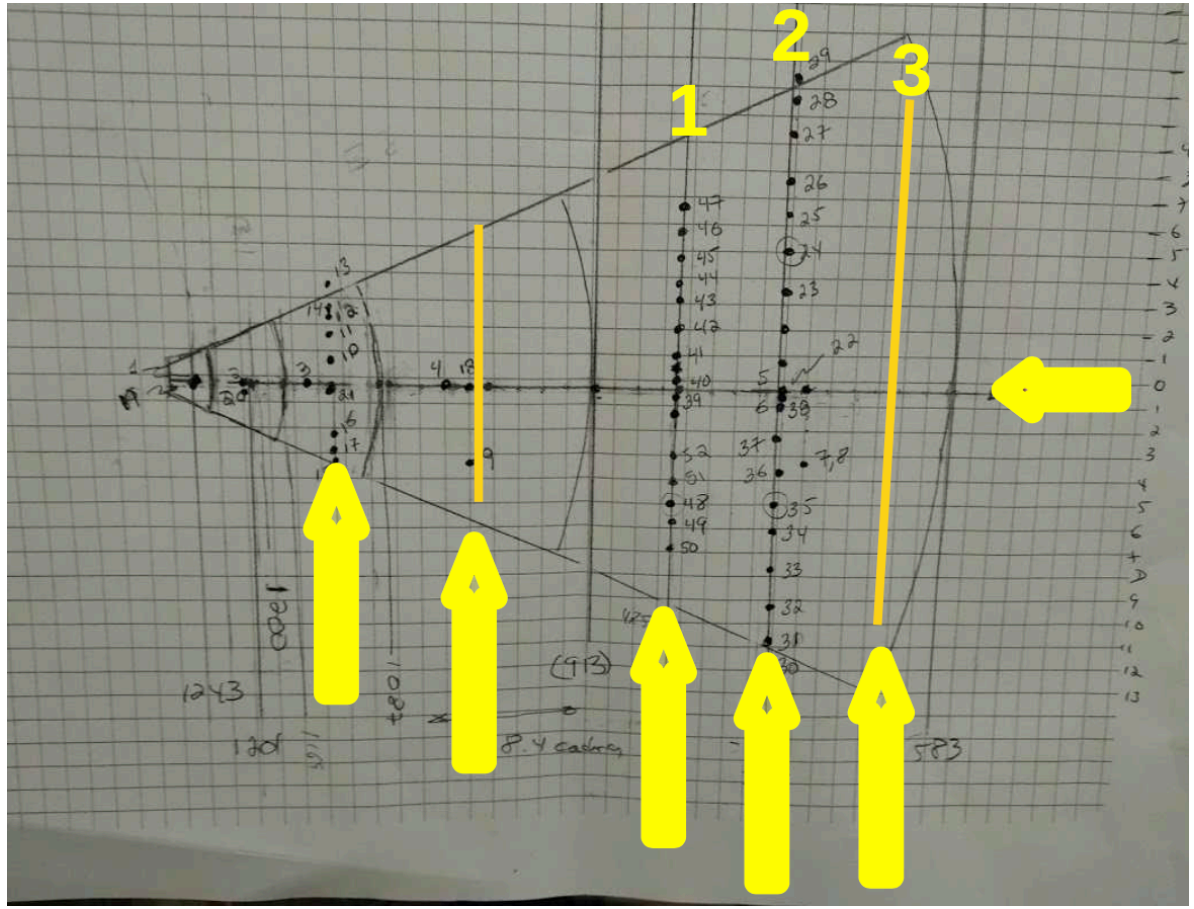
FV0 test-beam preliminary results and amplitude parametrisation of ring 5

