

# Mott Detector Energy Spectra (Normalized)

Ag 10 um Foil – Run 7452

RunTime = 433s

Beam Current = 0.422568 uA

Beam Momentum = 5.693 MeV

1/2 Wave Plate = IN

N\_LEFT\_p = 38998

N\_LEFT\_m = 29571

N\_RIGHT\_p = 29589

N\_RIGHT\_m = 39373

N\_UP\_p = 35683

N\_UP\_m = 35932

N\_DOWN\_p = 36609

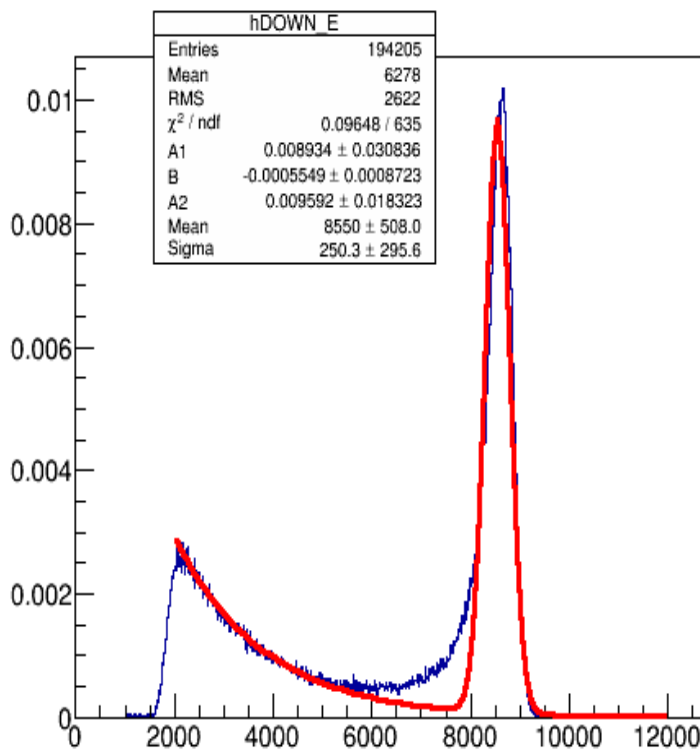
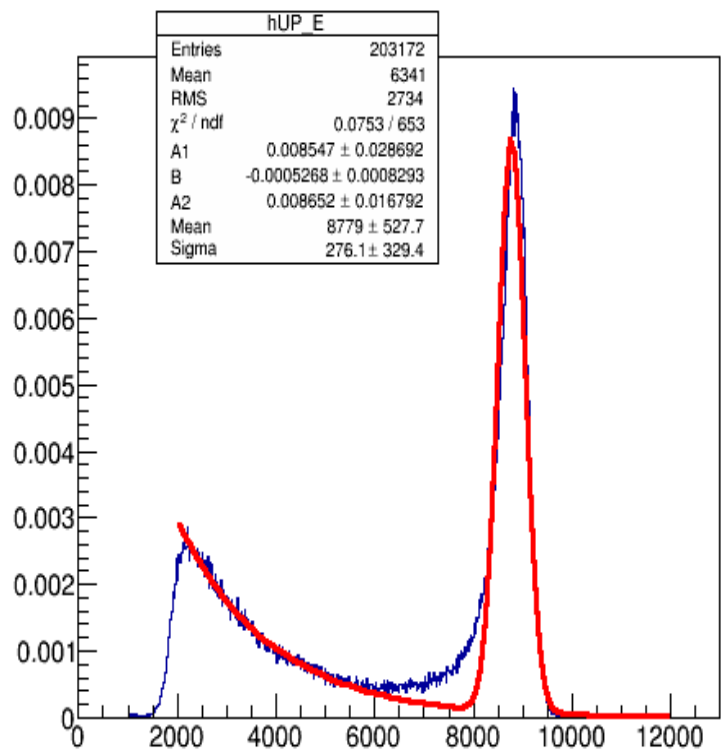
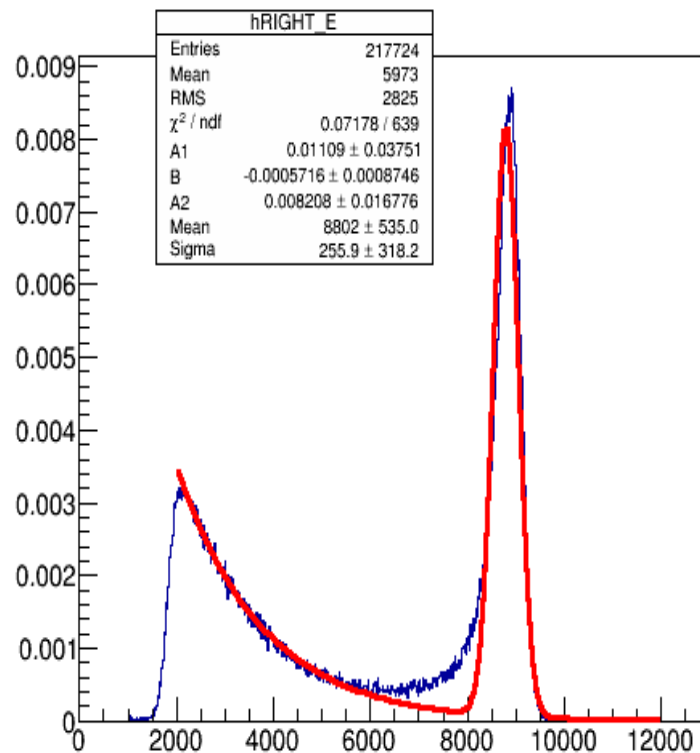
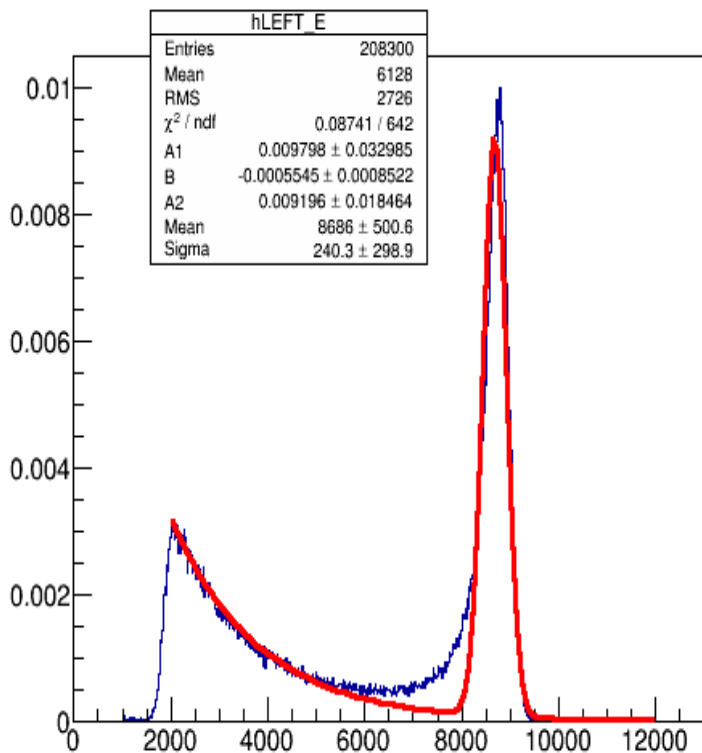
N\_DOWN\_m = 37034

