

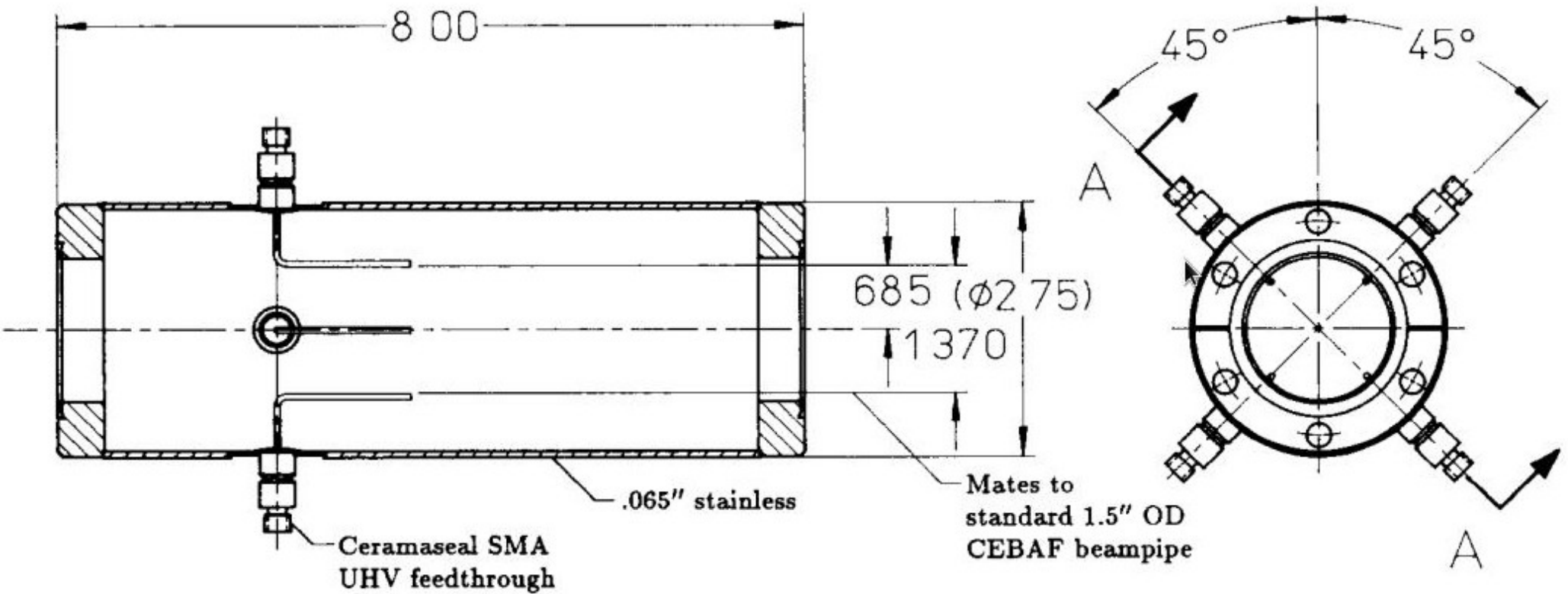
BPM Calibration



Outline

- Overview of the BPMs and the Harps
- Calibration procedure
- Results
- Current Issues
- Conclusion

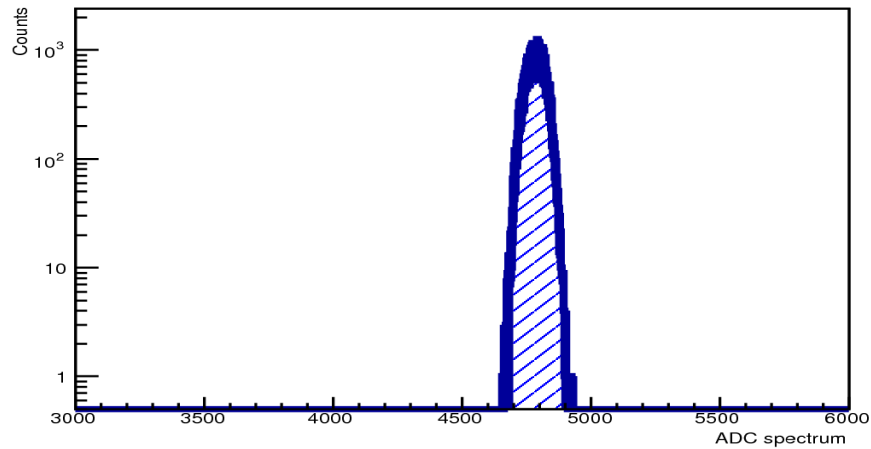
The BPM



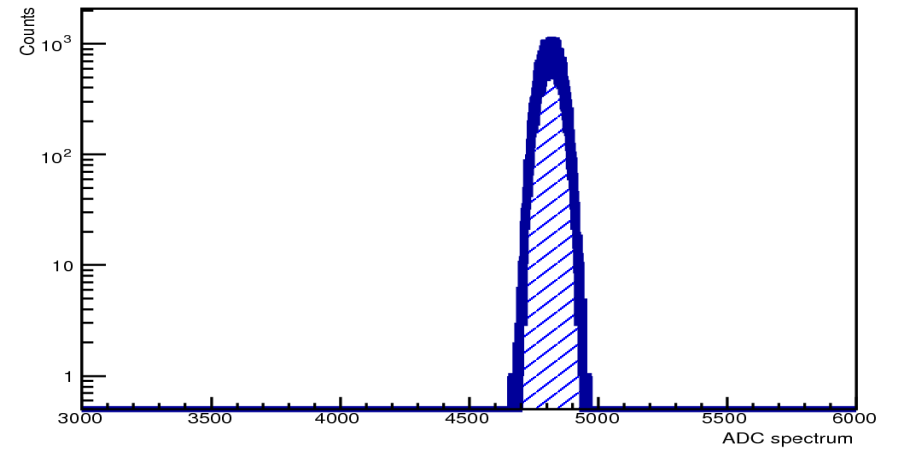
Open-circuited wireline BPM.

BPM Signal

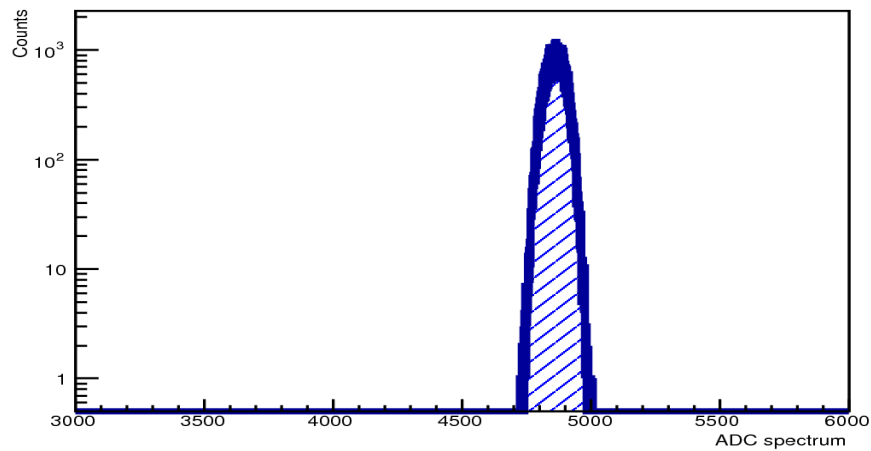
BPMA raw current signal wire 1.



