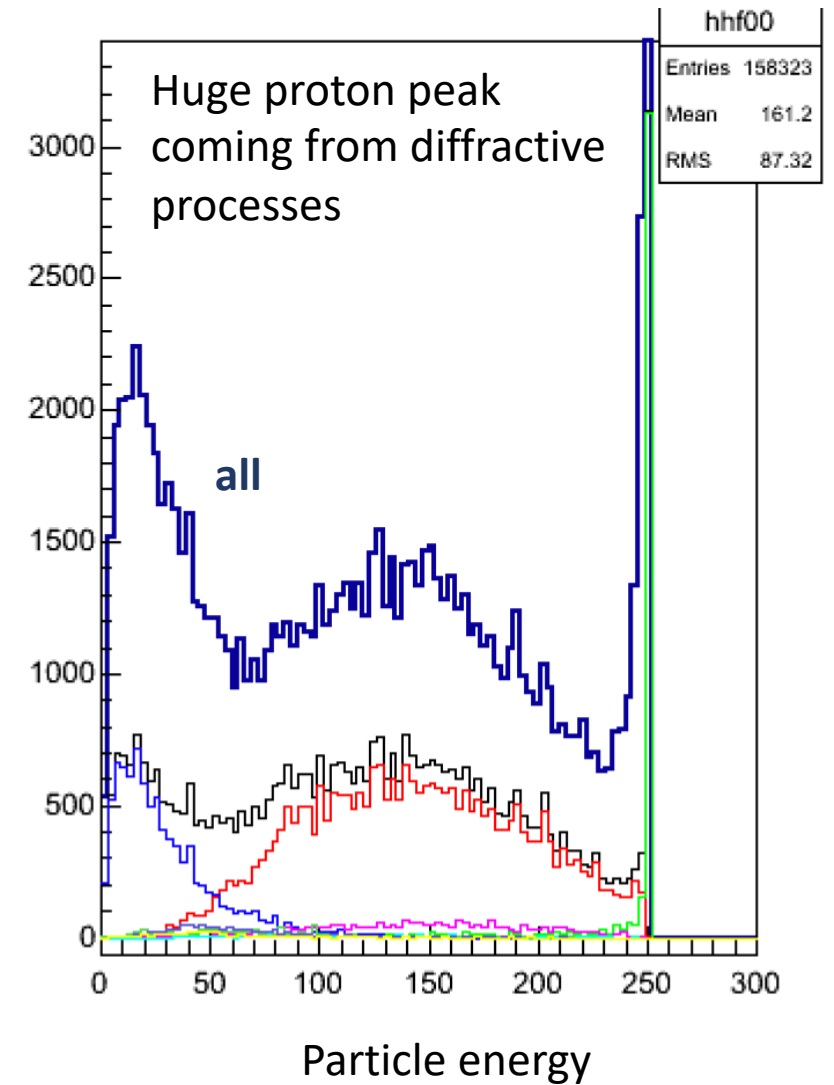
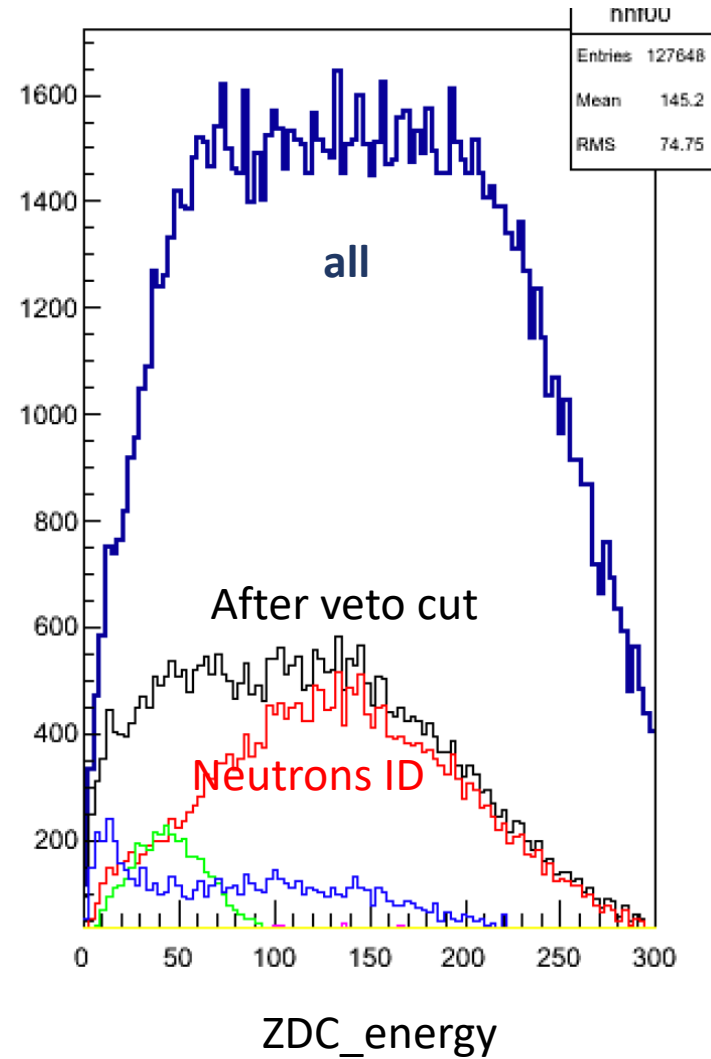
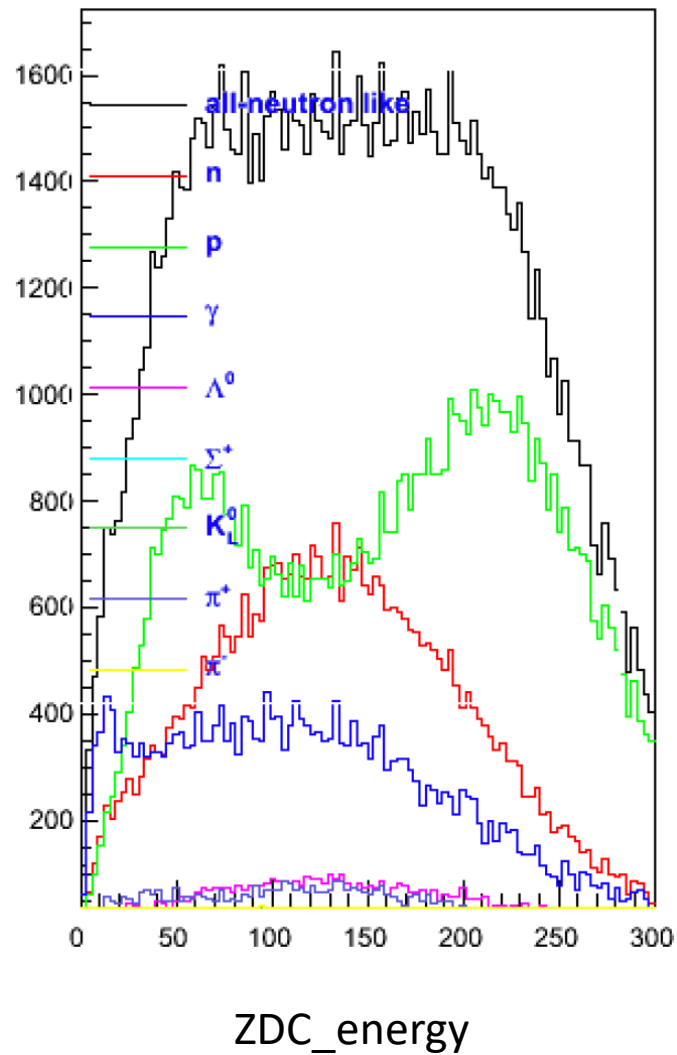


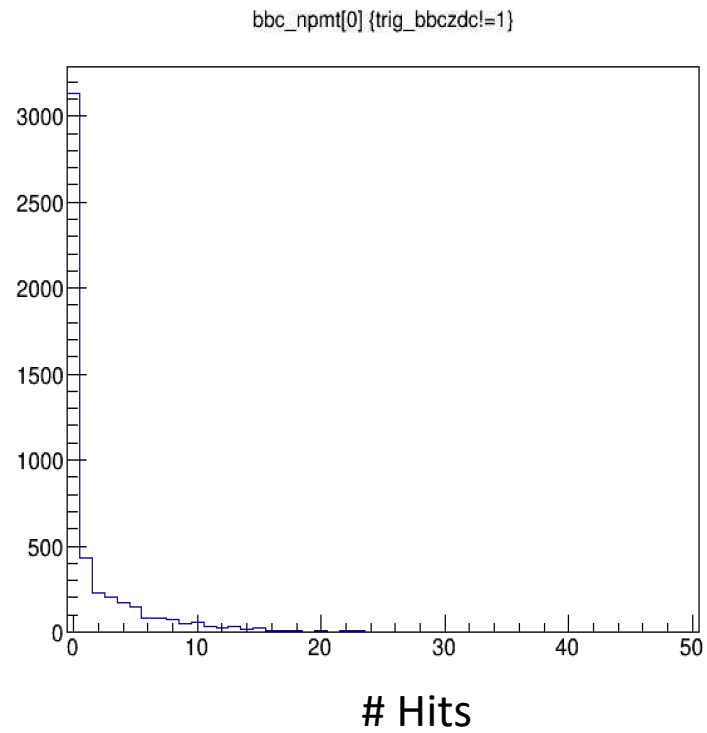
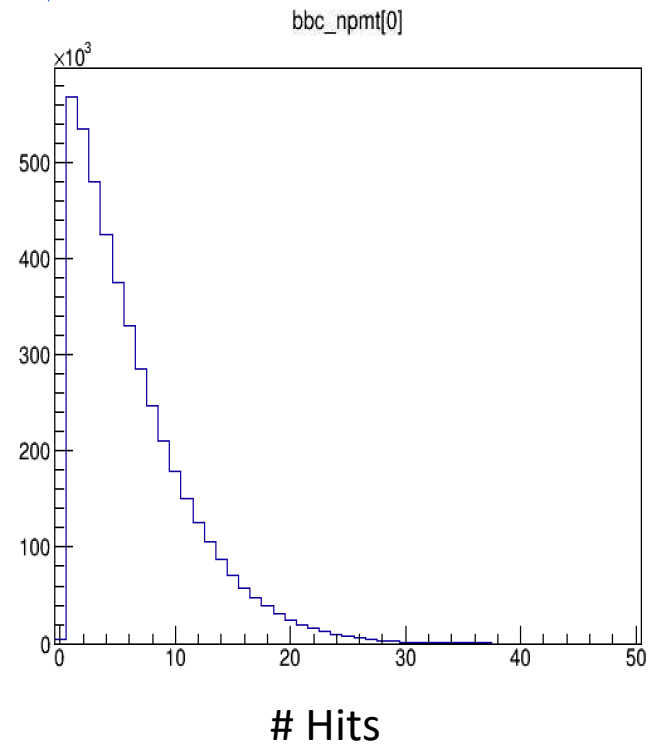
Simulations

