



# $H(e, e'p)$ Study

**Abdennacer Hamdi**

Kaon LT Meeting  
10/17/2024

# SHMS 3/4 efficiency update

Old

0.968182  
0.968276  
0.979547

0.964723  
0.964654  
0.982542

0.952446  
0.952562  
0.979278

0.926813  
0.927736  
0.927411  
0.966059

0.946009  
0.949185  
0.948187  
0.946252  
0.94878  
0.94702  
0.947144  
0.947888  
0.945237  
0.948445  
0.955936

New

0.998931  
0.99878  
0.996935

0.998336  
0.99843  
0.996824

0.998869  
0.998872  
0.999585

0.99821  
0.998398  
0.998544  
0.997896

0.998072  
0.998137  
0.997234  
0.998237  
0.998444  
0.997735  
0.997846  
0.998028  
0.998106  
0.99816  
0.996098

# Data vs. SIMC

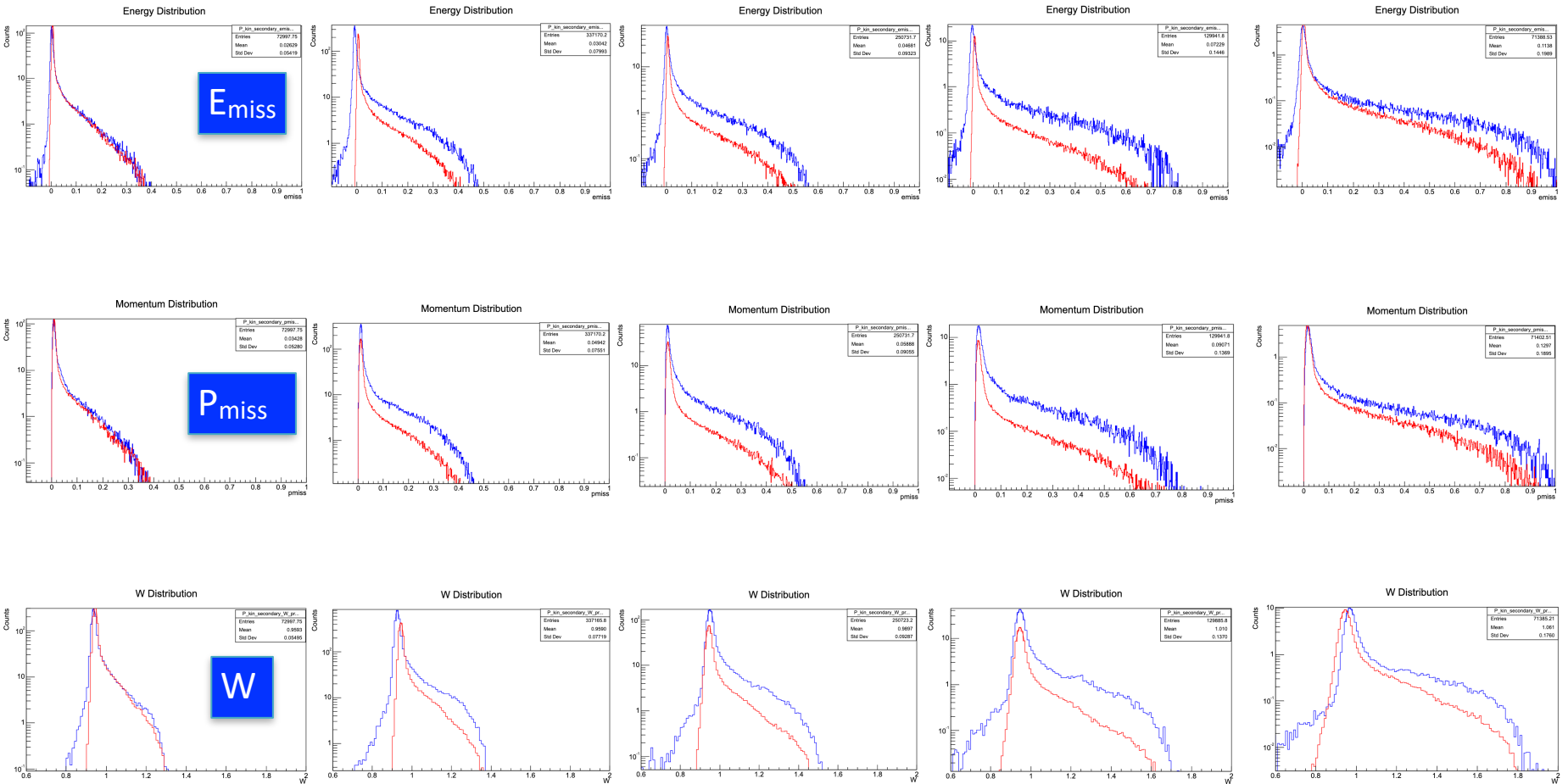
3.8 GeV

4.9 GeV