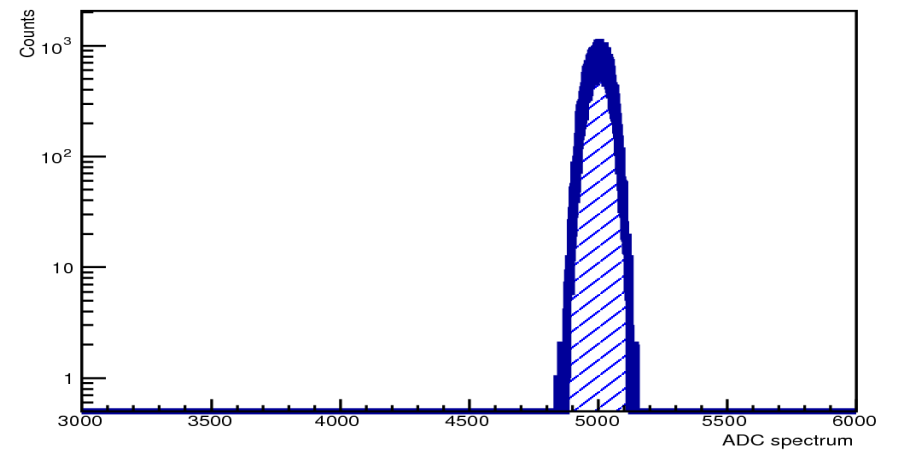
BPMA raw current signal wire 2.



BPMA raw current signal wire 3.

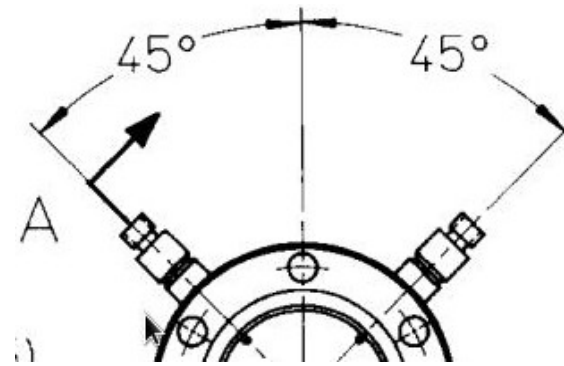


BPMA raw current signal wire 4.