Arvind Khuntia

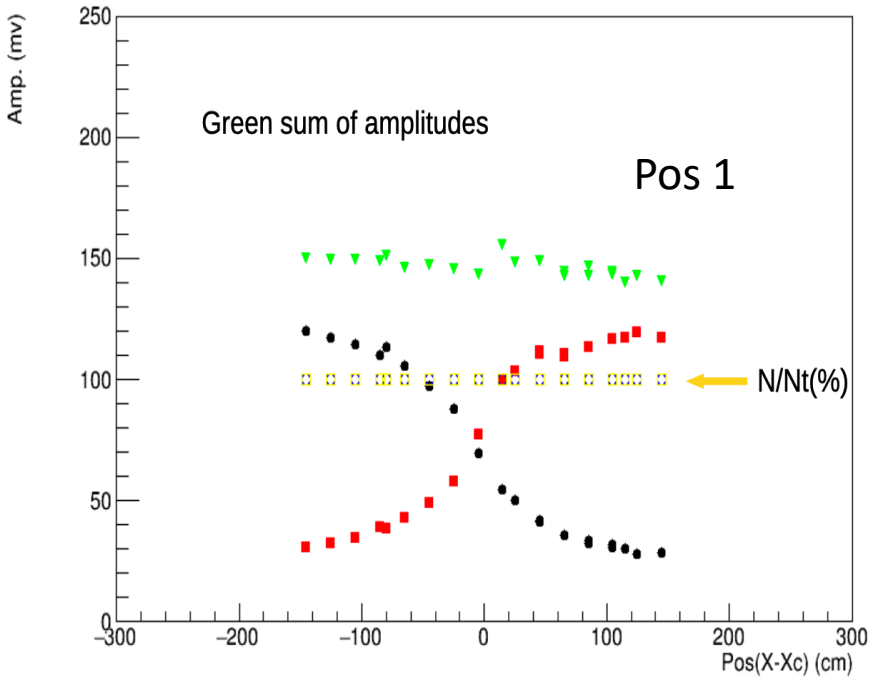
Data taking from 20/09/18

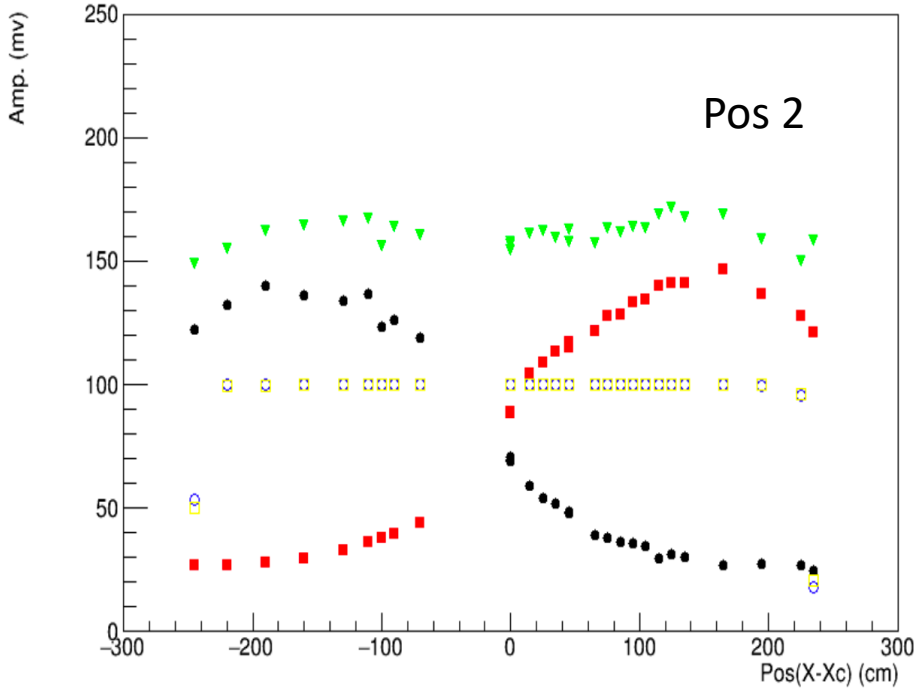
Experimental setup

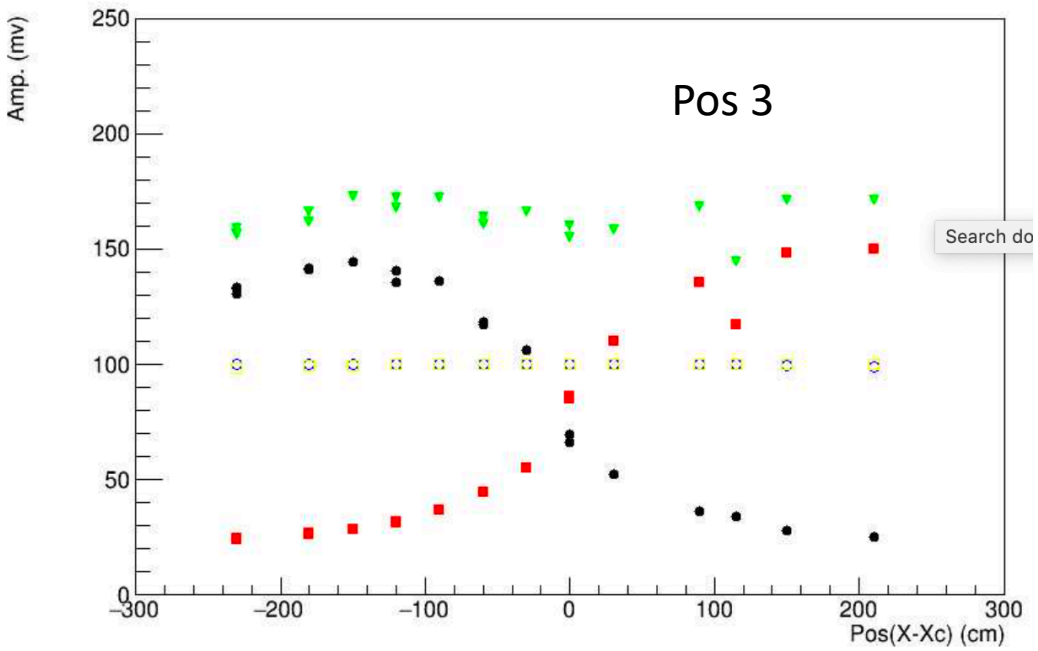
Measured data points



Ring 5 has three sets of vertical measured points: Pos (1), Pos (2) and Pos (3)