6.2 GeV

8.2 GeV

10.6 GeV



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3.8 GeV

4.9 GeV

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10.6 GeV

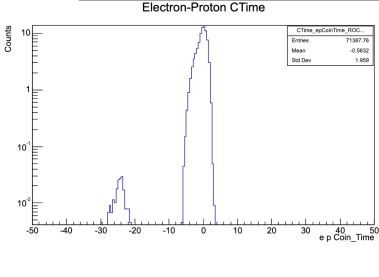
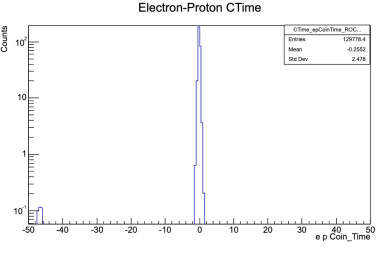
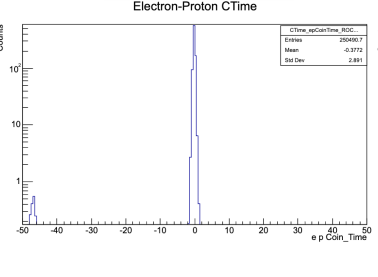
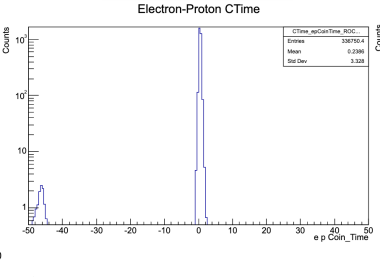
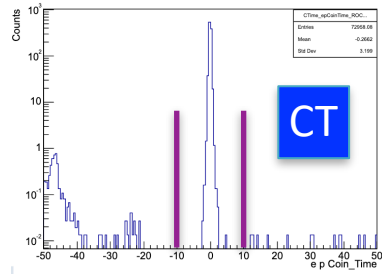
Electron-Proton CTime

Electron-Proton CTime

Electron-Proton CTime

Electron-Proton CTime

Electron-Proton CTime



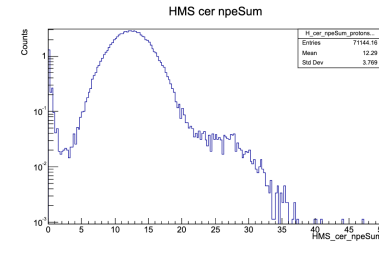
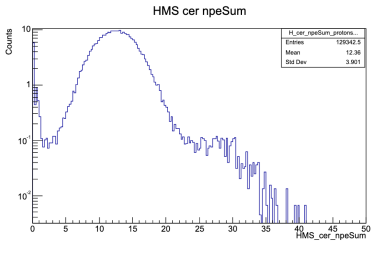
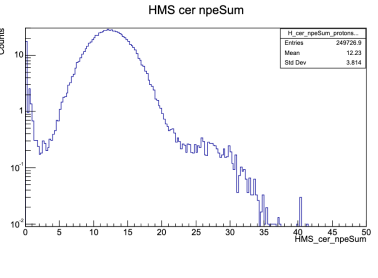
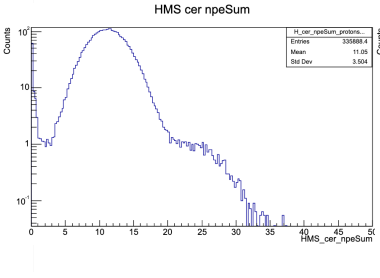
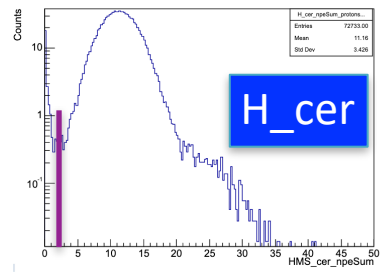
HMS cer npeSum