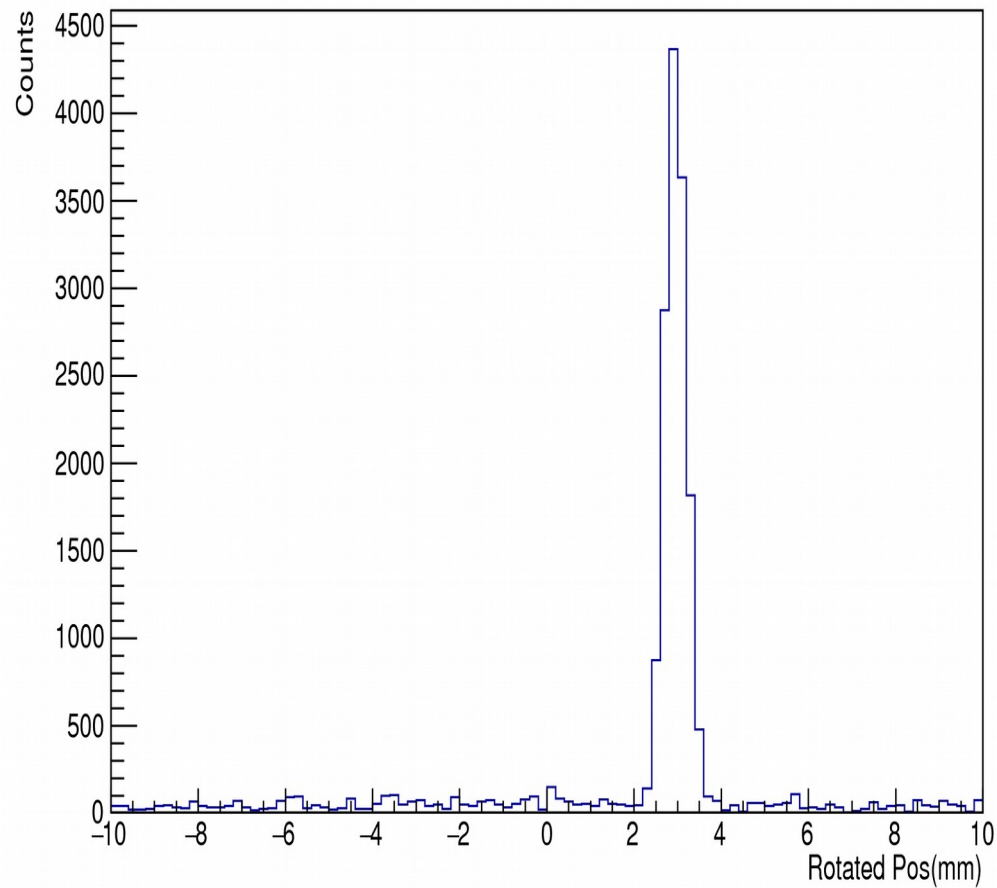


Raw Signals from the BPM wires

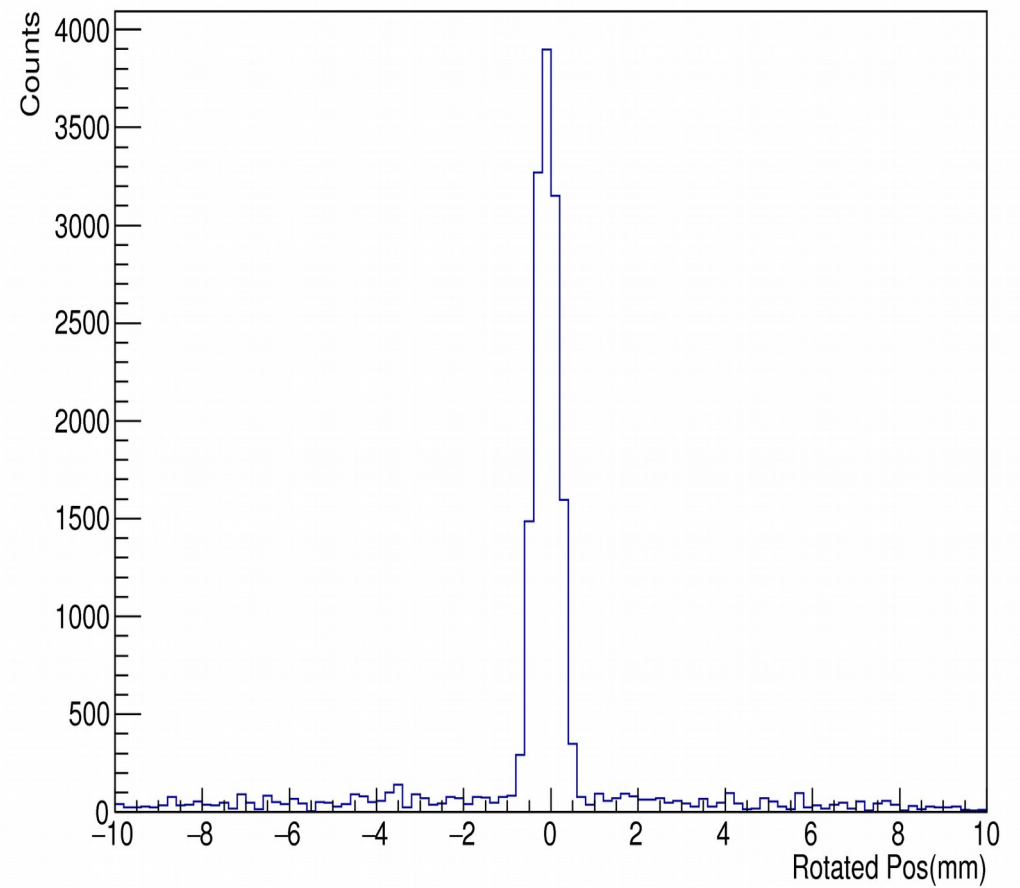
BPM Frame



BPMA X

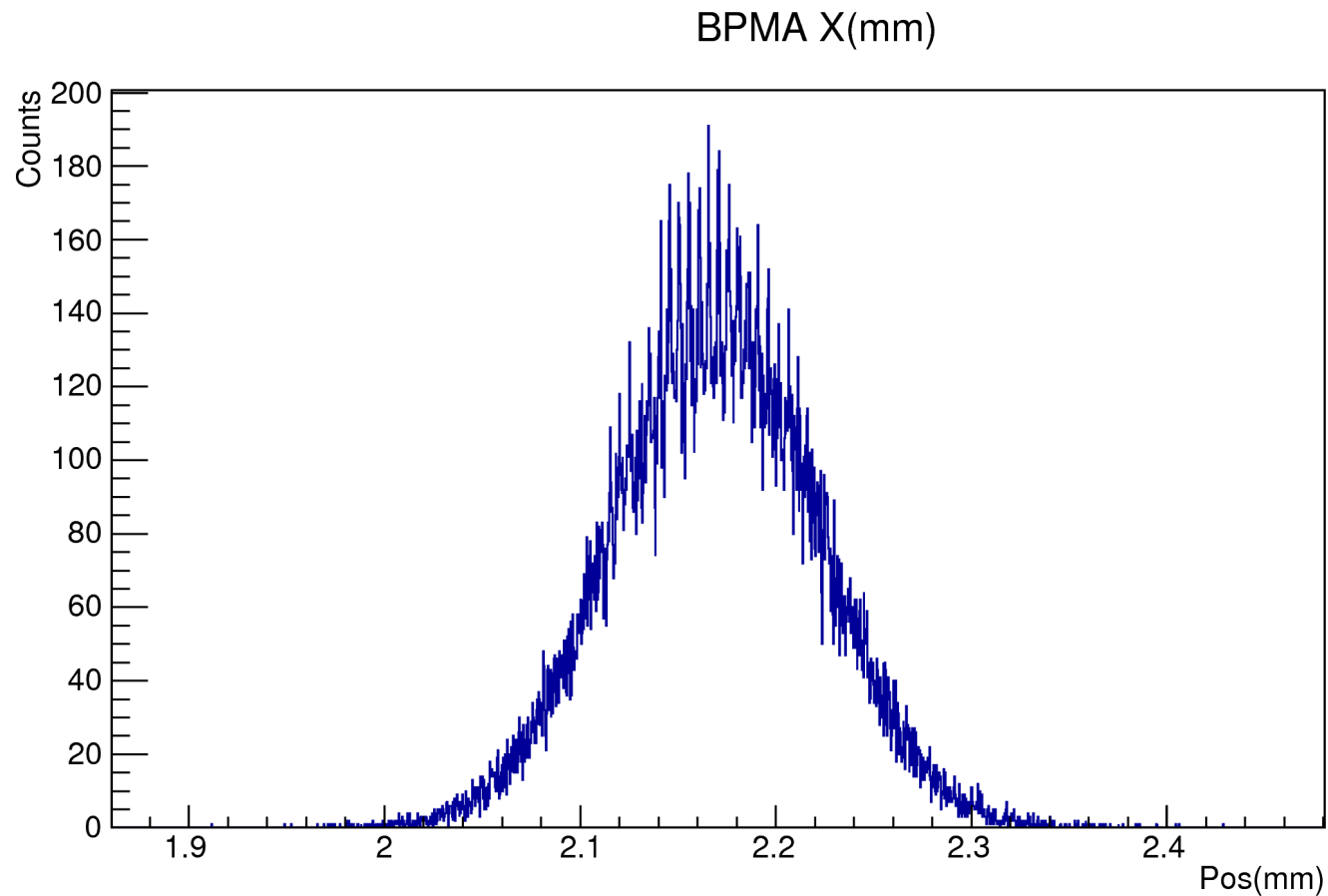


BPMA Y



Position at BPMA in the BPM's rotated frame.

