

Day 152 – First Pass Alignment

- With the ~600K events I got from Long, I ran the alignment code and got precise estimates (see slide-2)
- Produced the “corrected” geometry and re-run
 - Local histograms are corrected
 - Global are not correct -> need more work

FIRST PASS ESTIMATED Corrections (angles [only] need a minus sign)

SECTOR 4

dX mkm	dY mkm	dZ mkm	alpha mrad	beta mrad	gamma mrad	Comment
-100	300	2900	0	0.	-0	Average for PXL sector 4 Ladder 1
-20	150	2970	0	0.	0	Average for PXL sector 4 Ladder 2
-100	350	2700	0	0.	-0	Average for PXL sector 4 Ladder 3
-200	+400	3000	0	0	0	Average for PXL Ladder 4

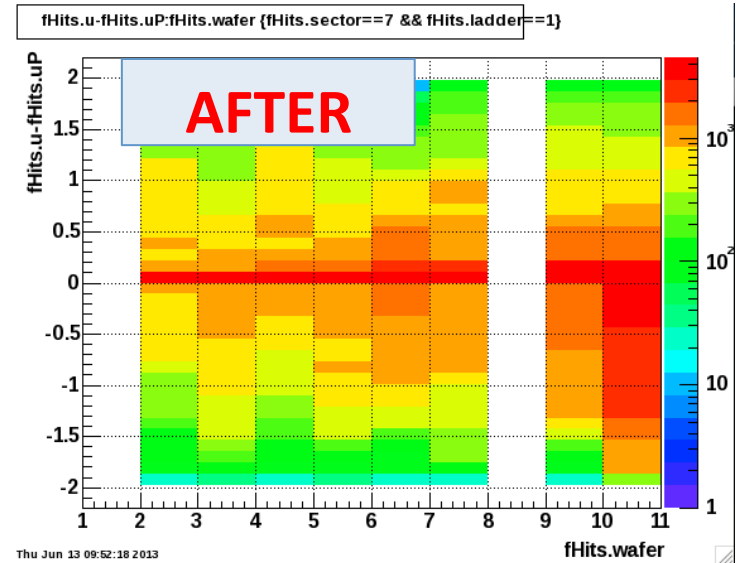
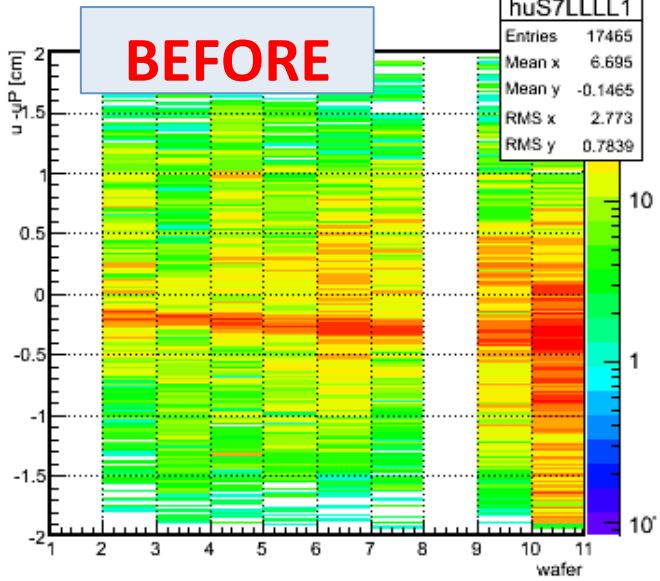
SECTOR 7

1500	2100	3000	-10	10	80	Ladder 1
2350	1150	2900	-15	10	80	Average for PXL sector 7 Ladder 2
2330	1800	2440	-15	20	80	Average for PXL Ladder 3
2230	2710	2570	-10.	20	80	Average for PXL Ladder 4

!!!

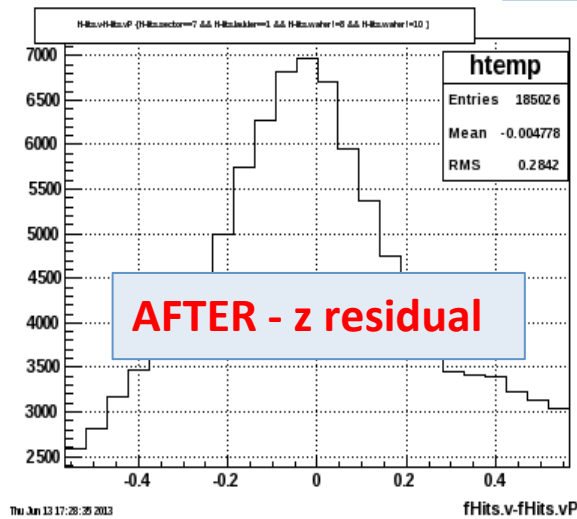
Sector 7 ladder 1 (inner)

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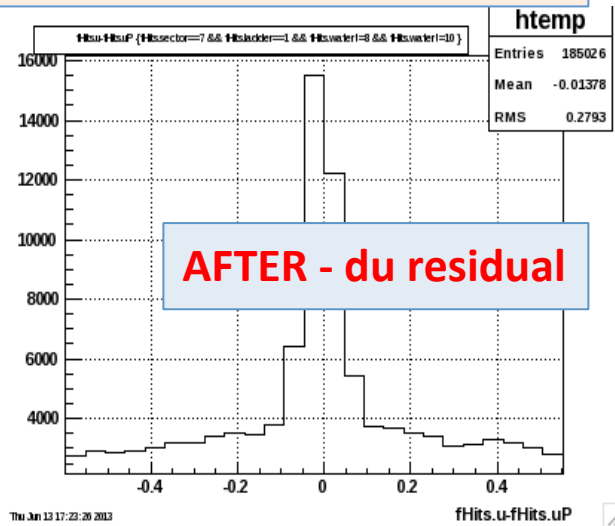
Thu Jun 13 09:52:18 2013

Most offset and slope gone!