Energy Distributions in ZDC

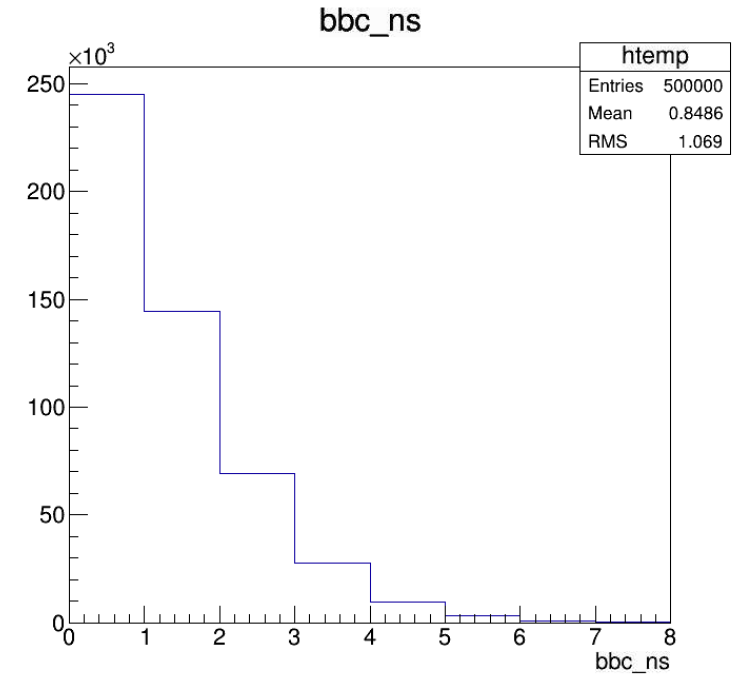


BBC hits in PMTs

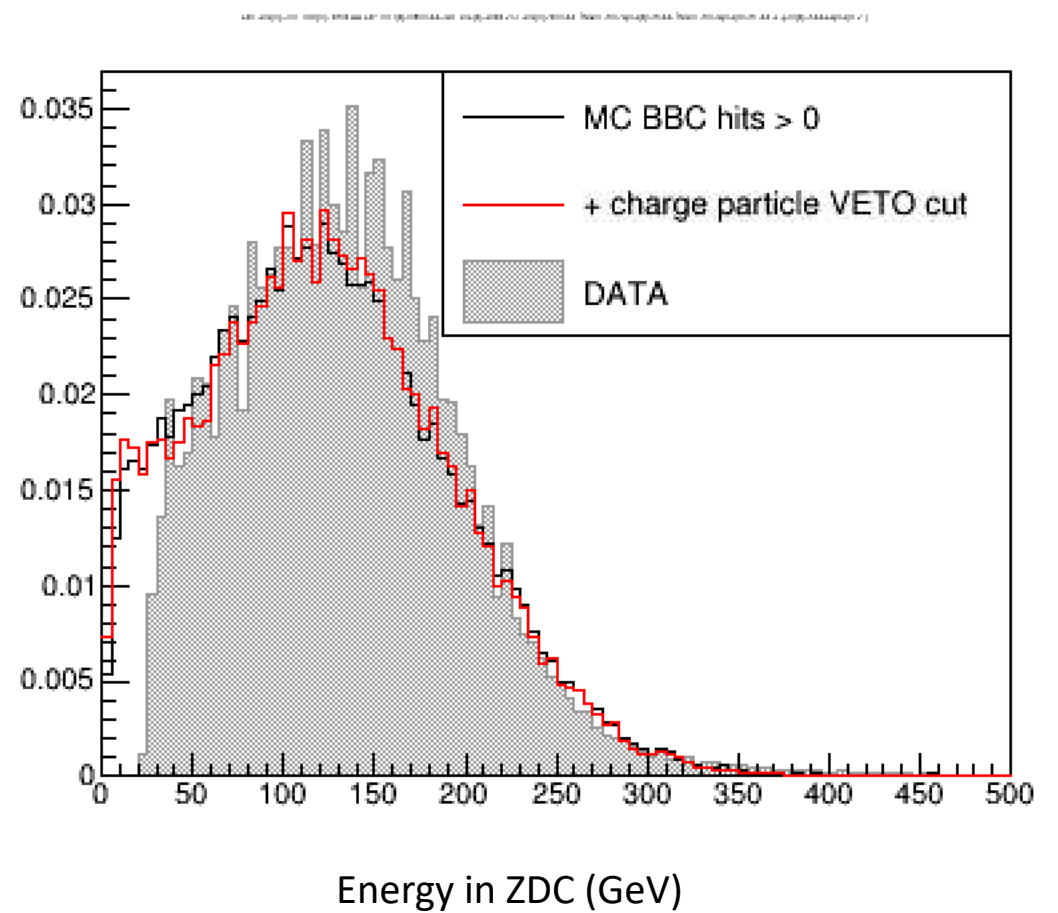
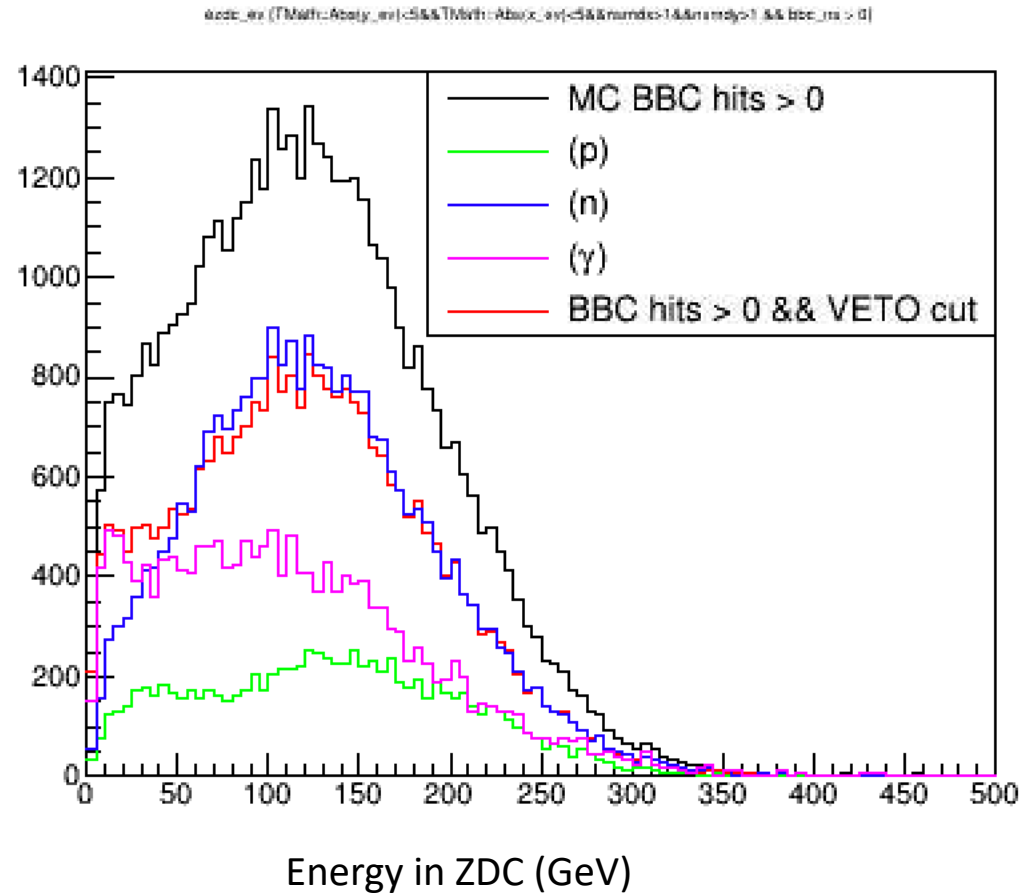
DATA



