

Arachnid: 21st June Update

[Apologies, I'm a few days behind because of QMUL computers being down]

Current Alignment Values

Fergus' values

Sensor	Row	Column
1	172.9	101.5
2	683.6	73.2
3	582.5	687.2
4	1053.2	617.9
5	89.5	109.6

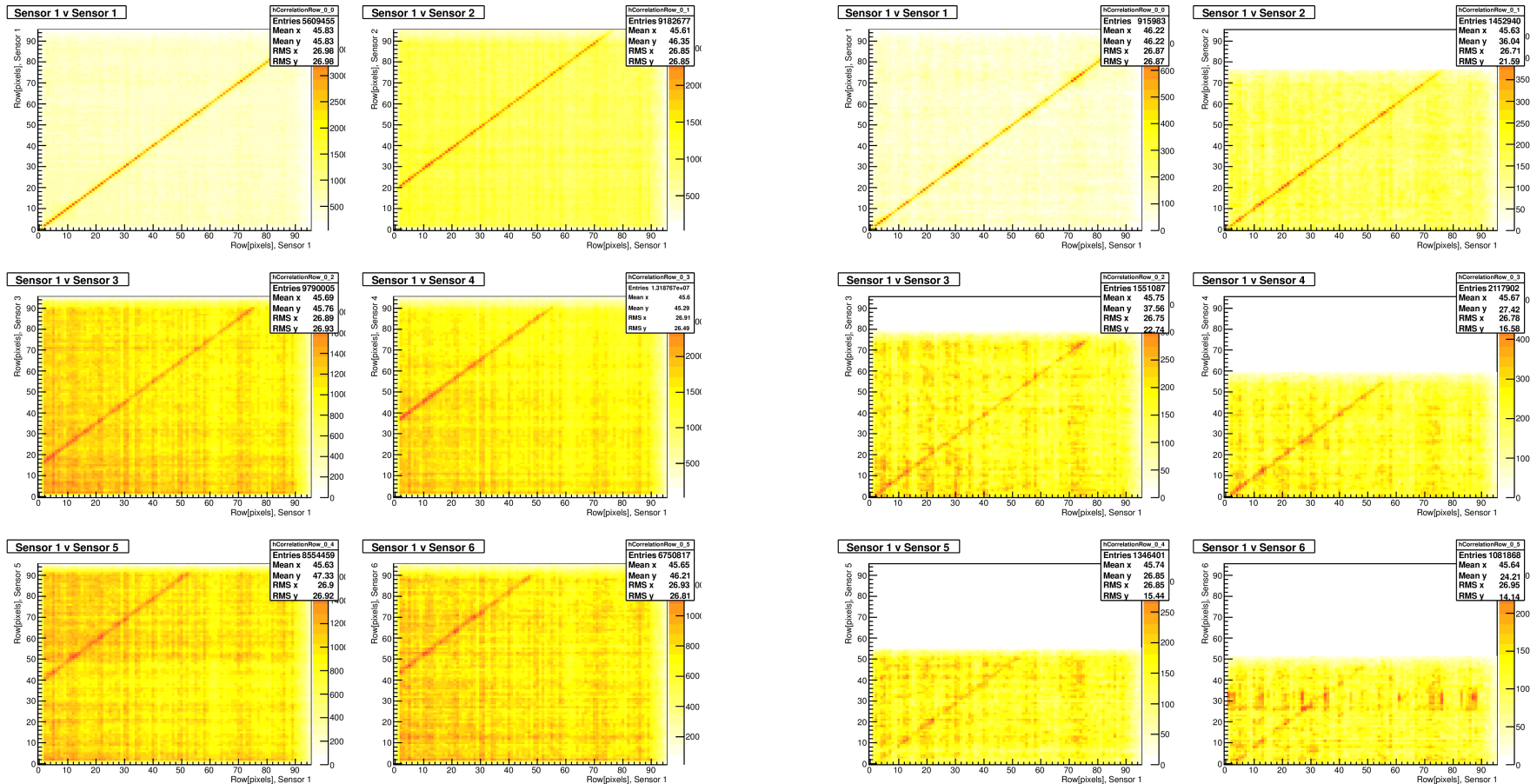
Sensor	Row	Column
1	484.45	-48.66425
2	385.7325	555.9798
3	870.13	531.13150
4	994.1975	559.1468
5	1070.9675	637.02

- Both for run 600102, 50000 events
- Offsets in microns, relative to sensor 0.
- Two sets of results completely inconsistent.
- Checked correlation plots, plugged alignment values in before generating.