Thu Jun 13 17:28:35 2013

fHits.v-fHits.vP



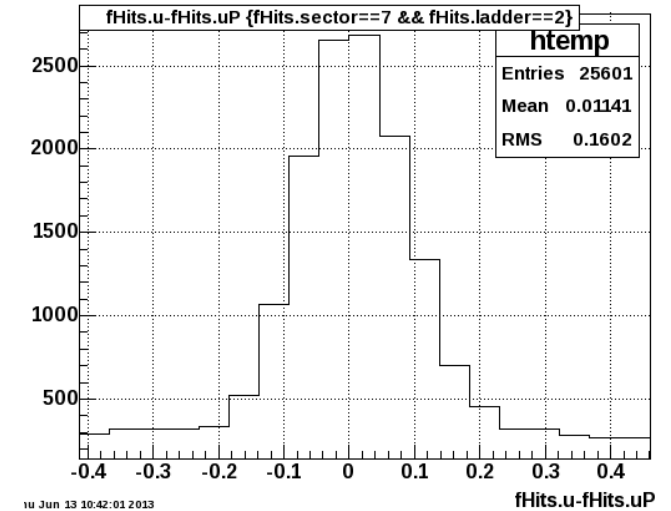
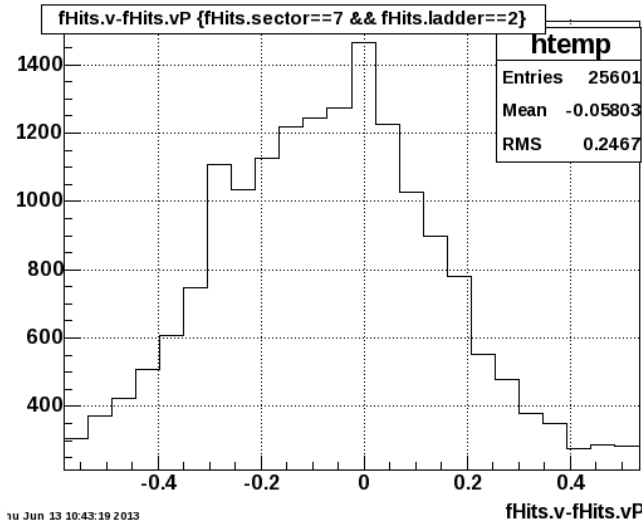
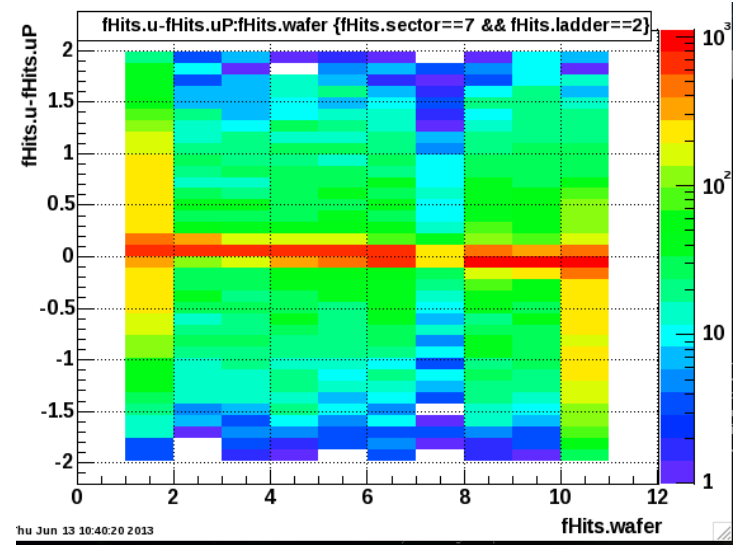
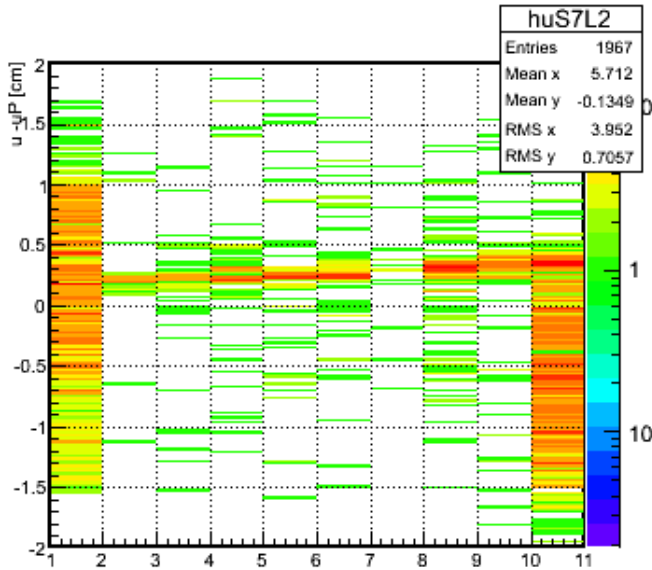
Thu Jun 13 17:28:26 2013

