



Endcap A Alignment in M6

- Recent change in SCT + TRT tracks (widened search road in patten rec)
- Running alignment with only tube hits
 - $r(t)$ hasn't been done in in the Endcap
 - can not be done before a L1 alignment
- tracks passing through SCT Barrel and TRT endcap
 - > 20 TRT hits
 - > 5 SCT hits
- aligned with 6 Dof, 4 Dof (3 translations, rotation around Z)
 - results consistent (convergence worse for 6 Dof)
 - imply large misalignment in x & z $O(\sim \text{mm})$
(z poorly constrained by survey/ x more surprising)
- Used TRT Barrel L1 alignment derived in M6 + SCT internal
alignments



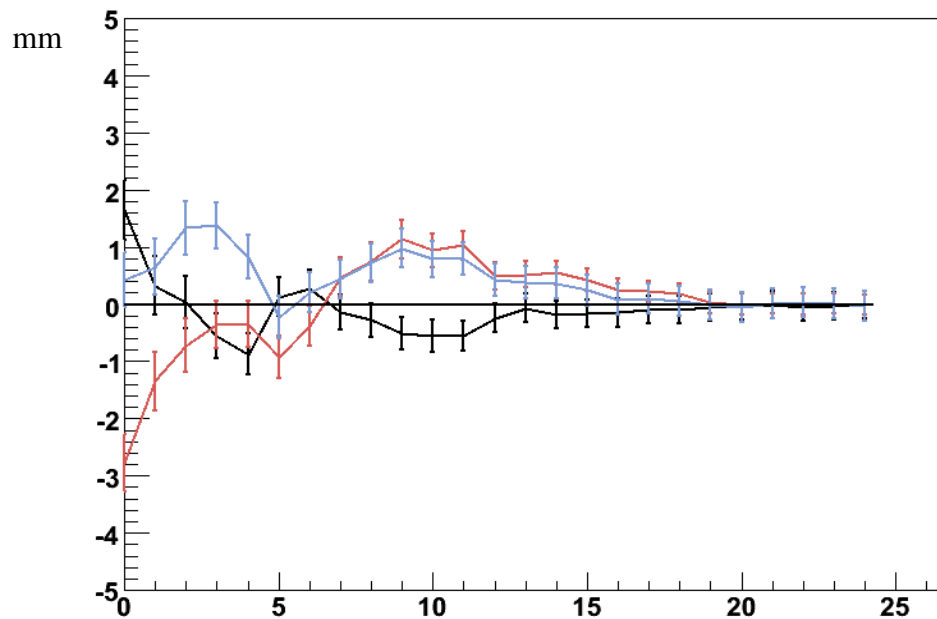
Endcap A Alignment M6

New L1 Alignment Constants

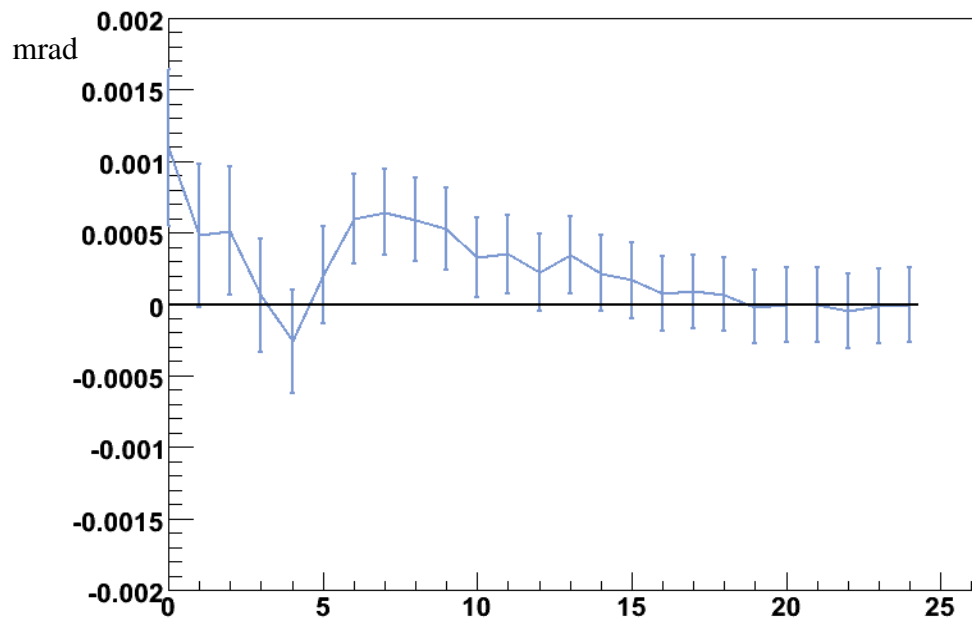
Module	Dx	Dy	Dz	Rotz
2/0	-2.25(0.2)	0.12(0.2)	9.89(0.3)	0.00622(0.0003)

