Track-based alignment updates? (No.)

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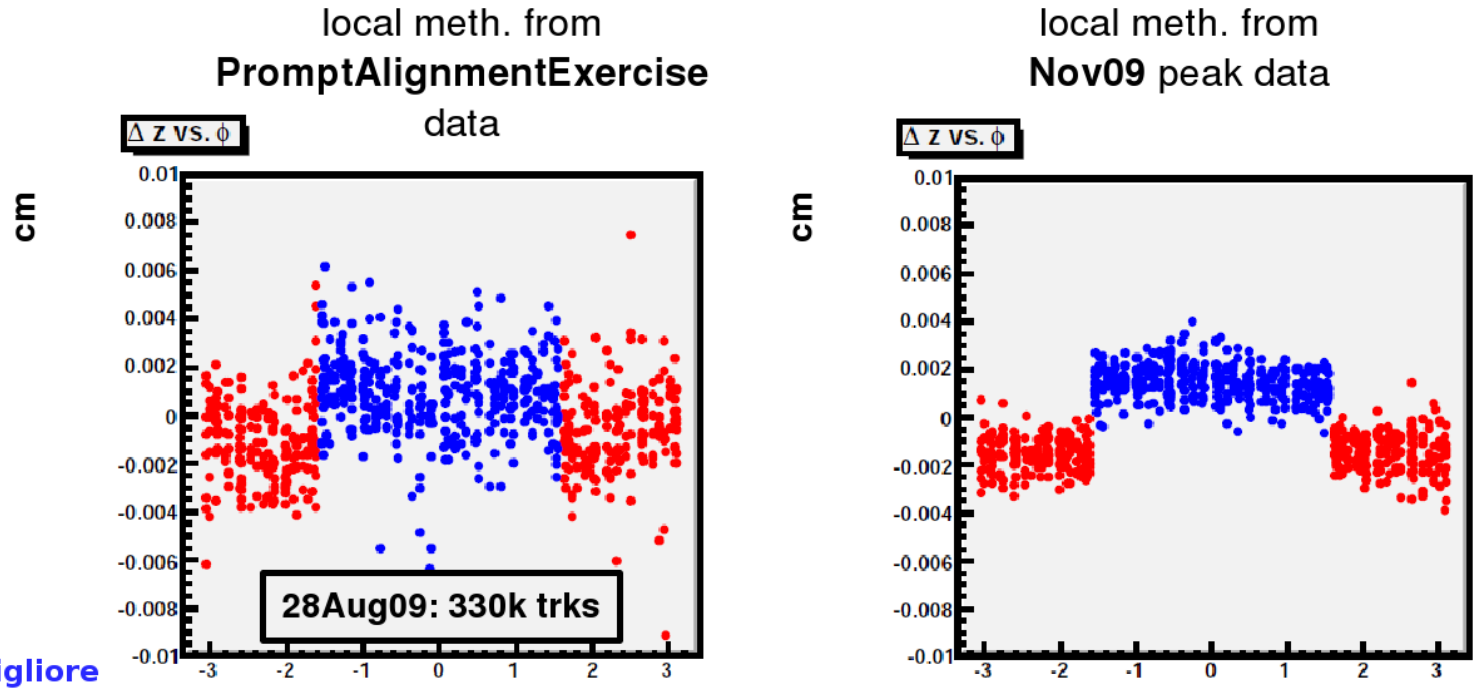
Tracker cooling incident

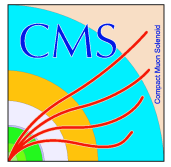
- Below: module position differences before and after cooling incident
- Left: "after" = prompt alignment performed immediately after incident (low statistics, but pinpoints the motion in time)
- Right: "after" = full-statistics November cosmic ray alignment

BPIX after TIB cooling accident: wrt Aug09pk_r1



E. Migliore

New muon alignment?