fHits.u-fHits.uP

dX mkm	dY mkm	dZ mkm	alpha mrad	beta mrad	gamma mrad	
1500	2100	3000	-10	10	80	

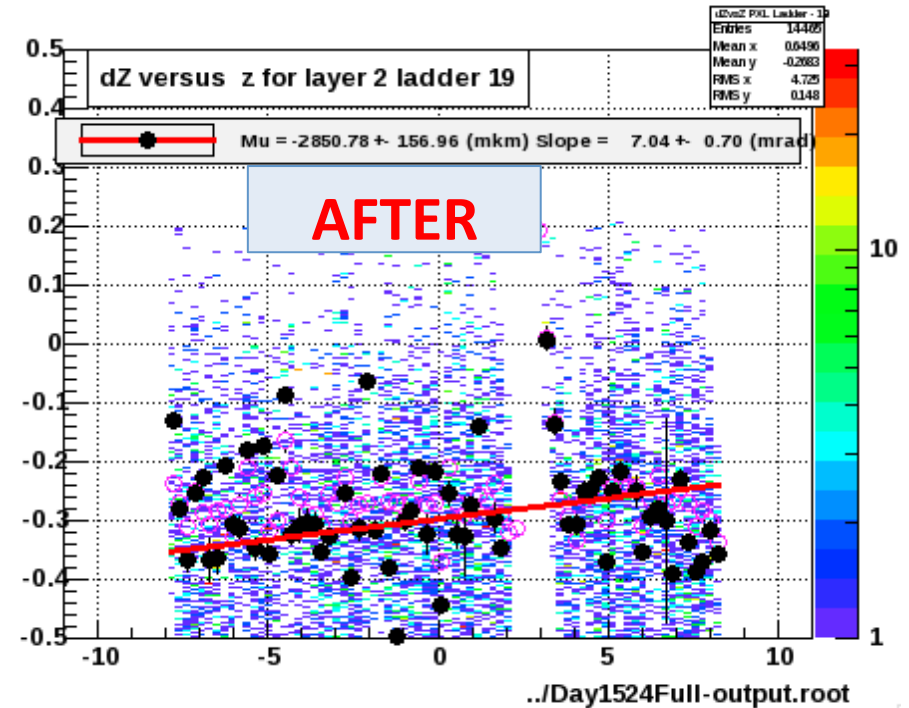
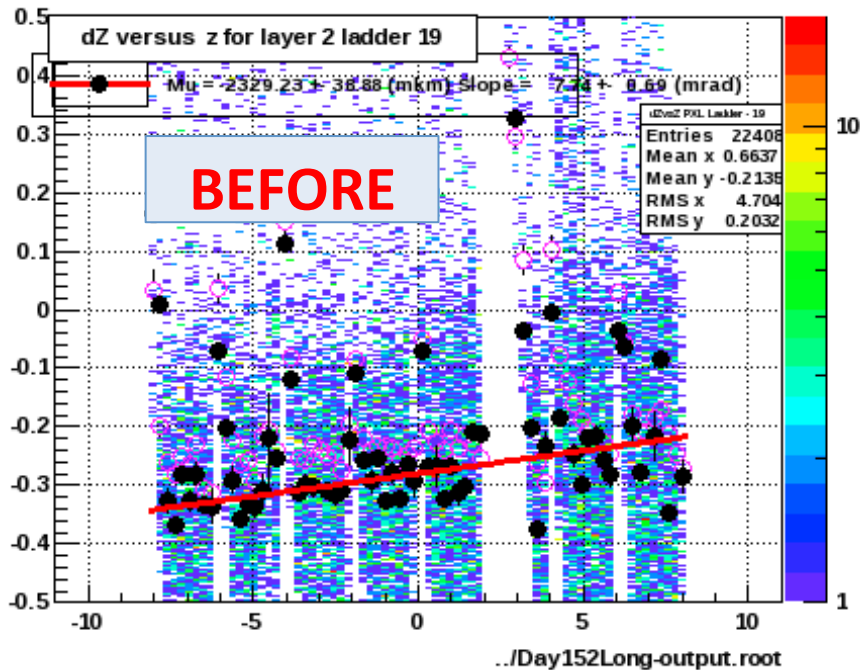
Sector 7 ladder 2 (outer)