Project Position



Use Calibration Matrix to rotate to the Hall A coordinates

How to Determine the Calibrations

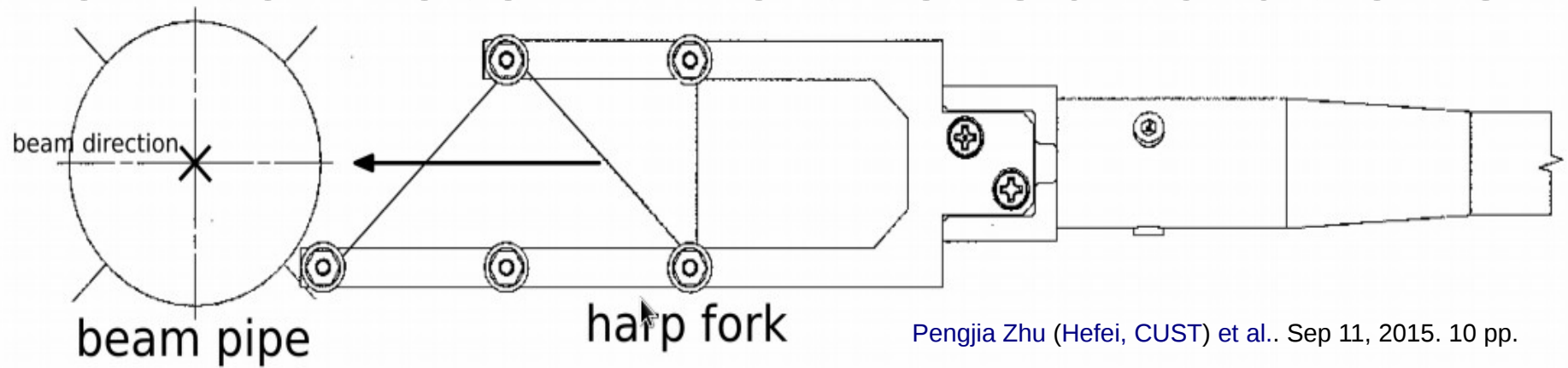
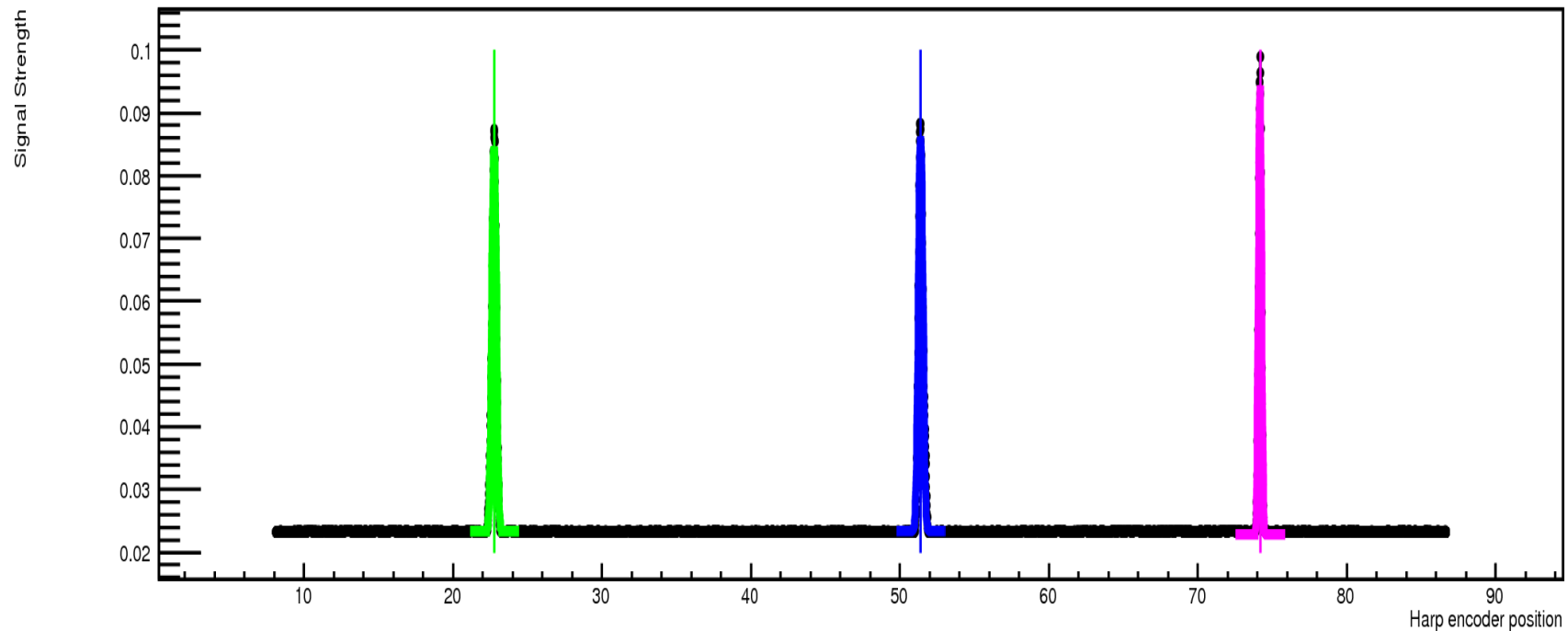
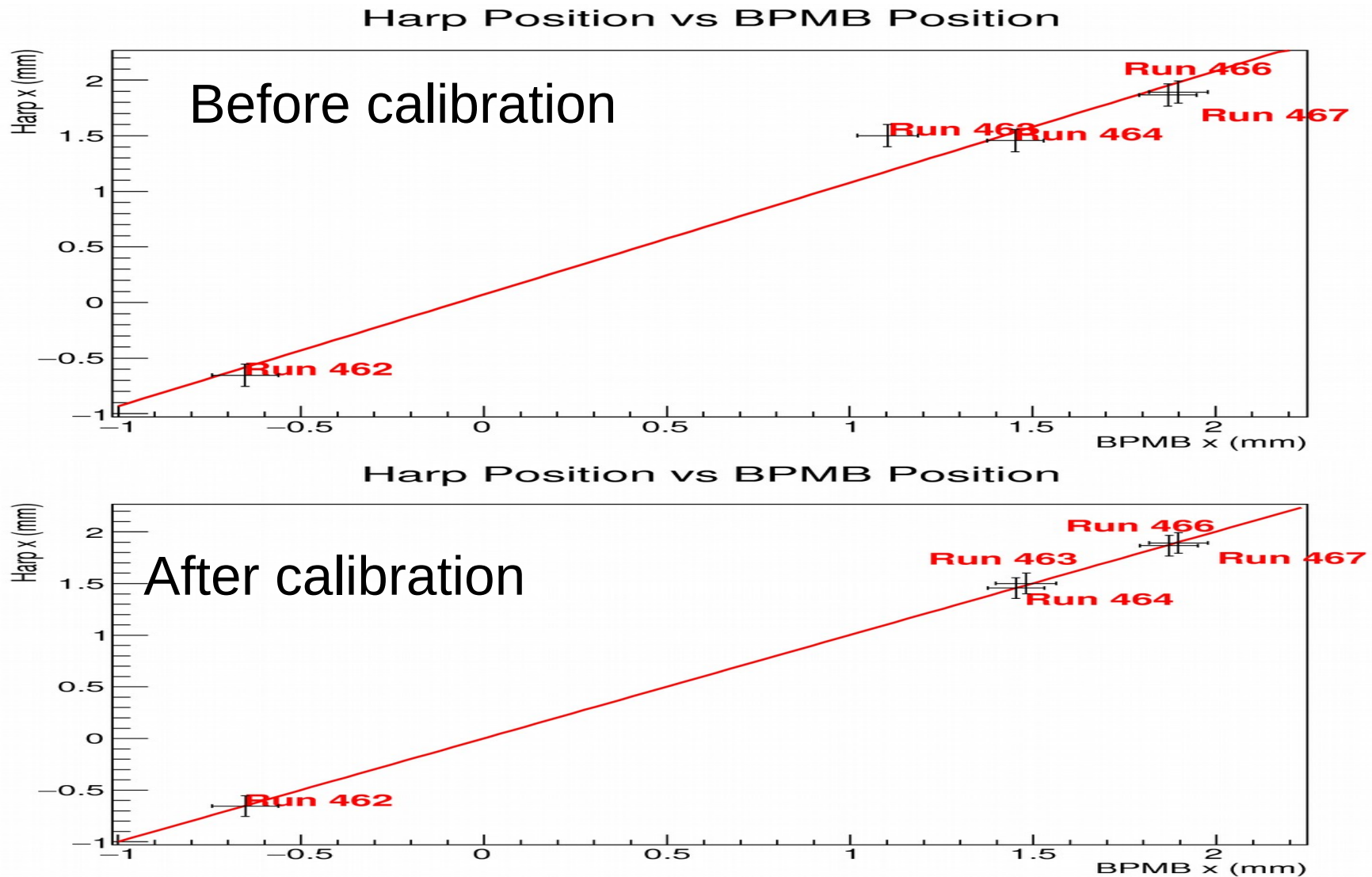