Horizontal Mott Asymmetry

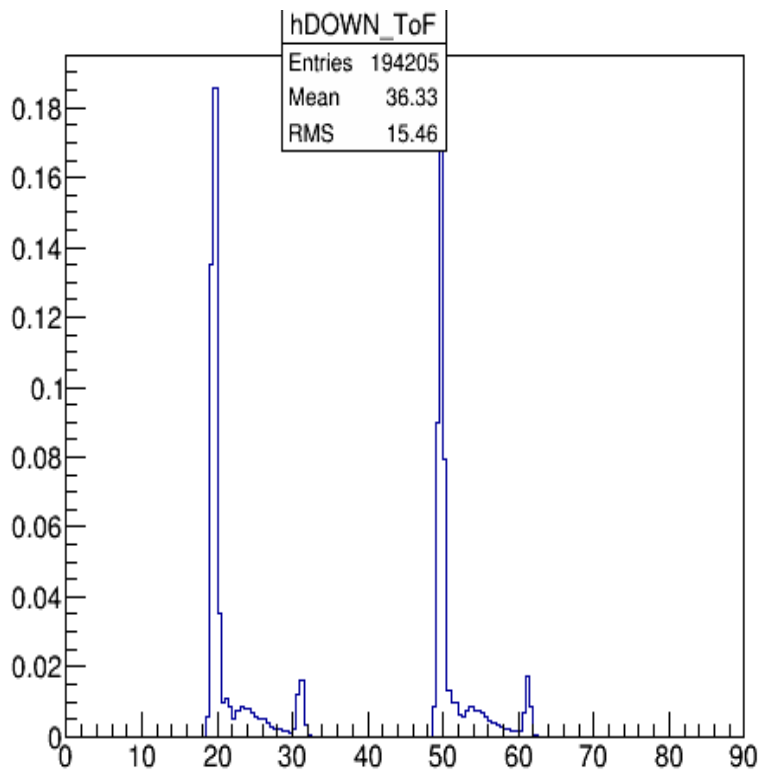
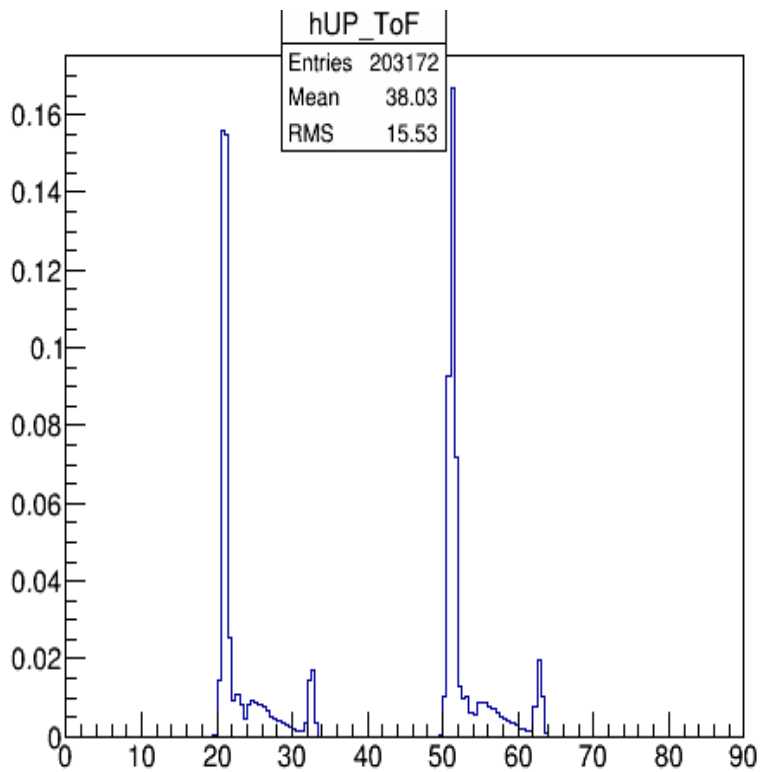
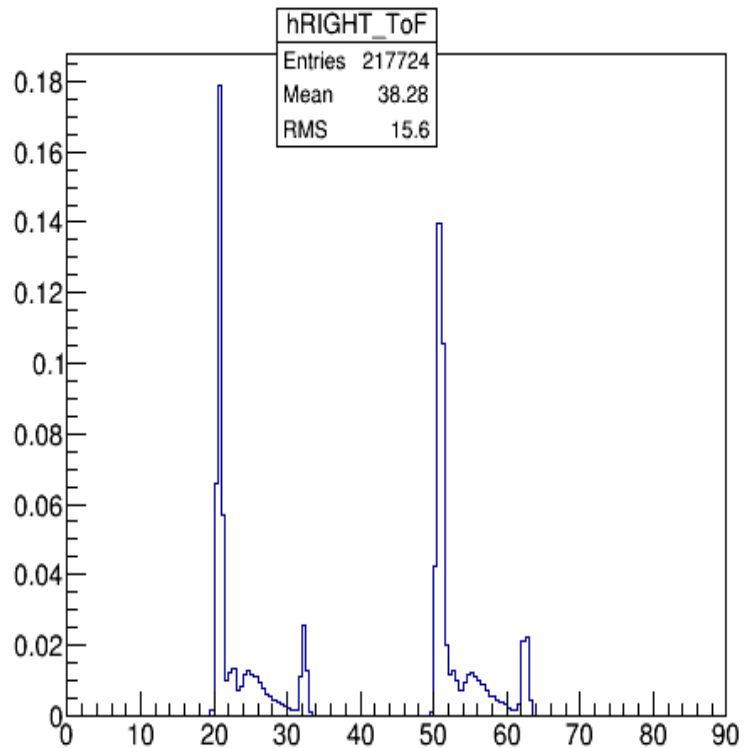
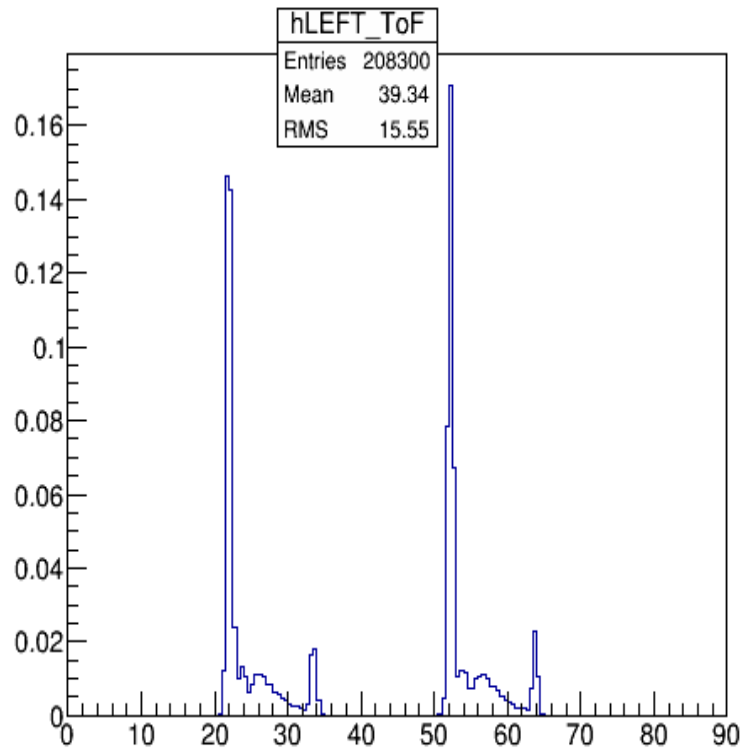
Ax\_Phy (%) = -0.11471 +/- 0.262408

