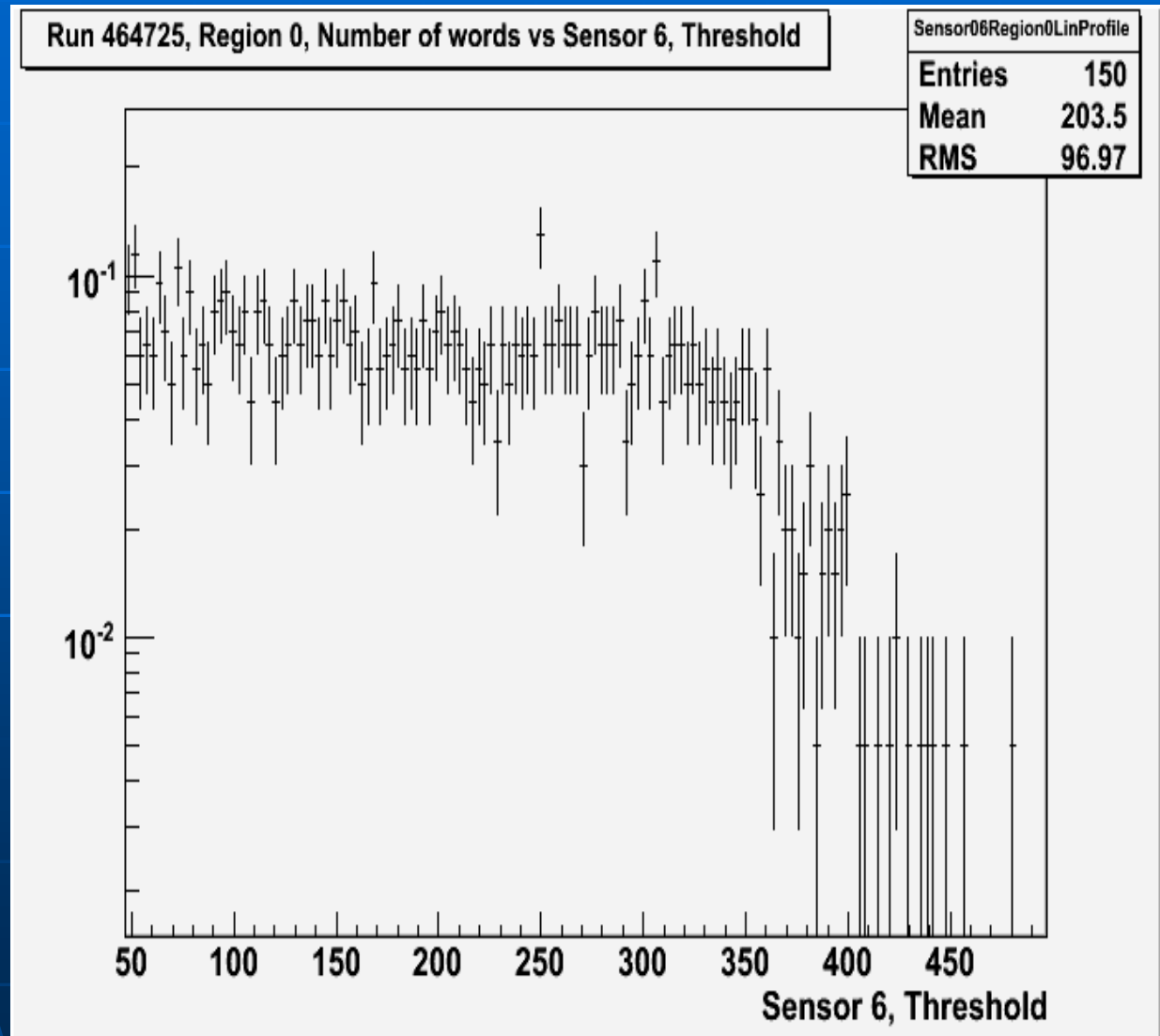


PIXEL SCANS

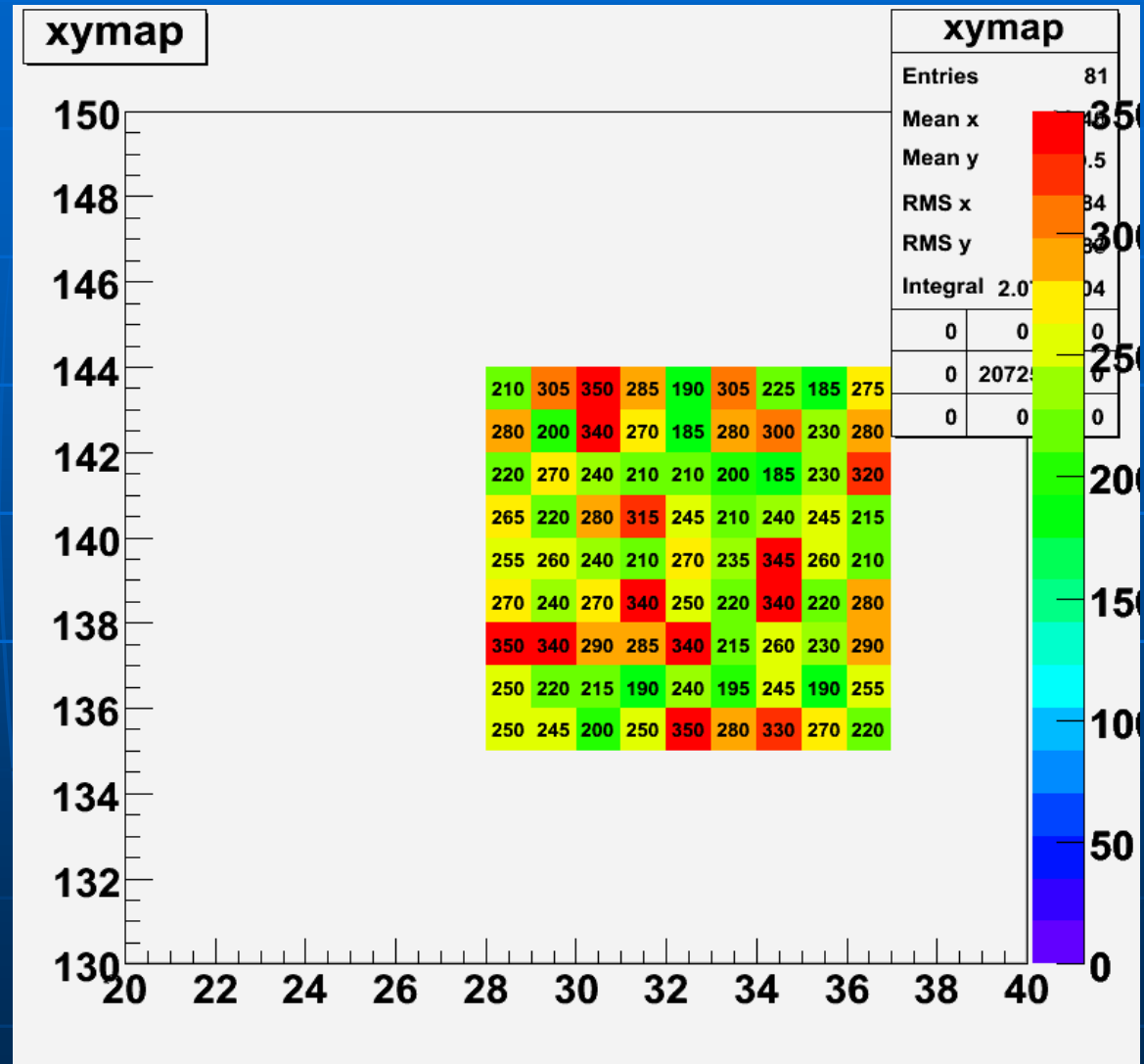
Measuring Data

- Measure last point before graphs cuts off at $1/10^3$.
- For spread of data, imagine fitting curve and take point where it would cross X axis.
- For larger spreads of data (see opposite), fit cubic polynomial.