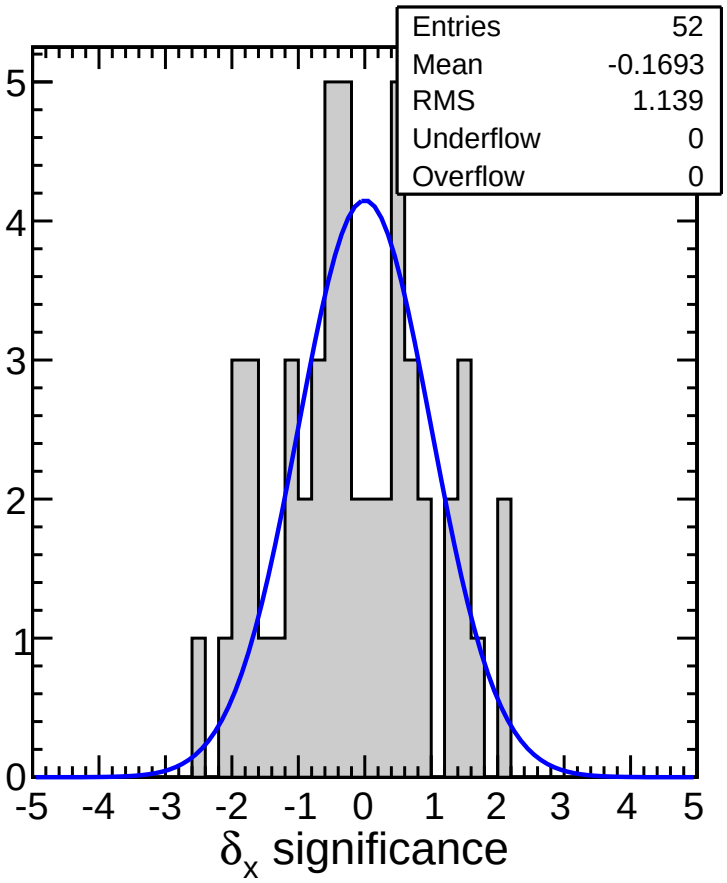


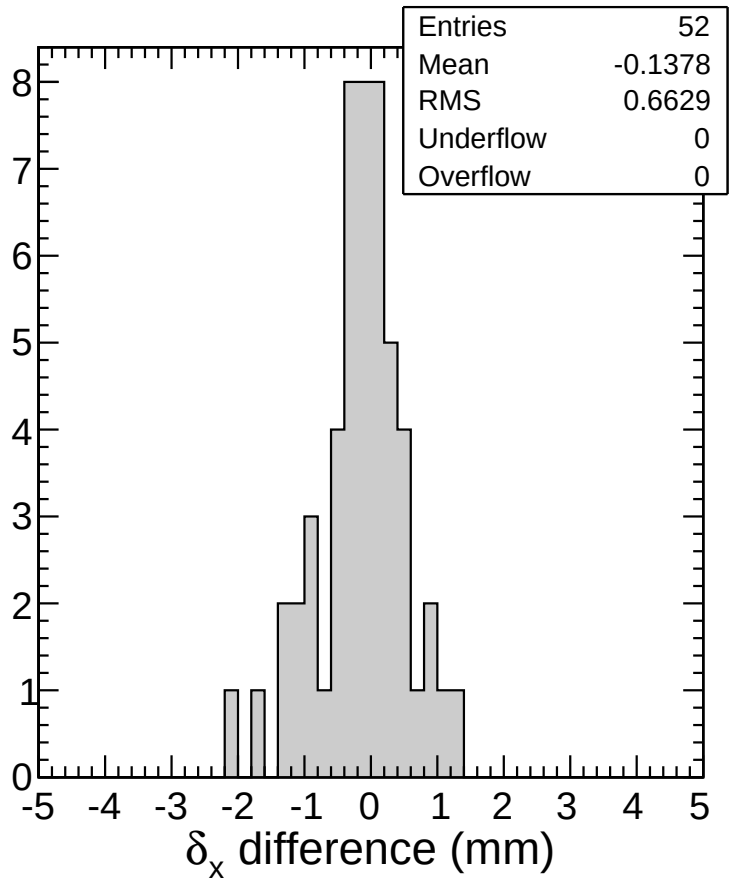
- Tracker alignment has been updated using post-incident (October-November) cosmic rays, $N_{\text{Oct-Nov}}/N_{\text{CRAFT}} \sim 2/3$
- GlobalMuons in the same run range: most runs are empty (presumably, tracker and DT were not taking data concurrently, as they were during CRAFT)
- Available runs for muon alignment: 118862, 118964, 118967, 118969; $N_{\text{Oct-Nov}}/N_{\text{CRAFT}} \sim 0.25\%$
- Only 52 chambers can be aligned, with low resolution
- Verify that the CRAFT-09 muon alignment is consistent with the post-incident tracker geometry in post-incident data

  (i.e. tracker moved, muon chambers didn't; verify that we see the same muon chamber positions when the right tracker description is used in both cases)

Results (1/4)