Figure 3: Harp diagram

Harp Scan

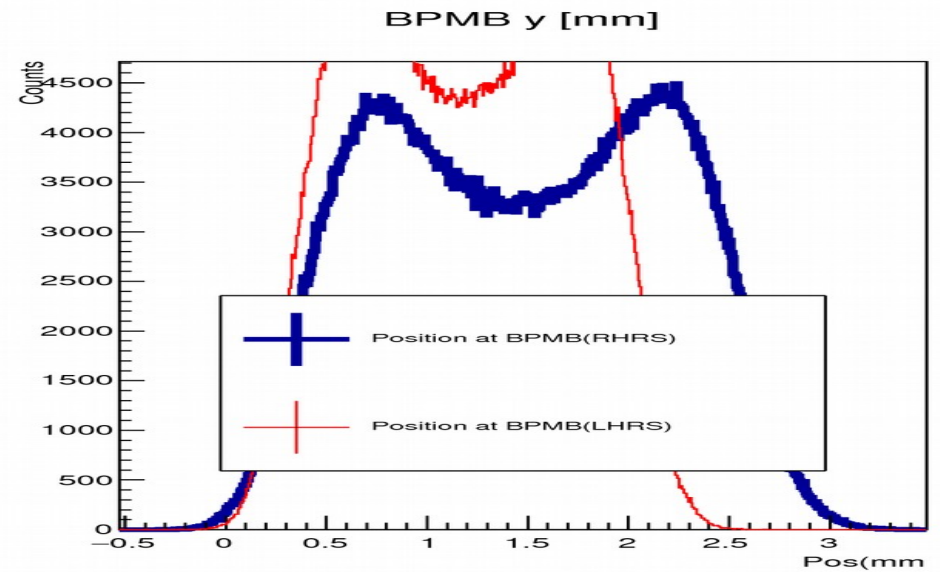
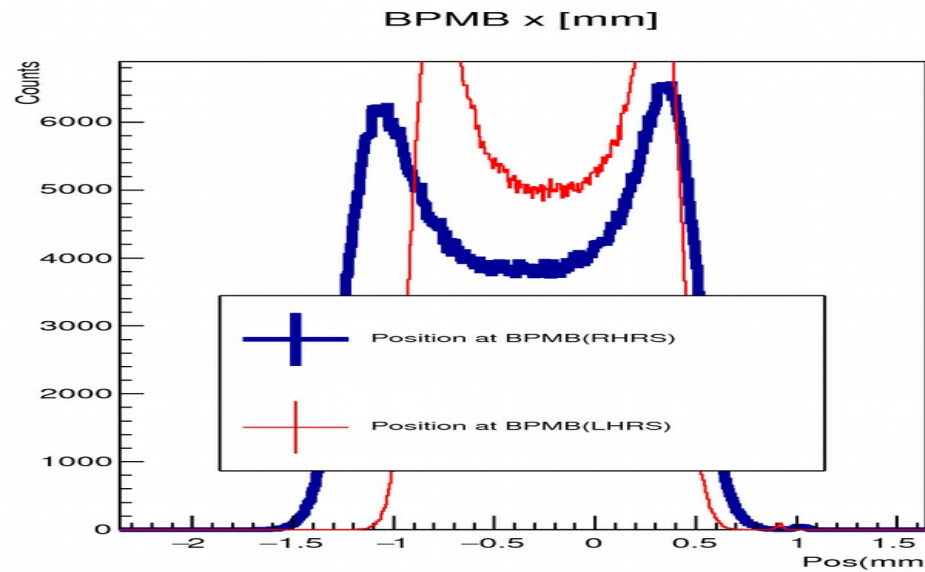


Before and After Calibration

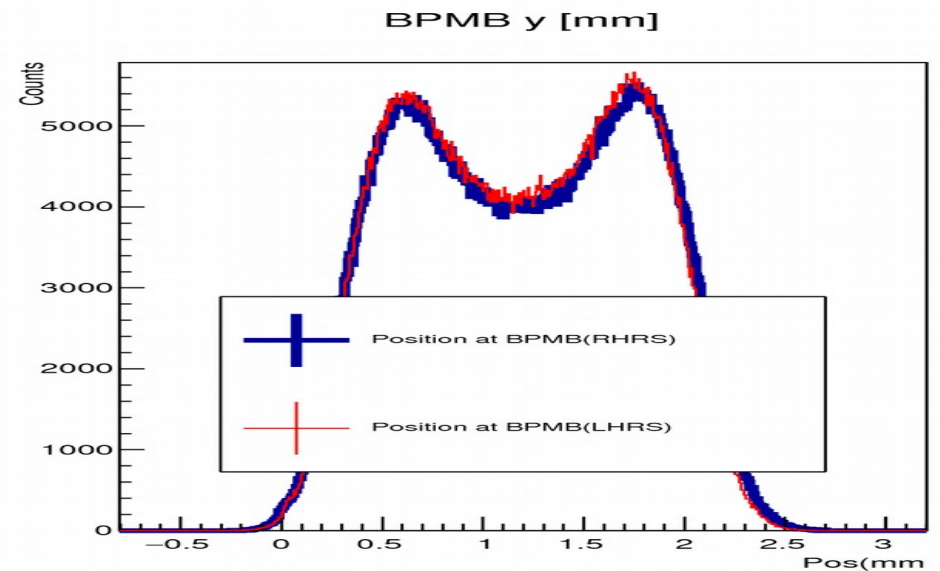
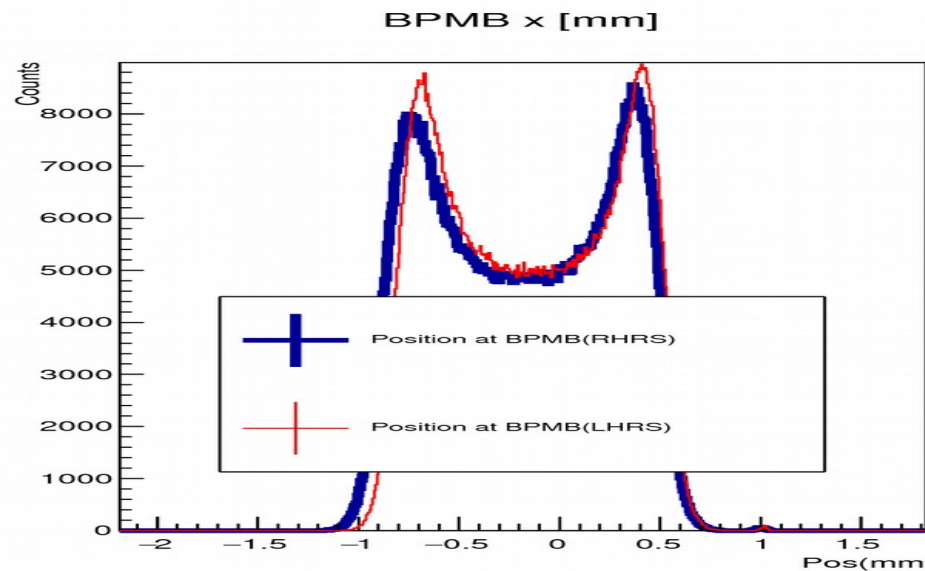


Before calibration

Results!