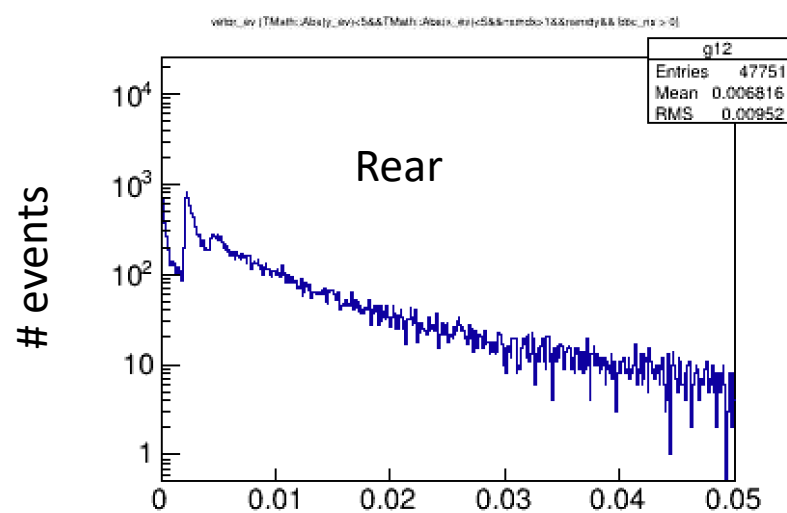
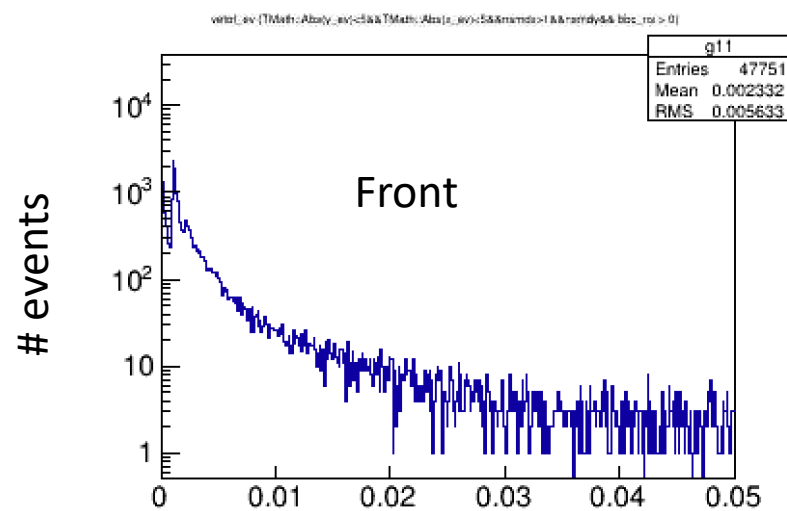
MC



Data vs. MC energy distributions

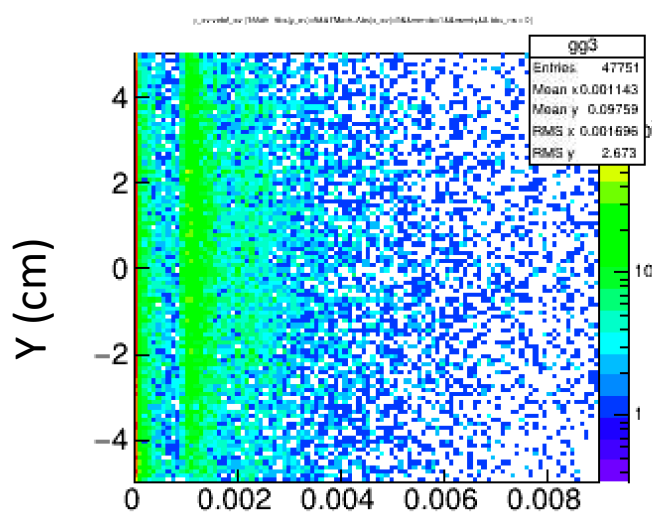
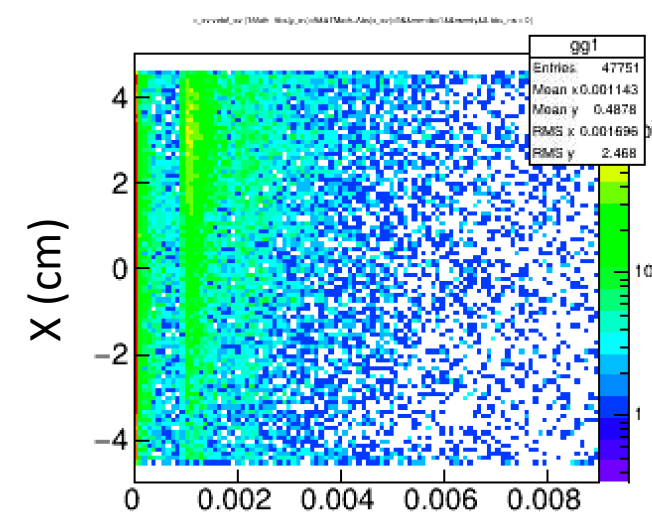


Charge particle veto detector energy distributions



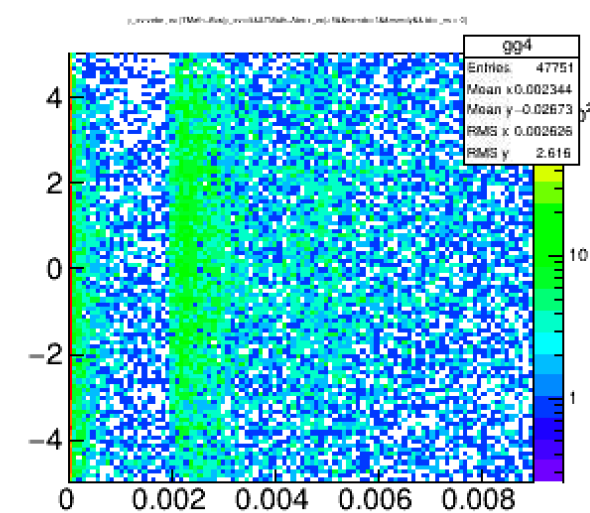
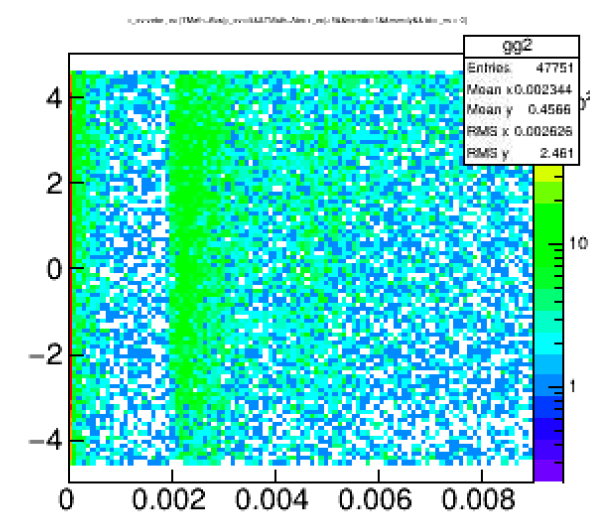
Energy dep in GeV