HMS cer npeSum

HMS cer npeSum

HMS cer npeSum

HMS cer npeSum



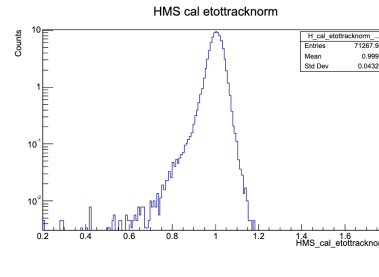
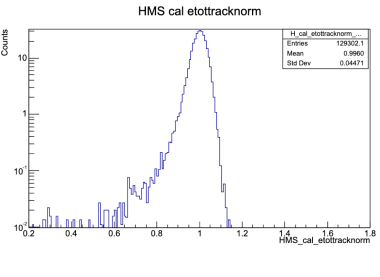
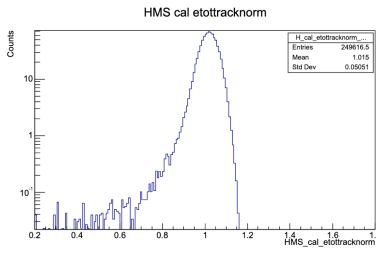
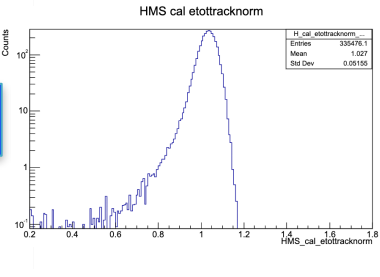
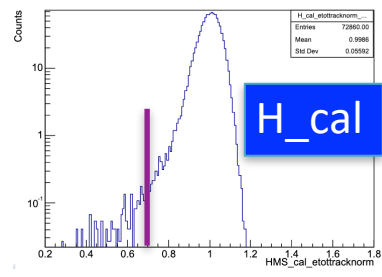
HMS cal etotracknorm

HMS cal etotracknorm

HMS cal etotracknorm

HMS cal etotracknorm

HMS cal etotracknorm



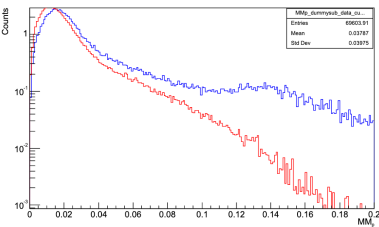
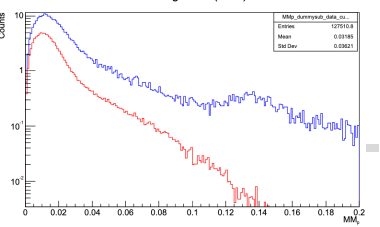
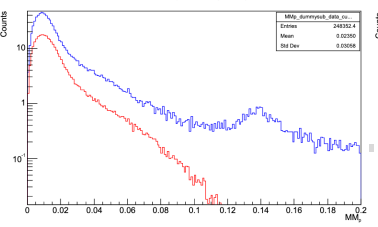
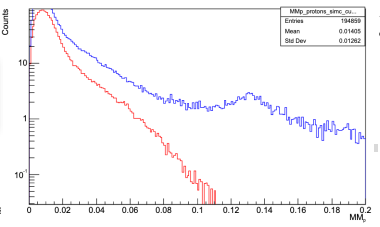
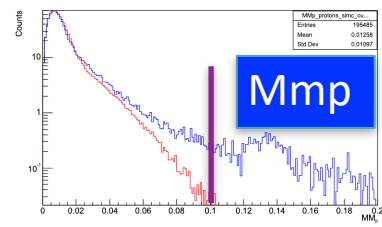
Missing Mass (SIMC)

Missing Mass (SIMC)

Missing Mass (Data)

Missing Mass (Data)

Missing Mass (Data)



