Pixel Cosmic Analysis Update

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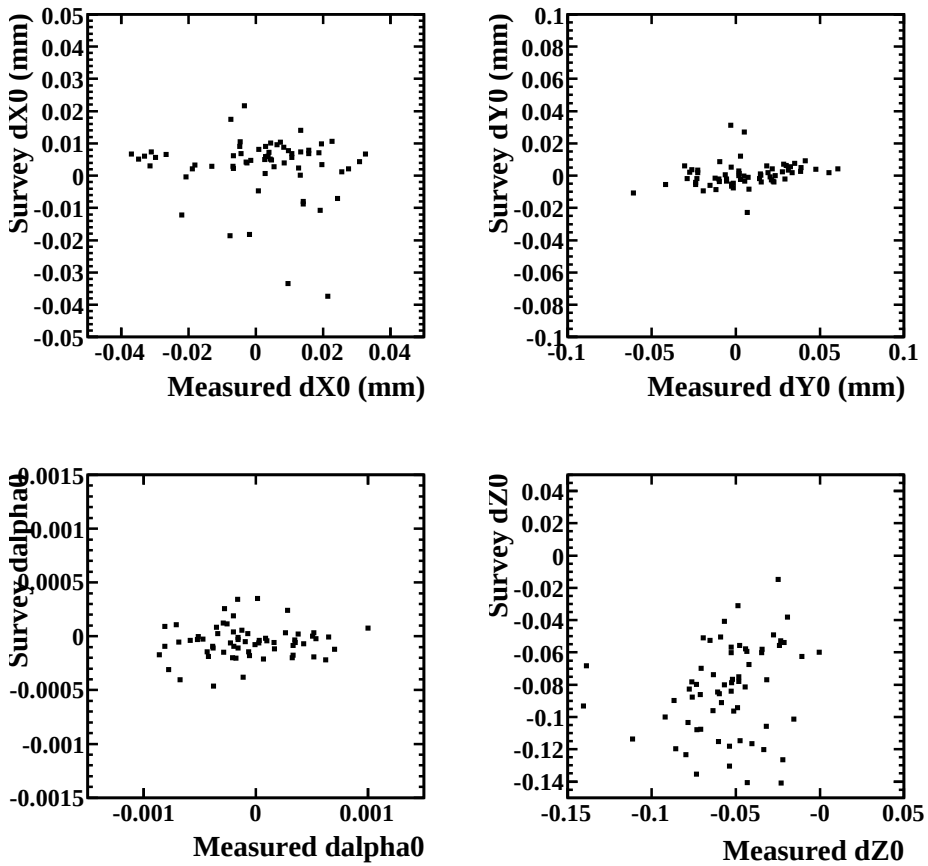
ATLAS Pixel Software Meeting, 3/12/2007

- Alignment vs Survey comparison after a bug fix

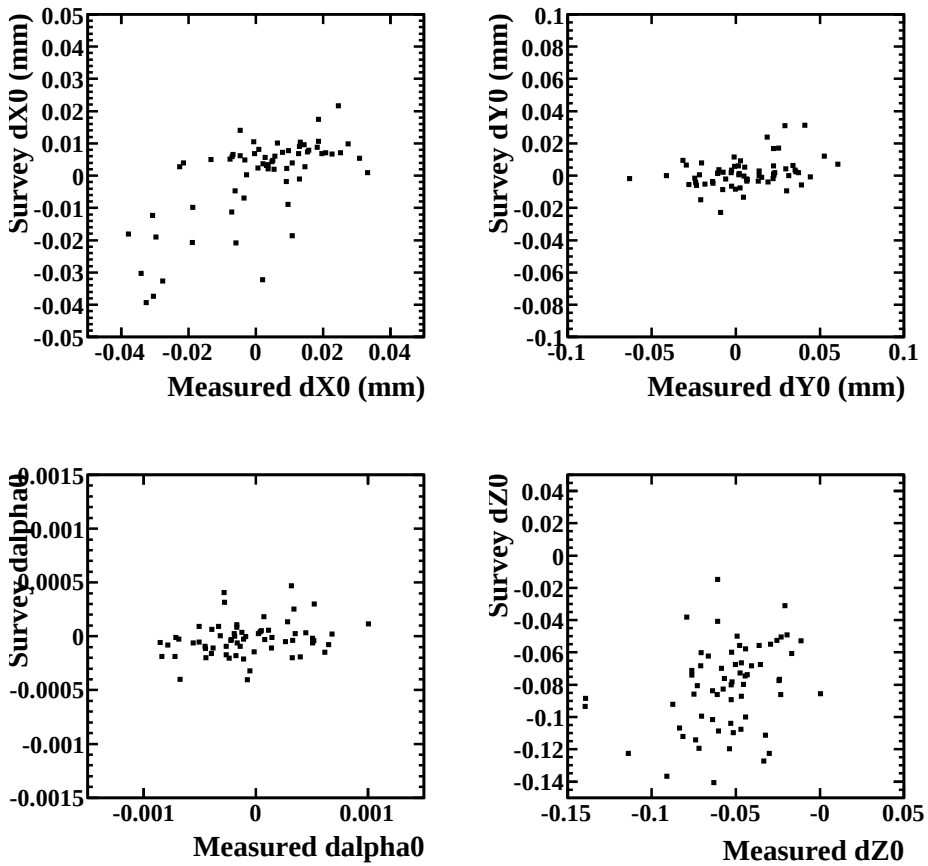
Survey vs Alignment (Old)



