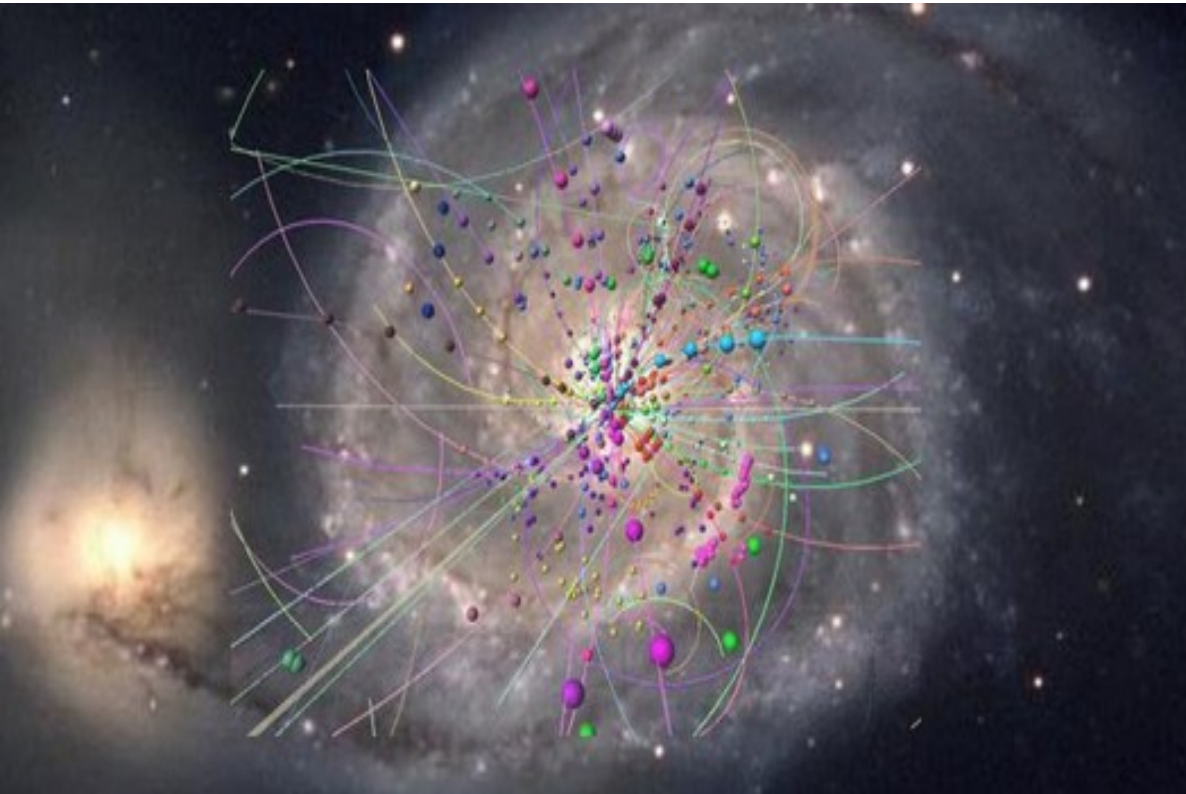




Reporte Semanal ACORDE MEETING



*Emma González Hernández **

*Dr. Arturo Fernández Téllez **