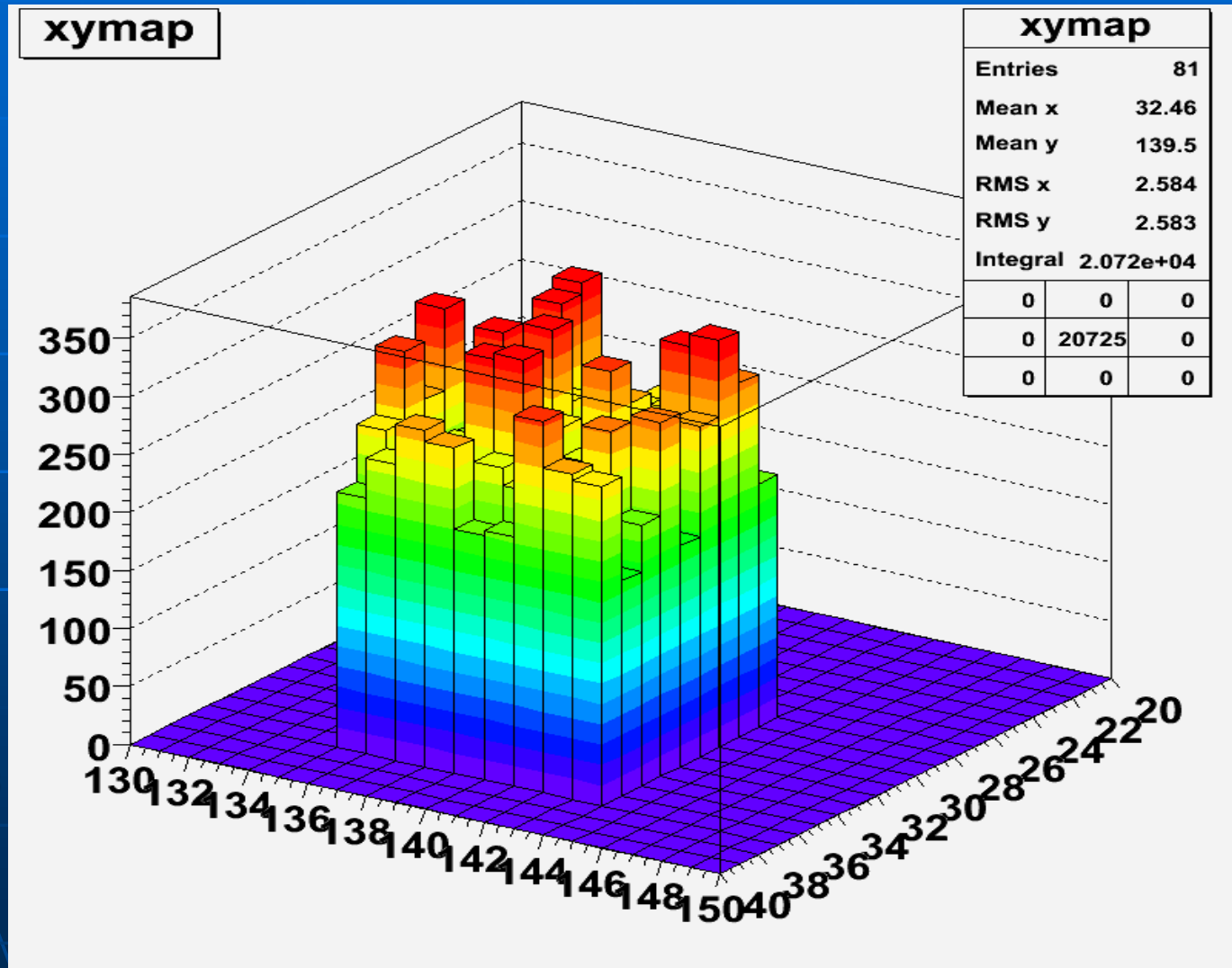
Mask Scanning

- 9 x 9 Mask Scanned
- 3 x 3 Aperture
- 60% Intensity
- 50 μ m step size
- 1064nm Wavelength
- 25Hz Firing Frequency
- Continuous Firing
- Scan Type: mpsAnalysis
- Threshold 149
- Scanned Between 50 and 350 units.