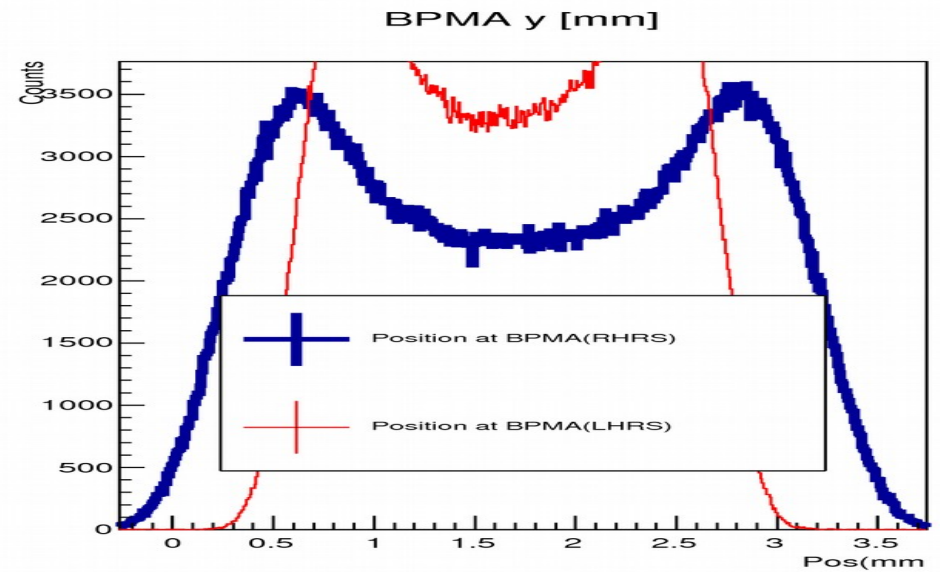
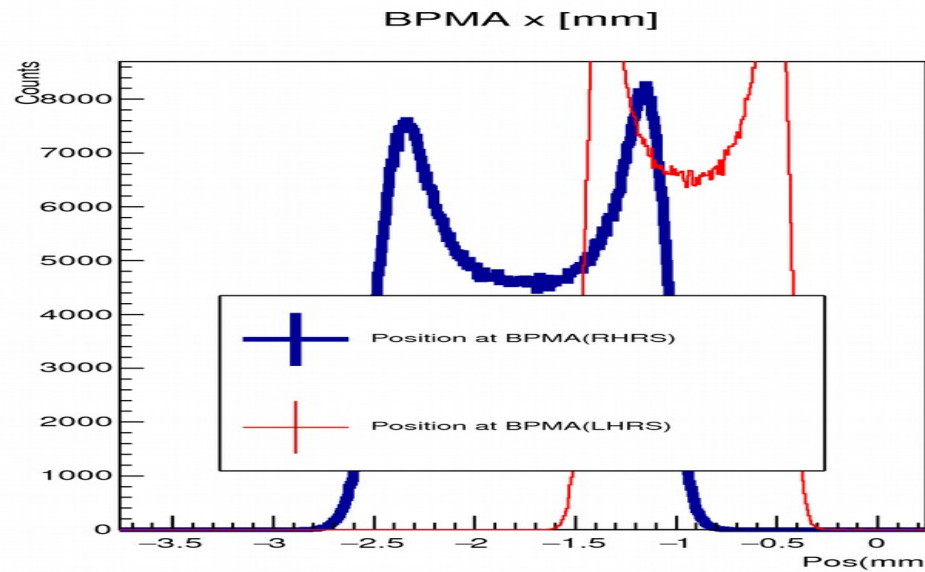


After calibration

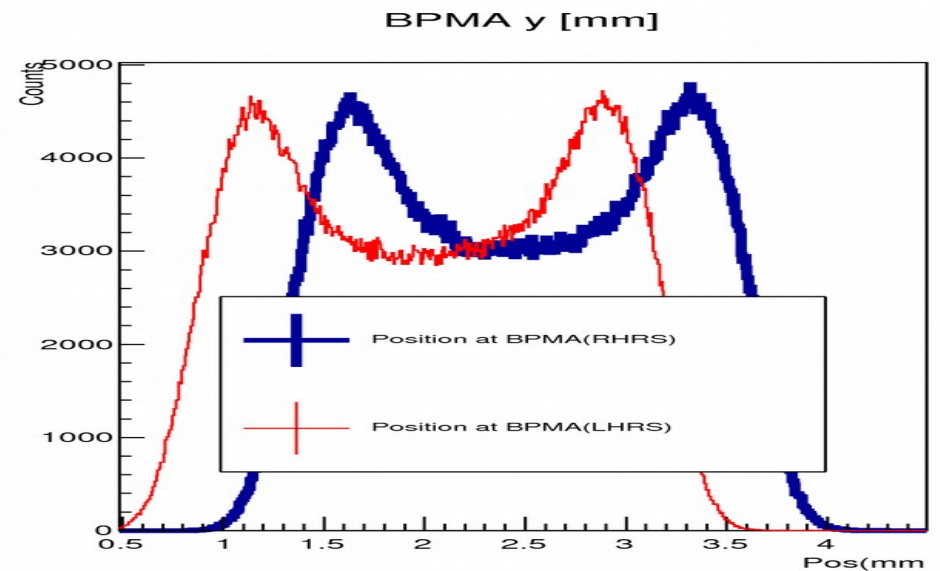
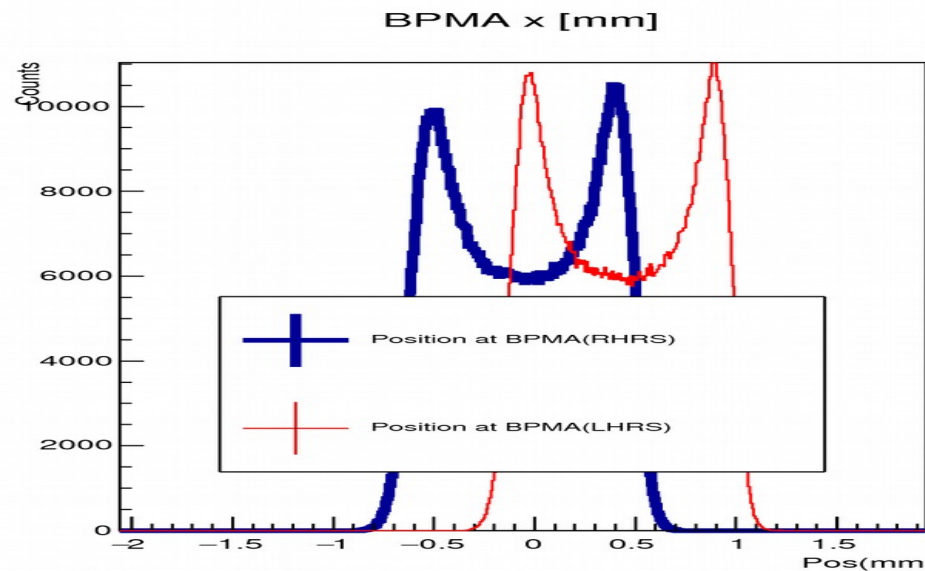


Before calibration

Results!