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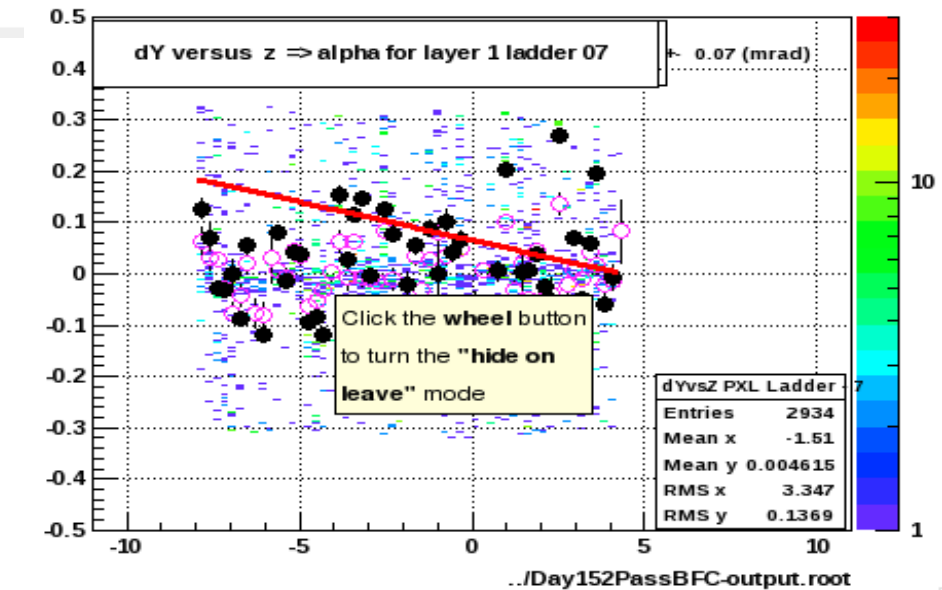
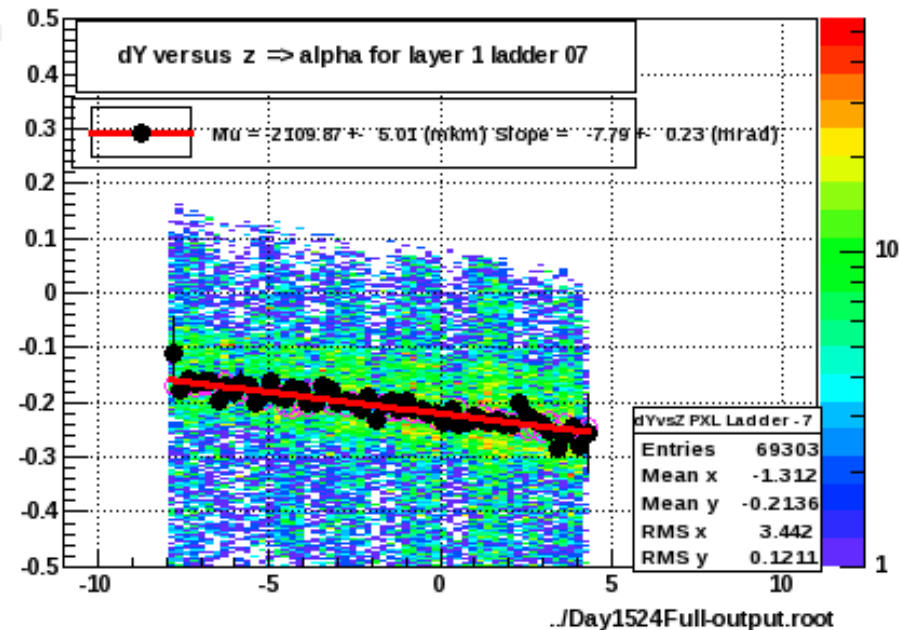