- Interesting to see how well the alignment compares to the survey for modules with > 50 overlap hits.

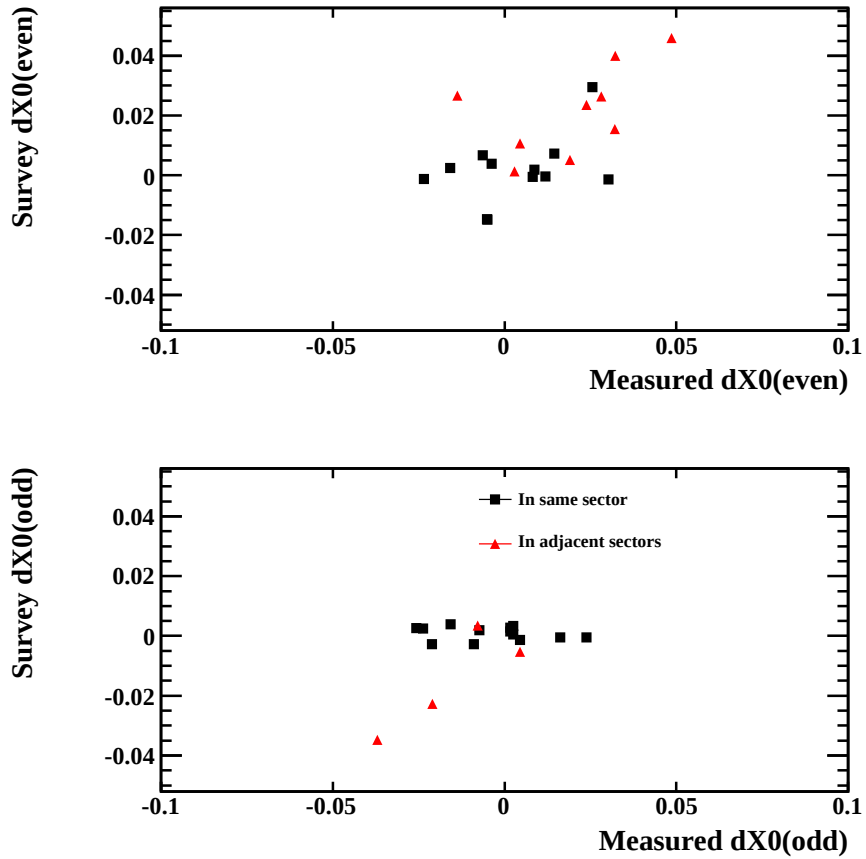
- The correlation does not seem strong, but there are some in δY_0 and δZ_0.

Survey vs Alignment (New)