Vertical Mott Asymmetry

Ay\_phy (%) = -13.9679 +/- 0.267008



**Mott Time of Flight  
Curves  
(TDC17 - TDC18)**



# Mott Detector Energy Spectra (Normalized)

## Ag 4.5 um Foil – Run 7458

RunTime = 492s

Beam Current = 0.849761 uA

Beam Momentum = 5.693 MeV

1/2 Wave Plate = OUT

N\_LEFT\_p = 24062

N\_LEFT\_m = 34383

N\_RIGHT\_p = 34732

N\_RIGHT\_m = 24625

N\_UP\_p = 31204

N\_UP\_m = 30921

N\_DOWN\_p = 32085

N\_DOWN\_m = 31570

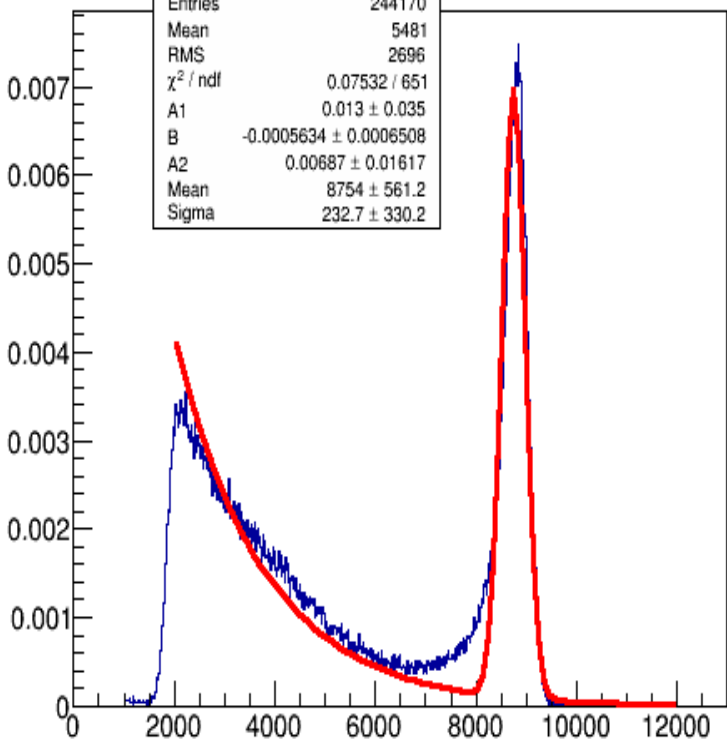
Horizontal Mott Asymmetry

Ax\_Phy (%) = 0.176765 +/- 0.28199

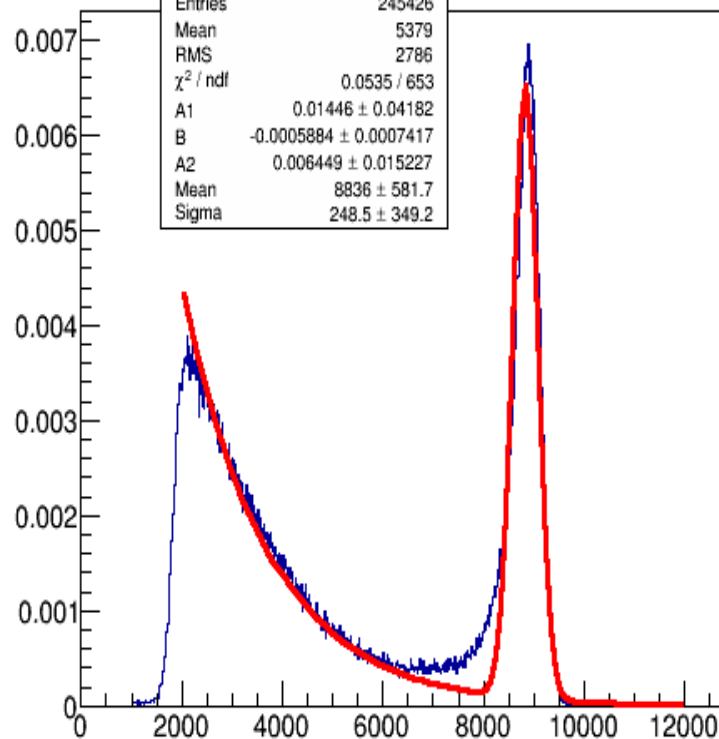
Vertical Mott Asymmetry

Ay\_phy (%) = 17.3436 +/- 0.286952

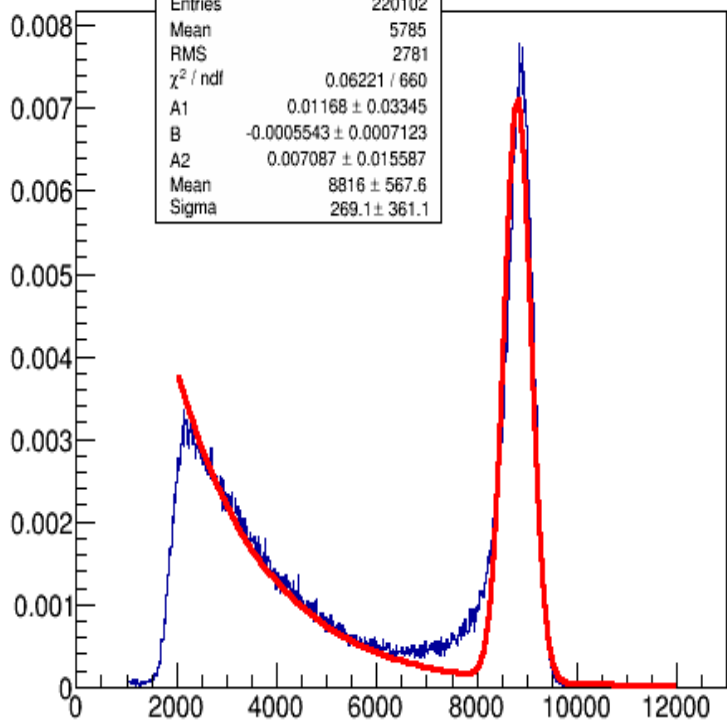
hLEFT_E	
Entries	244170
Mean	5481
RMS	2696
$\chi^2 / \text{ndf}$	0.07532 / 651
A1	0.013 ± 0.035
B	-0.0005634 ± 0.0006508
A2	0.00687 ± 0.01617
Mean	8754 ± 561.2
Sigma	232.7 ± 330.2



