

Results

FIXED – LOW STATS

| dX mkm | dY mkm | dZ mkm | alpha mrad | beta mrad | gamma mrad | Comment |
|--------------|---------------|----------------|--------------|--------------|--------------|--------------------------|
| 47.37+-13.13 | -2.35+- 1.71 | -54.34+-135.76 | -0.65+- 0.37 | -0.53+- 0.18 | 4.80+- 2.33 | Average for SSD Sector 1 |
| 20.30+-10.22 | -15.94+- 9.64 | 2.87+-31.68 | -0.07+- 0.03 | 0.04+- 0.04 | -0.03+- 0.20 | Average for SSD Sector 2 |
| 7.89+- 8.25 | -0.21+- 1.65 | -51.85+-98.45 | 0.05+- 0.27 | -0.62+- 0.15 | 0.05+- 0.04 | Average for SSD Sector 3 |
| 39.43+-11.80 | 15.98+- 7.41 | 31.78+-27.96 | -0.15+- 0.03 | -0.13+- 0.04 | -0.28+- 0.21 | Average for SSD Sector 4 |
| 12.46+- 4.21 | 20.10+- 4.37 | -21.72+-15.56 | -0.02+- 0.02 | 0.04+- 0.02 | -0.04+- 0.02 | Average for All Ssd |

FIXED – HIGHER STATS

| dX mkm | dY mkm | dZ mkm | alpha mrad | beta mrad | gamma mrad | Comment |
|---------------------|----------------------|----------------------|--------------|--------------|--------------------|--------------------------|
| -6.83+- 2.88 | 0.11+- 0.27 | 39.30+-44.76 | 0.02+- 0.00 | 0.21+- 0.01 | -1.59+- 0.13 | Average for SSD Sector 1 |
| -0.77+- 0.42 | -30.48+- 2.41 | -15.87+- 5.73 | -0.00+- 0.01 | -0.00+- 0.00 | 0.82+- 0.05 | Average for SSD Sector 2 |
| -0.74+-55.97 | 0.28+- 0.28 | -6.15+- 2.83 | 0.01+- 0.01 | -0.00+- 0.01 | 3.26+- 0.26 | Average for SSD Sector 3 |
| 0.24+- 0.45 | -66.33+- 1.63 | -51.49+- 7.30 | -0.05+- 0.00 | -0.00+- 0.00 | -0.10+- 0.05 | Average for SSD Sector 4 |
| -19.39+- 1.16 | -0.32+- 1.58 | -25.83+- 3.93 | -0.01+- 0.00 | -0.01+- 0.00 | -0.07+- 0.01 | Average for All Ssd |

- Statistics matter (up to a point)
- Some mis-behavior detected (next slides)

Results

FIXED – HIGHER STATS

| dX mkm | dY mkm | dZ mkm | alpha mrad | beta mrad | gamma mrad | Comment |
|---------------|----------------------|----------------------|--------------|--------------|--------------------|--------------------------|
| -6.83+- 2.88 | 0.11+- 0.27 | 39.30+-44.76 | 0.02+- 0.00 | 0.21+- 0.01 | -1.59+- 0.13 | Average for SSD Sector 1 |
| -0.77+- 0.42 | -30.48+- 2.41 | -15.87+- 5.73 | -0.00+- 0.01 | -0.00+- 0.00 | 0.82+- 0.05 | Average for SSD Sector 2 |
| -0.74+-55.97 | 0.28+- 0.28 | -6.15+- 2.83 | 0.01+- 0.01 | -0.00+- 0.01 | 3.26+- 0.26 | Average for SSD Sector 3 |
| 0.24+- 0.45 | -66.33+- 1.63 | -51.49+- 7.30 | -0.05+- 0.00 | -0.00+- 0.00 | -0.10+- 0.05 | Average for SSD Sector 4 |
| -19.39+- 1.16 | -0.32+- 1.58 | -25.83+- 3.93 | -0.01+- 0.00 | -0.01+- 0.00 | -0.07+- 0.01 | Average for All Ssd |