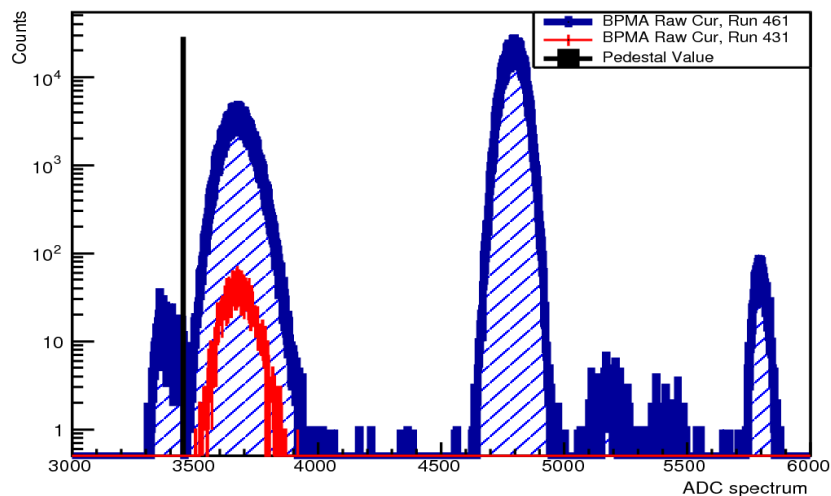


After calibration

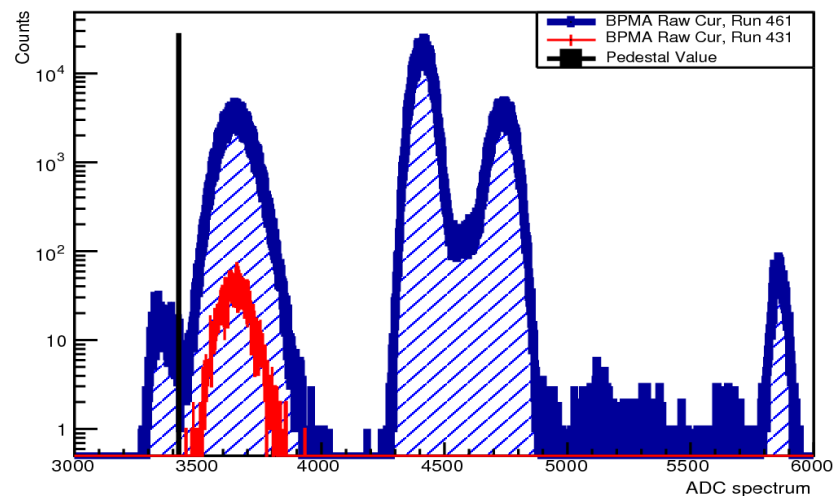


Issues!!

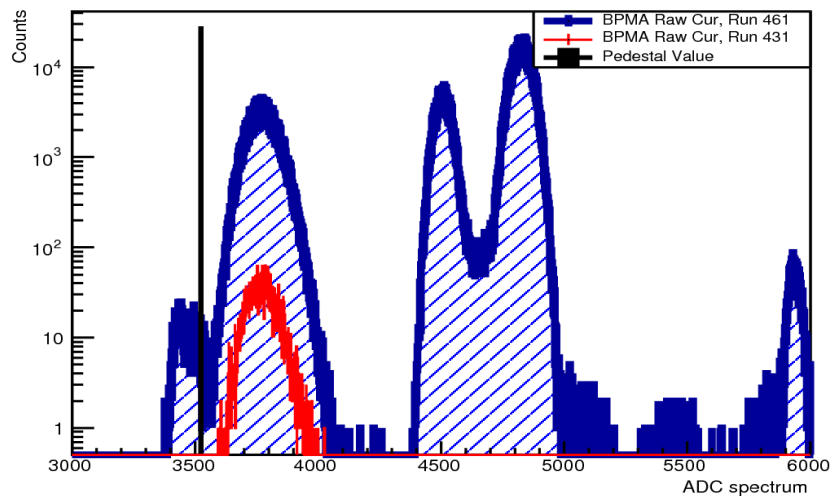
BPMA raw current signal wire 1.



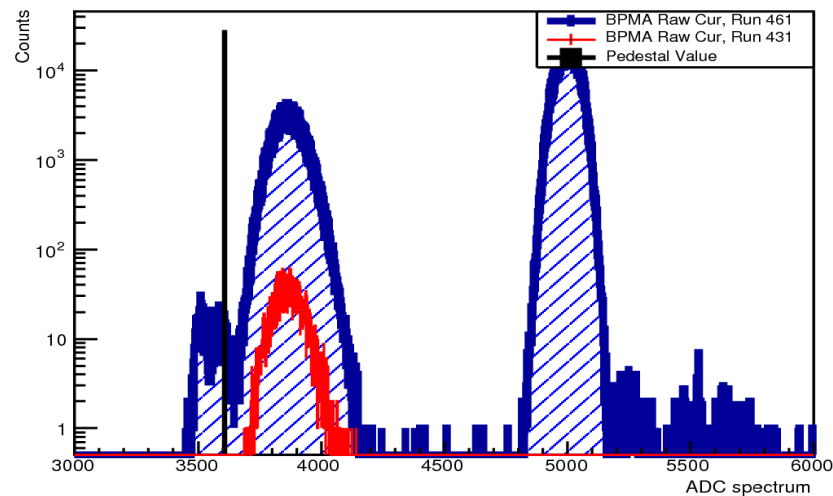
BPMA raw current signal wire 2.



BPMA raw current signal wire 3.



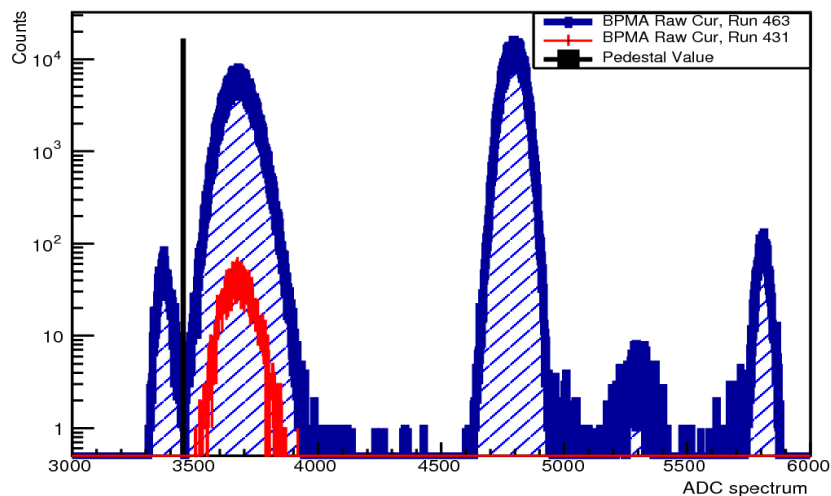
BPMA raw current signal wire 4.



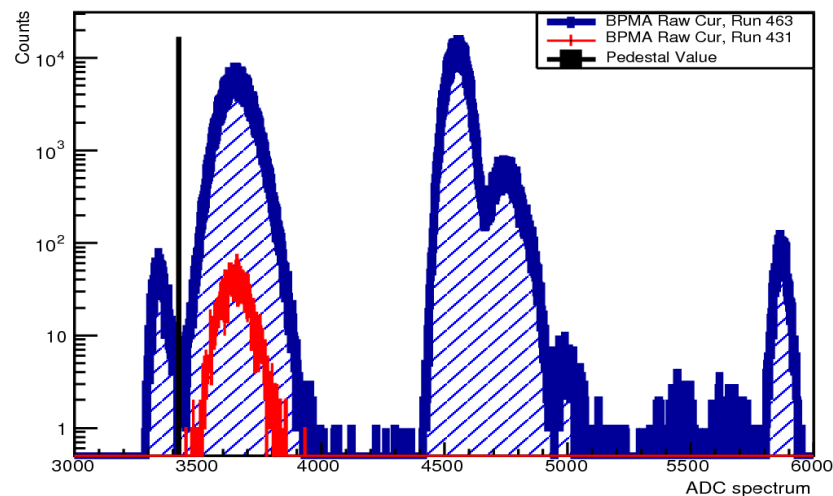
CODA runs Completed on Feb. 23rd during the Harp Scans

Issues!!