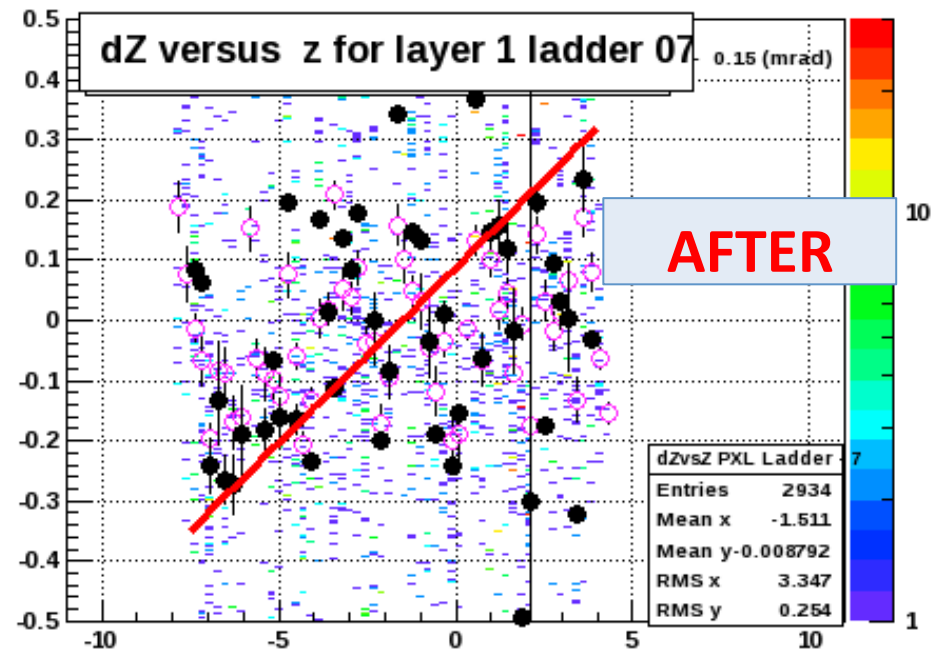
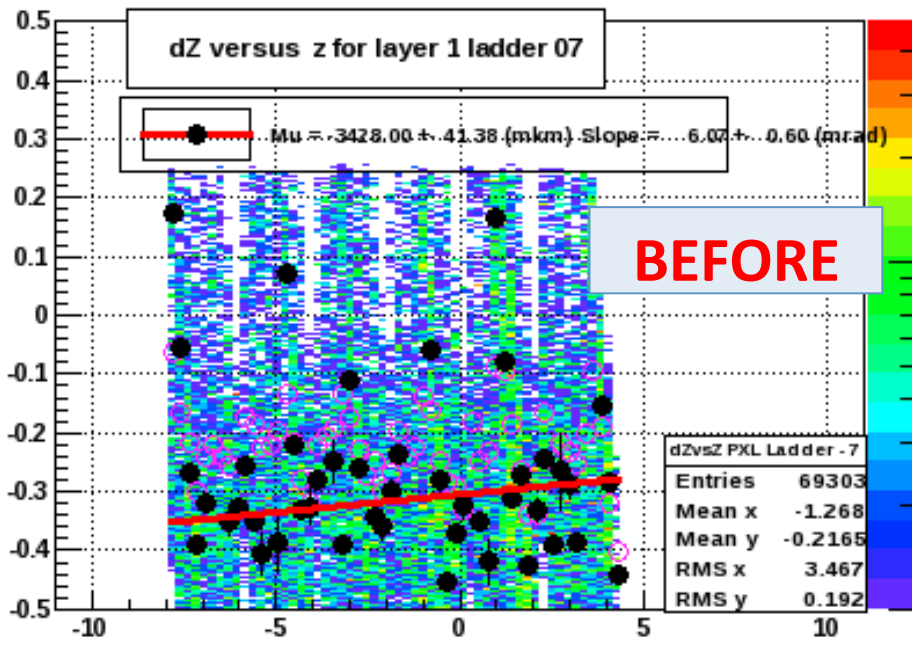
dX mkm	dY mkm	dZ mkm	alpha mrad	beta mrad	gamma mrad	
2350	1150	2900	-15	10	80	

