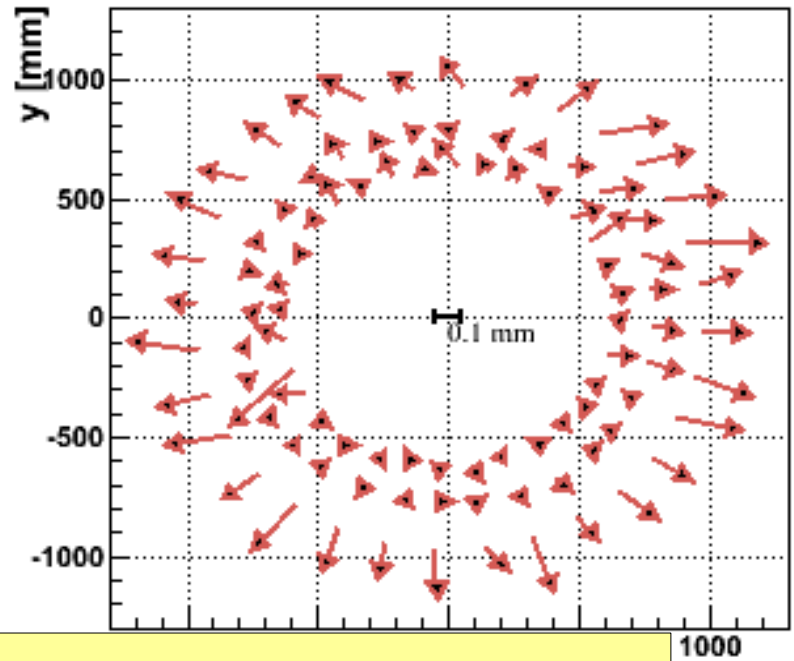
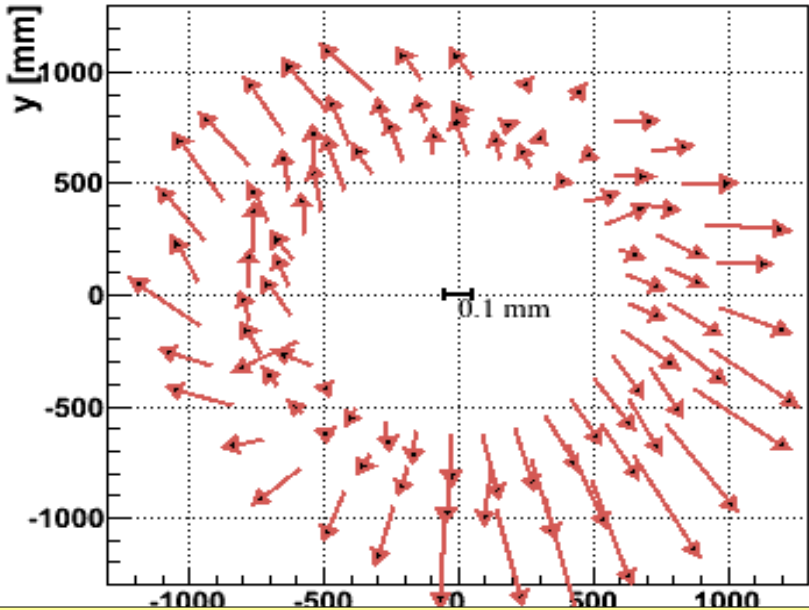
$$D_x = 0.638 \text{ mm} \quad / \quad D_y = -0.260 \text{ mm}$$

$$\text{Rot}_x = 0.162 \text{ mrad} \quad / \quad \text{Rot}_y = 0.498 \text{ mrad} \quad / \quad \text{Rot}_z = -0.742$$