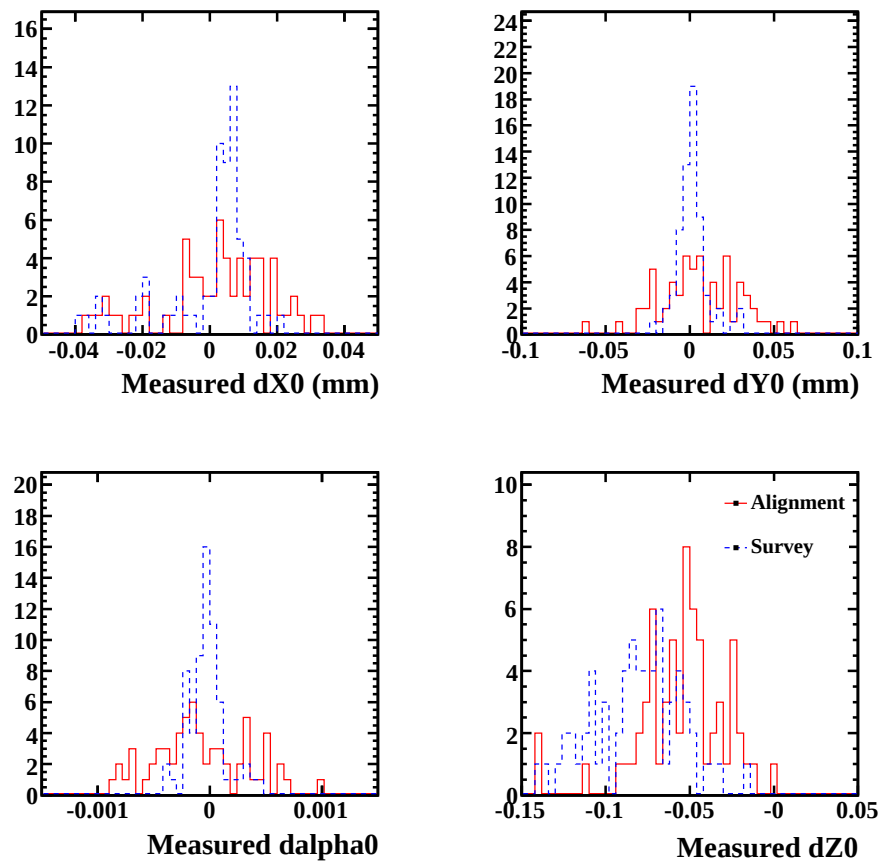
- A bug was found in interpolating alignment constants in which side of even module.
- After the fix, the correlation between the alignment and survey seems evident.

Relative Alignment Between Neighbor Modules



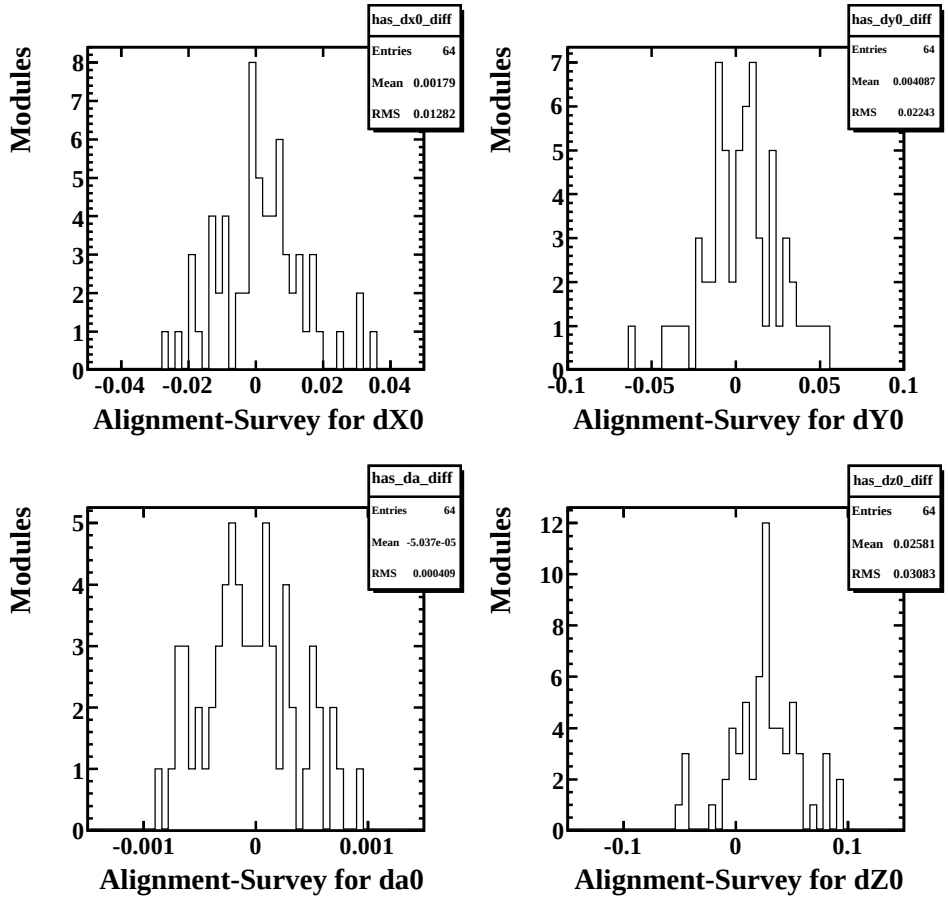
- Top is for even modules and bottom is for odd modules.
- Again, the correlation is evident.

Comparison: Survey vs Alignment (Projection)



- Projection in red for data and in blue for survey.
- There seems data prefer a shift of $\delta Z_0 = 50\mu m$, instead of 80 μm from survey.

Difference between Alignment and Survey



- RMS of delta X0 is 12.8 μm is much smaller than the data alone 16.8 μm
- Some correlation between two does exist, but needs more statistics to draw a firm conclusion.