Sector 2 ladder 2 (outer) GLOBAL

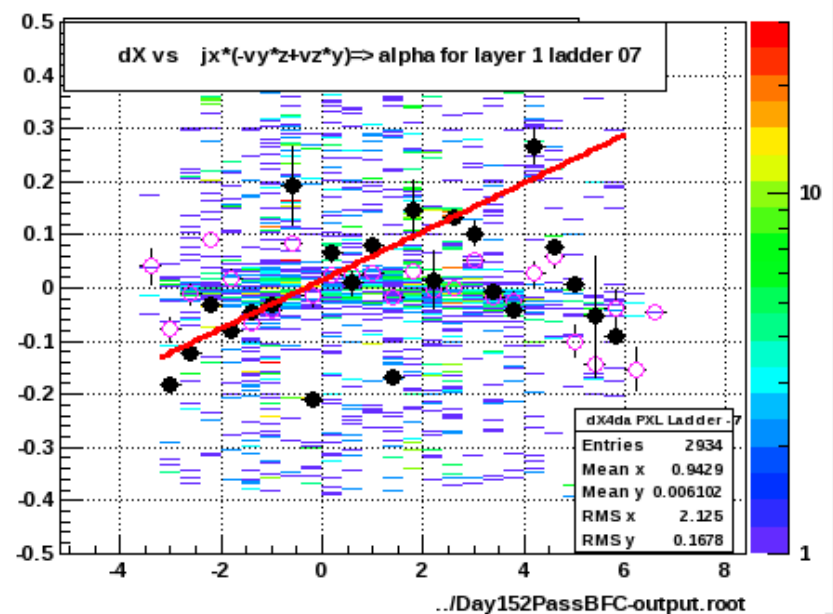
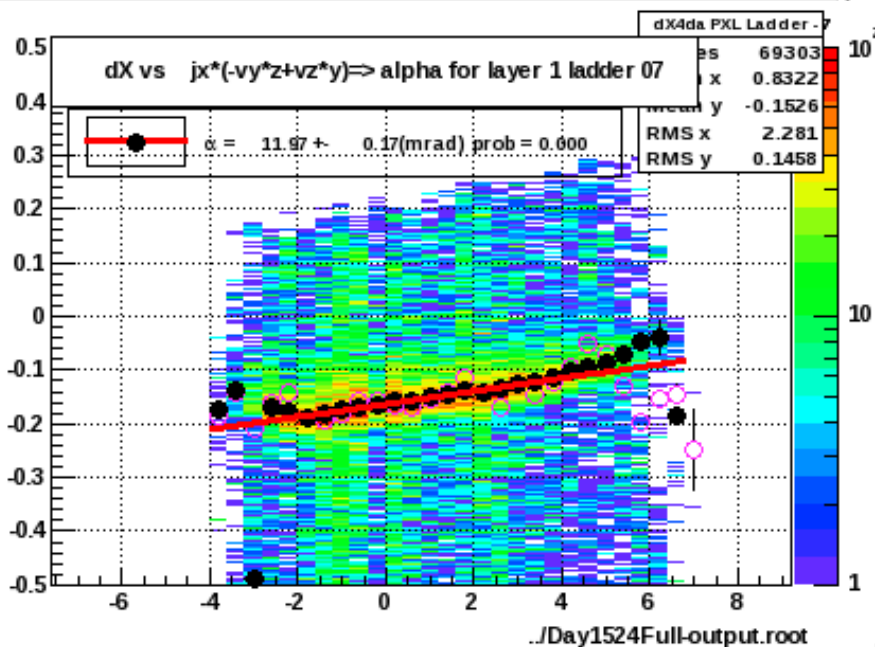
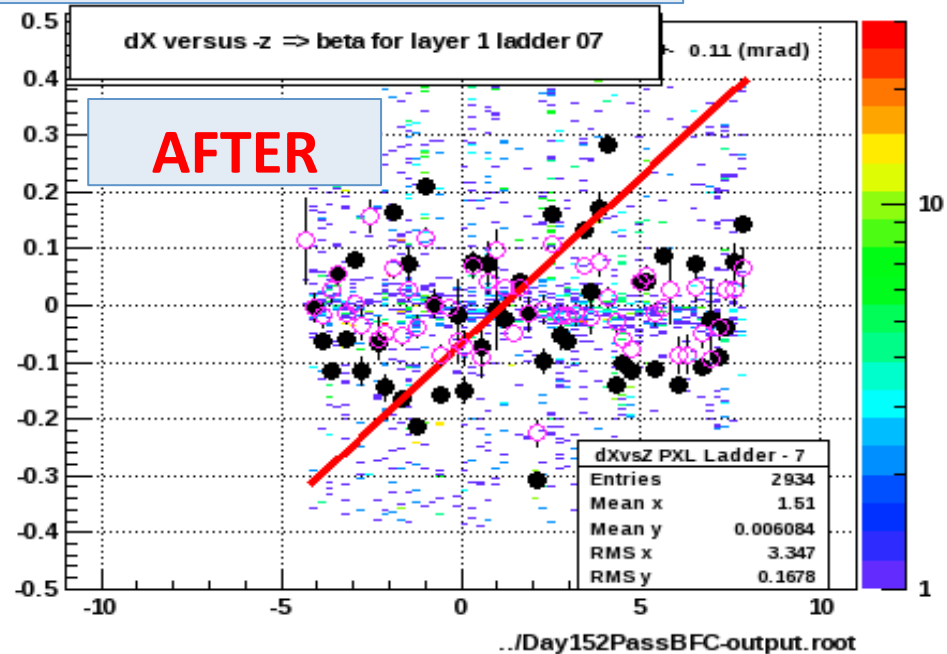
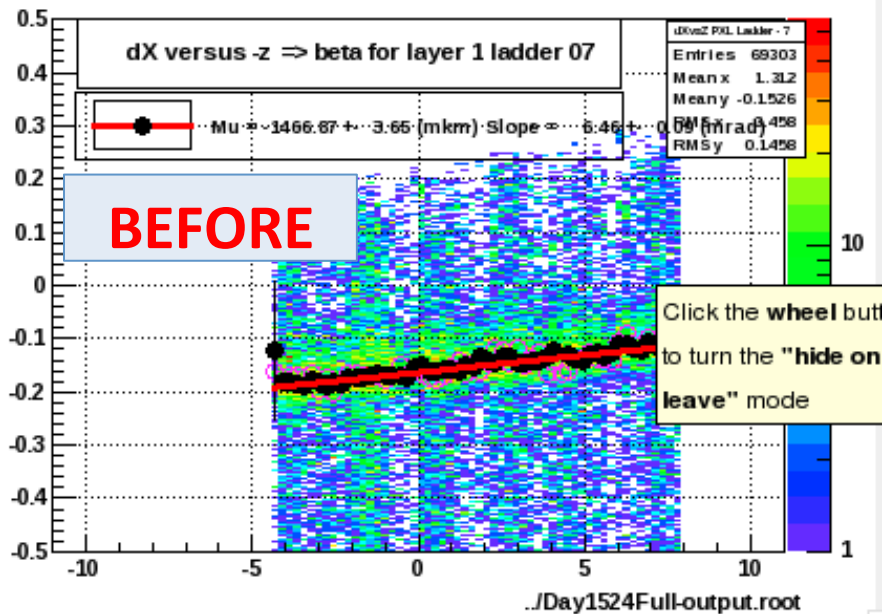