Convergence for 4 Dof 25 iterations (2500 hits in EndCap A)

Dx (black) and Dy (red) Alignment vs Iterations for Layer2and Phi Module0

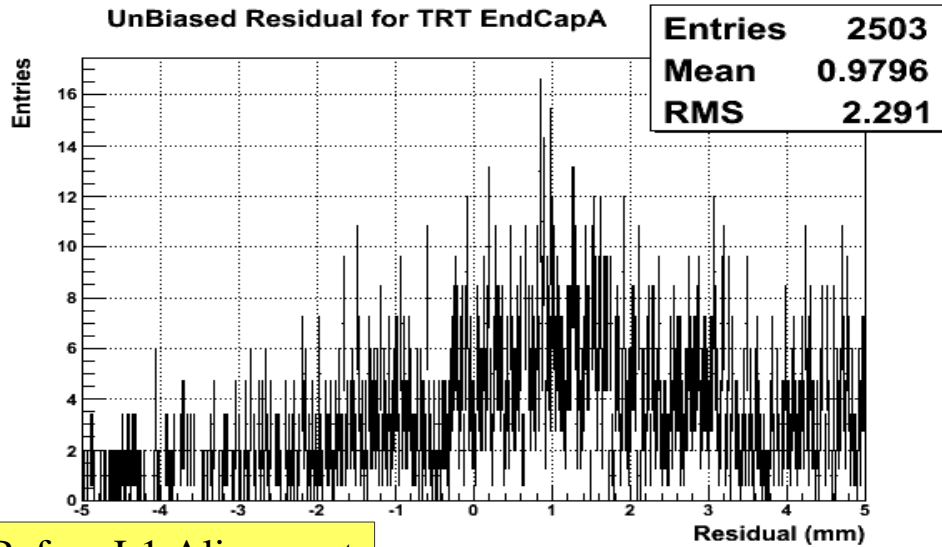