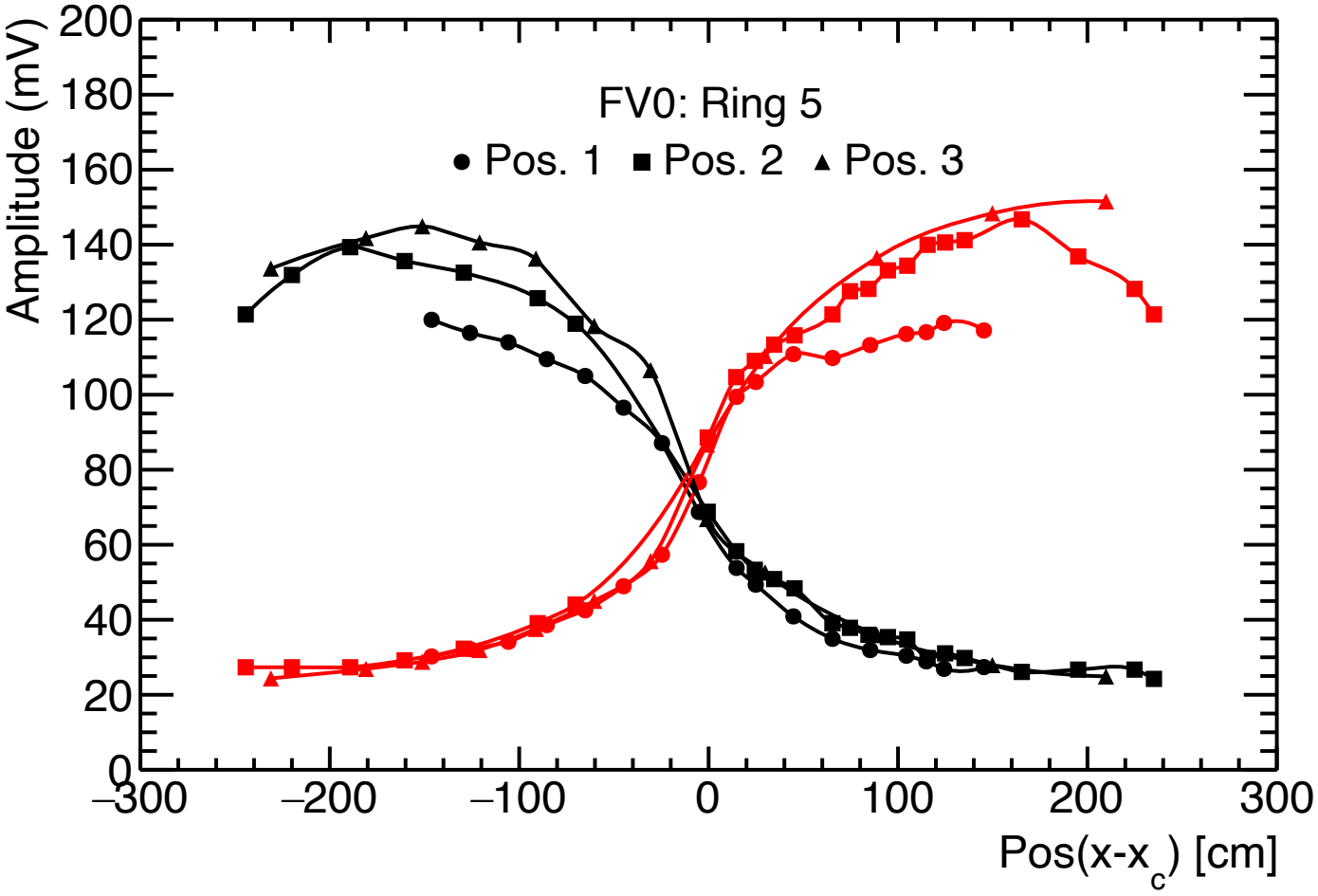




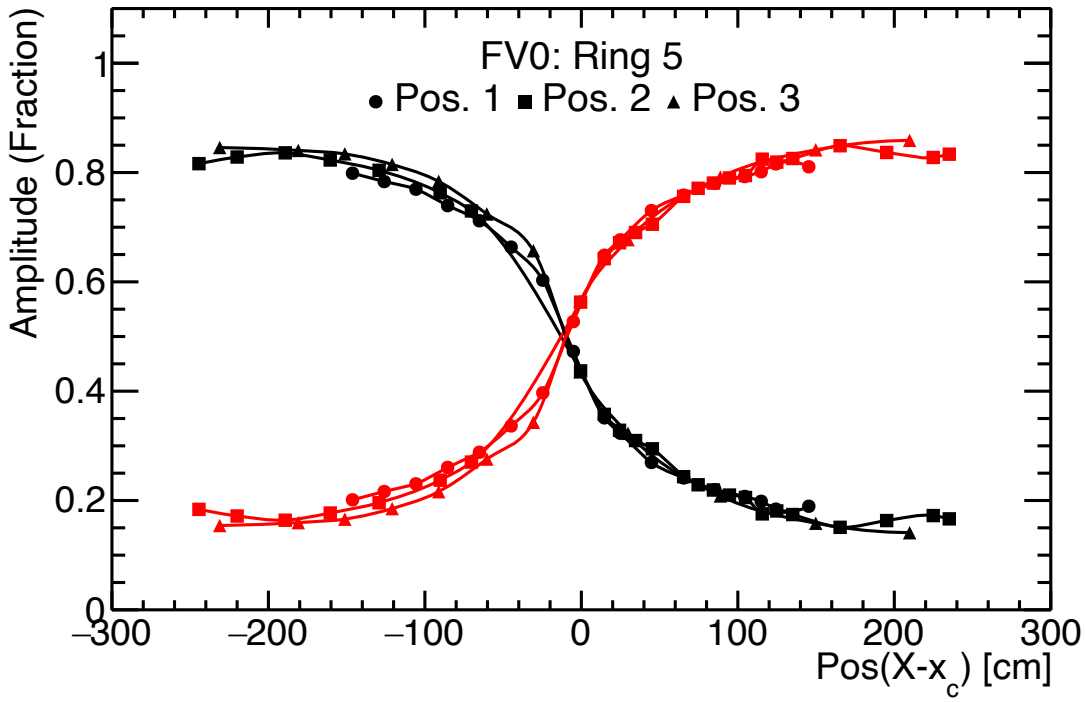


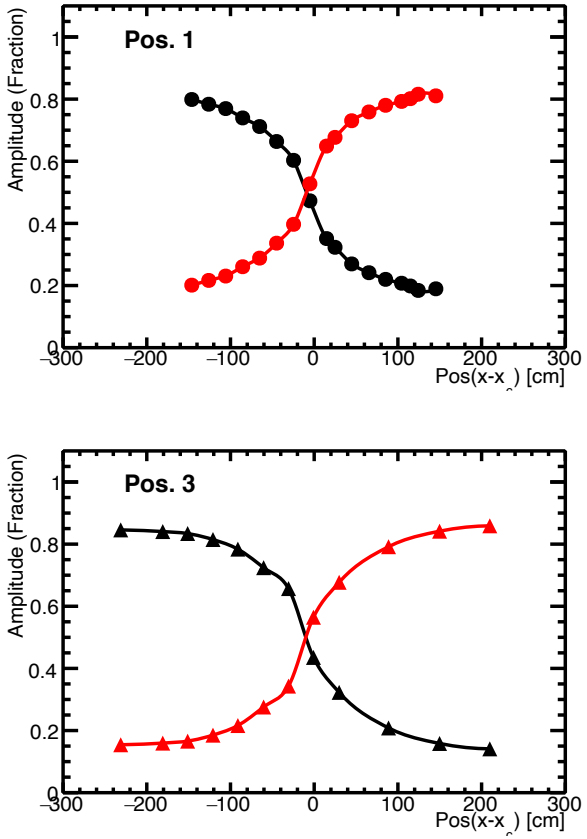
- Amplitude Vs Scanned position
- These values can be used to split the amplitude for ring 5 in the digitizer