Front



Energy dep in GeV

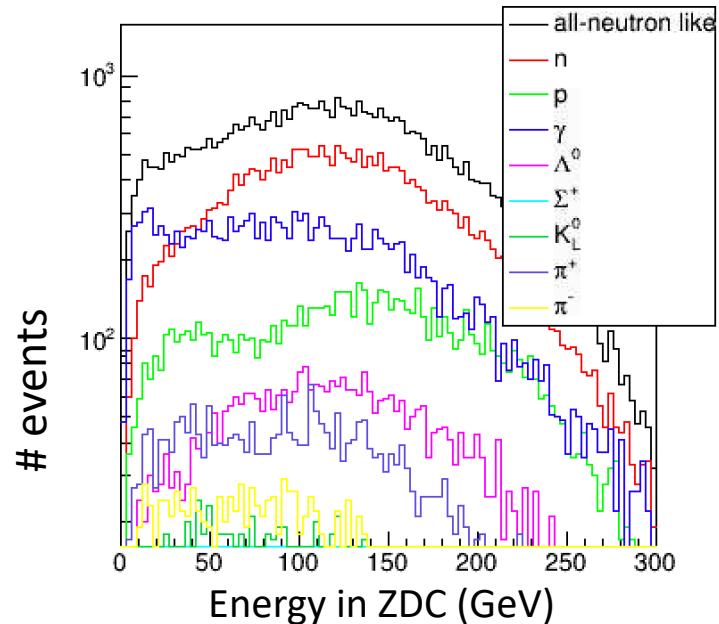
Rear



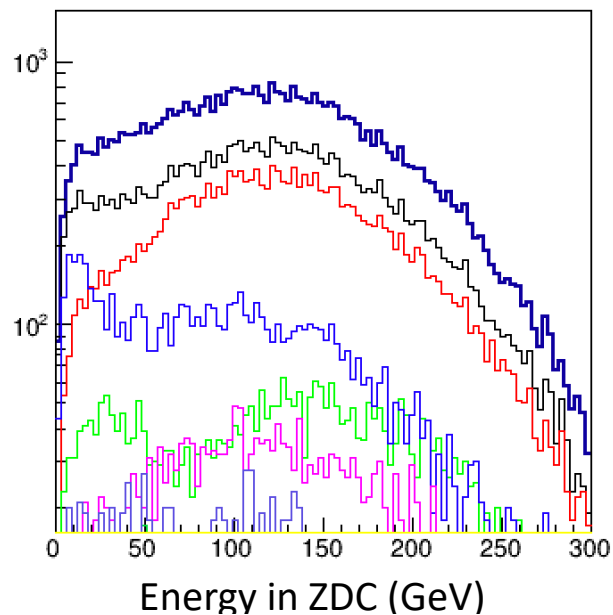
Energy dep in GeV

Rejection factor of various charged particles after CP Veto cuts

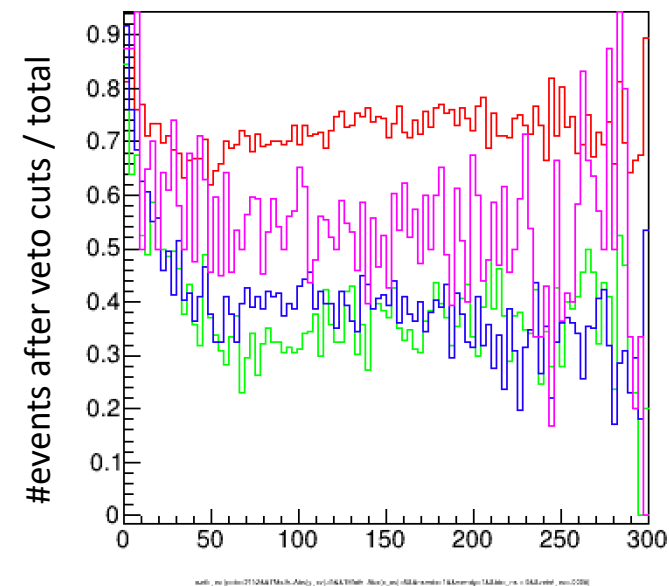
Before Veto cuts



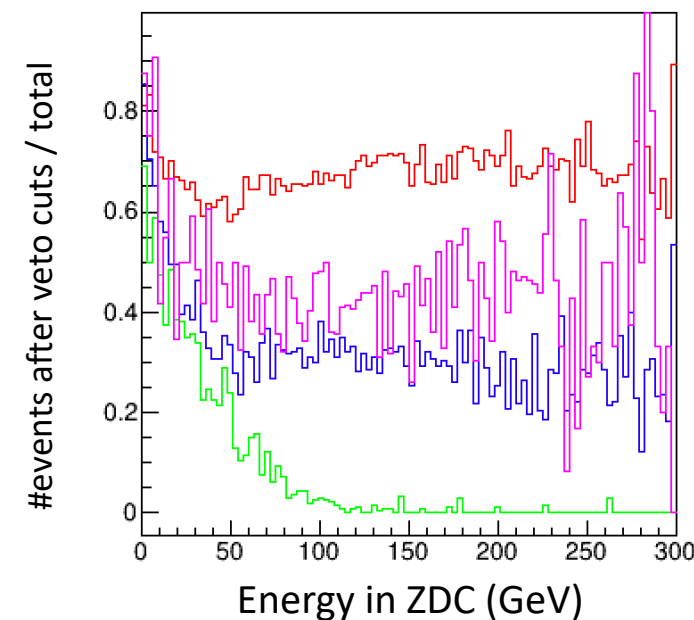
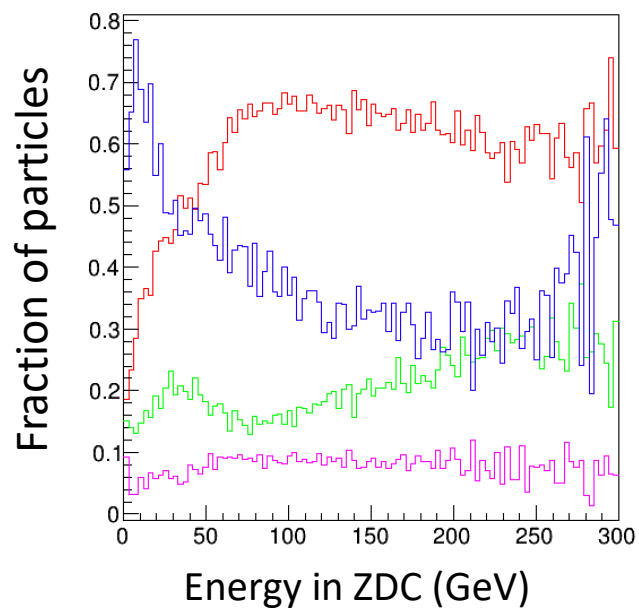
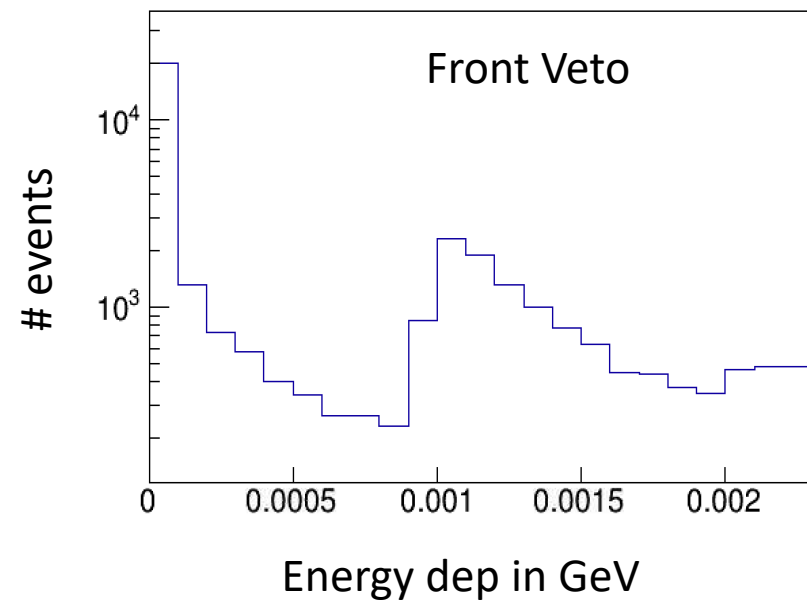
After Veto cuts



Rejection factor after CPV cut

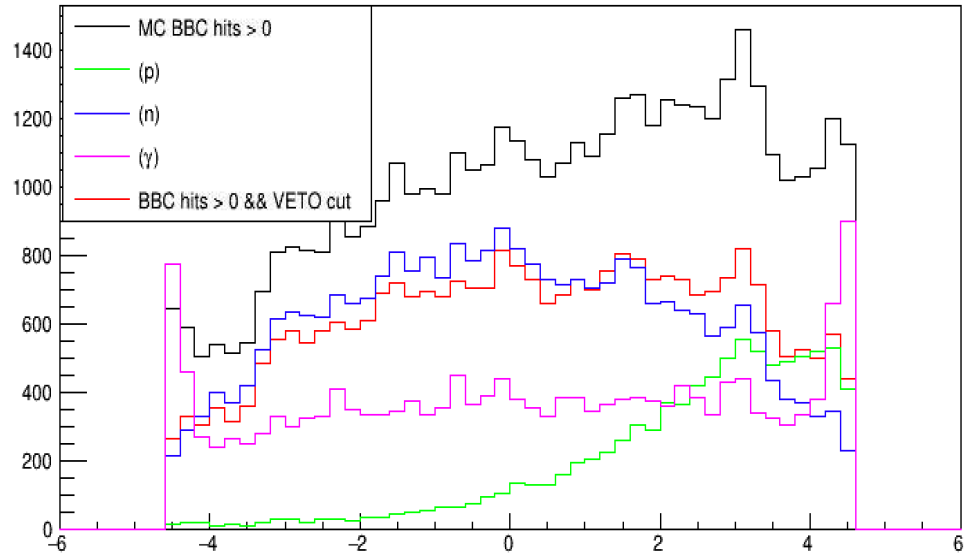


veto front
< 0.0012 GeV

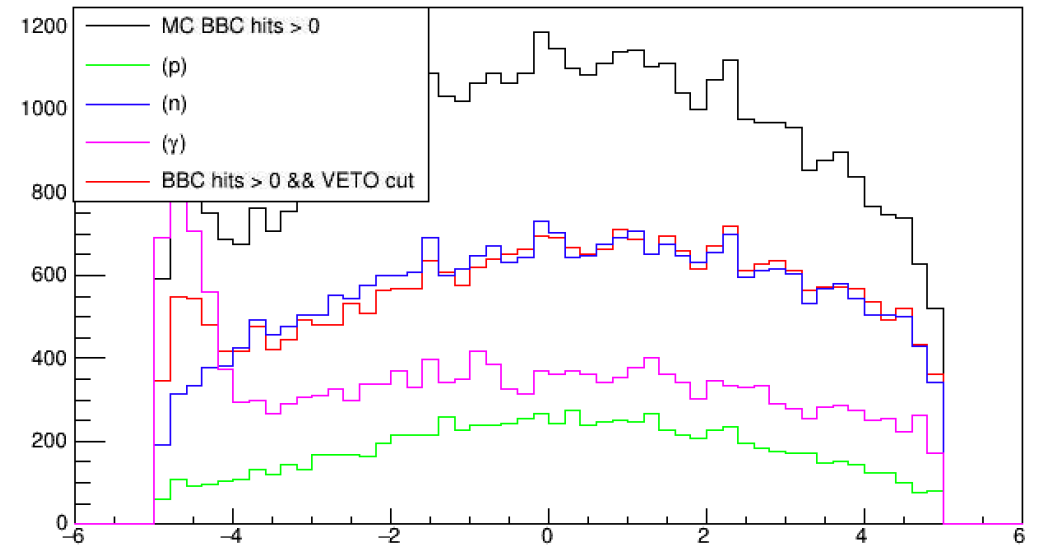


veto front
< 0.0008 GeV

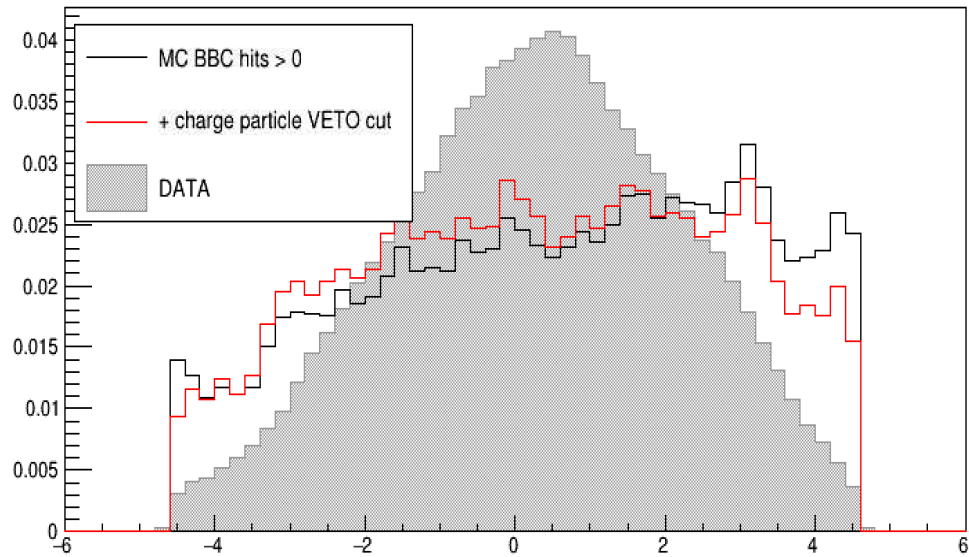
$x_{ev} [TMath::Abs(y_{ev}) < 5 \&\& TMath::Abs(x_{ev}) < 5 \&\& nsm dx > 1 \&\& nsm dy > 1 \&\& bbc_ns > 0]$