Correlation Plots: Rows

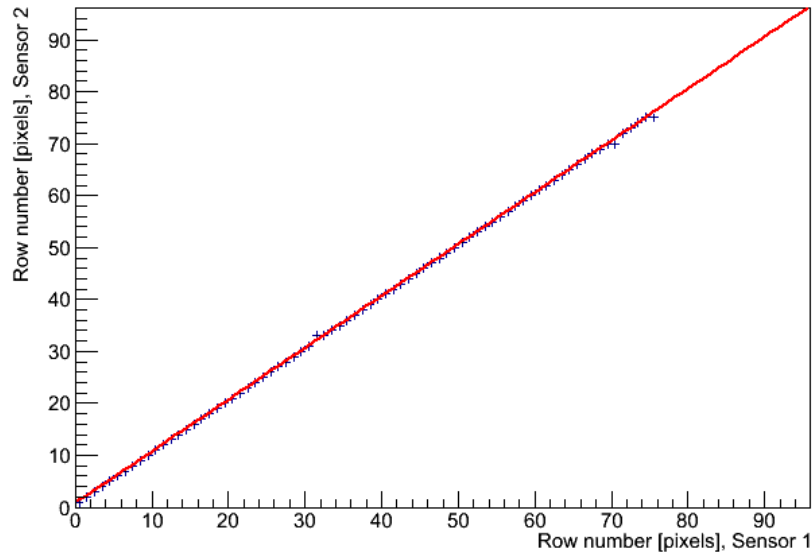
Original

With alignment corrections

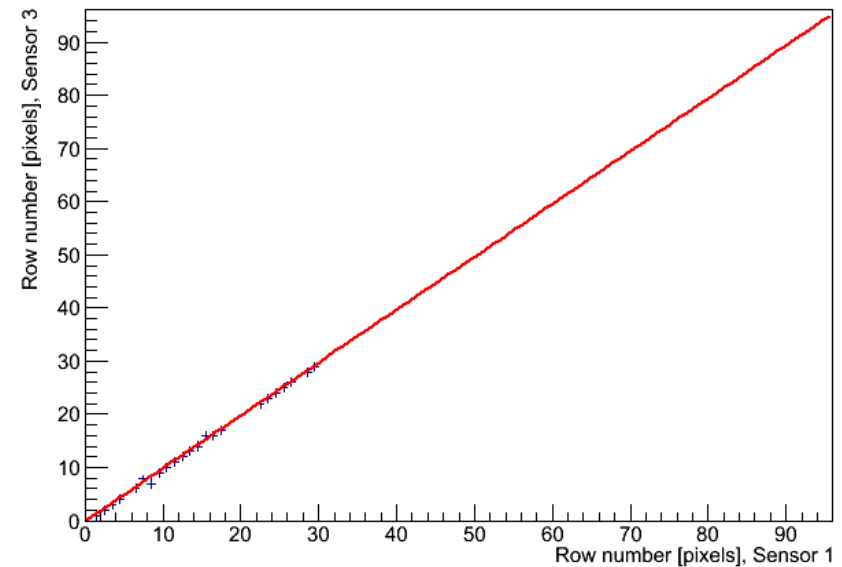


Fit Correlation Plots: Rows

Fit to Correlation Plot



Fit to Correlation Plot

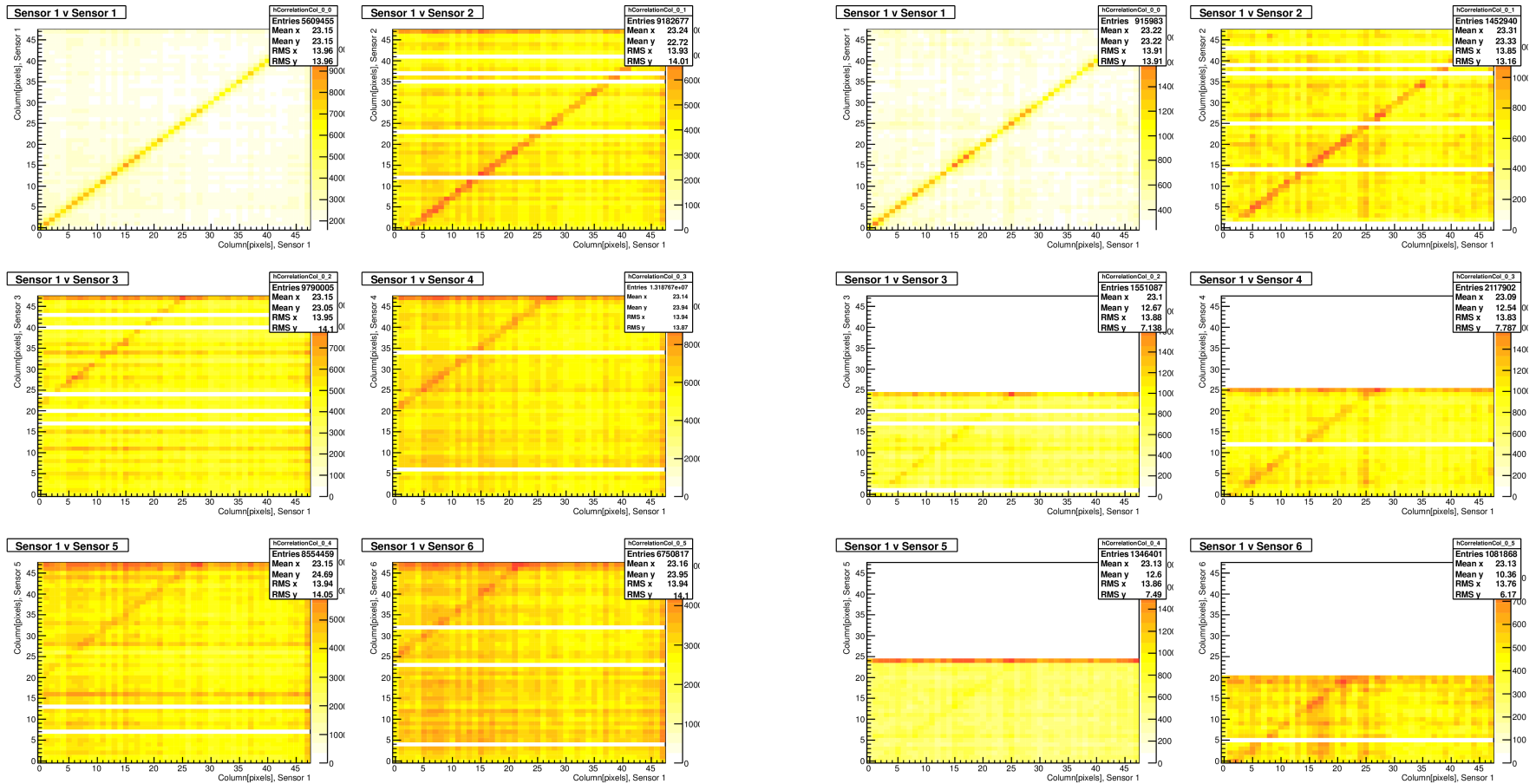


- Row12A, $p0 = 0.565348 \pm 0.178054$, $p1 = 0.9997906 \pm 0.00406309$
- Row13A, $p0 = -0.315269 \pm 0.313396$, $p1 = 0.994176 \pm 0.018927$
- i.e. $14.13370 \mu\text{m}$ c.f. $484.45 \mu\text{m}$ and $-7.881725 \mu\text{m}$ c.f. $385.7325 \mu\text{m}$
- Other plots show same order
- Should know alignment within $0.5 \mu\text{m}$
- Not at all perfect, but works approximately.
 - Need an improved method

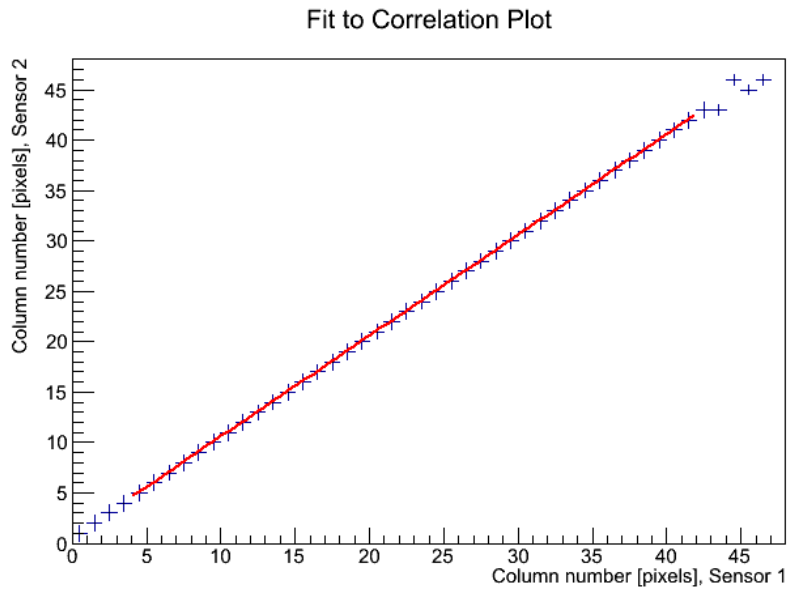
Correlation Plots: Columns

Original

With alignment corrections



Fit Correlation Plots: Columns



- $P0 = 0.0387233 + 0.339137$
- $P1 = 1.01133 + 0.0147638$
- $0.9680825 \mu\text{m}$ c.f. $-47.41925 \mu\text{m}$
- Code needs some adjusting to get the other plots, but should be similar

Efficiency checks

- Test:
 - Altered alignment values by 6 pixels
 - Made efficiency measurements as before
 - Efficiencies didn't drop (actually increased)
- Trying to check efficiency of each frame individually
 - Can't see where first and second frames are combined (Fergus thought they might be simply added?)
 - Just looks as if they're both read in separately to output file for clustering