Rotz (blue) Alignment vs Iterations for Layer2and Phi Module0

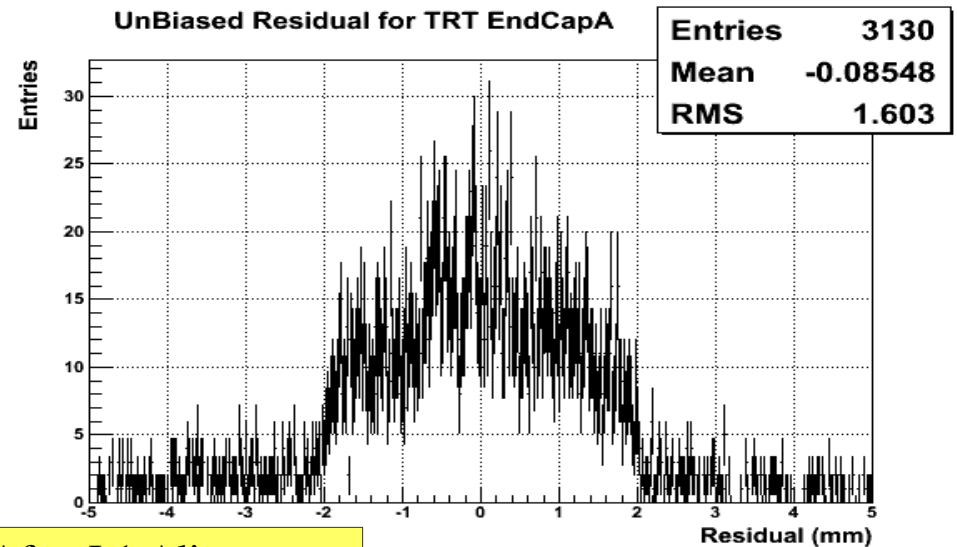




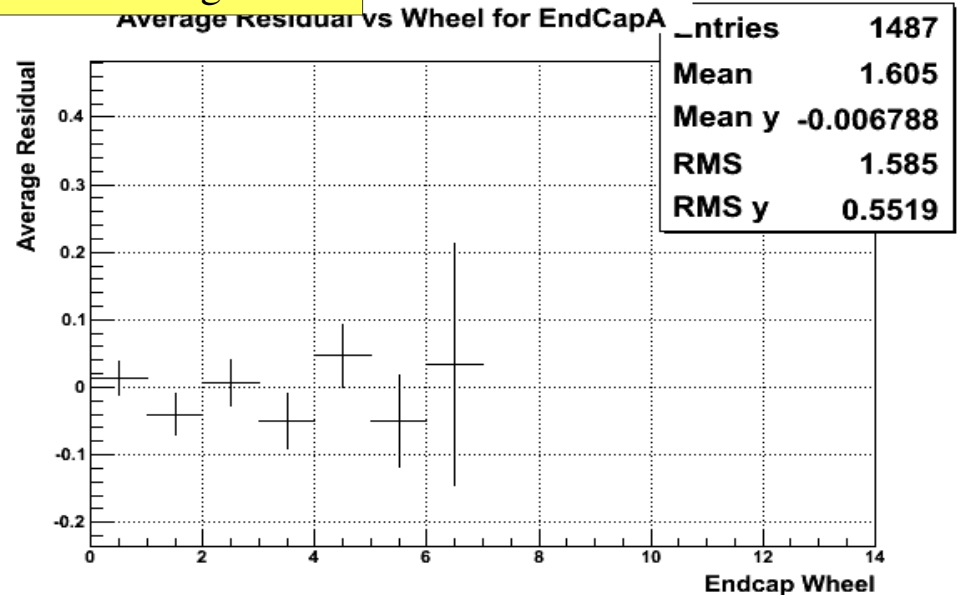
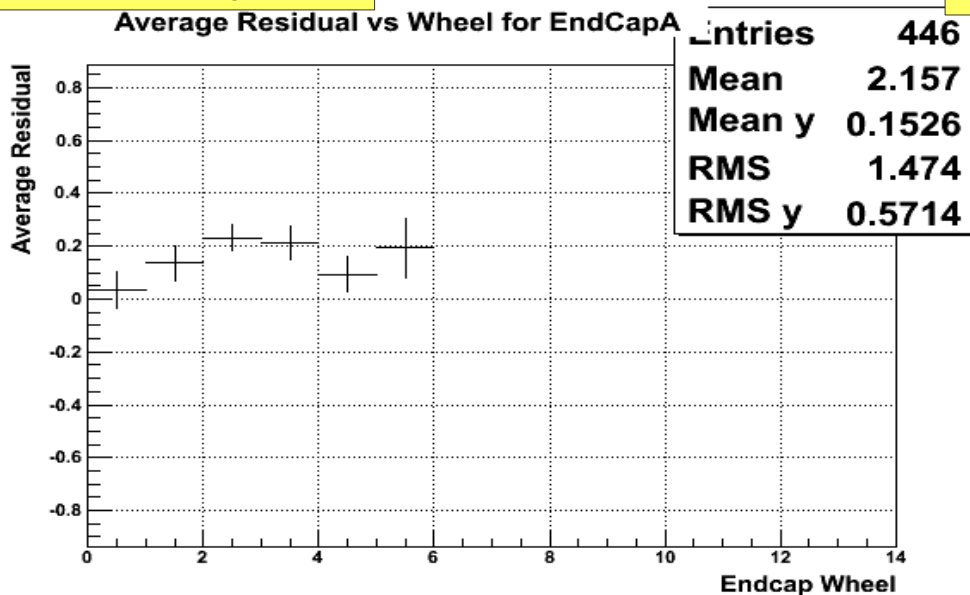
Endcap A Alignment in M6