# Data vs. SIMC

3.8 GeV

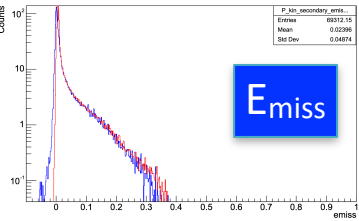
4.9 GeV

6.2 GeV

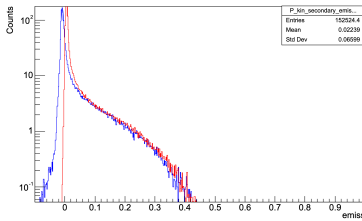
8.2 GeV

10.6 GeV

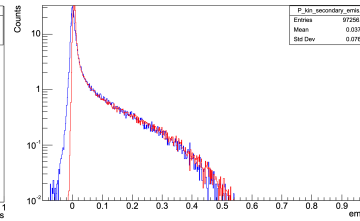
Energy Distribution



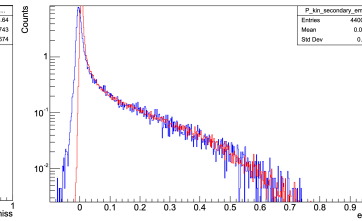
Energy Distribution



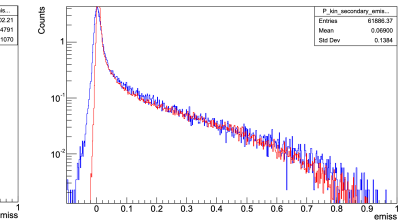
Energy Distribution



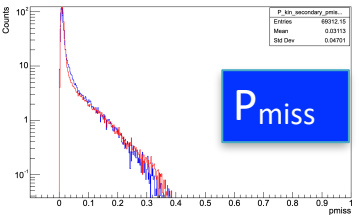
Energy Distribution



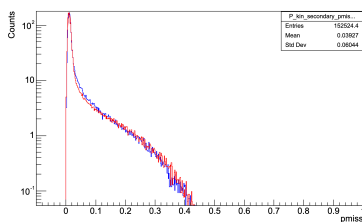
Energy Distribution



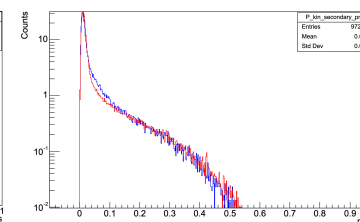
Momentum Distribution



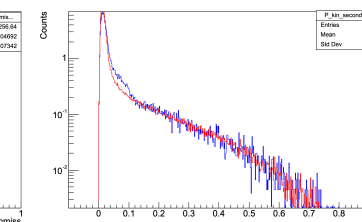
Momentum Distribution



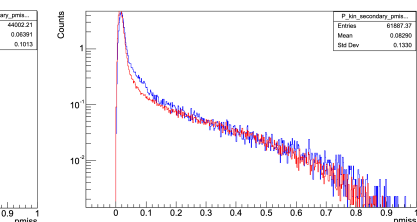
Momentum Distribution



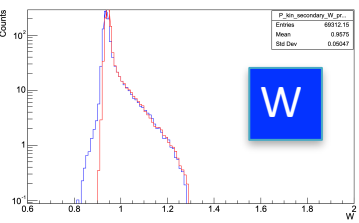
Momentum Distribution



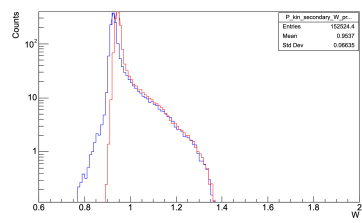
Momentum Distribution



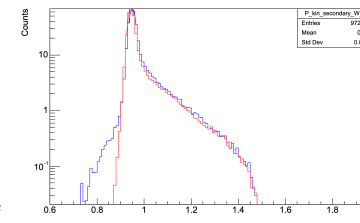
W Distribution



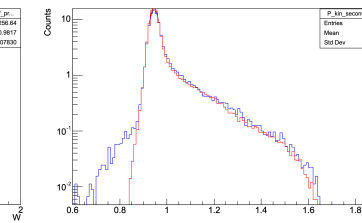
W Distribution



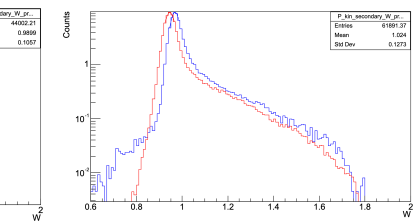
W Distribution



W Distribution



W Distribution



# HeeP Yield Ratio

Beam Energy (GeV)	3.8	4.9	6.2	8.2	10.6
<b>Without Proton absorption</b>	0.992 +/- 0.007	0.988 +/- 0.007	1.004 +/- 0.007	0.992 +/- 0.007	1.011 +/- 0.005