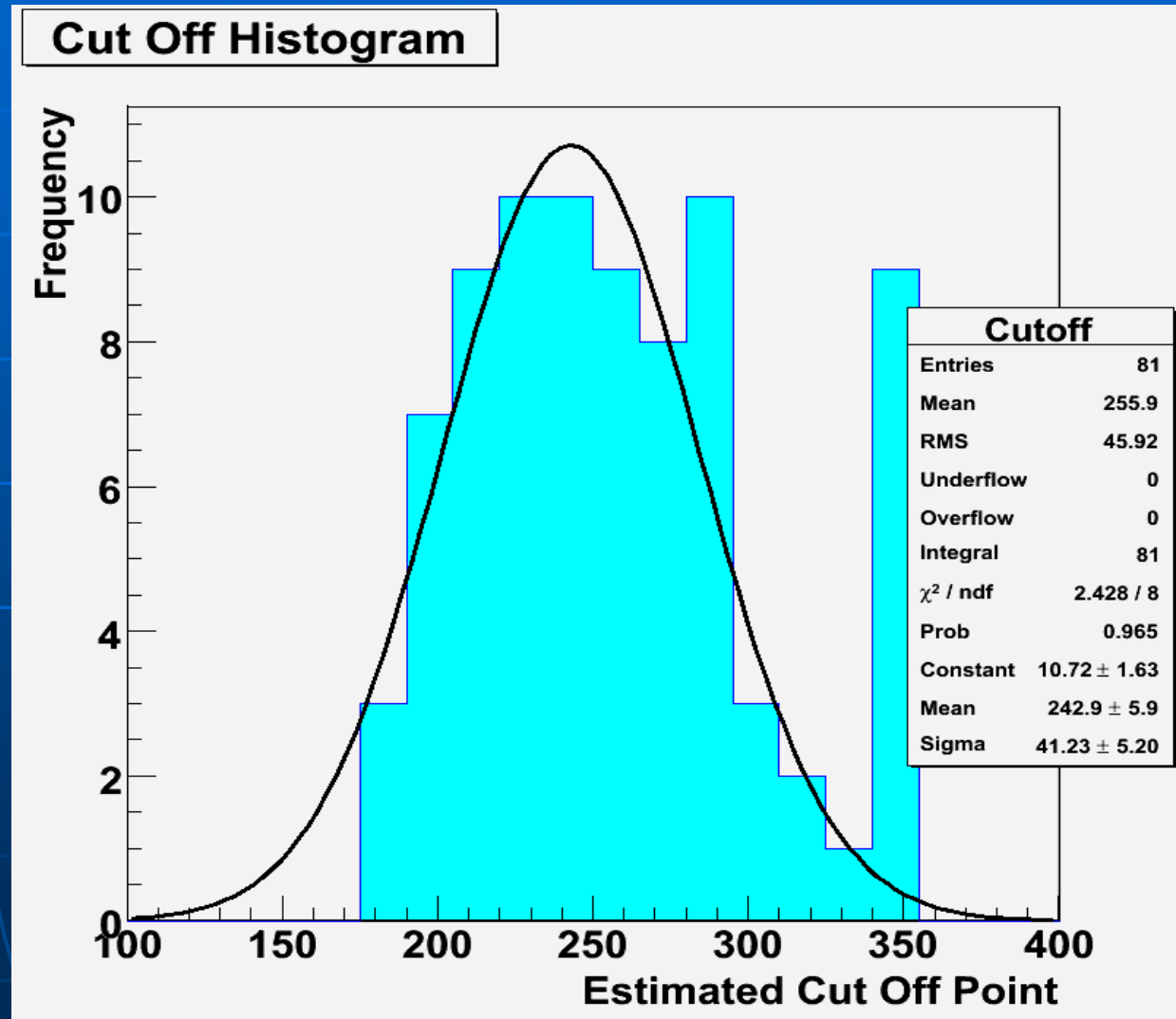
Mask Scanning – 3D

- Data Plotted In 3D for aesthetics.
- Cut Off Point Measured By Eye, defined as when no hits are recorded with more than $1/10^3$ frequency.

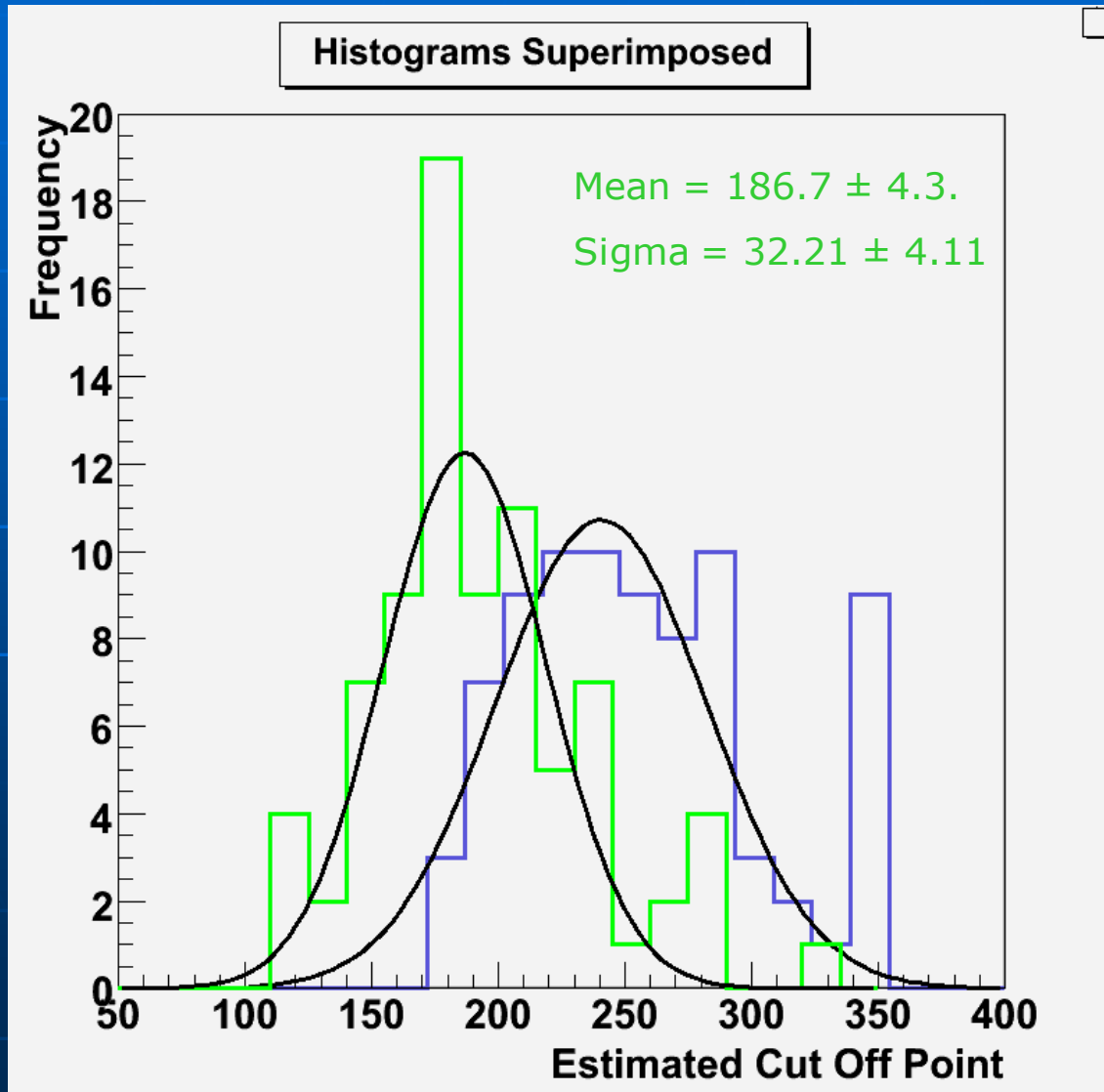


Mask Scanning: Histogram

- Gaussian Fitted Ignoring Saturated Data Points.
- Fitted by eye so may not be optimum