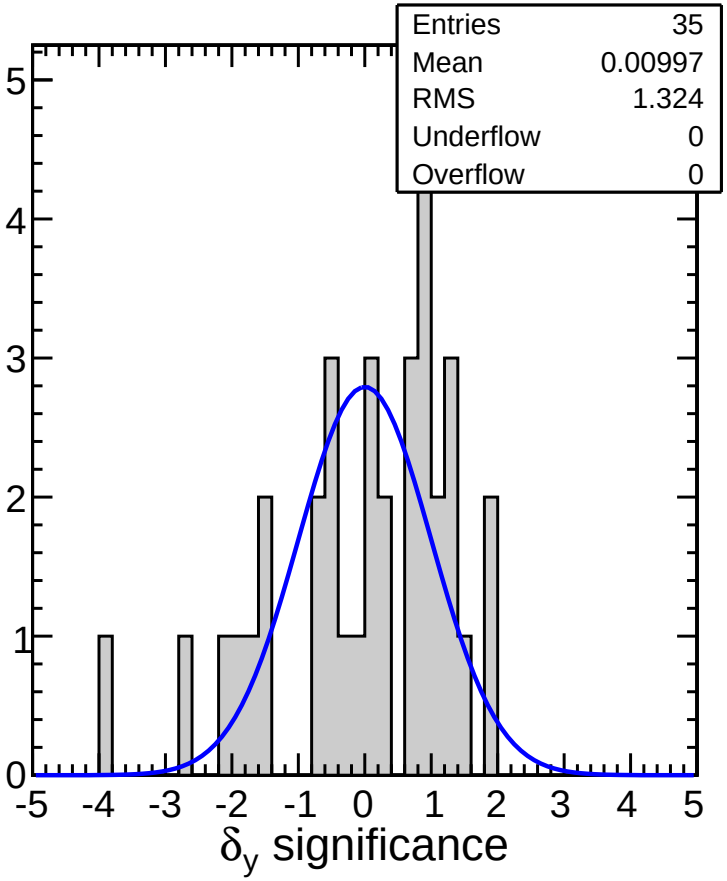
- Left: difference-over-statistical error, should be unit Gaussian (blue curve is a unit Gaussian, not a fit)
- Right: plain differences
- Consistent within uncertainties: 0.66 mm

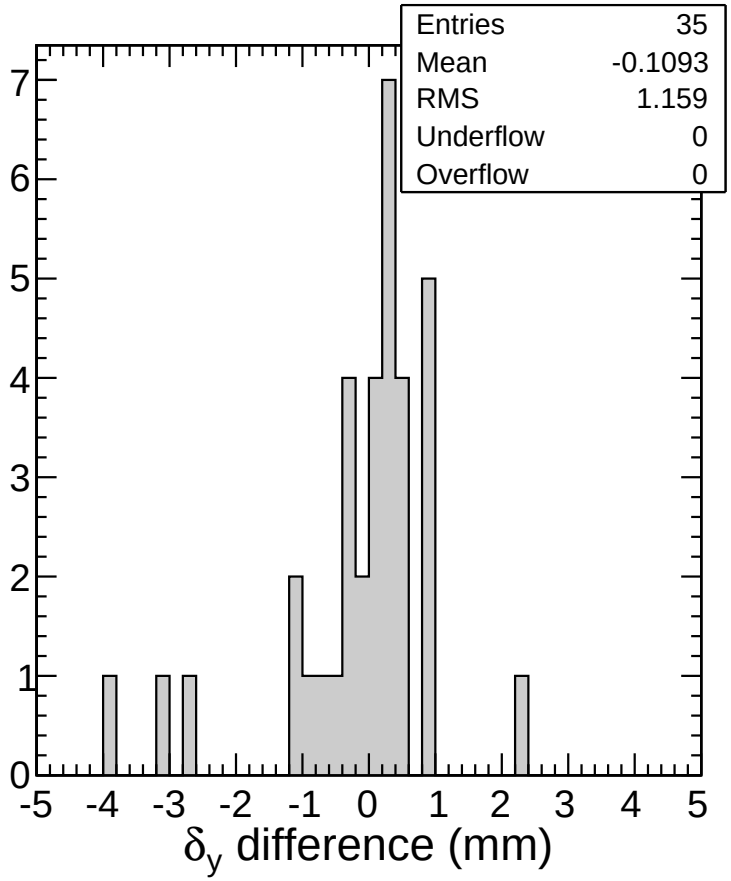




Results (2/4)