*Dr. Mario Rodríguez Cahuantzi **

* FCFM-BUAP

Abril 23, 2016

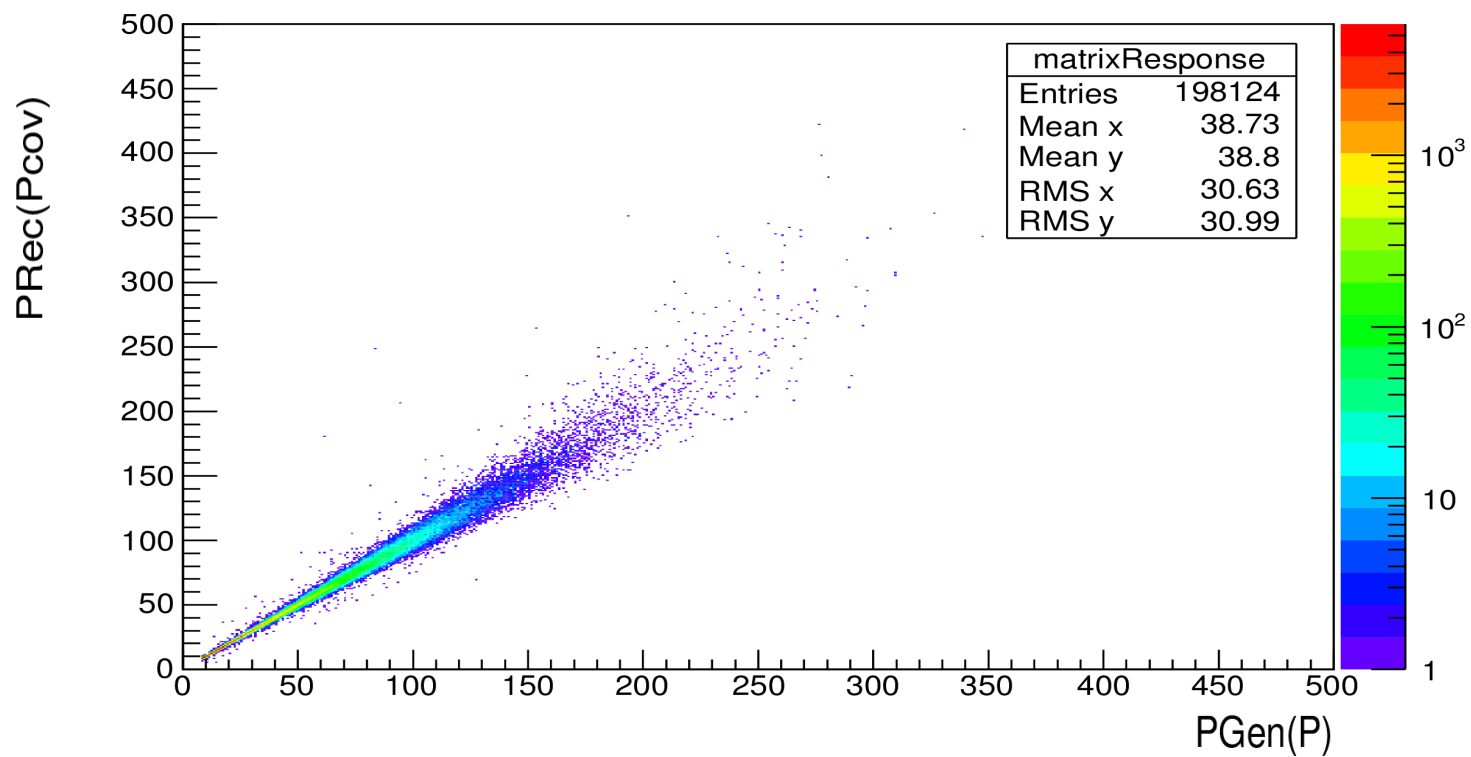
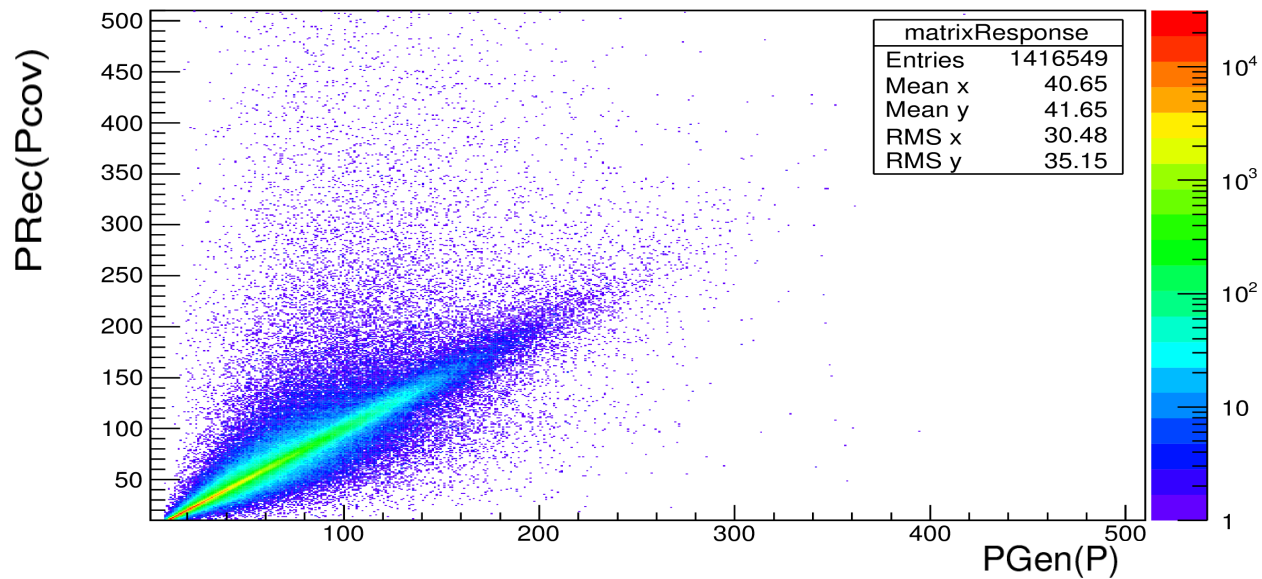
Data