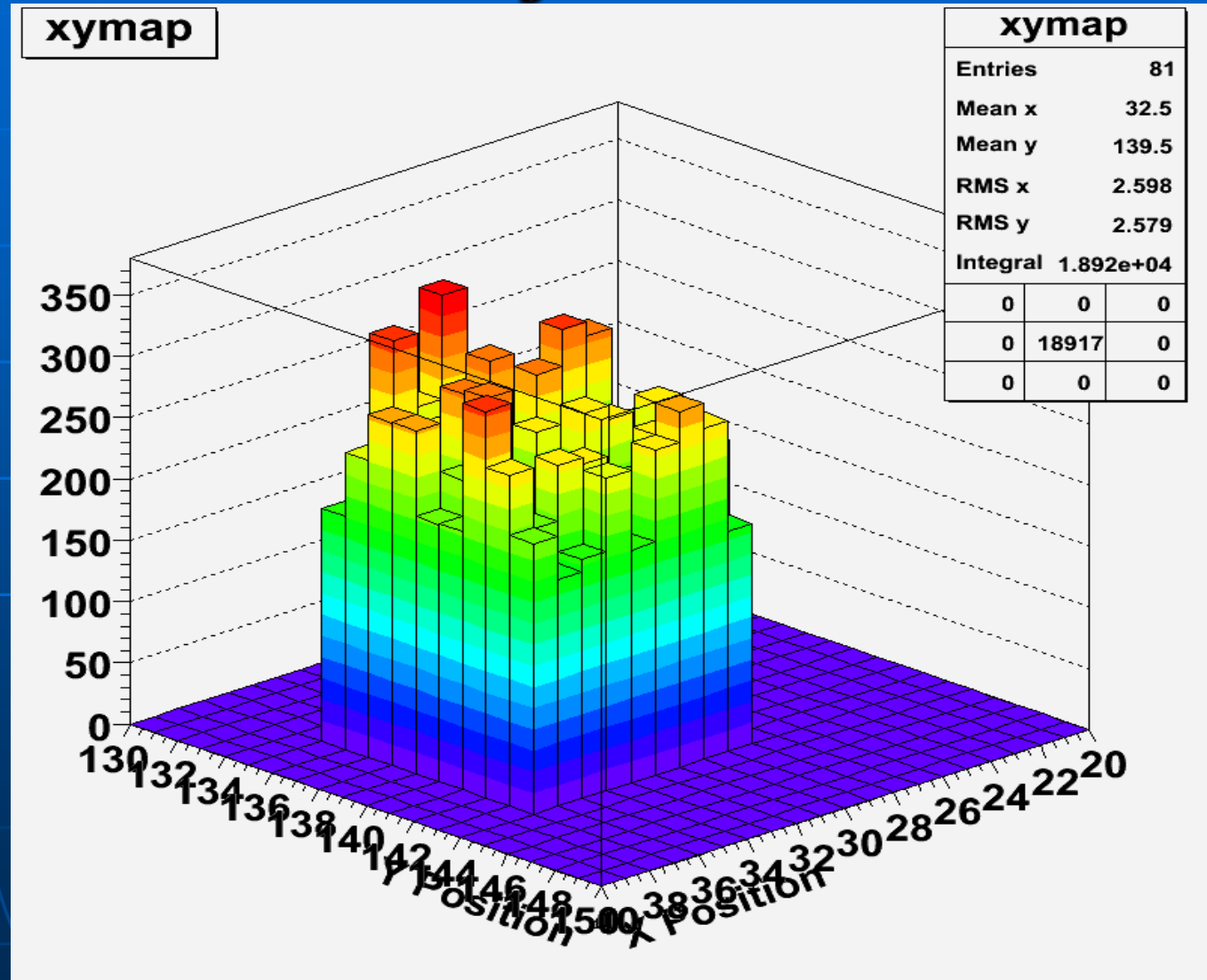
Mask Scans Other Region



- Another region was also scanned, 6mm down on sensor.
- Prob statistic for green histogram is 0.1688.