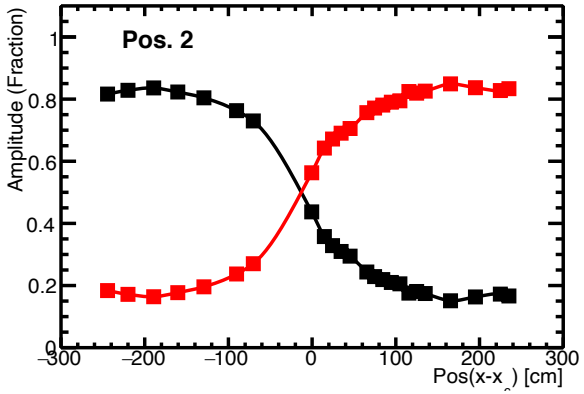
Comparison of amplitudes in different positions



Normalized amplitudes in different positions



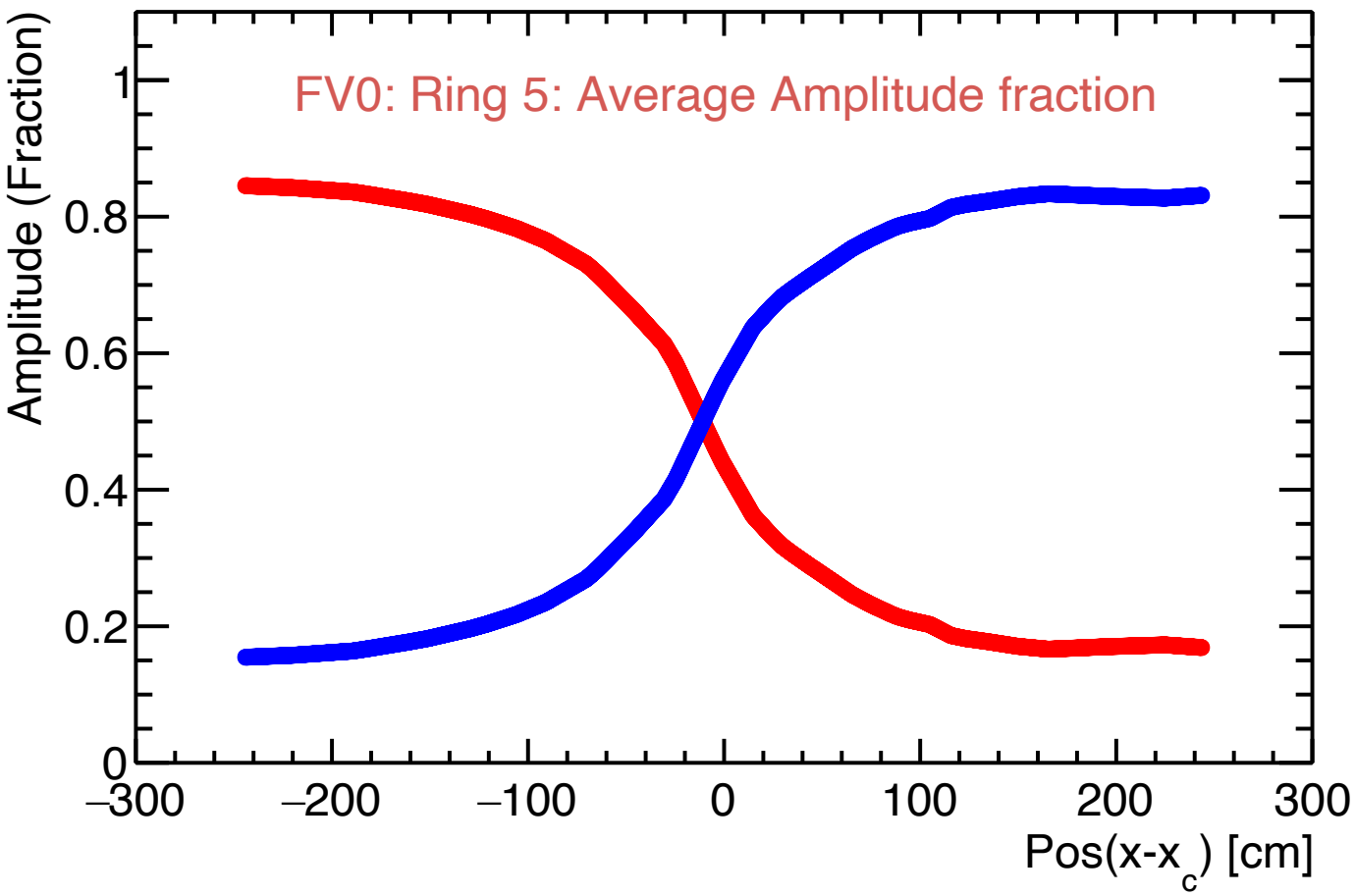




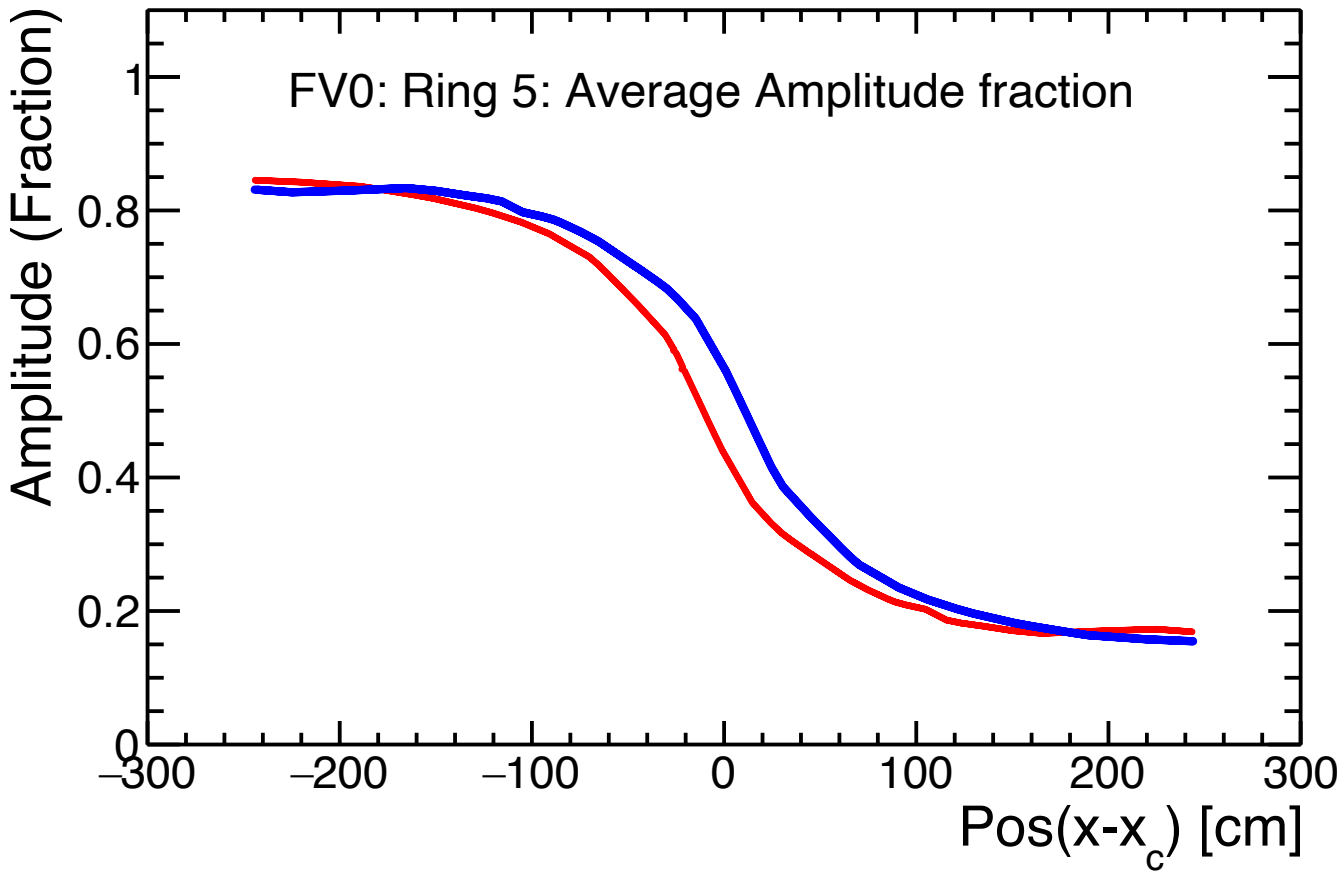
FV0: Ring 5

Pos. 1 Pos. 2 Pos. 3

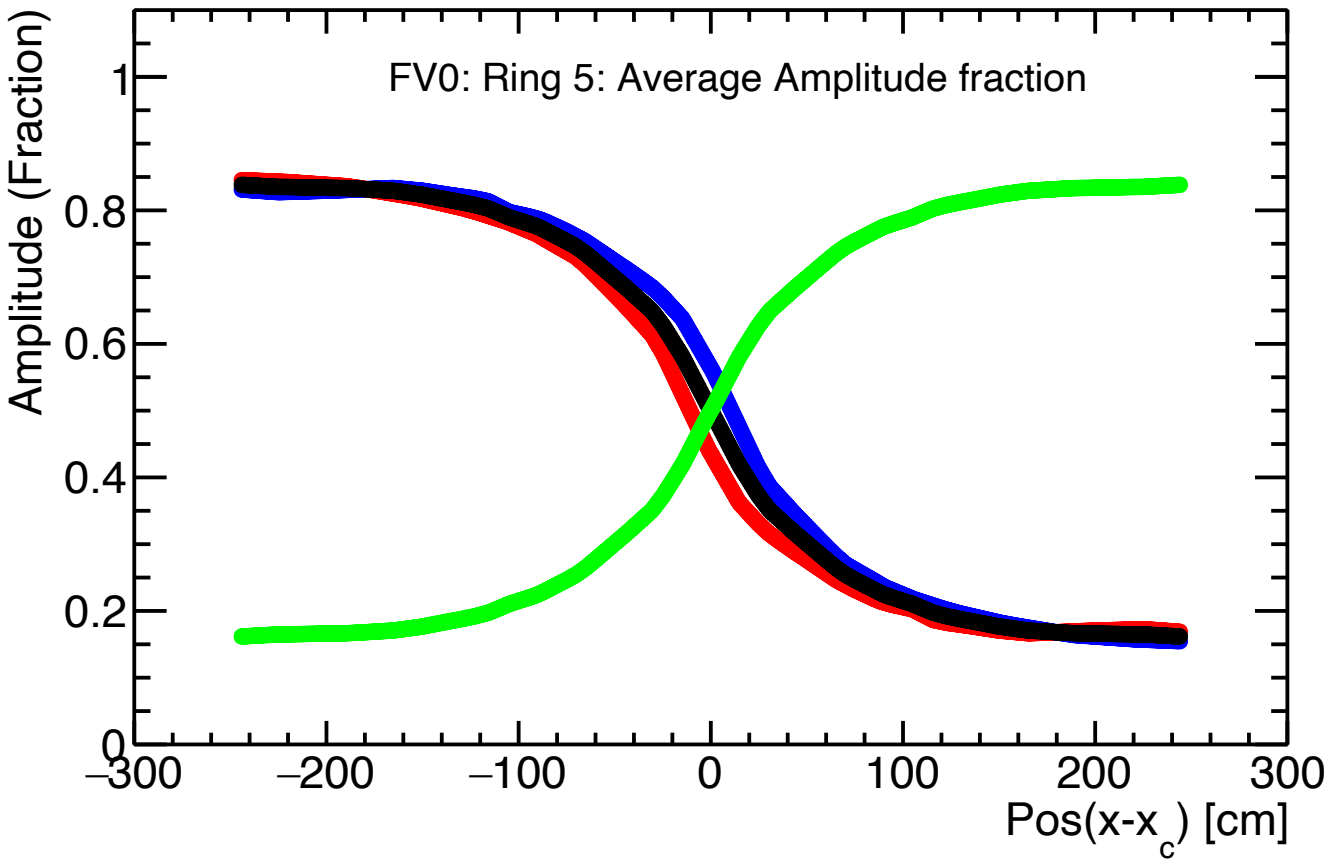
Normalized averaged amplitudes Vs Pos(x-xc)



Avg values of the amplitude fraction in 3 positions using the TGraph::Eval() function