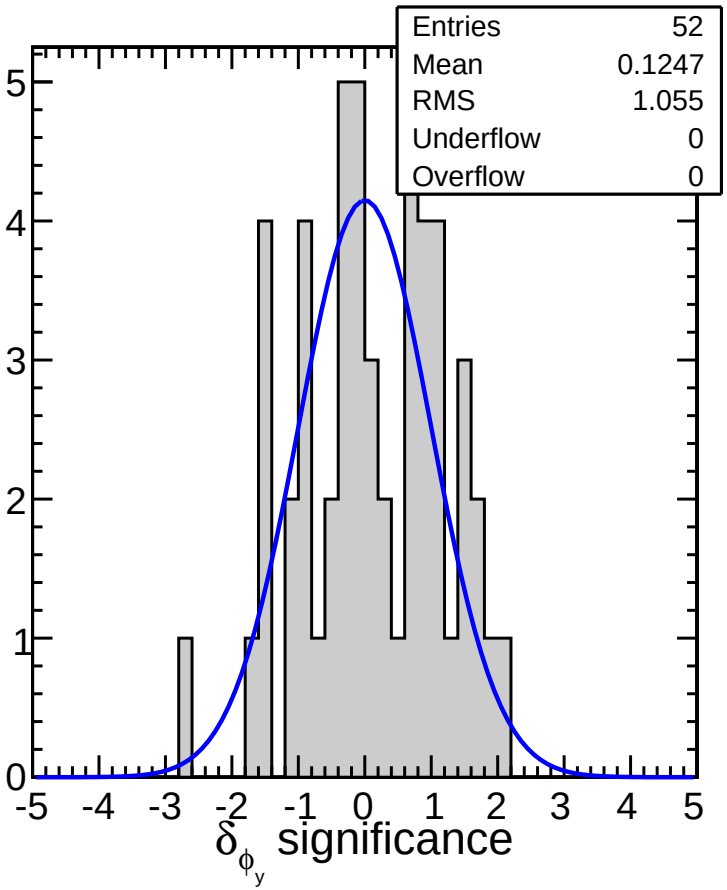
- Left: difference-over-statistical error, should be unit Gaussian (blue curve is a unit Gaussian, not a fit)
- Right: plain differences
- Consistent within uncertainties: 1.2 mm

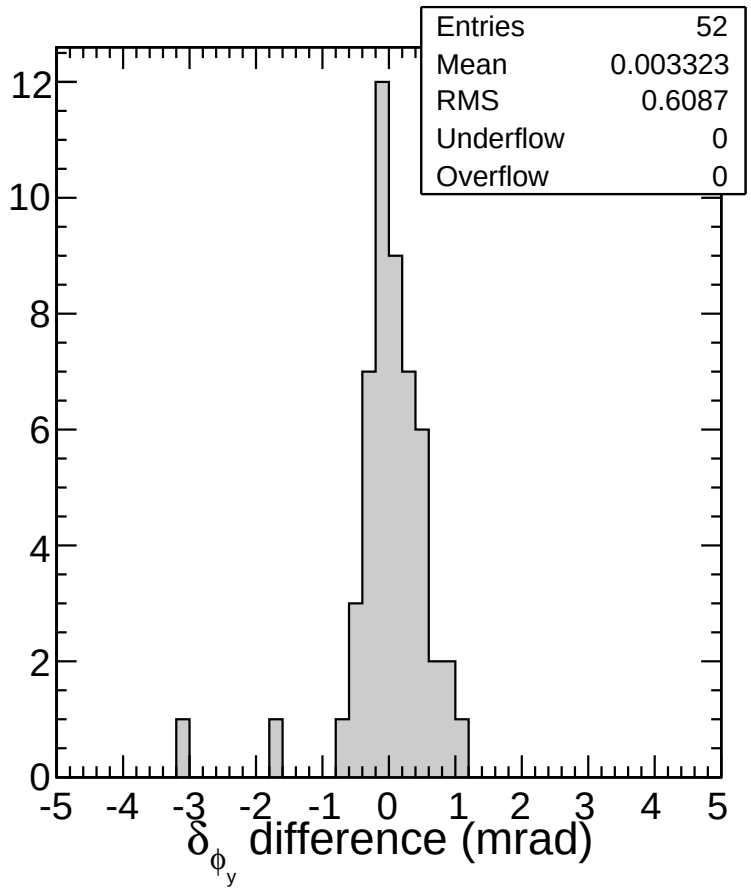




Results (3/4)