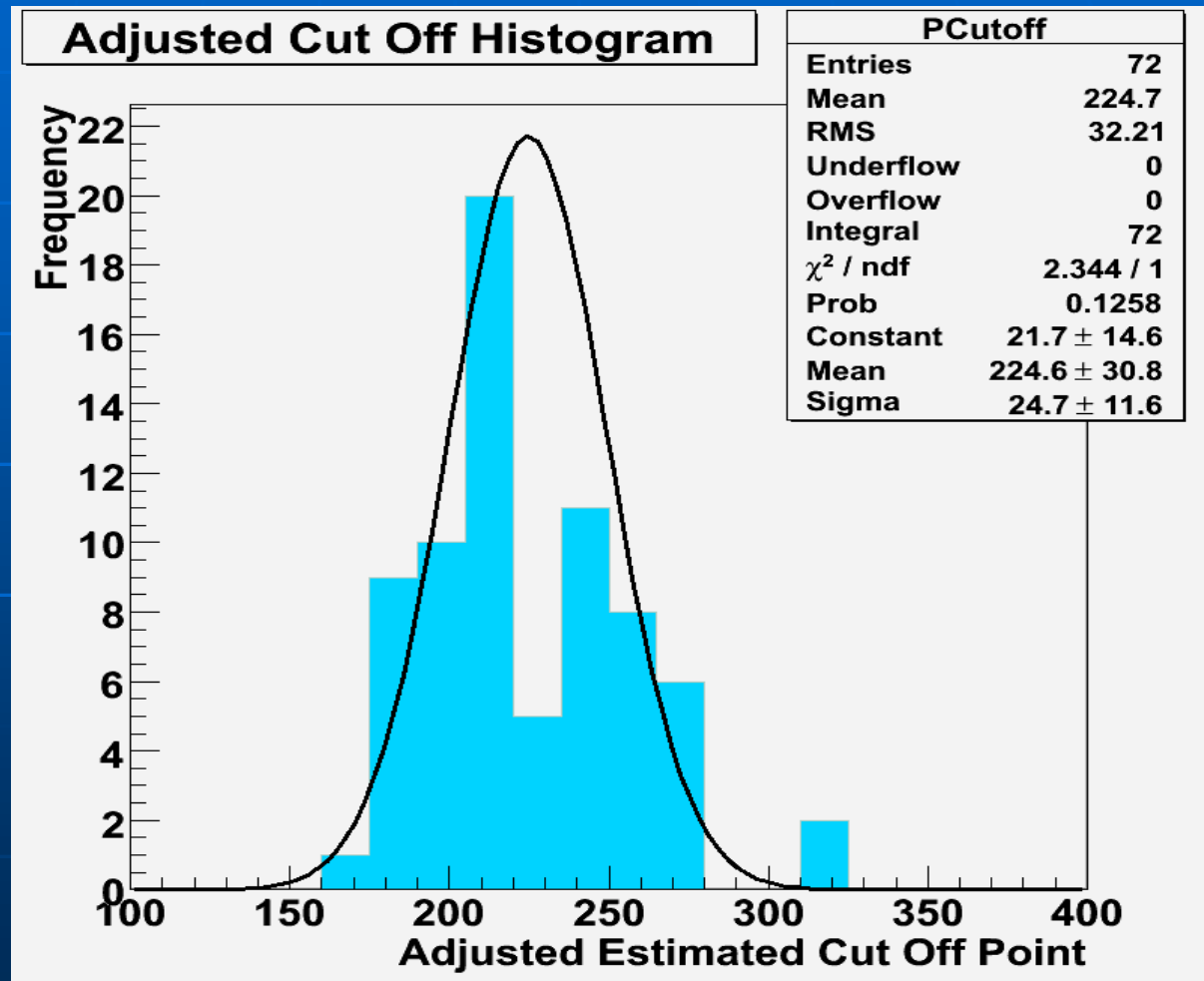
Pedestal Adjustment

- Pedestals
For each
Pixel
Subtracted
And Data
Replotted

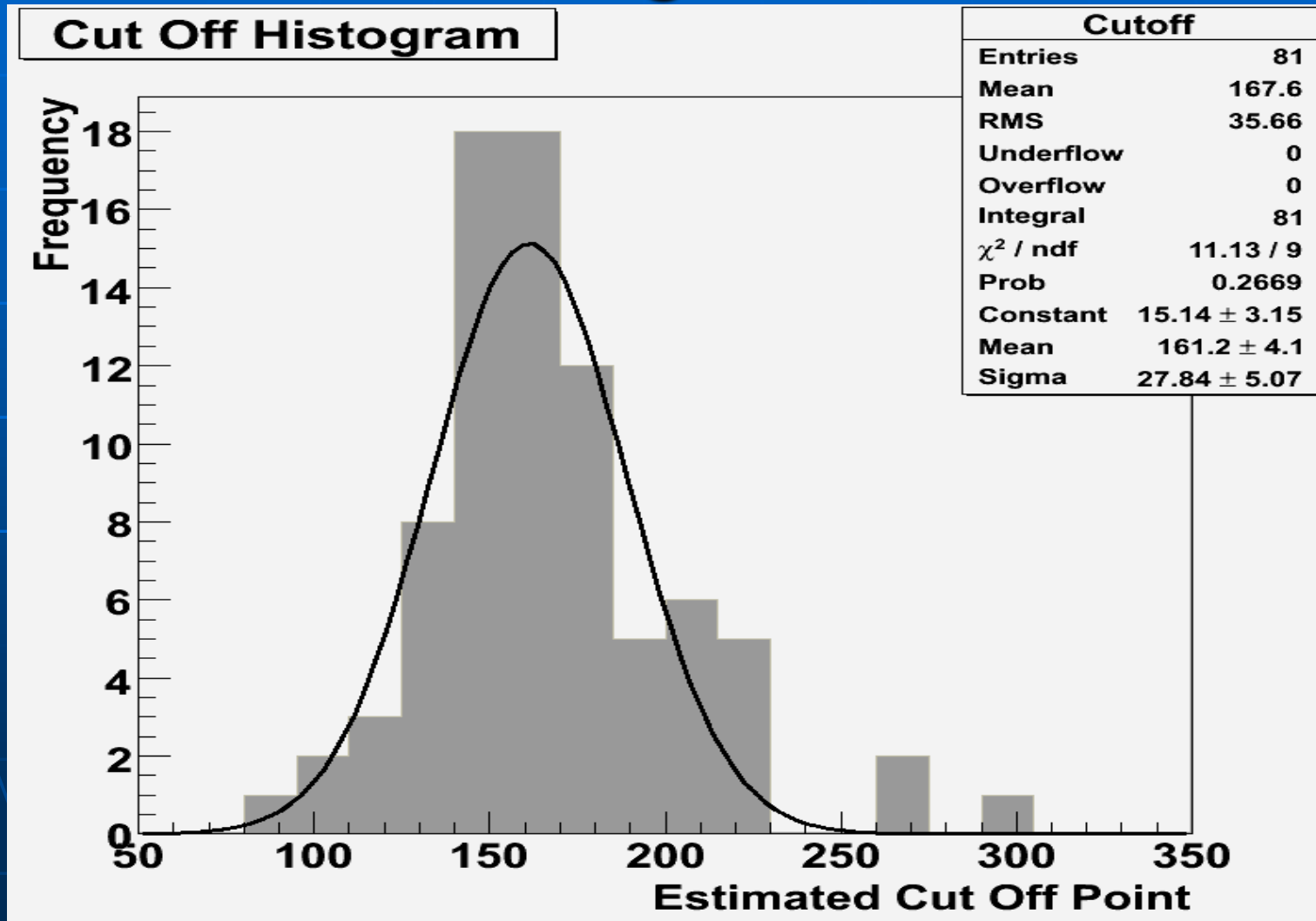


Pedestal Adjusted Histogram

- Gaussian Again Fitted By Eye.
- Histogram Does Not Include Saturated Pixels - 72 points.