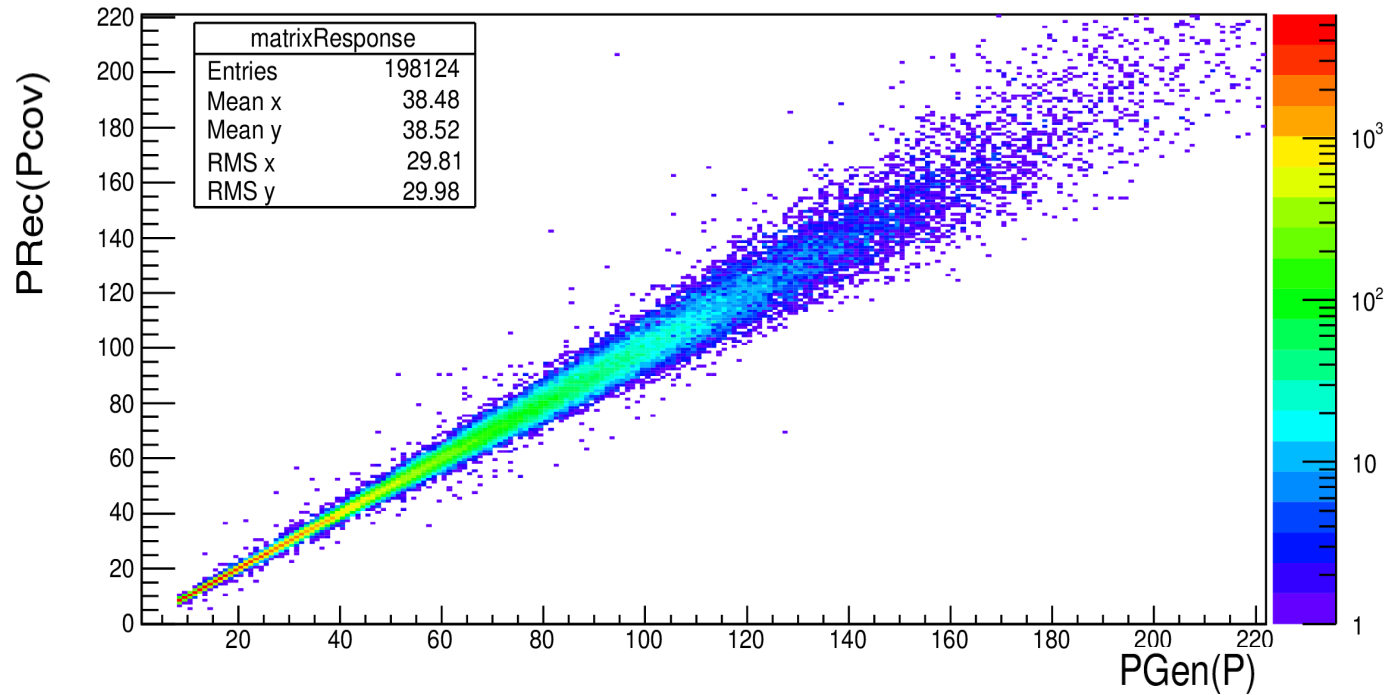
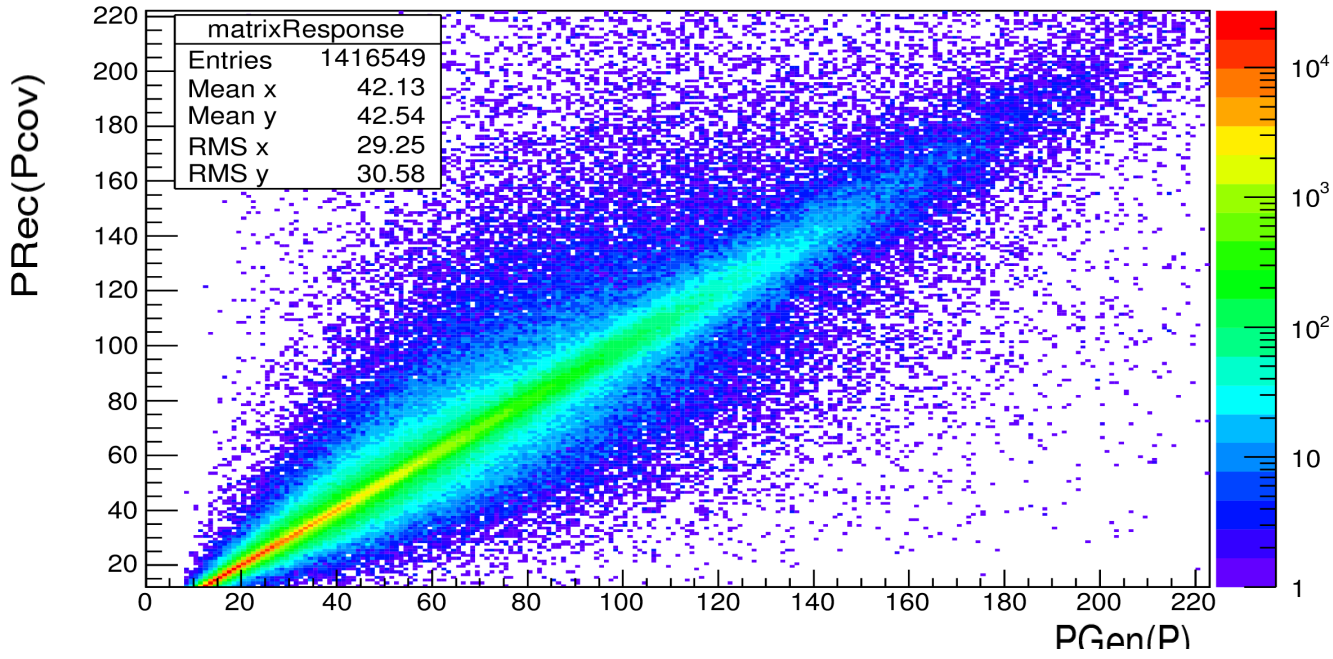
- ♦ LHC15a_Bminus.root
- ♦ LHC15a_Bplus.root
- ♦ LHC15c_Bplus_1.root
- ♦ LHC15c_Bplus_2.root
- ♦ LHC15d_Bminus.root
- ♦ LHC15d_Bplus.root
- ♦ LHC15e_Bplus.root
- ♦ LHC15f_Bminus.root
- ♦ LHC15f_Bplus.root
- ♦ LHC15g_Bplus.root
- ♦ LHC15h_Bplus.root
- ♦ LHC15i_Bplus.root
- ♦ LHC15j_Bplus.root
- ♦ LHC15k_Bminus.root