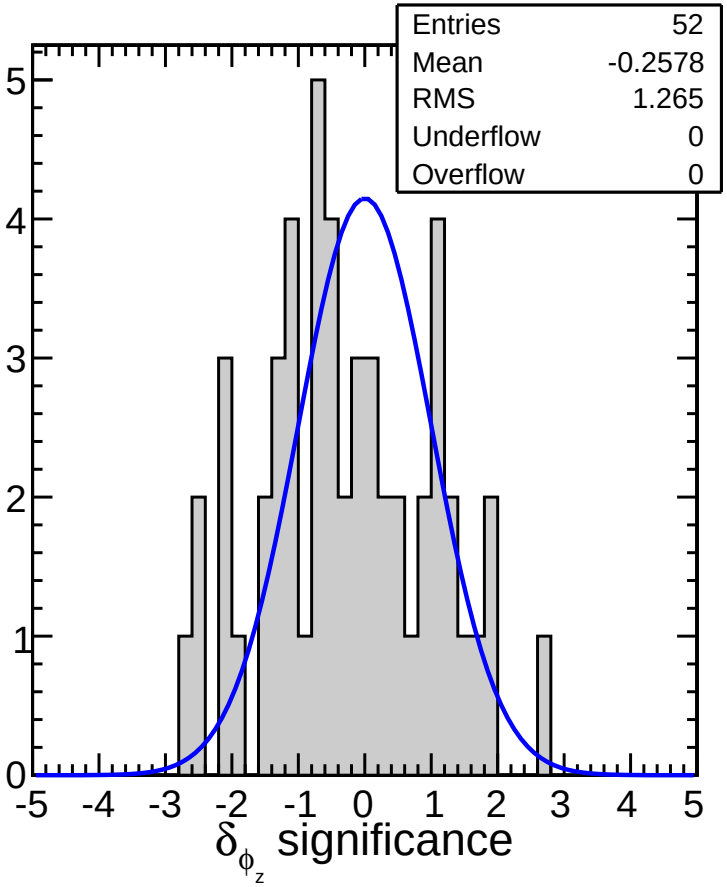
- Left: difference-over-statistical error, should be unit Gaussian (blue curve is a unit Gaussian, not a fit)
- Right: plain differences
- Consistent within uncertainties: 0.6 mrad

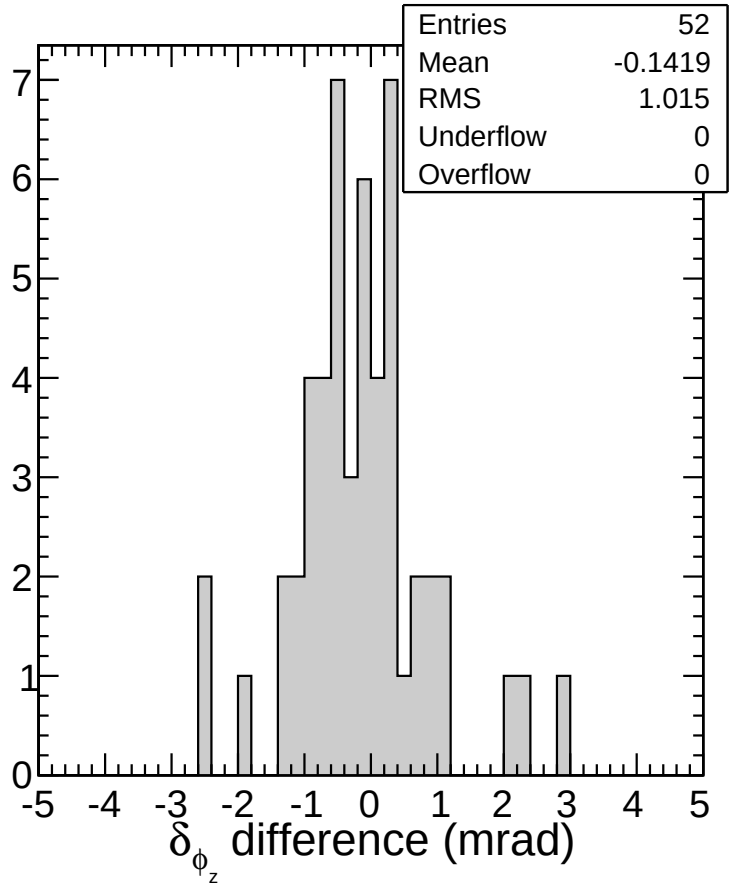




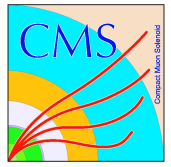
Results (4/4)