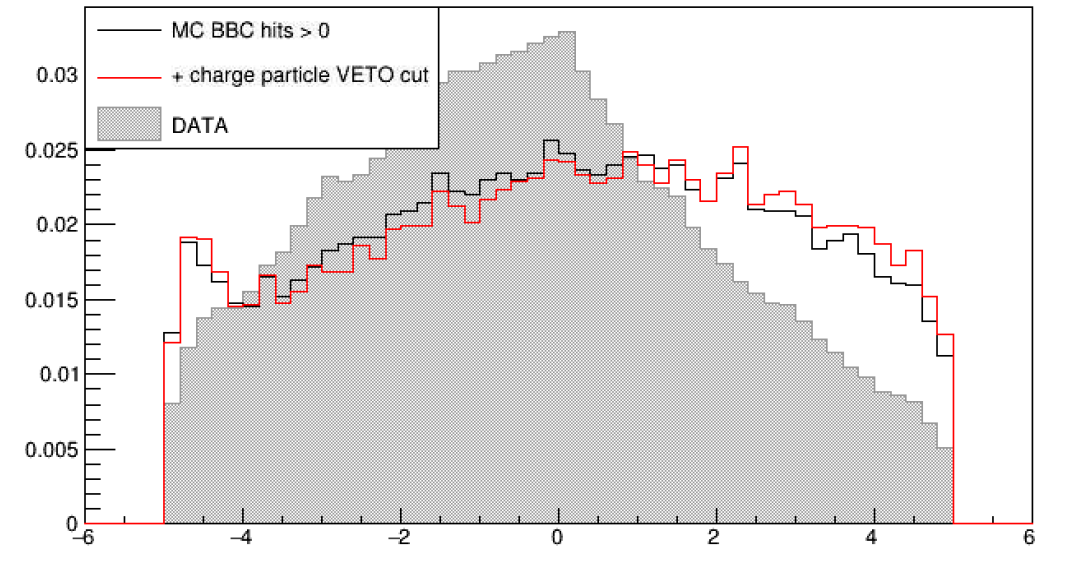
$y_{ev} [TMath::Abs(y_{ev}) < 5 \&\& TMath::Abs(x_{ev}) < 5 \&\& nsm dx > 1 \&\& nsm dy > 1 \&\& bbc_ns > 0]$



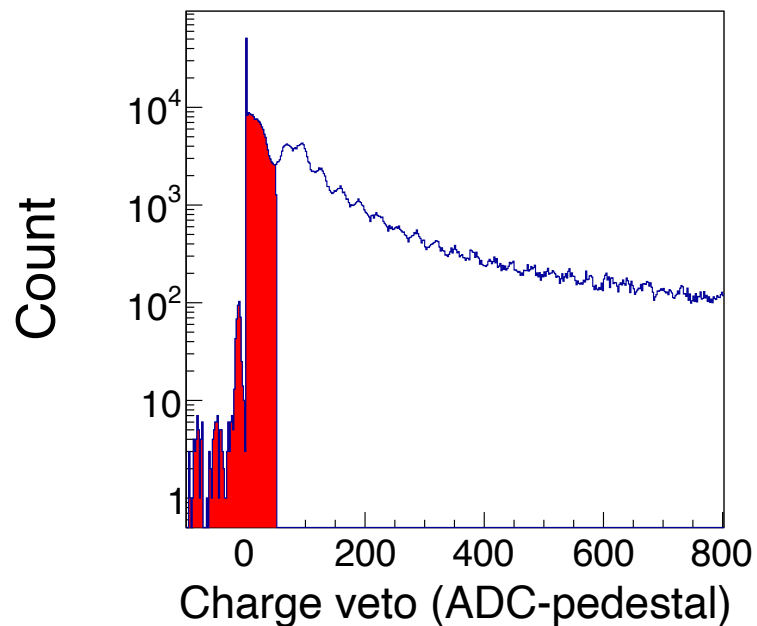
$npa[1] [zdc_hdc[1] < 2000 \&\& zdc_hdc[1] > 2000 \&\& zdc_ene[1] > 0 \&\& zdc_ene[1] < 500 \&\& TMath::Abs(jpca[1]) < 5 \&\& TMath::Abs(jpca[1]) < 5 \&\& wypos[1] > 1 \&\& wypos[1] > 1 \&\& zdc_ene[0] > 0]$



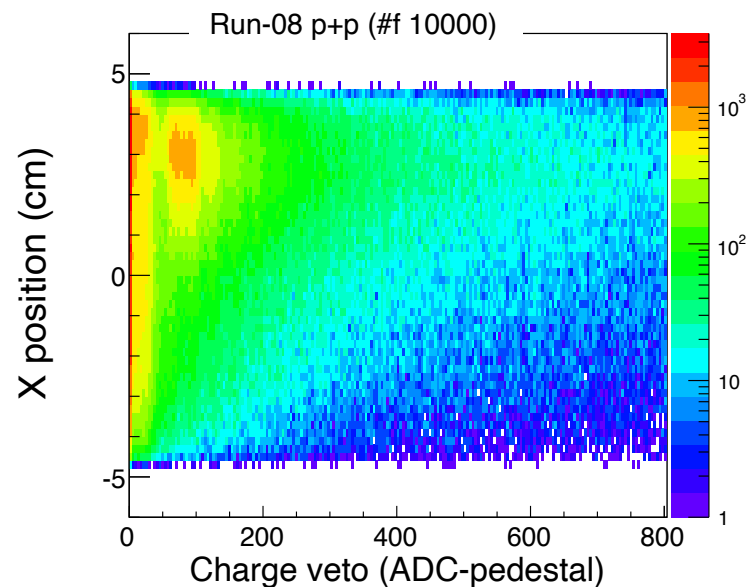
$npa[1] [zdc_hdc[1] < 2000 \&\& zdc_hdc[1] > 2000 \&\& zdc_ene[1] > 0 \&\& zdc_ene[1] < 500 \&\& TMath::Abs(jpca[1]) < 5 \&\& TMath::Abs(jpca[1]) < 5 \&\& wypos[1] > 1 \&\& wypos[1] > 1 \&\& zdc_ene[0] > 0]$



Run-08 p+p



(a) ADC distribution of Charge veto counter.



(b) x position of SMD vs ADC value of Charge veto counter. One MIP peak is shown around 100 ADC, from the charged backgrounds bending to the right region by DX magnet.

Figure 12: Run-08 Charge veto counter.

Run8 - HV

POL_N_0 -1800
POL_N_1 -1730
POL_S_0 -1700
POL_S_1 -1600

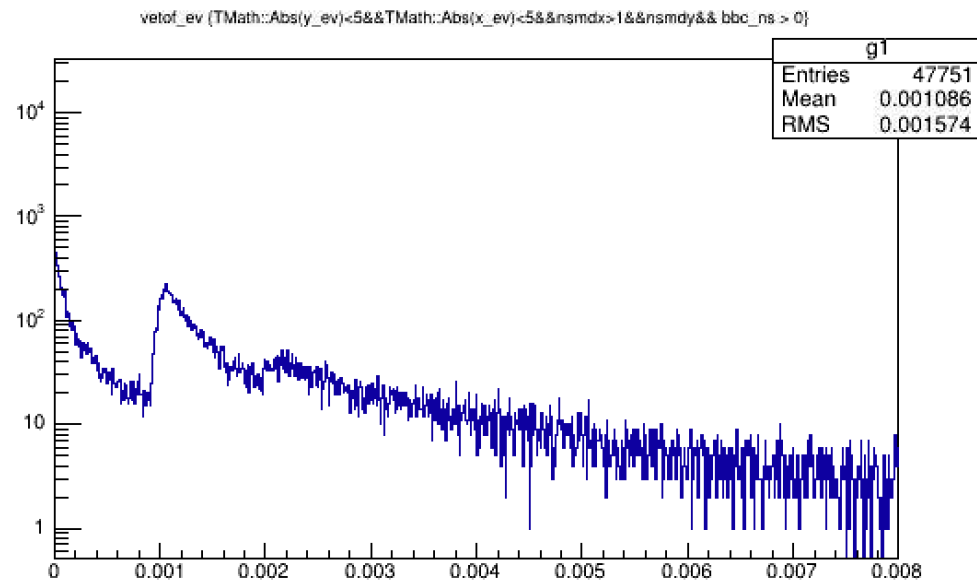
Run9 - HV

(2749980-275014)