Before L1 Alignment



After L1 Alignment

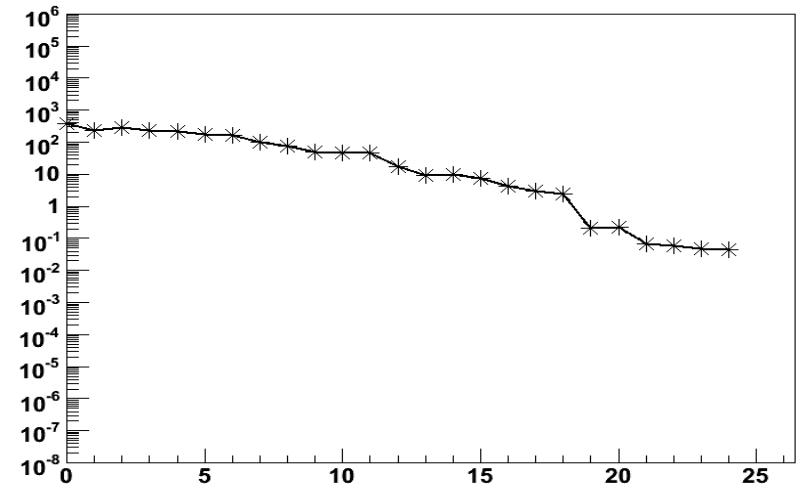




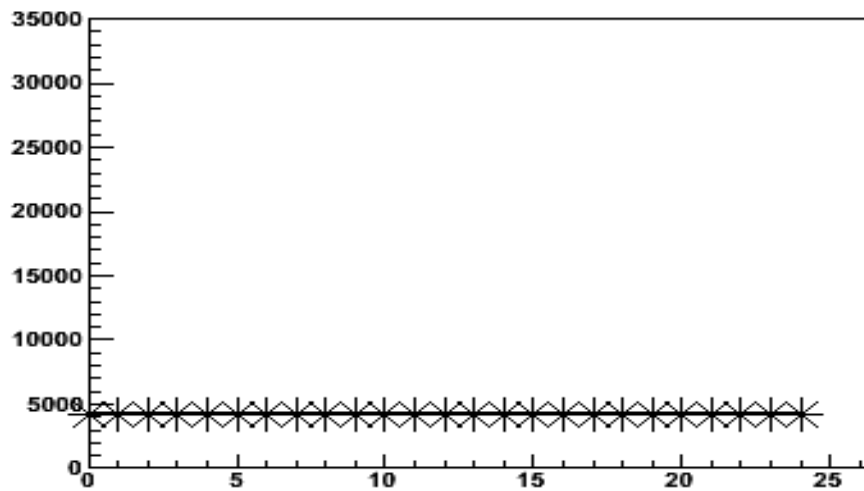
Endcap A Alignment in M6

Change in Chi2 vs Iteration

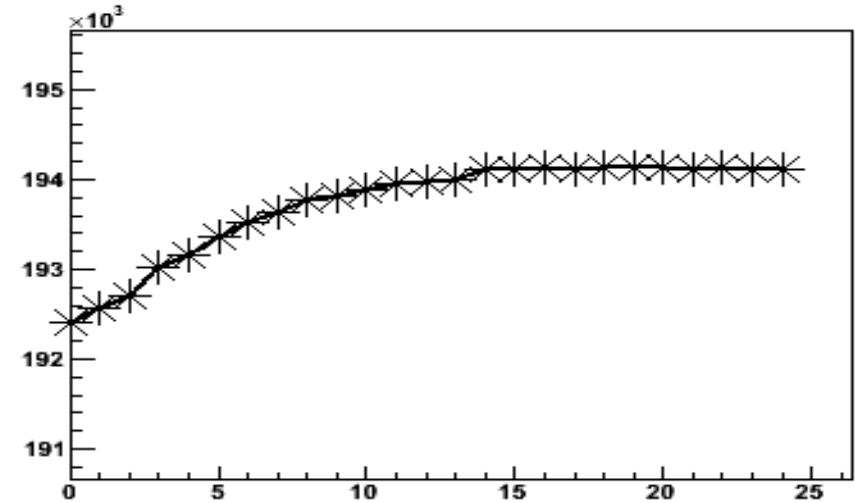
Chi2 Alignment vs Iterations for Layer2and Phi Module0



Tracks vs Iteration



hits vs iteration





Back Up



Endcap A Alignment in M6