- Left: difference-over-statistical error, should be unit Gaussian (blue curve is a unit Gaussian, not a fit)
- Right: plain differences
- Consistent within uncertainties: 1.0 mrad





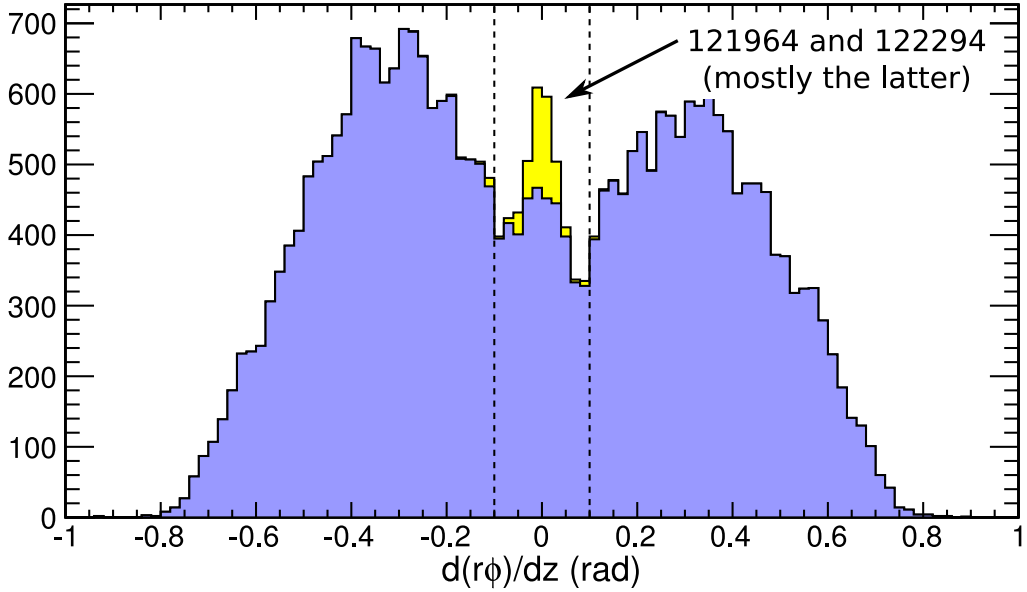
DT conclusion

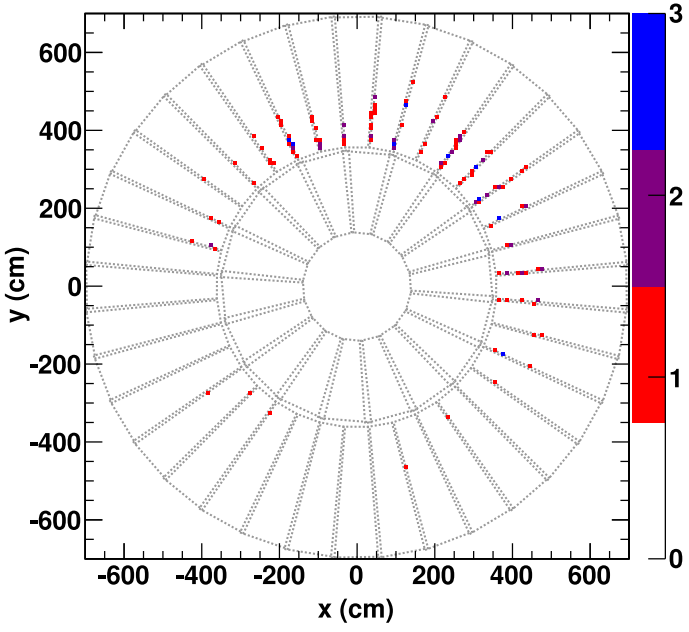


- As far as we can tell, CRAFT-09 alignment is as consistent with the new tracker as it was with the old tracker
- Statistical uncertainty in this statement is 0.66 mm in δ_x
- (CRAFT-09 systematic uncertainty $\sim$ 0.35 mm in δ_x, with much, much smaller statistical uncertainties)

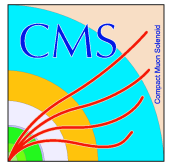
CSC beam-halo

- Still very few beam-halo (lots of cosmics)
- As of yesterday evening, still the only 121964 and 122294 (Nov 23) are the only beam-halo enriched runs in Prompt RECO
- Left: identifying beam-halo enriched runs
- Right: overlaps hits from beam-halo enriched runs





Conclusions



- No proposed track-based alignment updates for early data re-reconstruction (Dec 17)