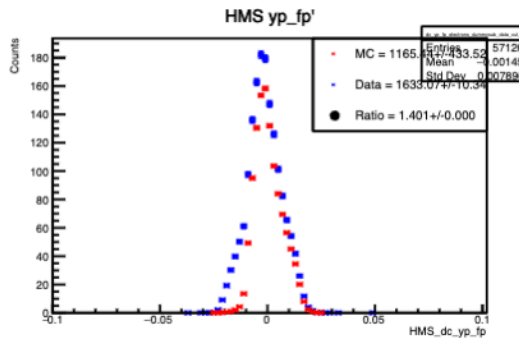
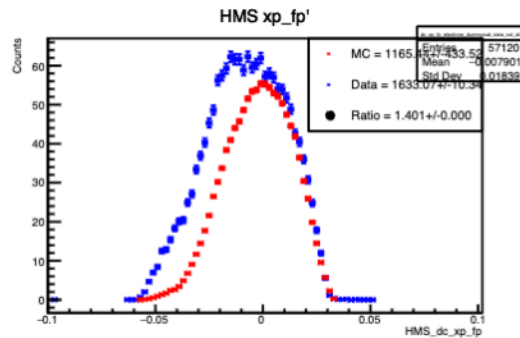
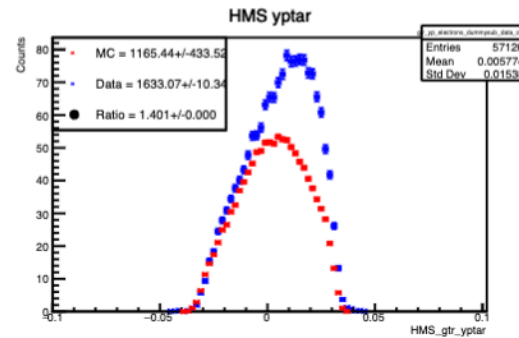
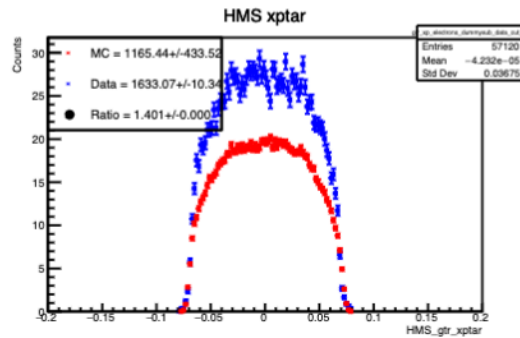
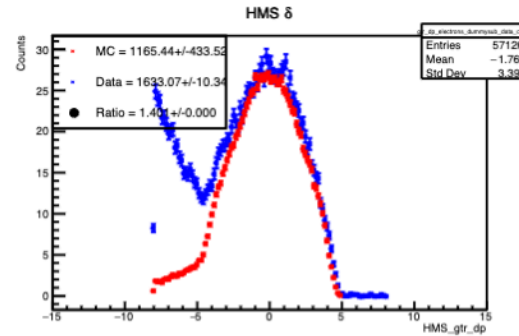
*H(e, e')p* **Singles**