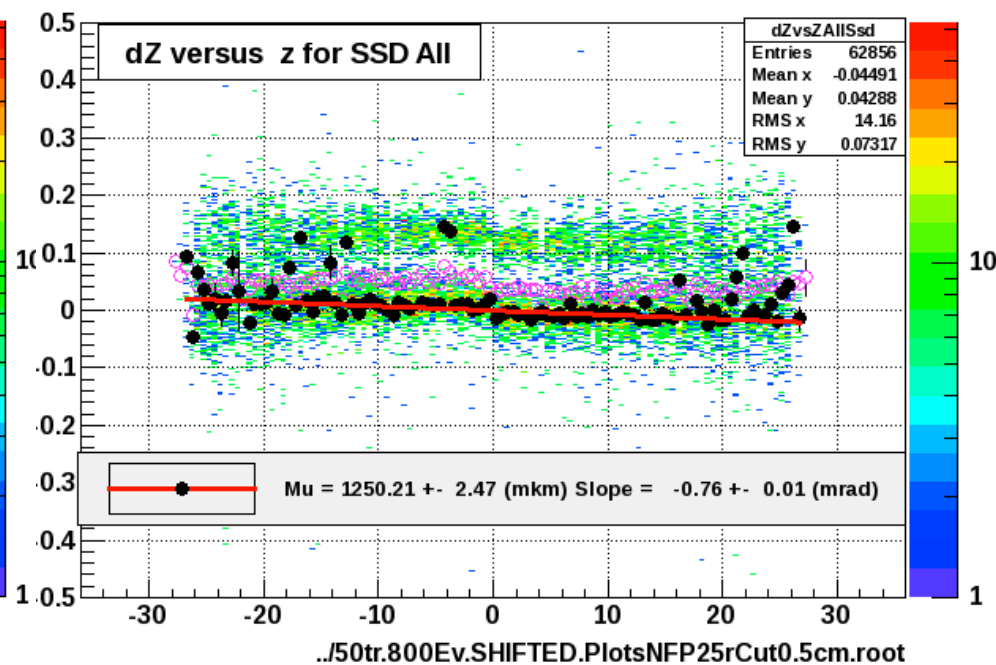
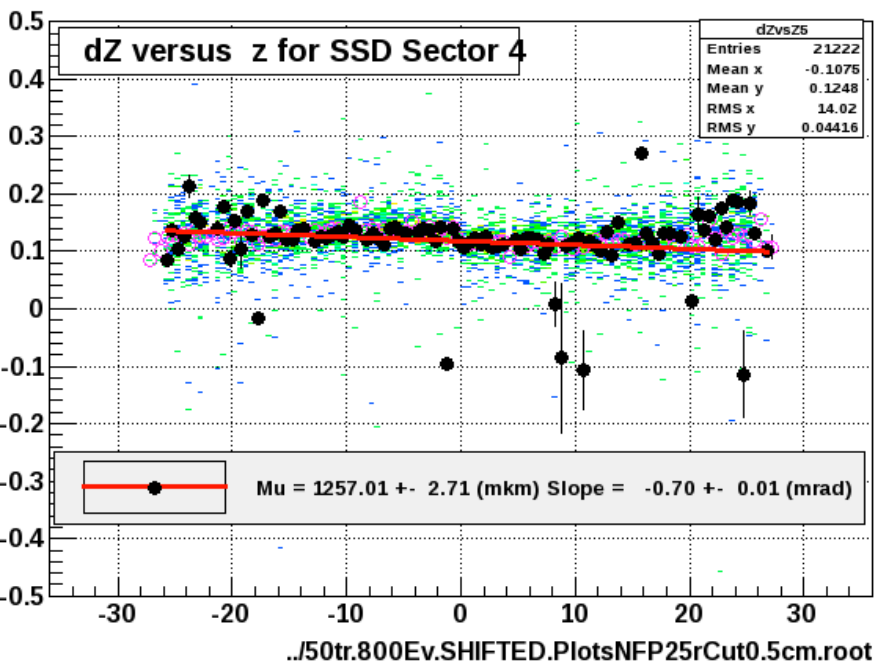
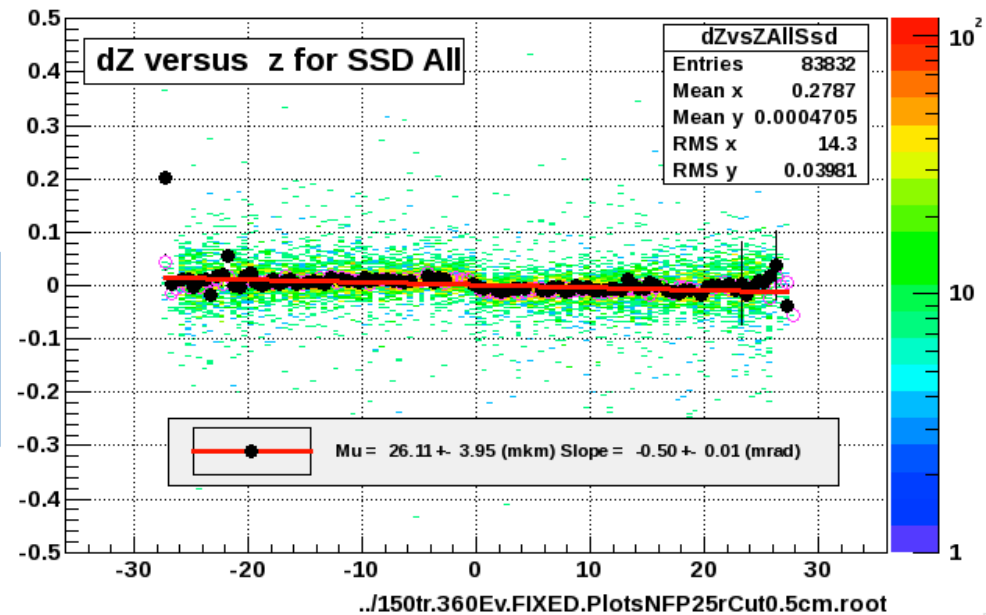
Sector-4 SHIFTED by 1.25 mm (+1250 mkm)