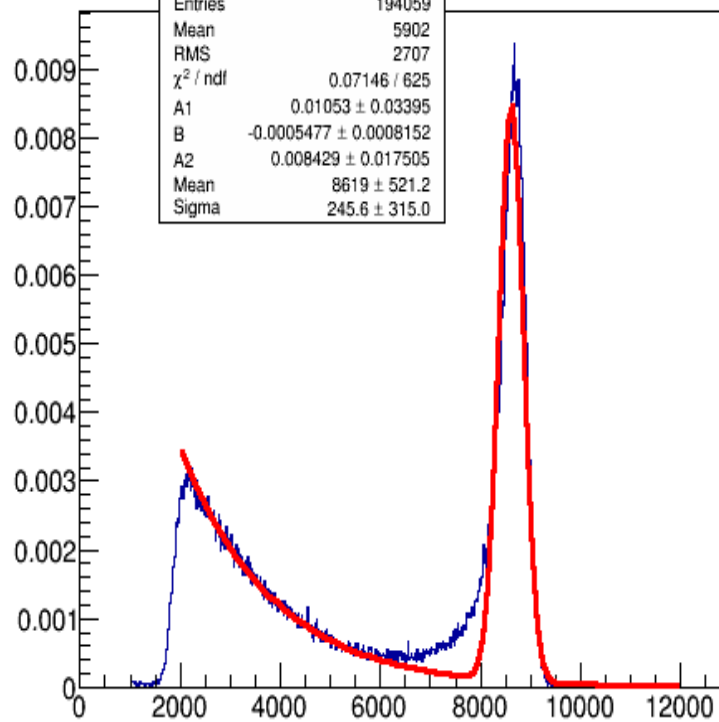
hRIGHT_E	
Entries	245426
Mean	5379
RMS	2786
$\chi^2 / \text{ndf}$	0.0535 / 653
A1	0.01446 ± 0.04182
B	-0.0005884 ± 0.0007417
A2	0.006449 ± 0.015227
Mean	8836 ± 581.7
Sigma	248.5 ± 349.2



hUP_E	
Entries	220102
Mean	5785
RMS	2781
$\chi^2 / \text{ndf}$	0.06221 / 660
A1	0.01168 ± 0.03345
B	-0.0005543 ± 0.0007123
A2	0.007087 ± 0.015587
Mean	8816 ± 567.6
Sigma	269.1 ± 361.1

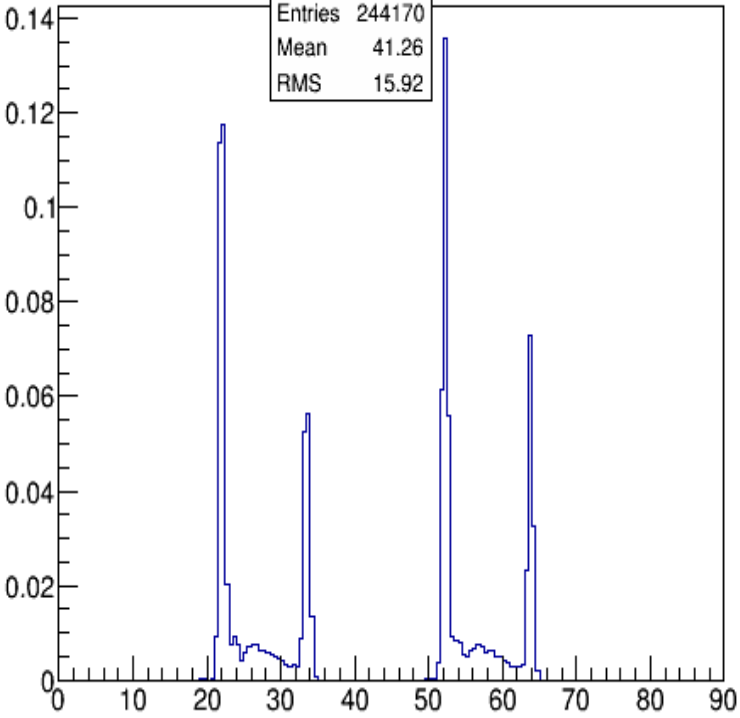


hDOWN_E	
Entries	194059
Mean	5902
RMS	2707
$\chi^2 / \text{ndf}$	0.07146 / 625
A1	0.01053 ± 0.03395
B	-0.0005477 ± 0.0008152
A2	0.008429 ± 0.017505
Mean	8619 ± 521.2
Sigma	245.6 ± 315.0