POL_N_0 -1500
POL_N_1 -1430
POL_S_0 -1380
POL_S_1 -1500

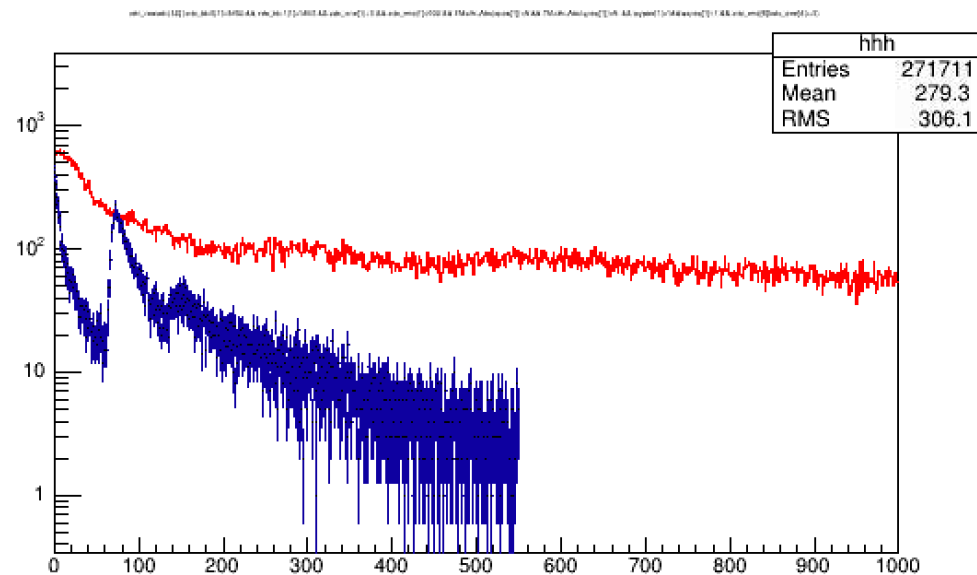
(above 275066)

POL_N_0 -1300
POL_N_1 -1430
POL_S_0 -1380
POL_S_1 -1100

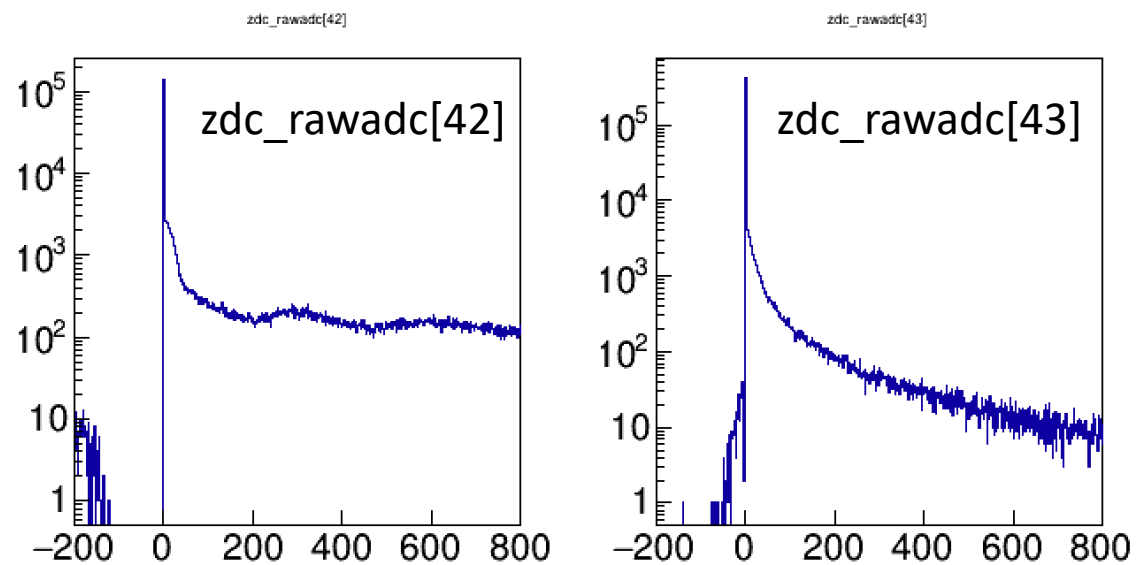
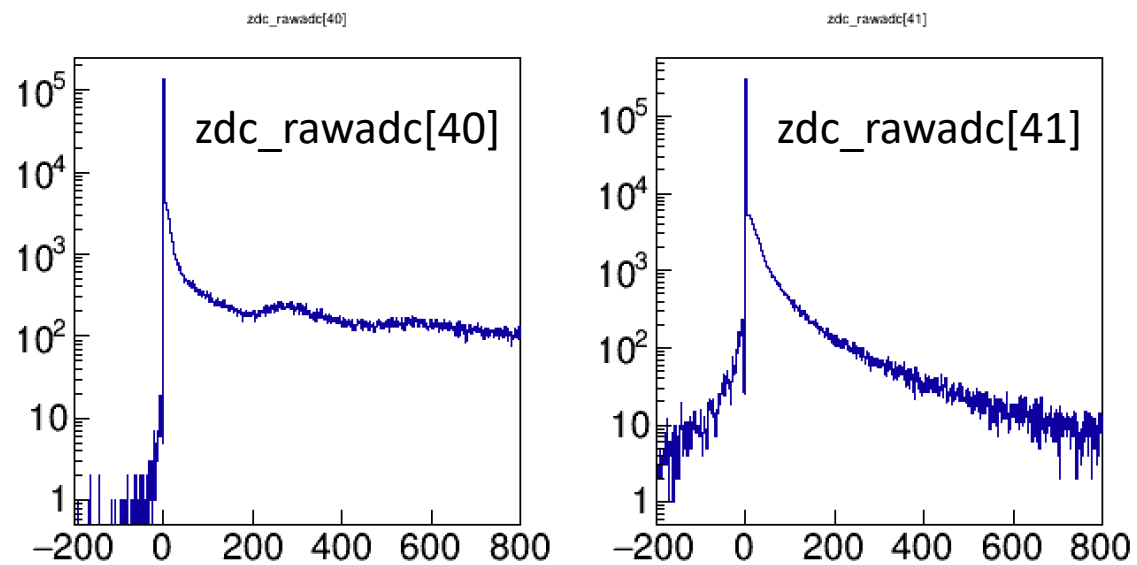


The peak corresponds to 0.00105 GeV = 72 ADC channels for runs above 275066

In data neutron candidates are selected with ADC < 30 ADC



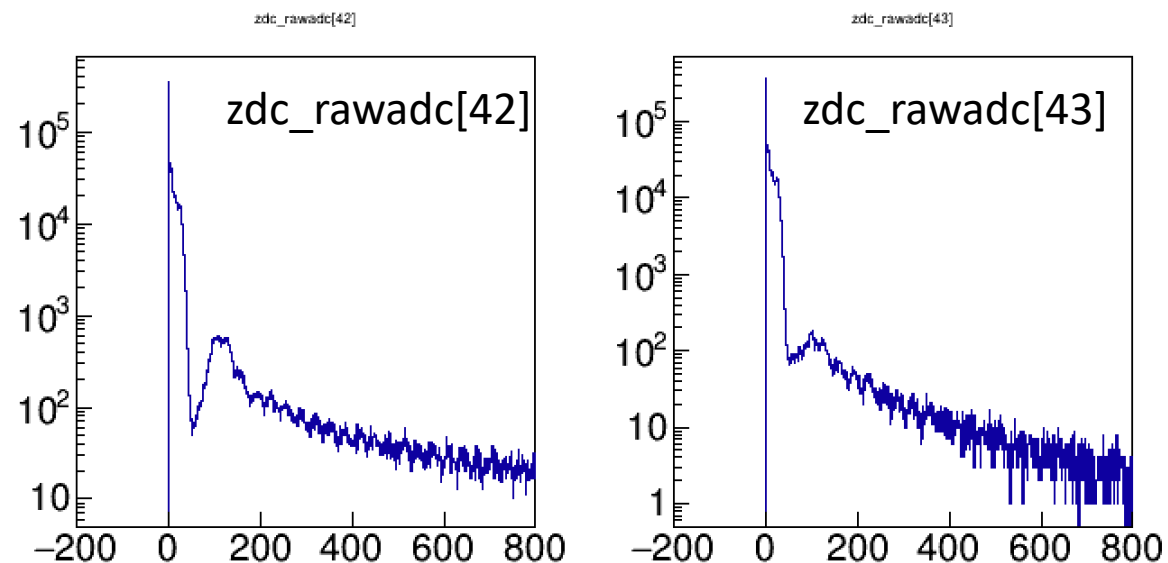
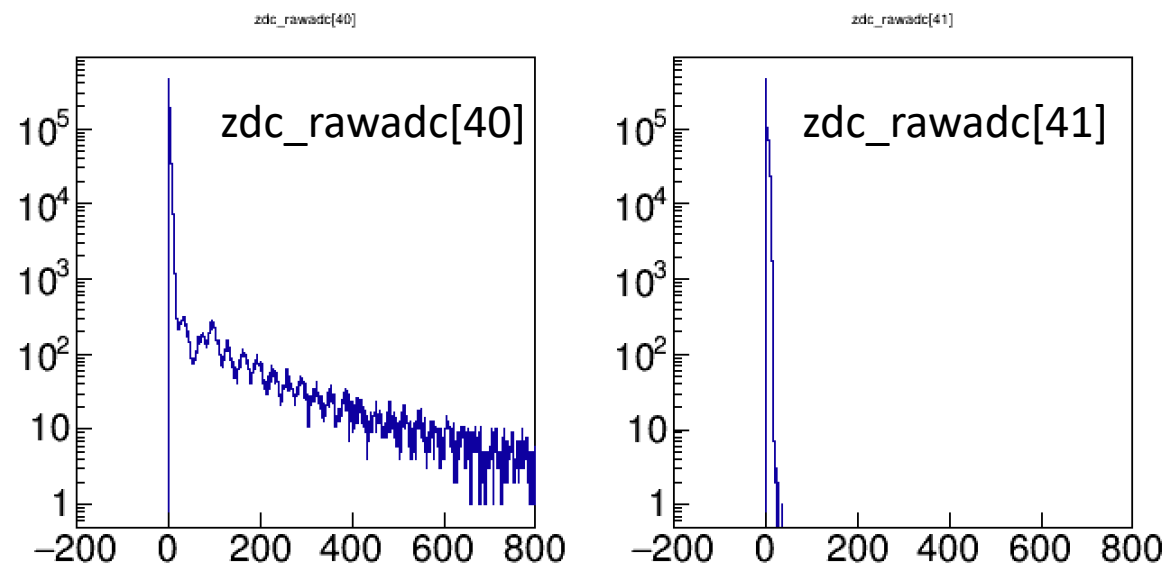
Run-9