# HeeP Yield Ratio

HeePCoin Setting  
Beam Energy = 3.834

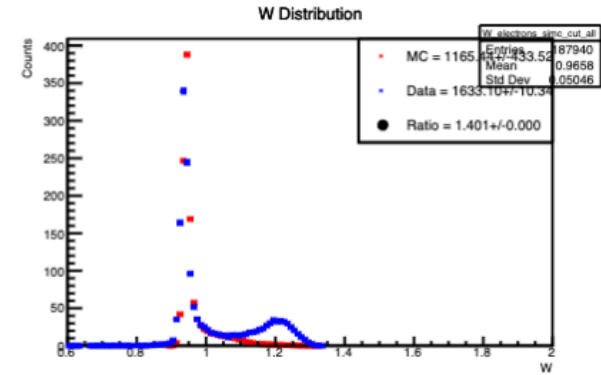
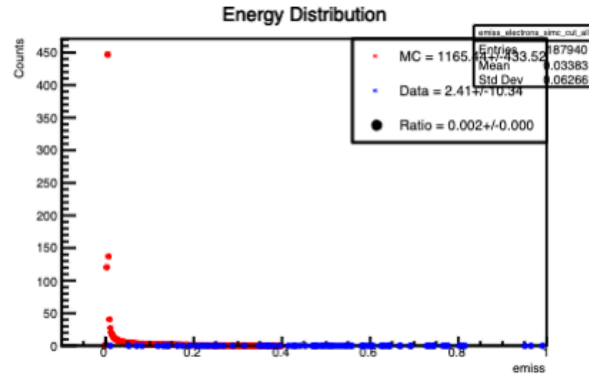
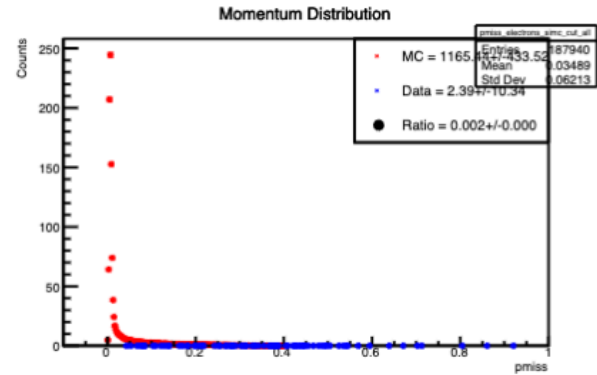
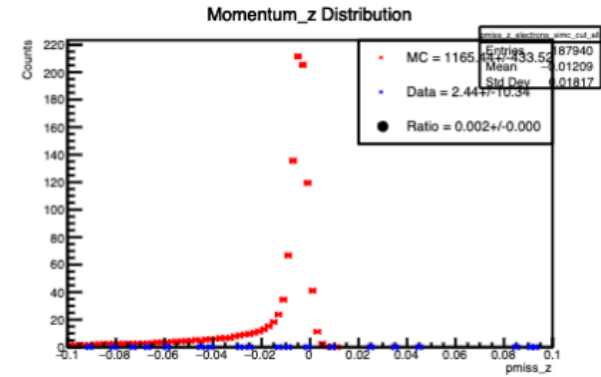
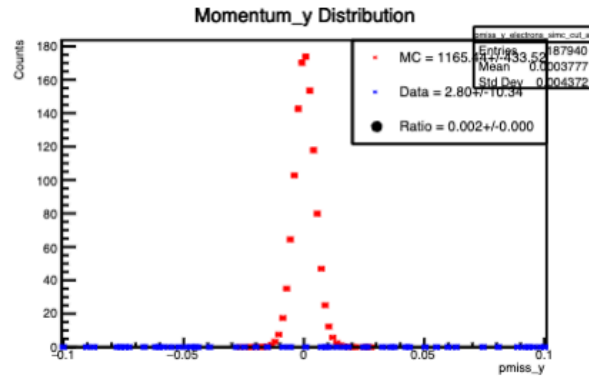
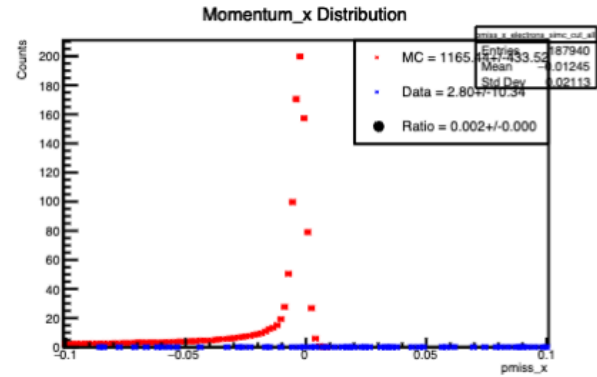
HMS\_p = 2.026  
HMS\_theta = 38.600  
SHMS\_p = 2.583  
SHMS\_theta = 28.190