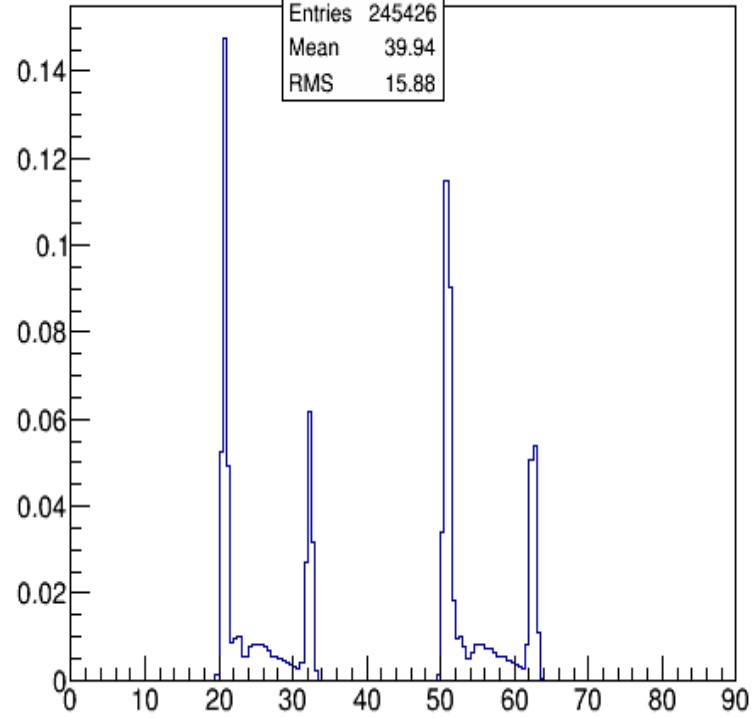


**Mott Time of Flight  
Curves  
(TDC17 - TDC18)**

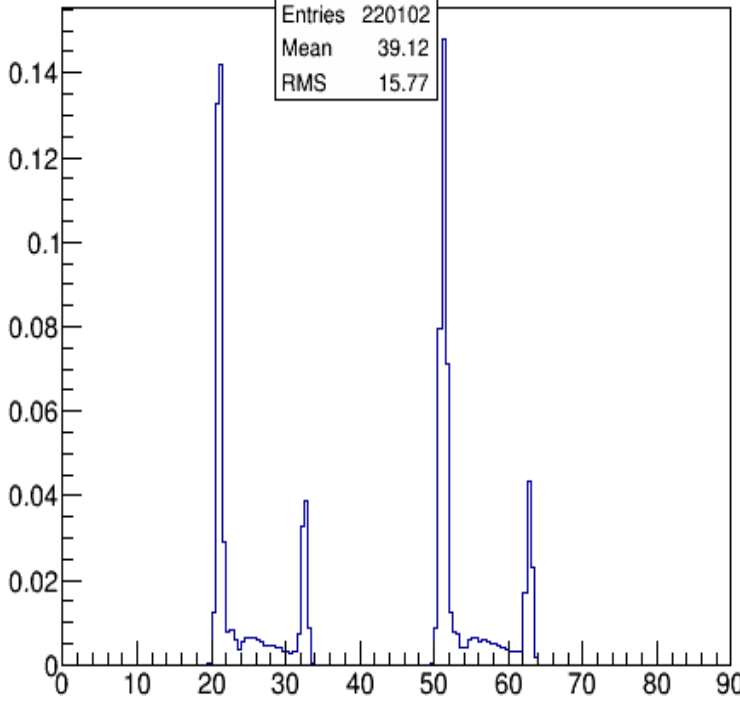
**hLEFT\_ToF**  
Entries 244170  
Mean 41.26  
RMS 15.92



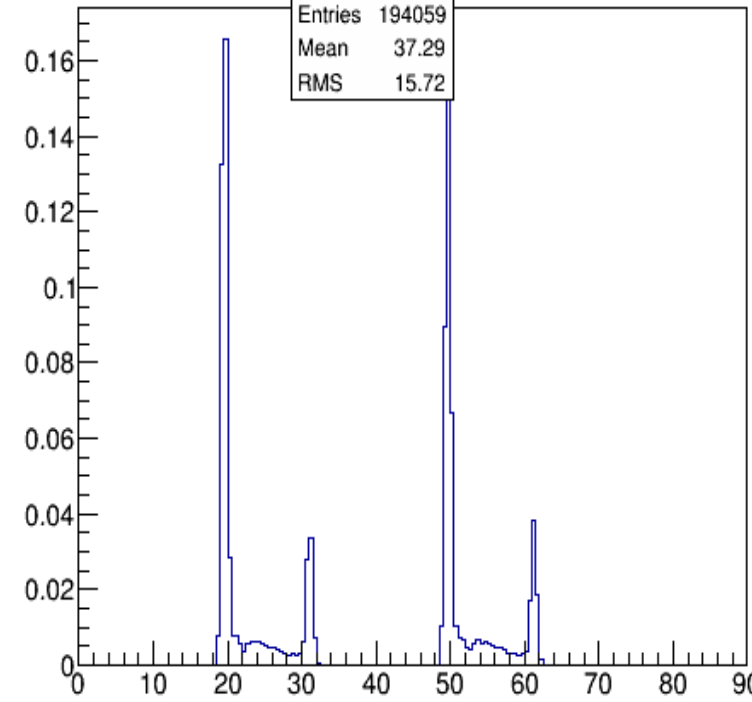
**hRIGHT\_ToF**  
Entries 245426  
Mean 39.94  
RMS 15.88