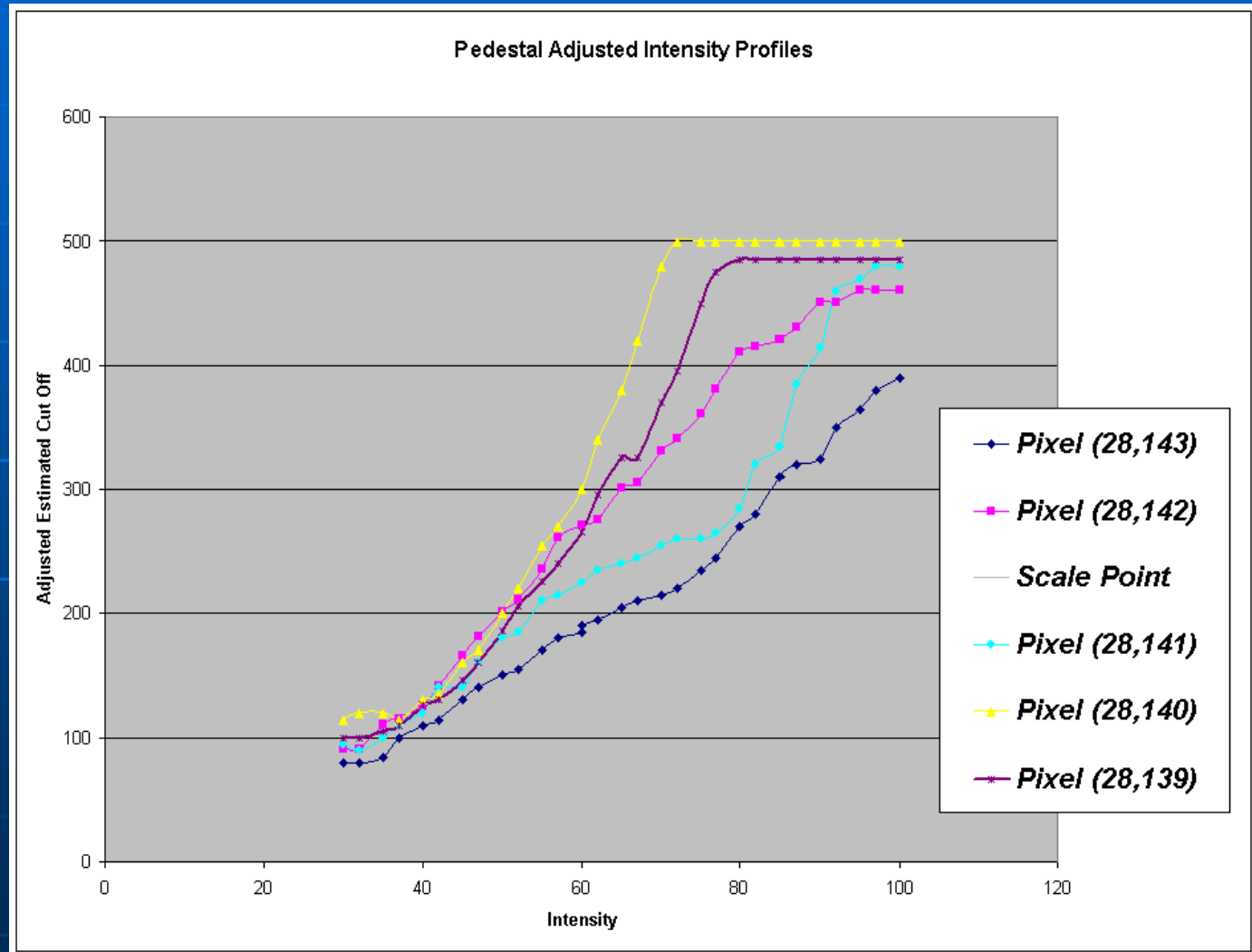


Pedestal Adjustment In Other Region



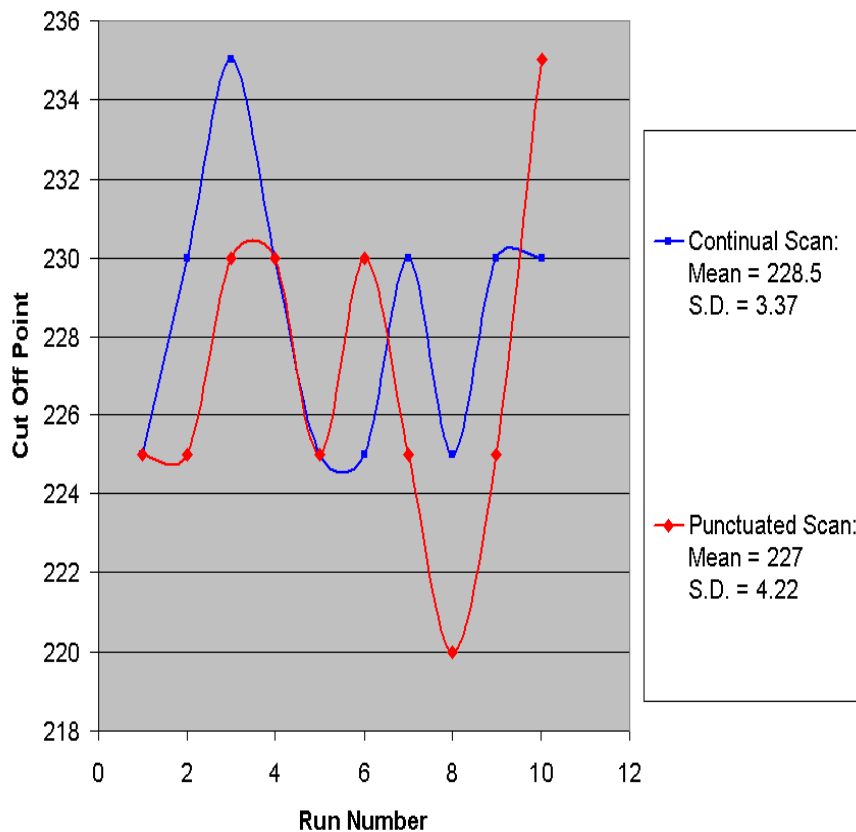
Intensity

- Automate Scans of Intensity For Several Pixels
- 30-100% Alternating Steps of 2% and 3%.
- Scanned between 0 and 500 units.

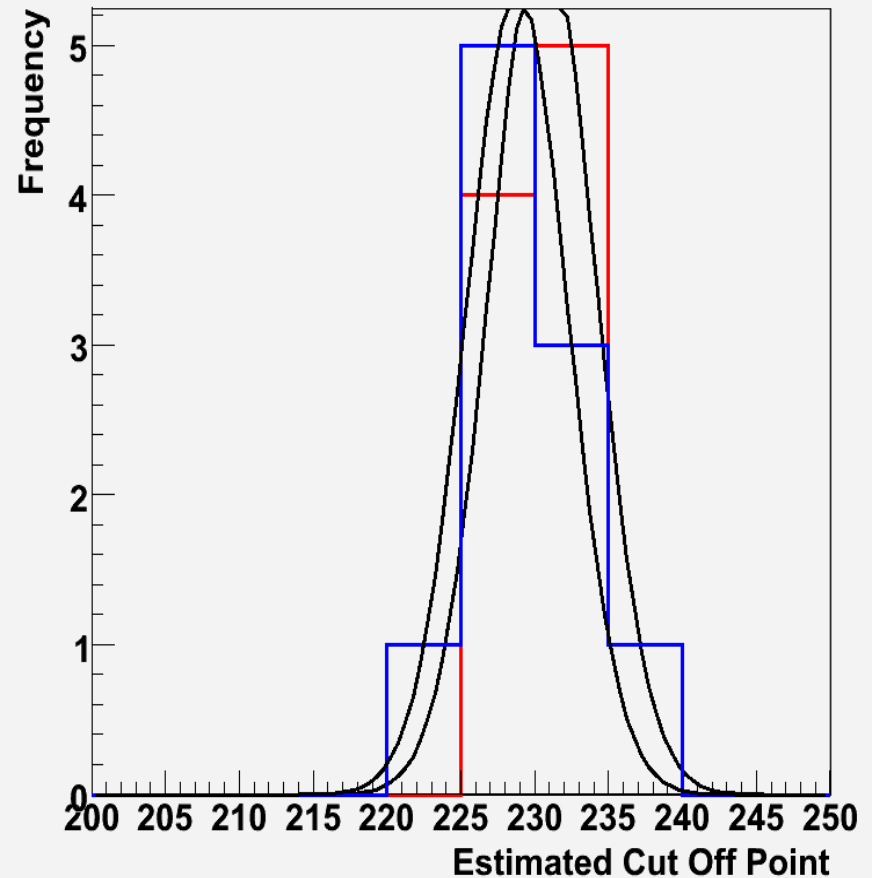


Does Turning Laser Off and On Make A Difference?