Red = SIMC  
Blue = DATA

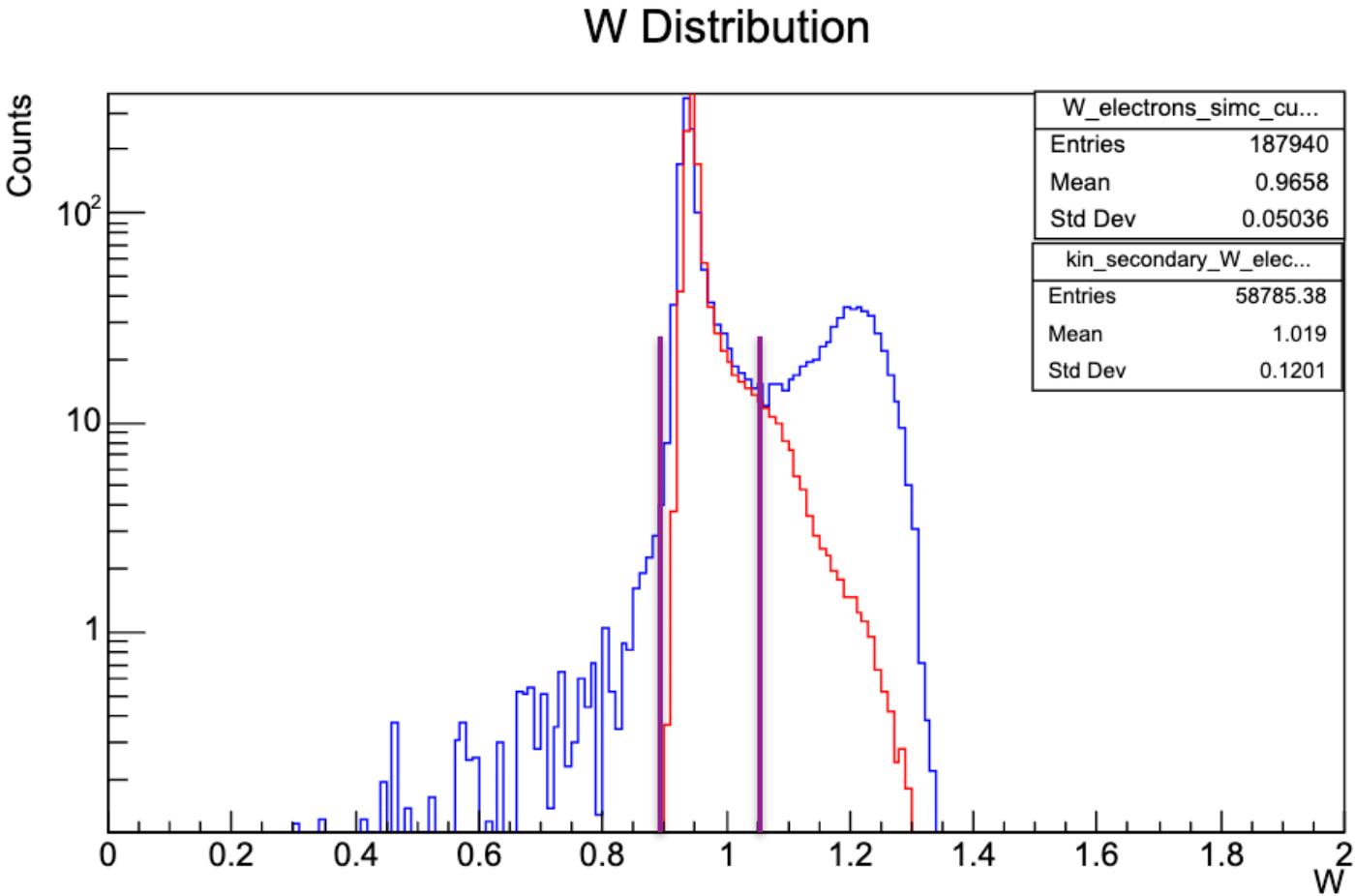




# HeeP Yield Ratio



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HeePCoin Setting  
Beam Energy = 3.834

HMS\_p = 2.026  
HMS\_theta = 38.600  
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Red = SIMC  
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