**hUP\_ToF**  
Entries 220102  
Mean 39.12  
RMS 15.77



**hDOWN\_ToF**  
Entries 194059  
Mean 37.29  
RMS 15.72



# Mott Detector Energy Spectra (Normalized)

## Ag 1.6 um Foil – Run 7464

RunTime = 508s

Beam Current = 2.04384 uA

Beam Momentum = 5.693 MeV

1/2 Wave Plate = IN

N\_LEFT\_p = 21958

N\_LEFT\_m = 14790

N\_RIGHT\_p = 14978

N\_RIGHT\_m = 23106

N\_UP\_p = 19442

N\_UP\_m = 19728

N\_DOWN\_p = 20243

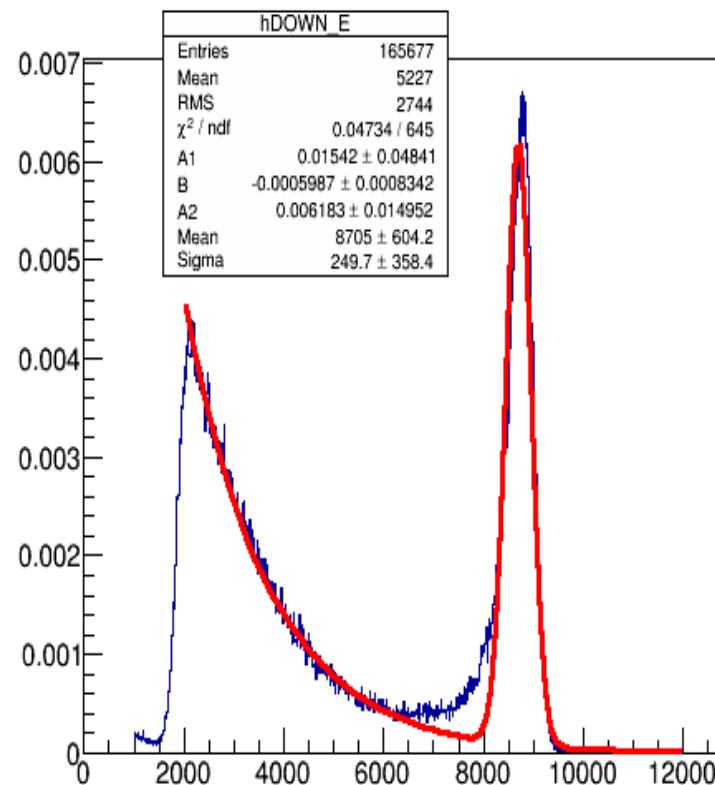
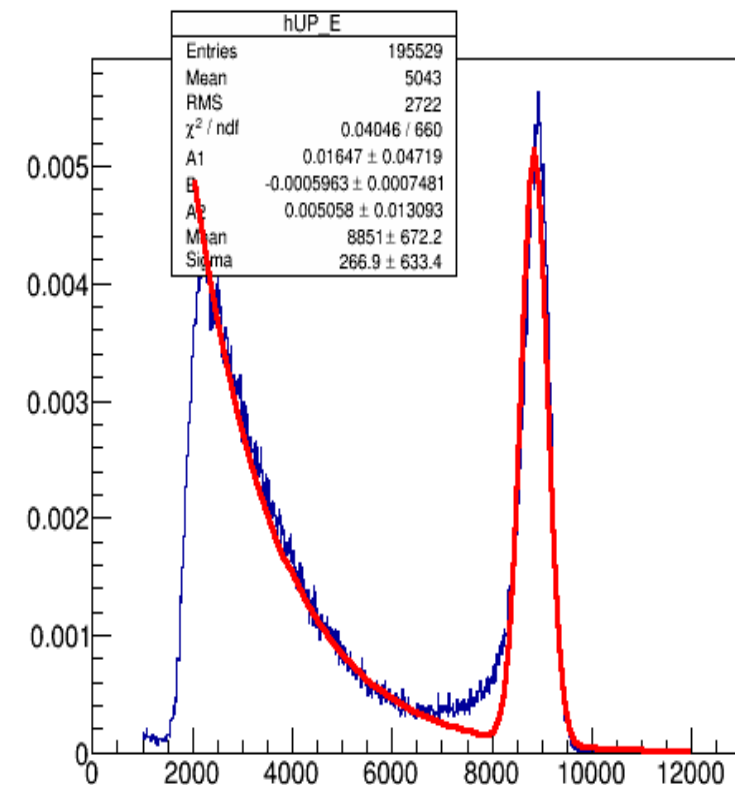
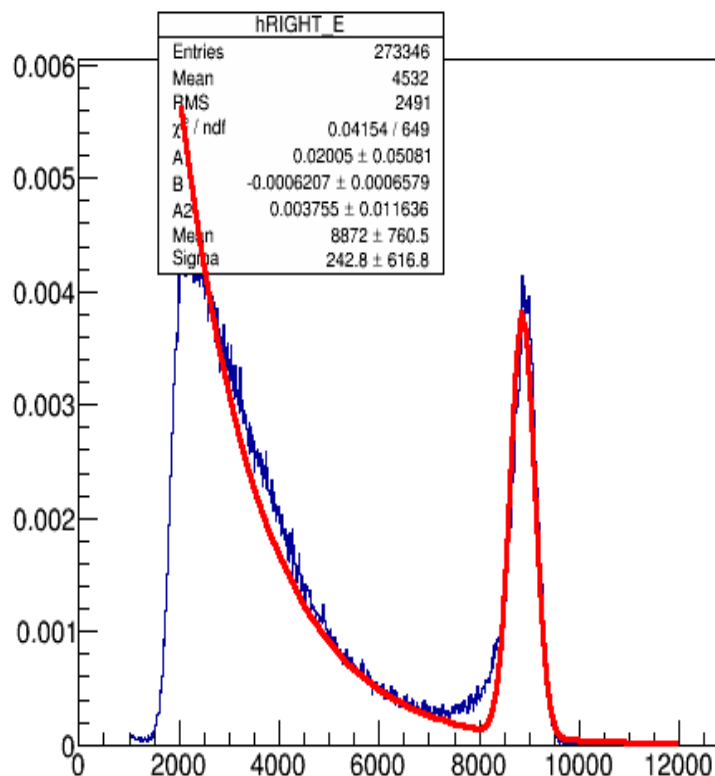
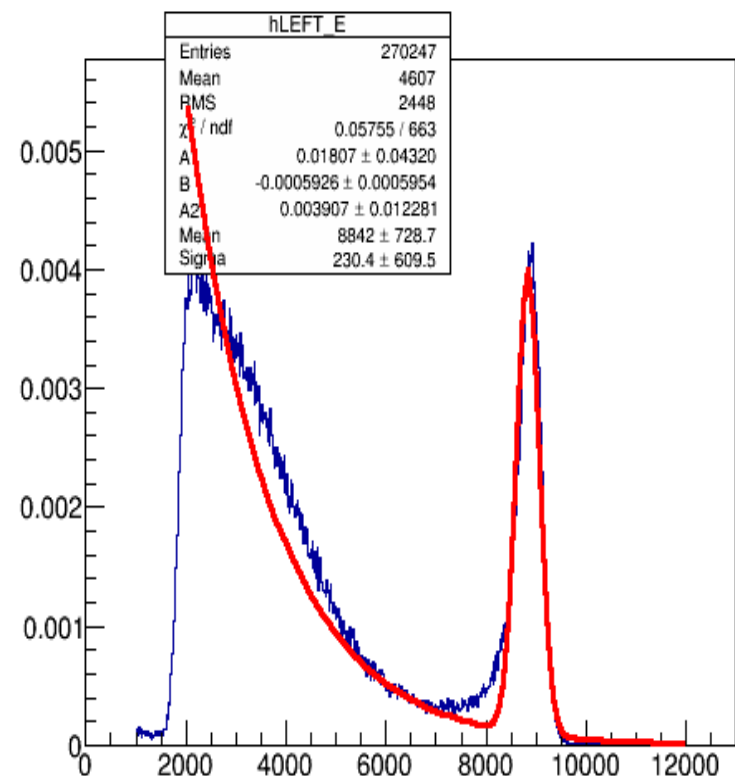
N\_DOWN\_m = 20392