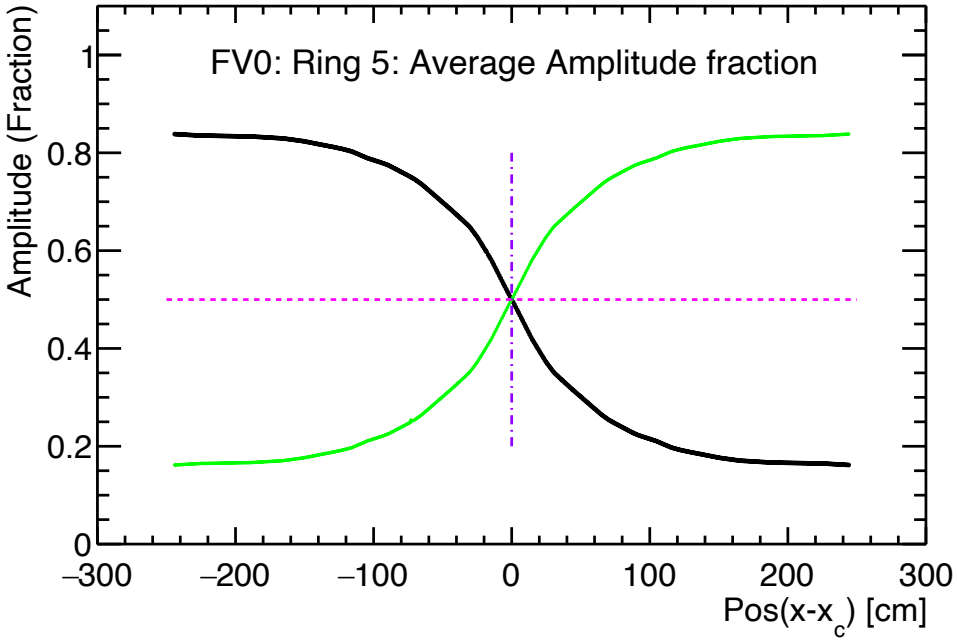


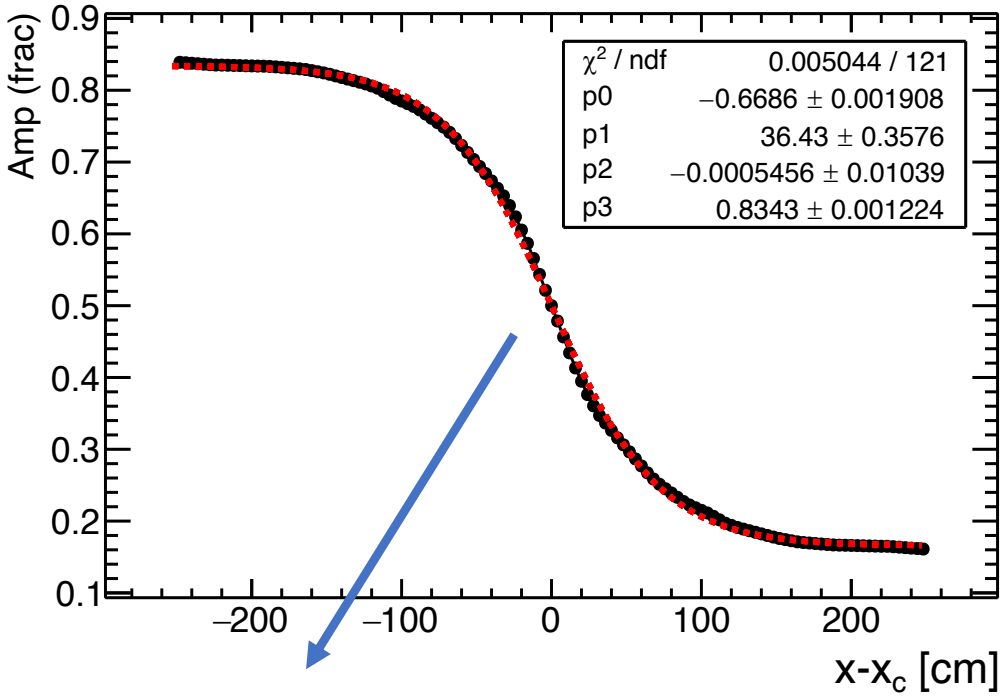
Comparison of both the amplitude



- Black marker is the average of the red and blue line and green is the mirror image of the black line.
- The average one crosses the exactly around (x-xc)=0.

Final amplitude gain which will be used for the splitting of the amplitude in the fifth ring





Fitting with the modified Sigmoid function given by Maciej

$$f(x) = \frac{A}{1 + e^{\frac{-x}{B-C}}} + D$$

Digits→ Raw

. Using the RawFileWriter common framework for RDH

. The output of raw-file-check looks ok

```
[INFO] Lnk0   |  Link FLP/RAWDATA/0x00000000 FEE:0x0000 CRU:   0 Lnk:  0 EP:0 | SPages:   1 Pages:   512 TFs:     1 with    256 HBF in  256 blocks (0 err)
[INFO] Lnk1   |  Link FLP/RAWDATA/0x02040102 FEE:0x0001 CRU:   1 Lnk:  1 EP:0 | SPages:   1 Pages:   512 TFs:     1 with    256 HBF in  256 blocks (0 err)
[INFO] Lnk2   |  Link FLP/RAWDATA/0x04080204 FEE:0x0002 CRU:   2 Lnk:  2 EP:0 | SPages:   1 Pages:   512 TFs:     1 with    256 HBF in  256 blocks (0 err)
[INFO] Lnk3   |  Link FLP/RAWDATA/0x060c0306 FEE:0x0003 CRU:   3 Lnk:  3 EP:0 | SPages:   1 Pages:   512 TFs:     1 with    256 HBF in  256 blocks (0 err)
[INFO] Lnk4   |  Link FLP/RAWDATA/0x08100408 FEE:0x0004 CRU:   4 Lnk:  4 EP:0 | SPages:   1 Pages:   512 TFs:     1 with    256 HBF in  256 blocks (0 err)
```

Next: To read back this rawfile and compare with the original digit file