(post-Pre) ADC

(post-Pre) ADC

Run-6



Backup

- Neutrons PHENIX :

Simulation is in progress : Understanding charge particle veto

--- seeing lot of protons from diffractive in simulations which is not present in data

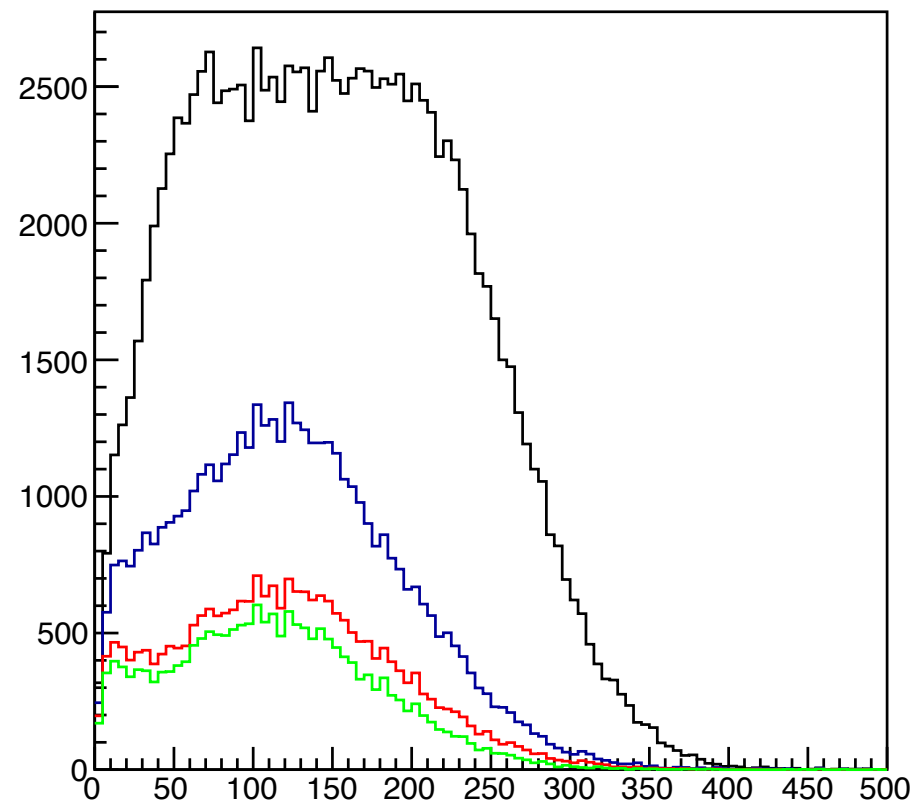
1. Magnetic field settings – Seems to be correct

2. Does PYTHIA generating the right thing or showing excessive x-section for diffractive events?

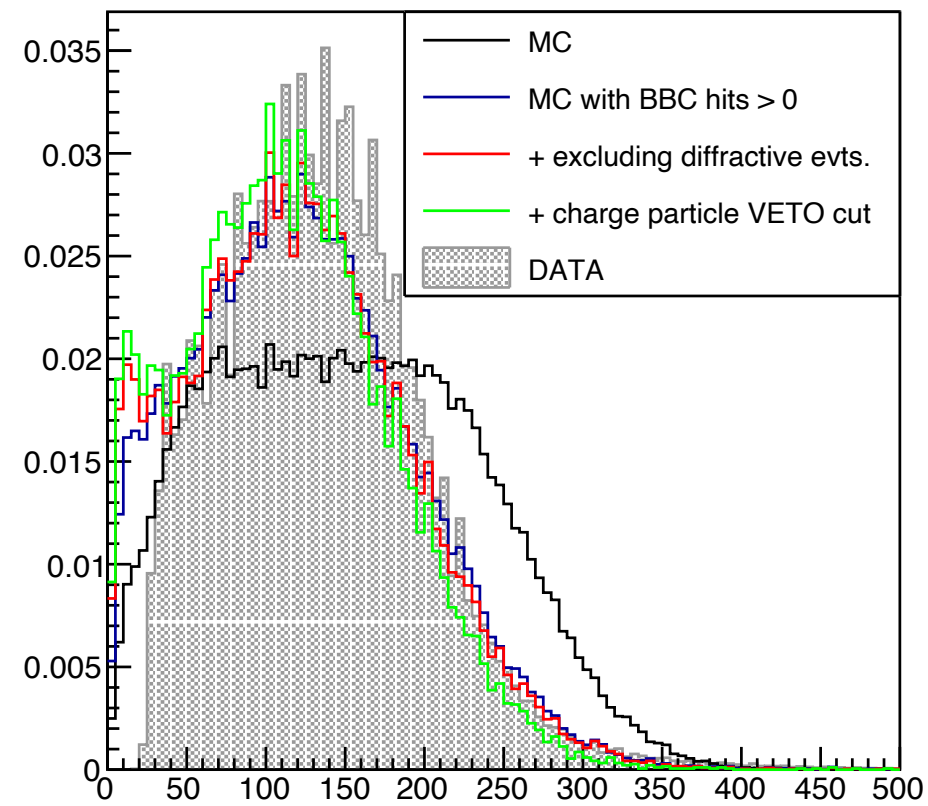
In DATA to estimate ADC MIP for run-9 from 200GeV-data peak using simulations and detector HV inputs.

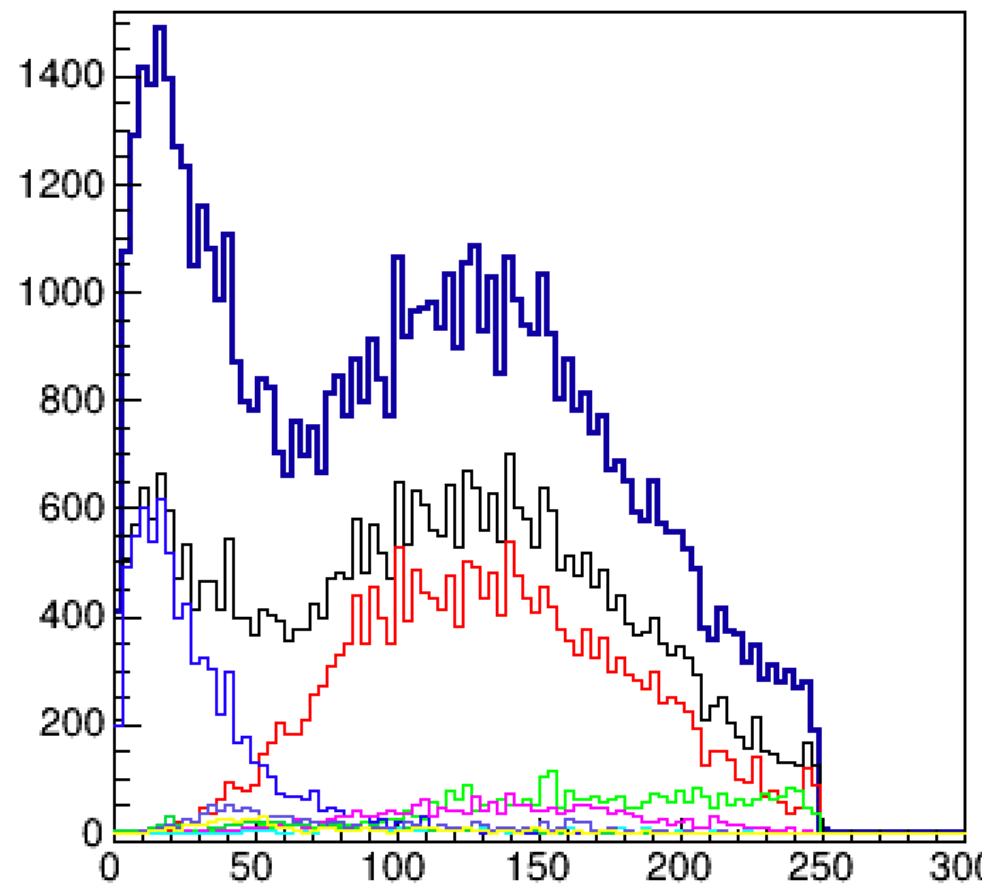
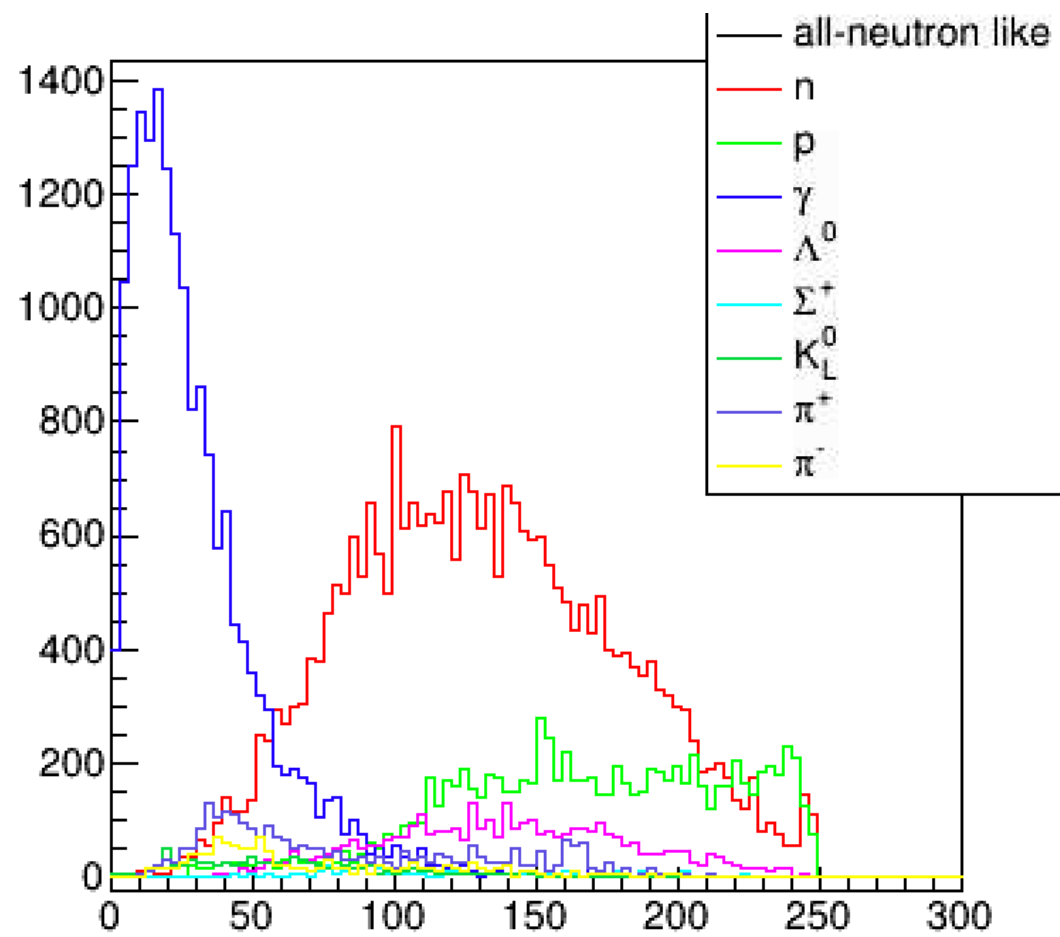
Include BBC info.