Horizontal Mott Asymmetry

Ax\_Phy (%) = 0.181741 +/- 0.35405

Vertical Mott Asymmetry

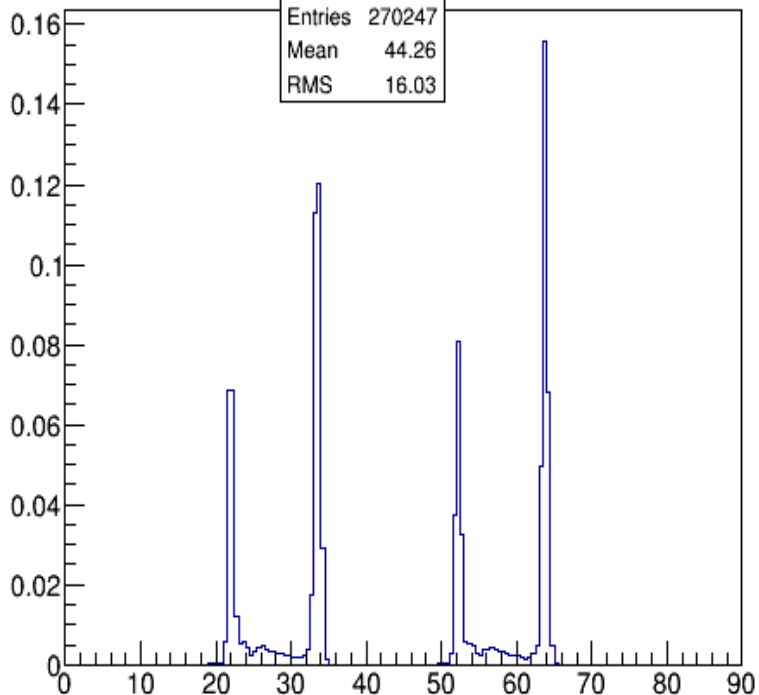
Ay\_phy (%) = -20.4259 +/- 0.357913



# Mott Time of Flight Curves (TDC17 - TDC18)

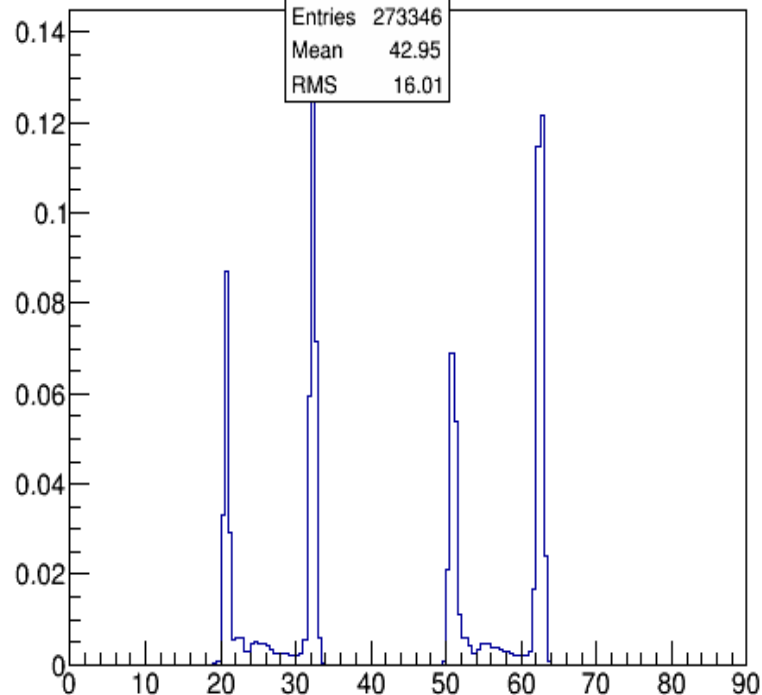
hLEFT\_ToF

Entries 270247  
Mean 44.26  
RMS 16.03



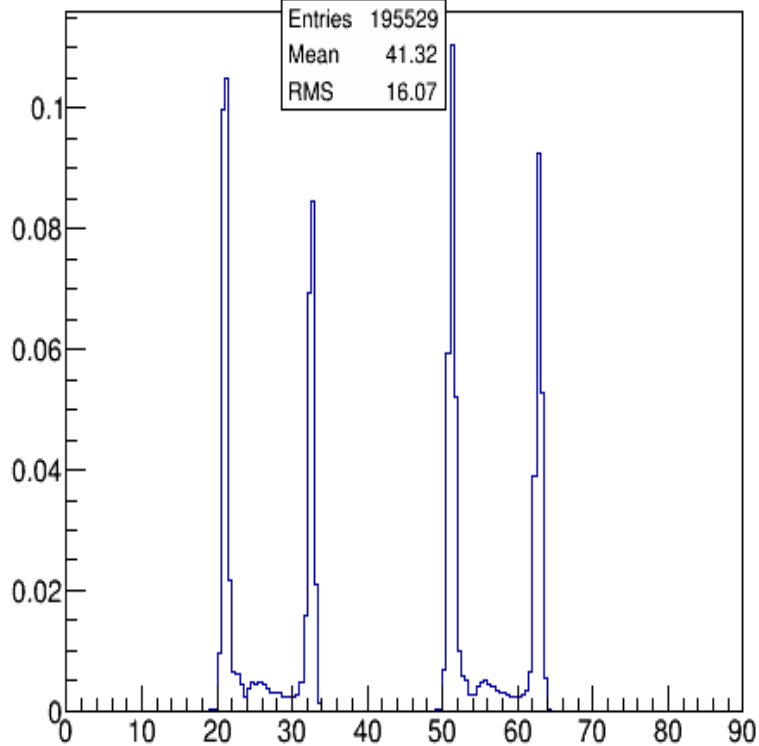
hRIGHT\_ToF

Entries 273346  
Mean 42.95  
RMS 16.01



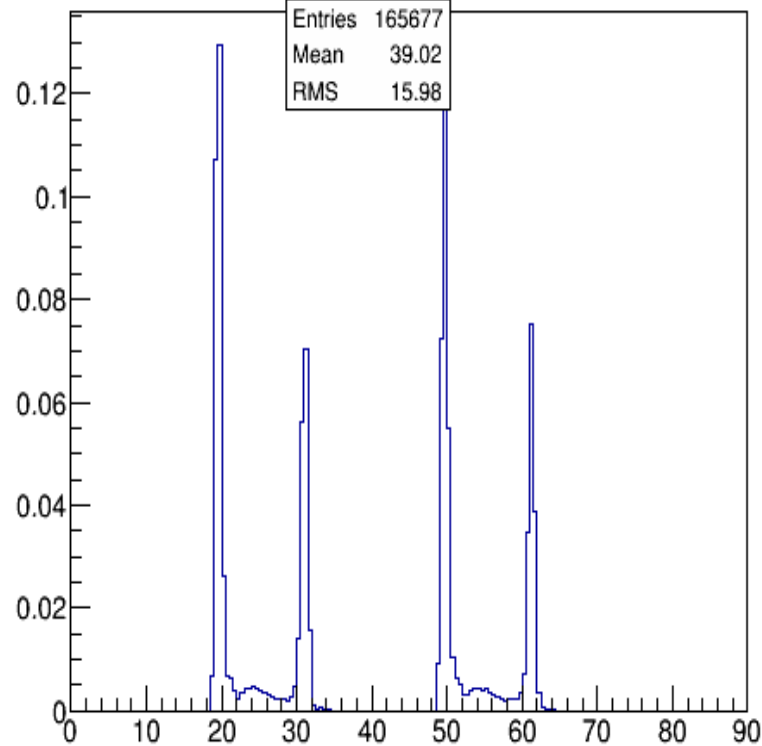
hUP\_ToF

Entries 195529  
Mean 41.32  
RMS 16.07



hDOWN\_ToF

Entries 165677  
Mean 39.02  
RMS 15.98



# Mott Detector Energy Spectra (Normalized)

## Ag 0.45 um Foil – Run 7464

RunTime = 1985s