Comparison Of Continual and Punctuated Firing



Comparison of Continual and Punctuated Scans of Same Point

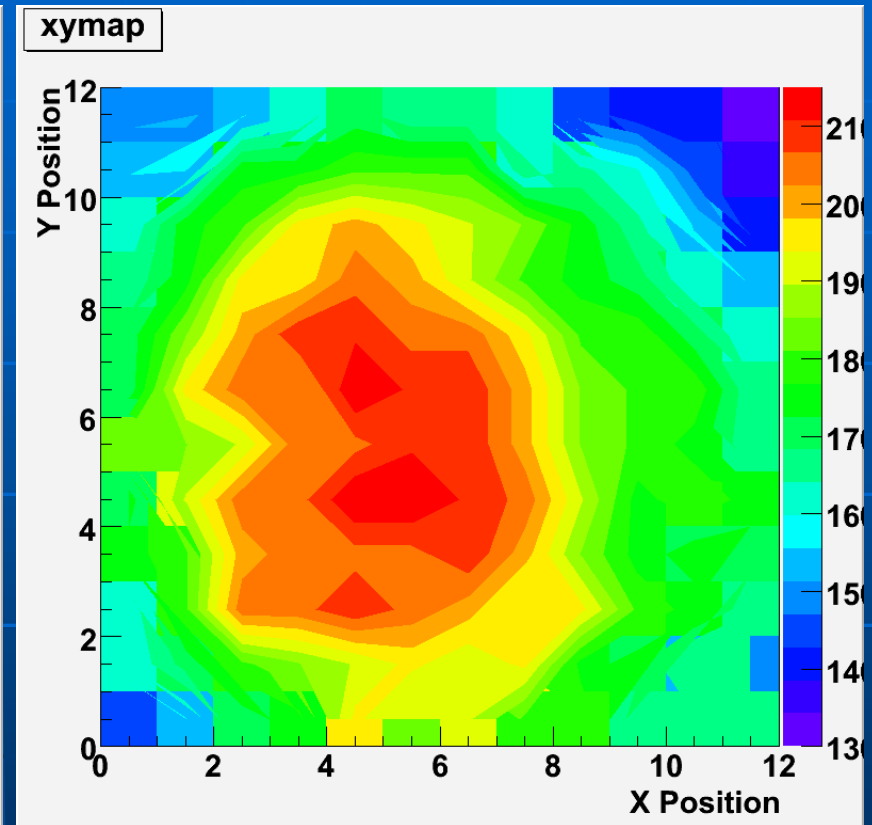
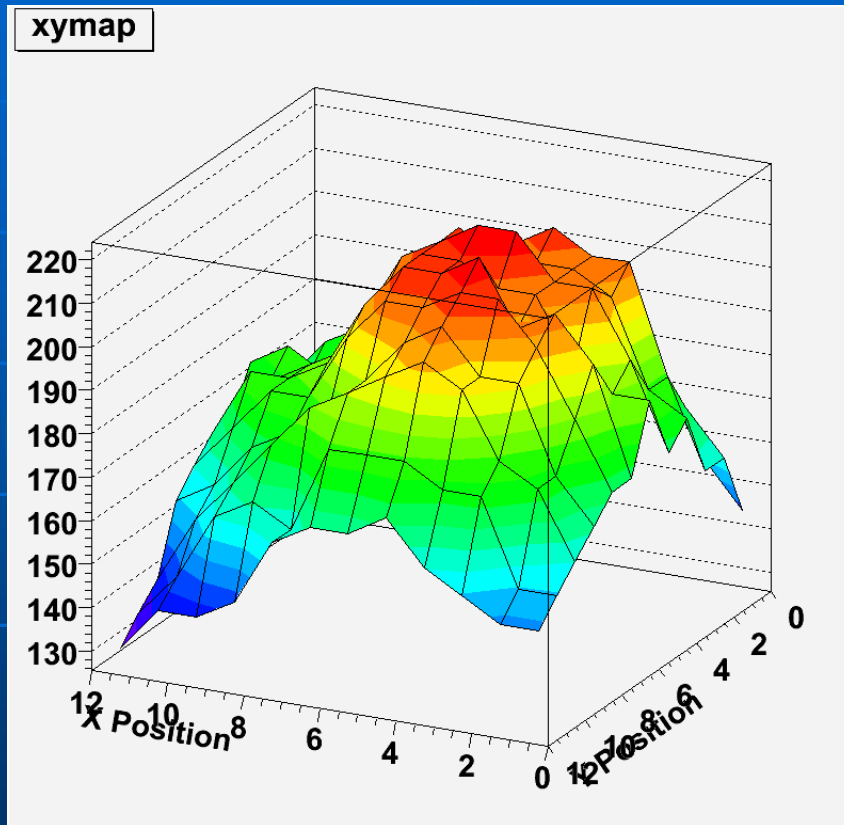


NO SIGNIFICANT DIFFERENCE

Alignment Data

- Scanned In Alternating 5 and 6 micron steps, over whole of Pixel (28,143).
- 2 x 2 Aperture
- 1 x 1 Mask over chosen pixel
- 60% Intensity
- (All other settings same as for Mask Scanning)
- Coordinates arbitrary to allow ROOT plots.