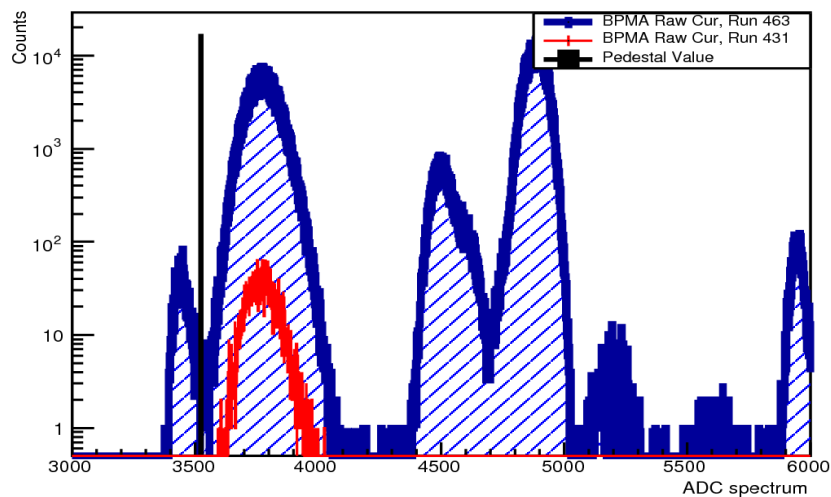
BPMA raw current signal wire 1.



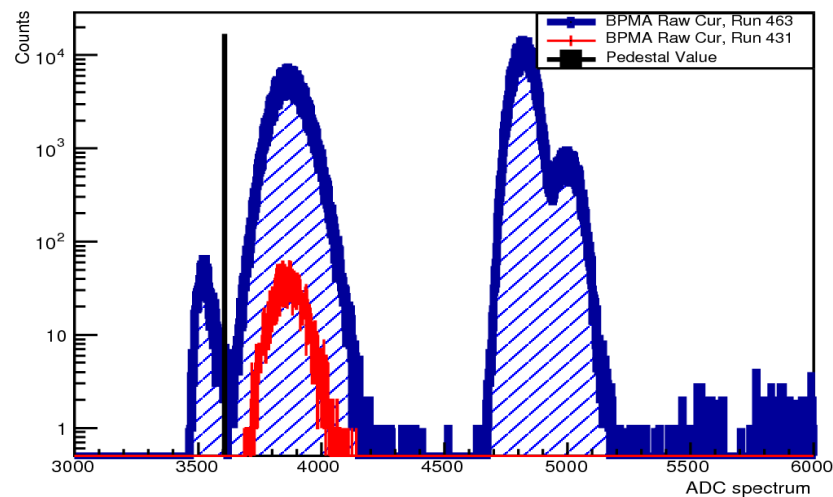
BPMA raw current signal wire 2.



BPMA raw current signal wire 3.

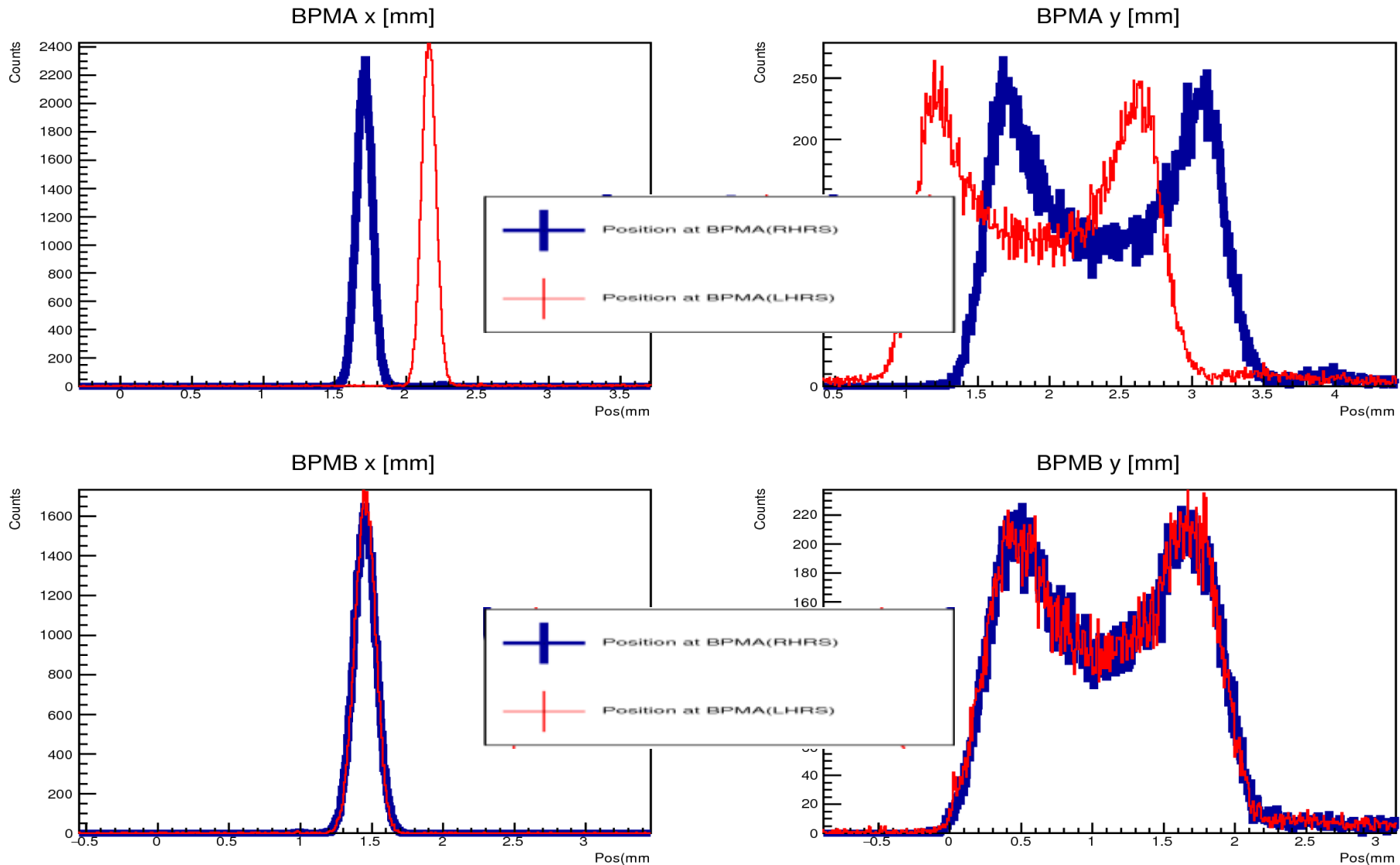


BPMA raw current signal wire 4.



CODA runs Completed on Feb. 23rd during the Harp Scans

Issues!!



BPM positions from the Harp Scans
The Raster is recorded as off during this Run.

Burn Marks on Target



Conclusion

- BPM calibrations were completed for Argon
- Harp scans and BPM pedestal runs in late February
- There was some weird issues with the beam during the harp scans which cause inconsistent results for calibration.
- Due to the ADC gate changes through out experiment:
 - These calibrations are not accurate for entire run
- However Beam was on target and reconstruction from the HRS will provide accurate event by event Beam position on Target!