| dX mkm | dY mkm | dZ mkm | alpha mrad | beta mrad | gamma mrad | Comment |
|--------------|--------------|------------------------|--------------|--------------|--------------------|--------------------------|
| 70.65+-14.72 | -0.21+- 0.23 | -36.55+- 5.13 | 0.00+- 0.00 | 0.13+- 0.01 | 2.01+- 0.04 | Average for SSD Sector 1 |
| -8.03+- 2.75 | -6.10+- 2.29 | -12.56+- 3.96 | 0.06+- 0.00 | -0.03+- 0.00 | 0.84+- 0.04 | Average for SSD Sector 2 |
| -8.74+-10.68 | 0.58+- 0.24 | -39.07+-11.77 | 0.01+- 0.00 | 0.05+- 0.01 | 1.78+- 0.10 | Average for SSD Sector 3 |
| 10.02+- 2.68 | 27.94+- 2.37 | -1257.02+- 1.51 | 0.01+- 0.00 | 0.00+- 0.00 | -1.13+- 0.04 | Average for SSD Sector 4 |
| -8.02+- 1.37 | 9.18+- 1.31 | -434.10+-25.80 | -0.01+- 0.00 | -1.95+- 0.00 | -0.38+- 0.01 | Average for All Ssd |

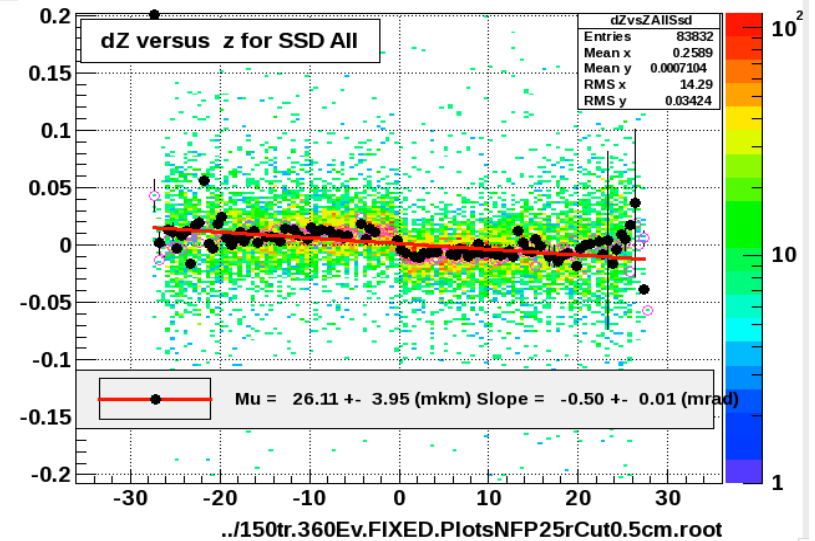
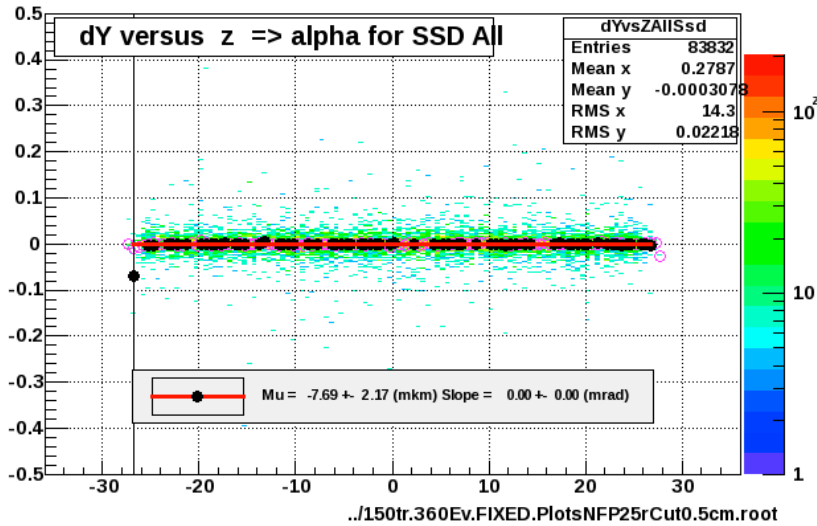
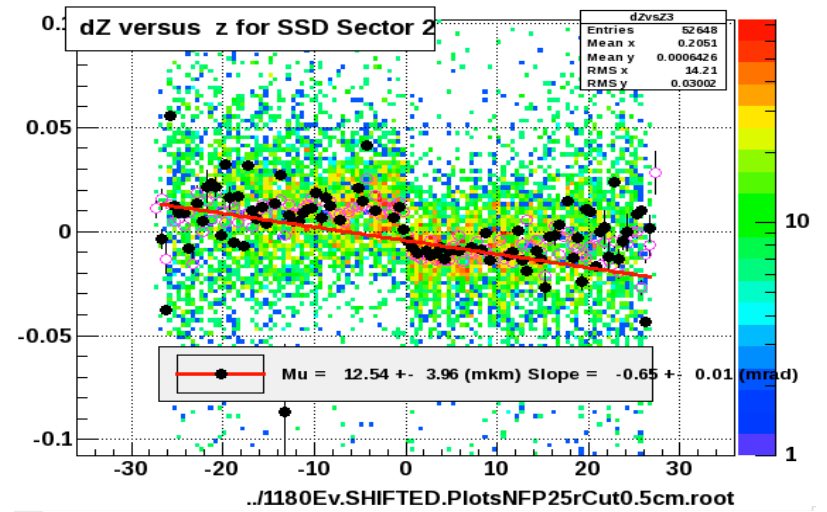
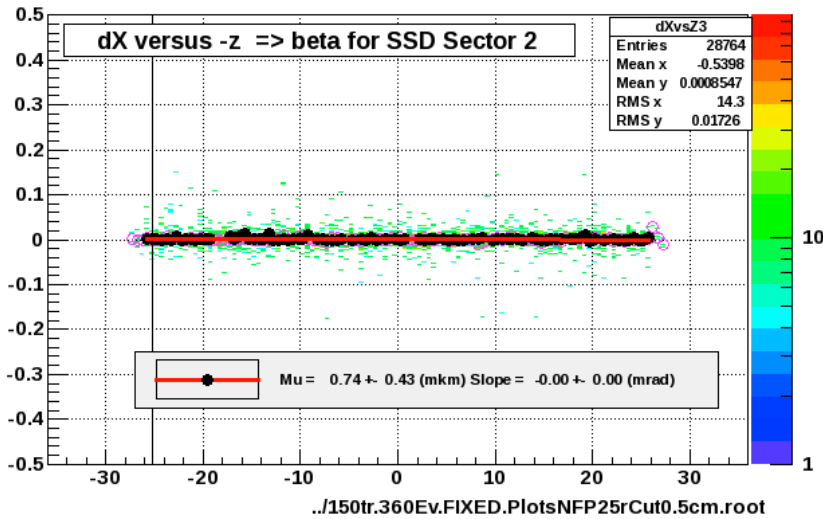
- Shift detected within a few microns
- Some mis-behavior still exists. Needs Investigation (next slides)
- One Ladder can distort the Global positioning of a detector as a whole
- Iterations and/or Reversal of procedure is needed

Results - Global

- Fixed and Shifted dZ
- One Sector or Ladder affects dZ ALL
- A kink exists in the middle (next slides)



Results - Global



- dX/dY are fine...dZ shows TPC t0 effect (!)
- This is also responsible for the γ angle effect

Results – Ladder/local

- FIXED left - SHIFTED right
- u (rphi) UP - v (beam) right