Beam Current = 1.02671 uA

Beam Momentum = 5.693 MeV

1/2 Wave Plate = OUT

N\_LEFT\_p = 8983

N\_LEFT\_m = 13792

N\_RIGHT\_p = 13466

N\_RIGHT\_m = 8610

N\_UP\_p = 12163

N\_UP\_m = 11818

N\_DOWN\_p = 12478

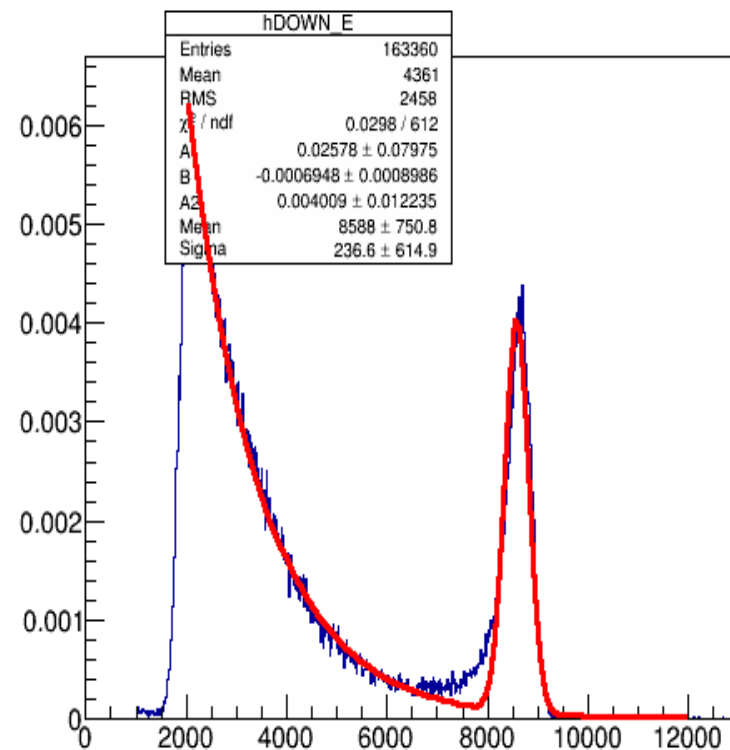
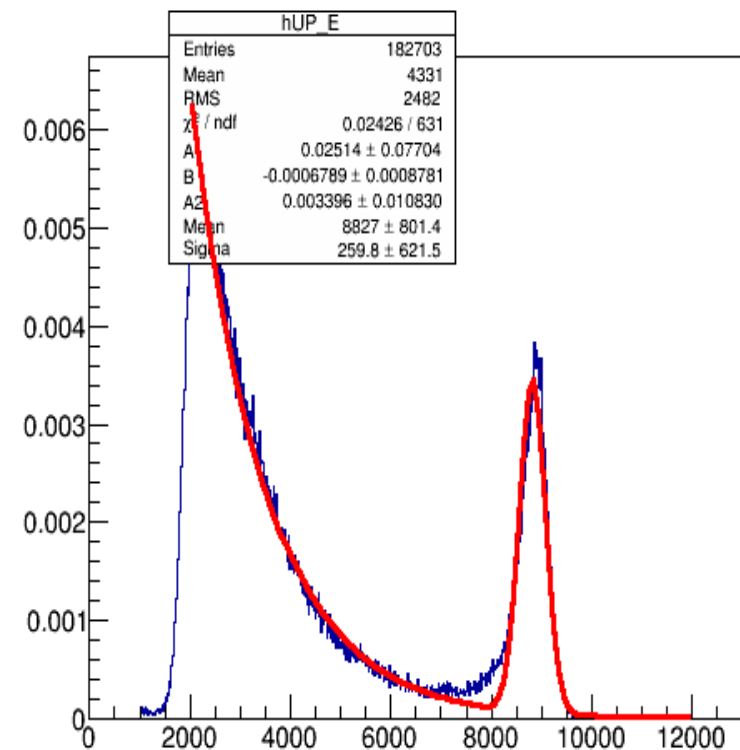
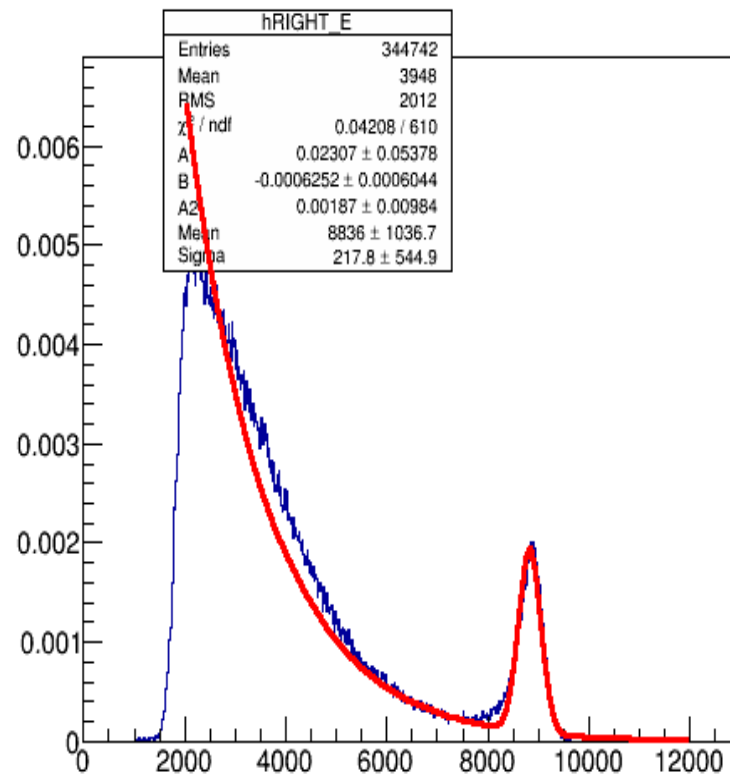
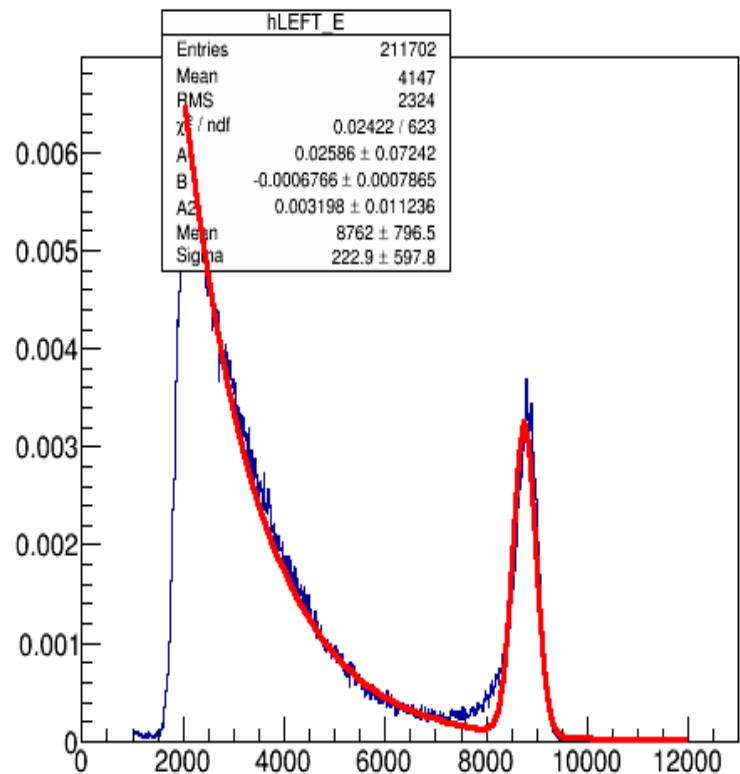
N\_DOWN\_m = 12160

Horizontal Mott Asymmetry

Ax\_Phy (%) = -0.073988 +/- 0.45360

Vertical Mott Asymmetry

Ay\_phy (%) = 21.5564 +/- 0.461154



**Mott Time of Flight  
Curves  
(TDC17 - TDC18)**