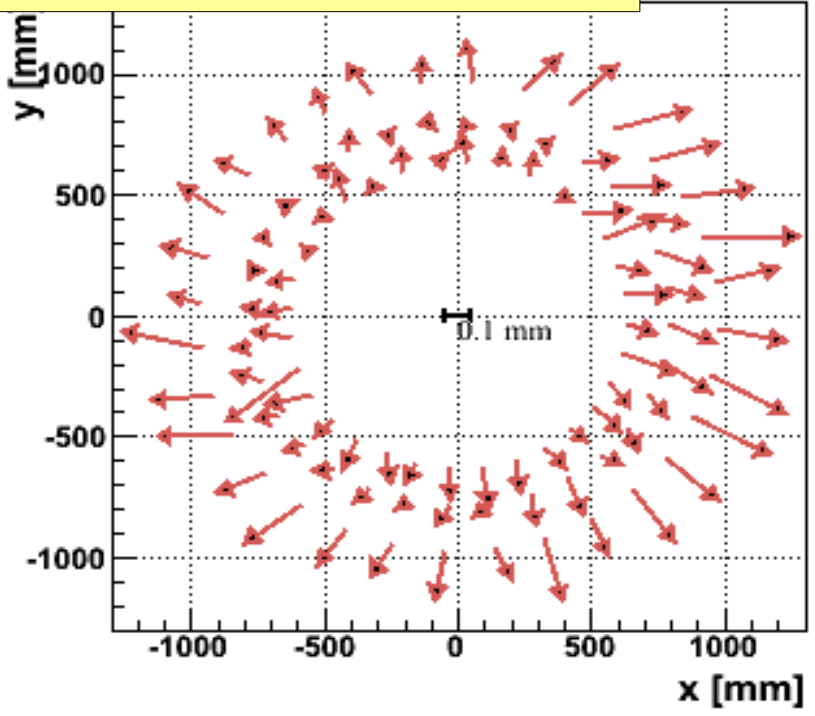
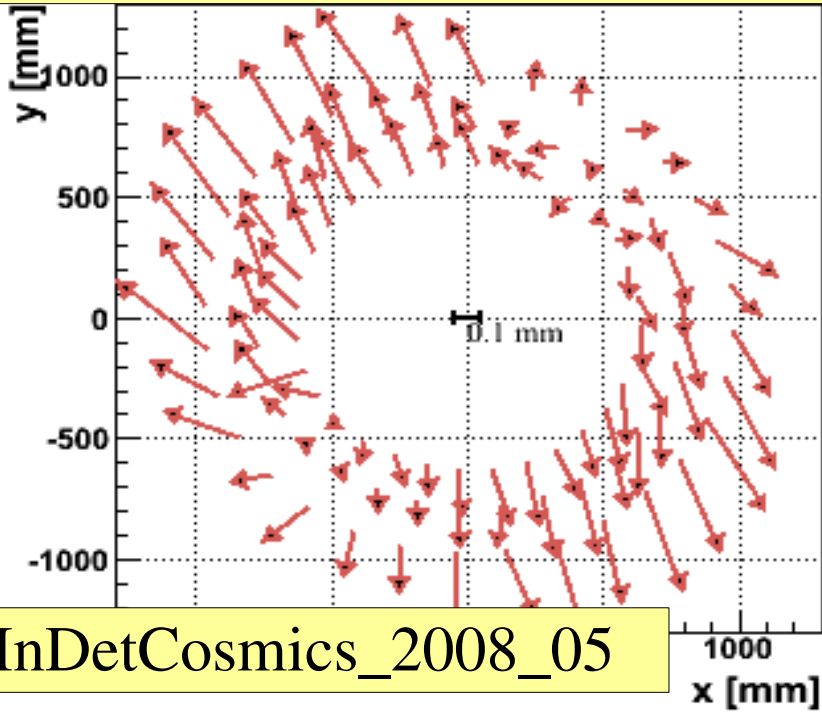


InDetCosmics_2008_03

translation x1000 - Layer 2



L2 Alignment: Both TRT-Only & Si + TRT **TRT-Only**



InDetCosmics_2008_05