- Global histos are not correct
 - Modify EventT.C to do a Local to Master transform and overwrite global coords (testing)
 - Modify EventT.C to redo Pxl hit finding (Hao's suggestion) (investigating)
 - Rerun reconstruction
- Local histos are correct because prediction moved (uP,vP) not hit. Hit in local is fixed

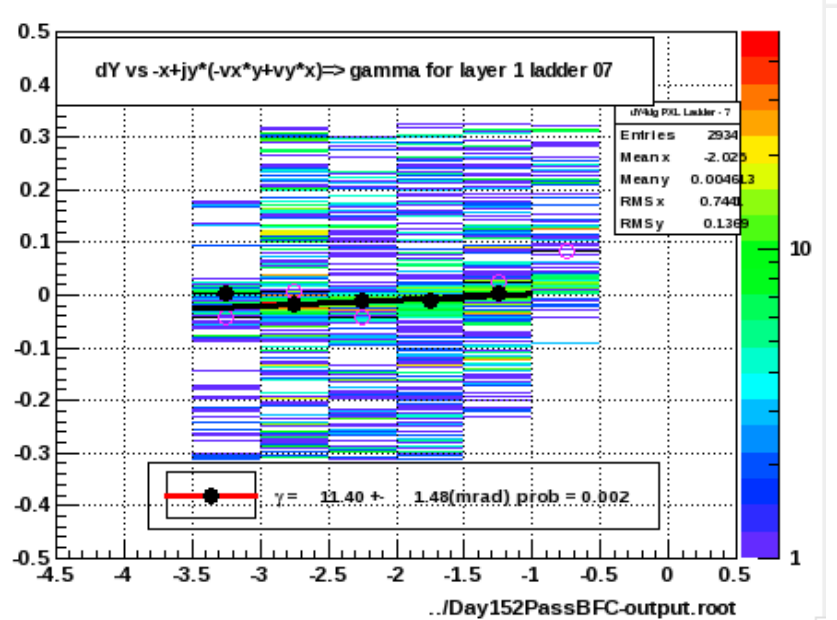
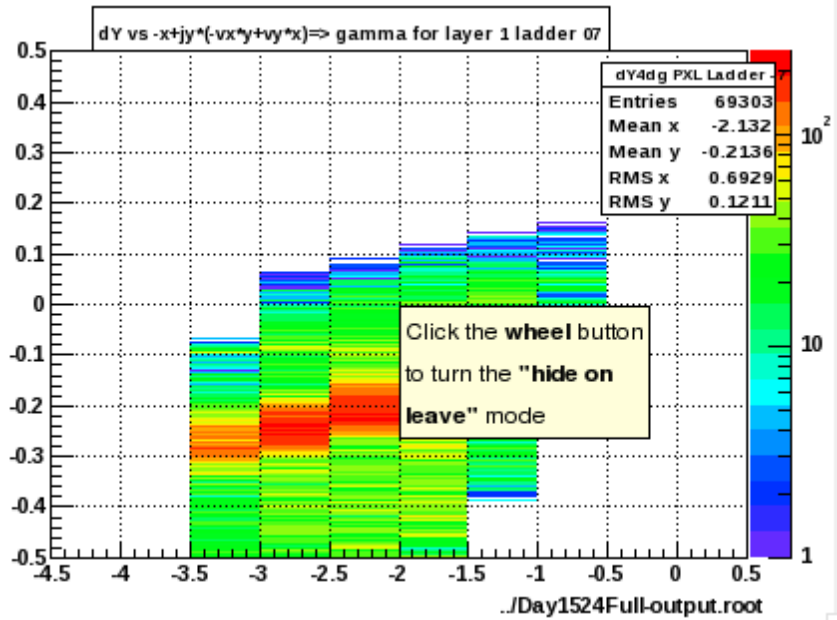
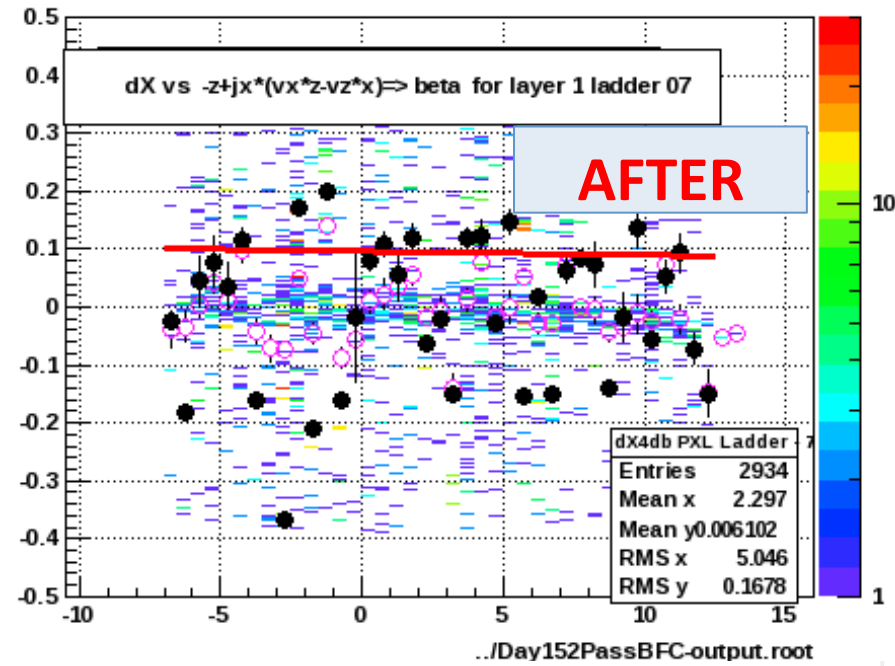
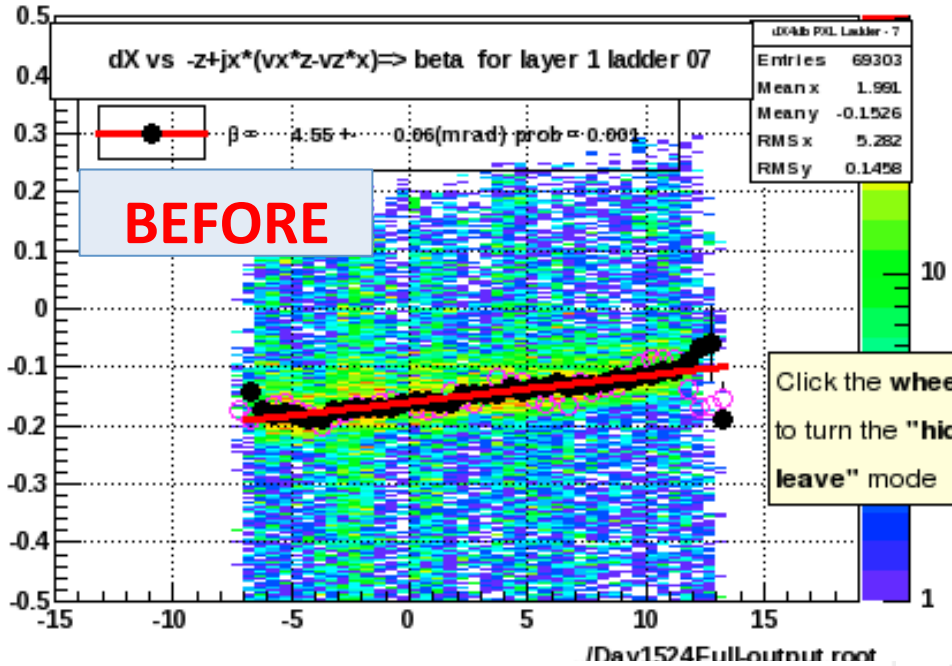
Sector 1 ladder 1 (inner) GLOBAL after BFC rerun (5K)



Sector 1 ladder 1 (inner) GLOBAL after BFC rerun (5K)