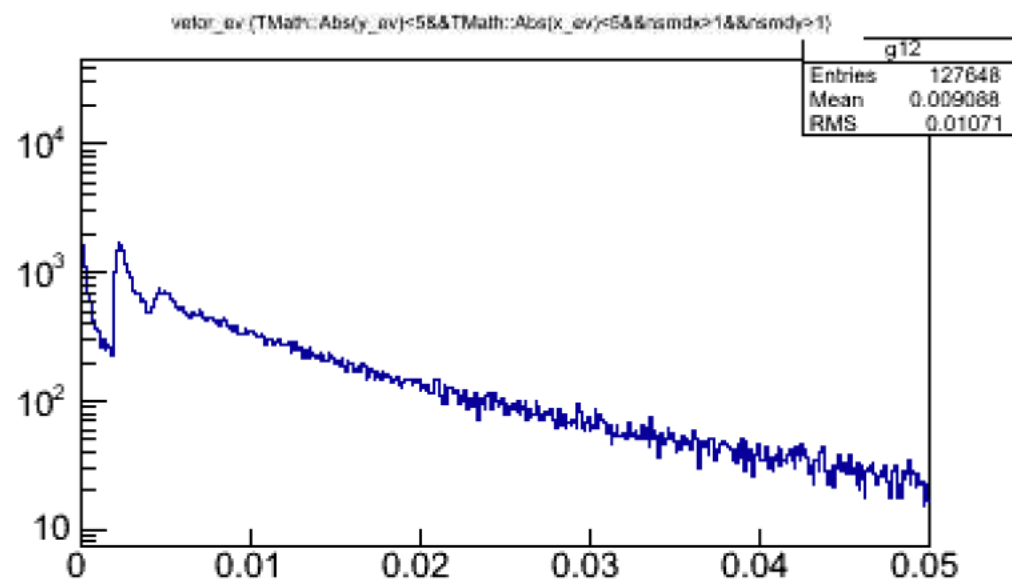
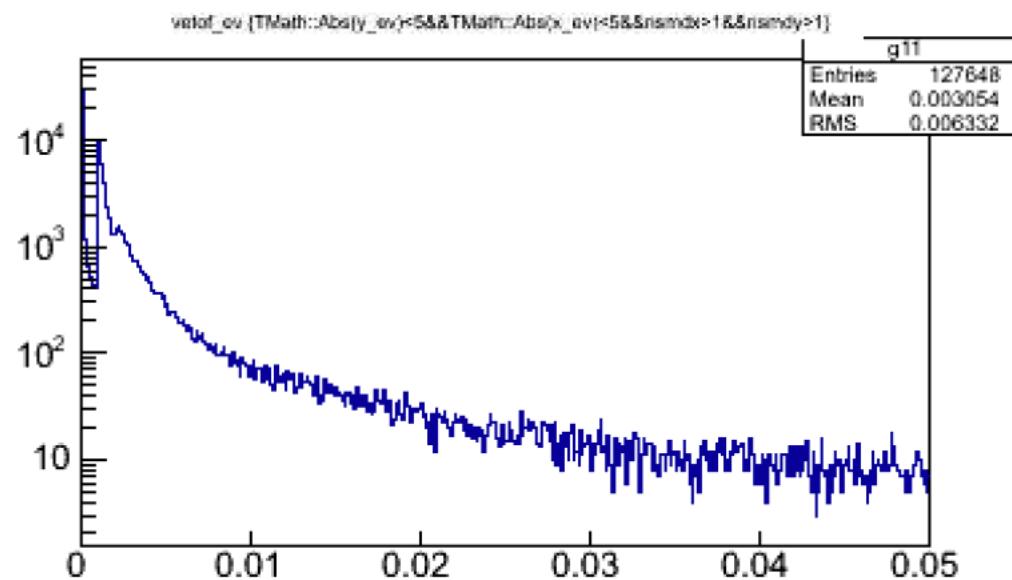
ezdc_ev {TMath::Abs(y_ev)<5&&TMath::Abs(x_ev)<5&&nsmdx>1&&nsmdy>1}



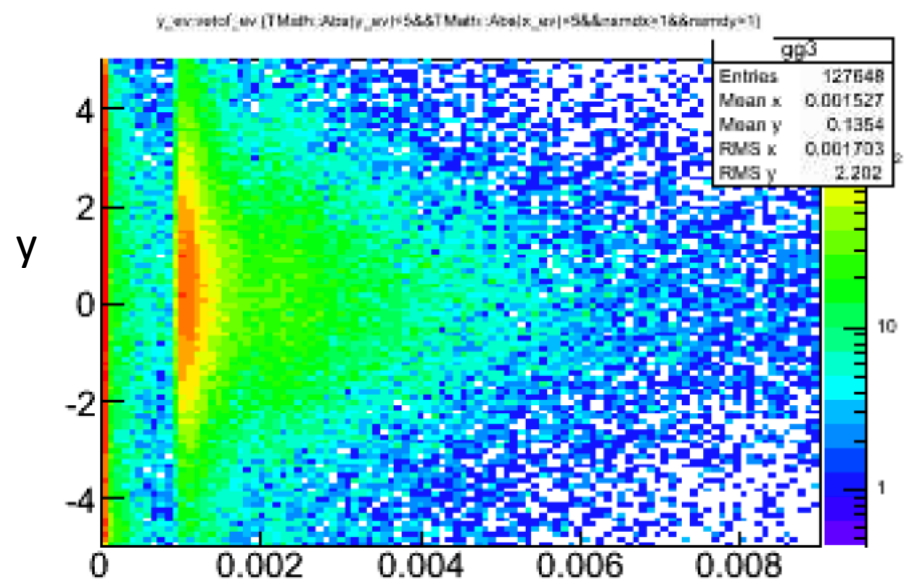
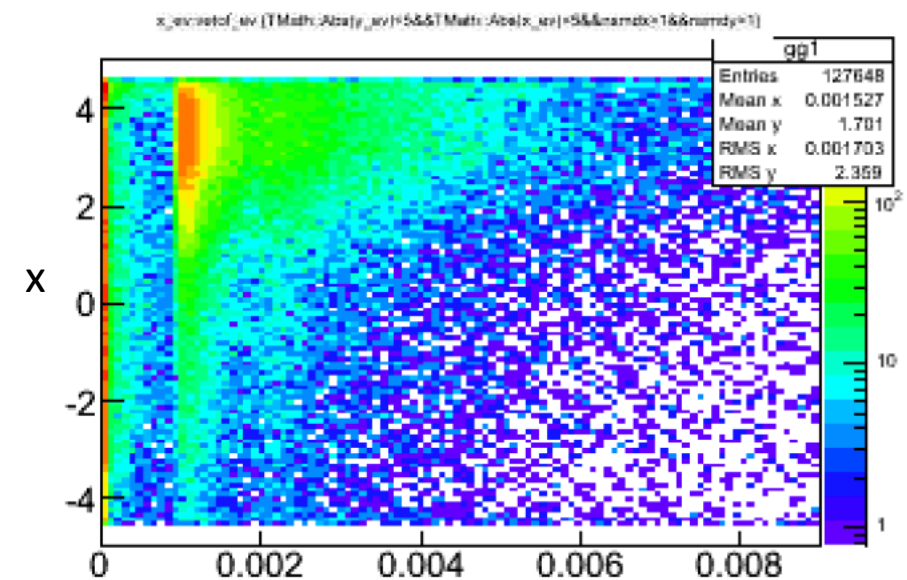
zdc_eme[0] (zdc_bdc[0]<3800 && zdc_bdc[0]>3800 && zdc_eme[0]>0 && zdc_eme[0]<500 && TMath::Abs(ypos[0])<5 && TMath::Abs(ypos[0])<5 && vxypos[0]>1&&wxypos[0]>1 && bdc_rpm[0]>0)







VETO energy



VETO energy