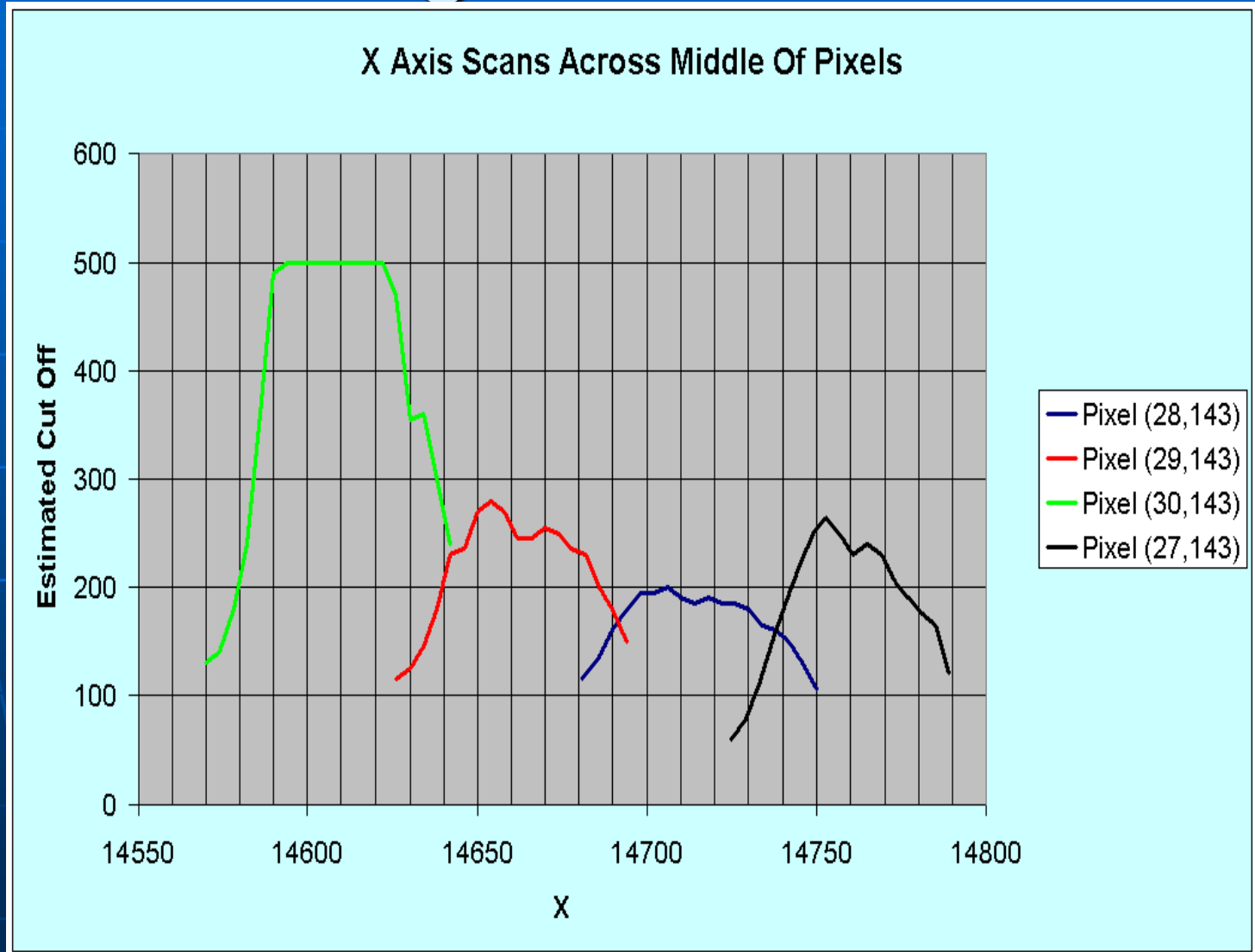
Alignment Plots



Looks As Though Laser Is Out of Focus!!!

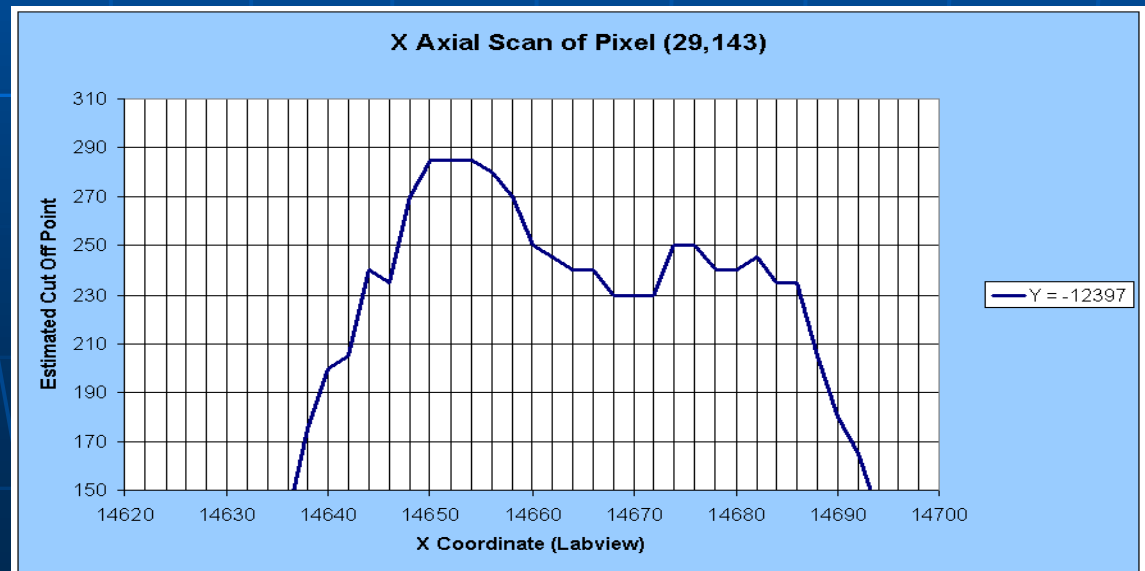
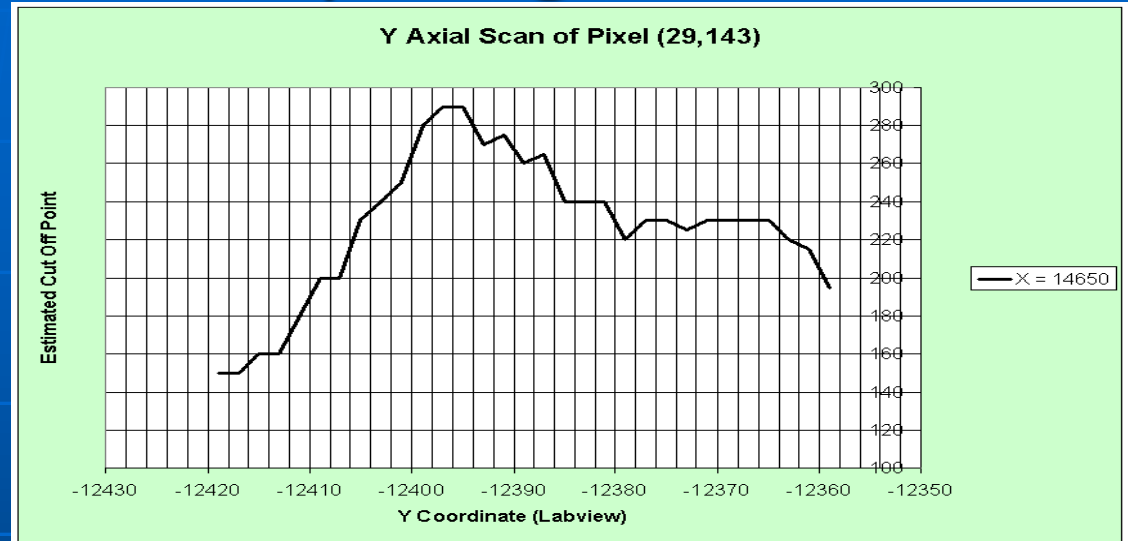
Focused Alignment Scans

- Scanned Along X Axis Through Centre of Four Pixels (Separate 1 x 1 Mask for each)
- 2 μ m steps.
- Pixel (29,143) best displayed twin peaks.



Pixel (29,143) Alignment

- Scanned along Y axis (through maximum point from earlier scan) to find Diode.
- Then along X axis, through maximum Point from Y Axis Scan.



END

More data is at SpiderWiki
<http://hepilc01.pp.rl.ac.uk/spiderwiki>