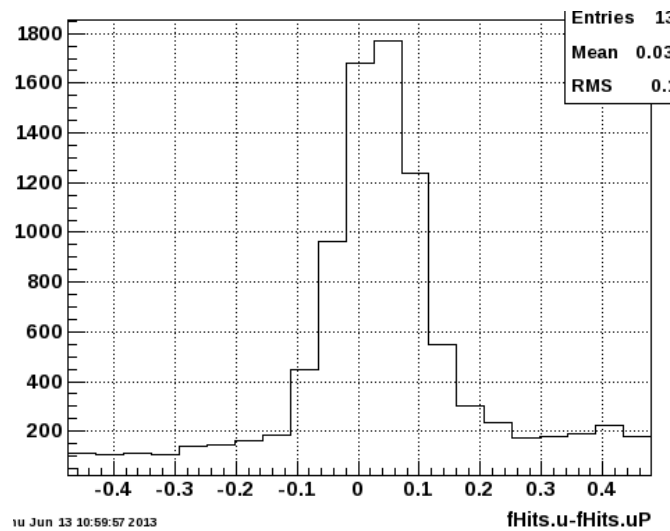
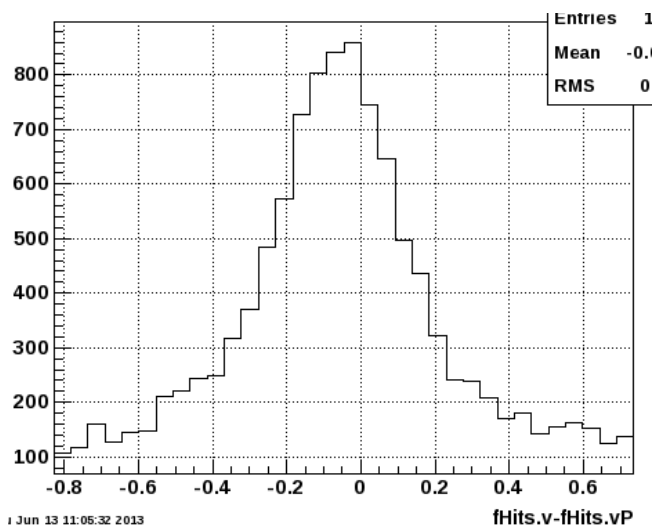
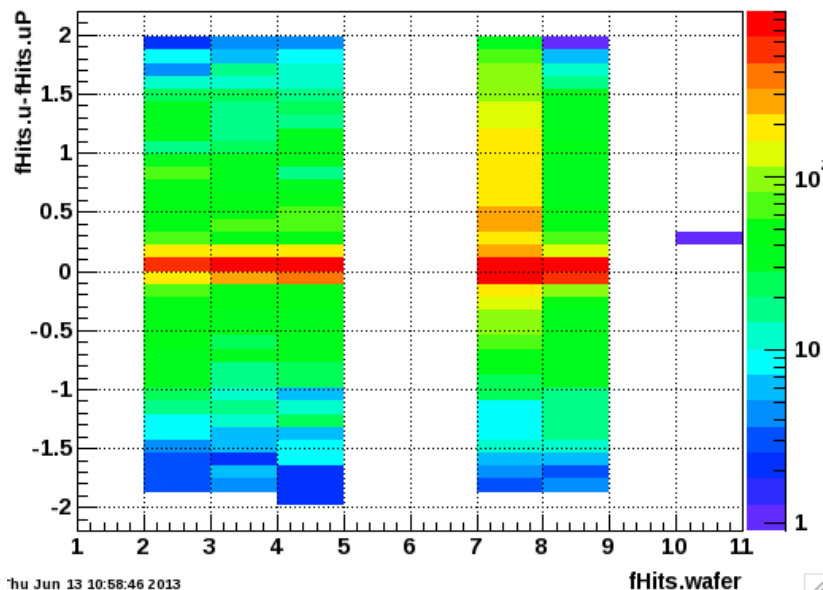
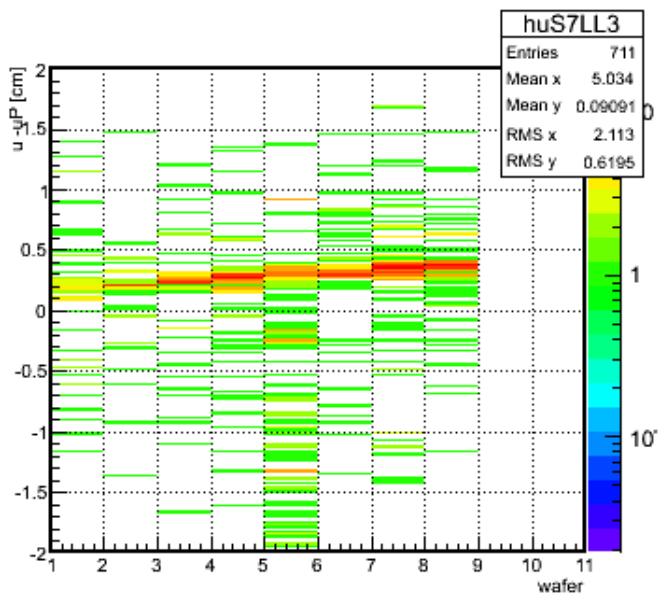


Sector 1 ladder 1 (inner) GLOBAL after BFC rerun (5K)



Sector 7 ladder 3 (outer)

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dX mkm	dY mkm	dZ mkm	alpha mrad	beta mrad	gamma mrad	
2330	1800	2440	-10	10	80	

Summary

- Corrections seem to work well
 - need statistics
 - work in progress
- We should be done with alignment by the time of the BNL workshop
 - we will have cleaned up data (I hope)
 - things will converge in 3-4 iterations to specs