- ♦ **1 muon**
- ♦ **2 tracks**
- ♦ **Range of momentum: 0-500 GeV/c**
- ♦ **Within $\theta < 20^\circ$**
- ♦ **Fiducial area of $1.5 \times 1.5 \text{m}^2$**

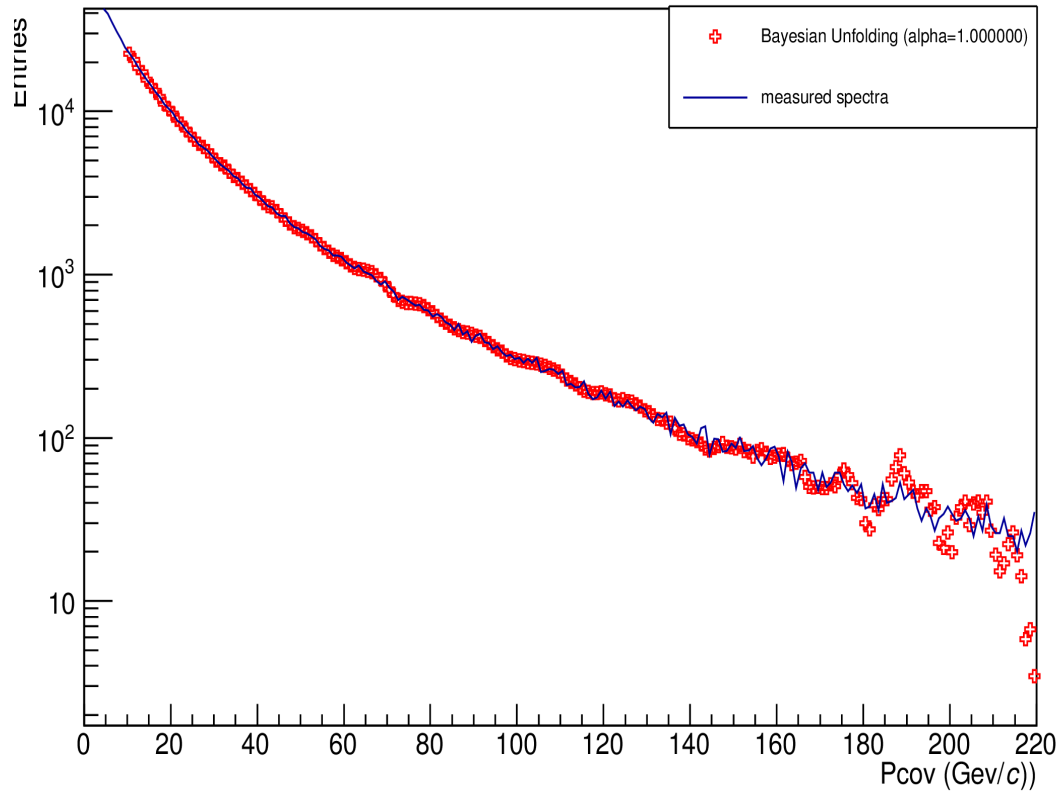
Study of Monte Carlo

- ♦ **1 muon**
- ♦ **2 tracks**
- ♦ **1,416,549 events**
- ♦ **Range of momentum: 5-500 GeV/c**
- ♦ **Within $\theta < 20^\circ$**
- ♦ **Fiducial area of $1.5 \times 1.5 \text{m}^2$**
- ♦ **435cm above the point of interaction**
- ♦ **In a random plane**

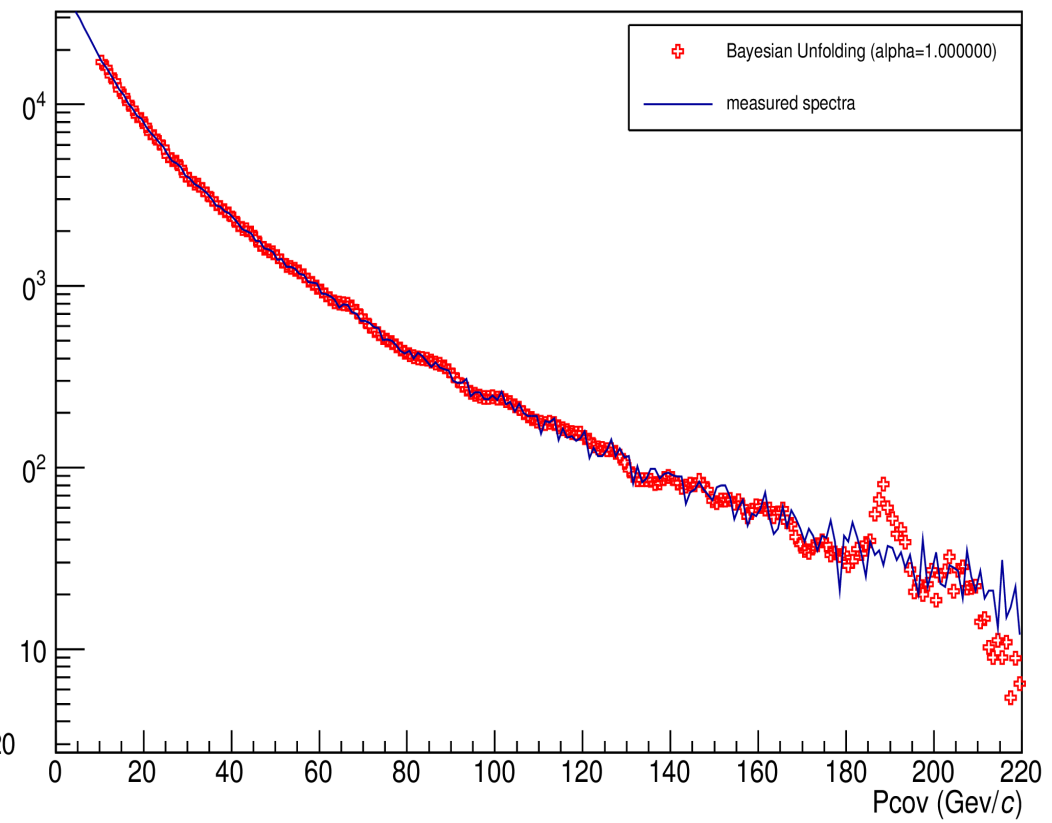




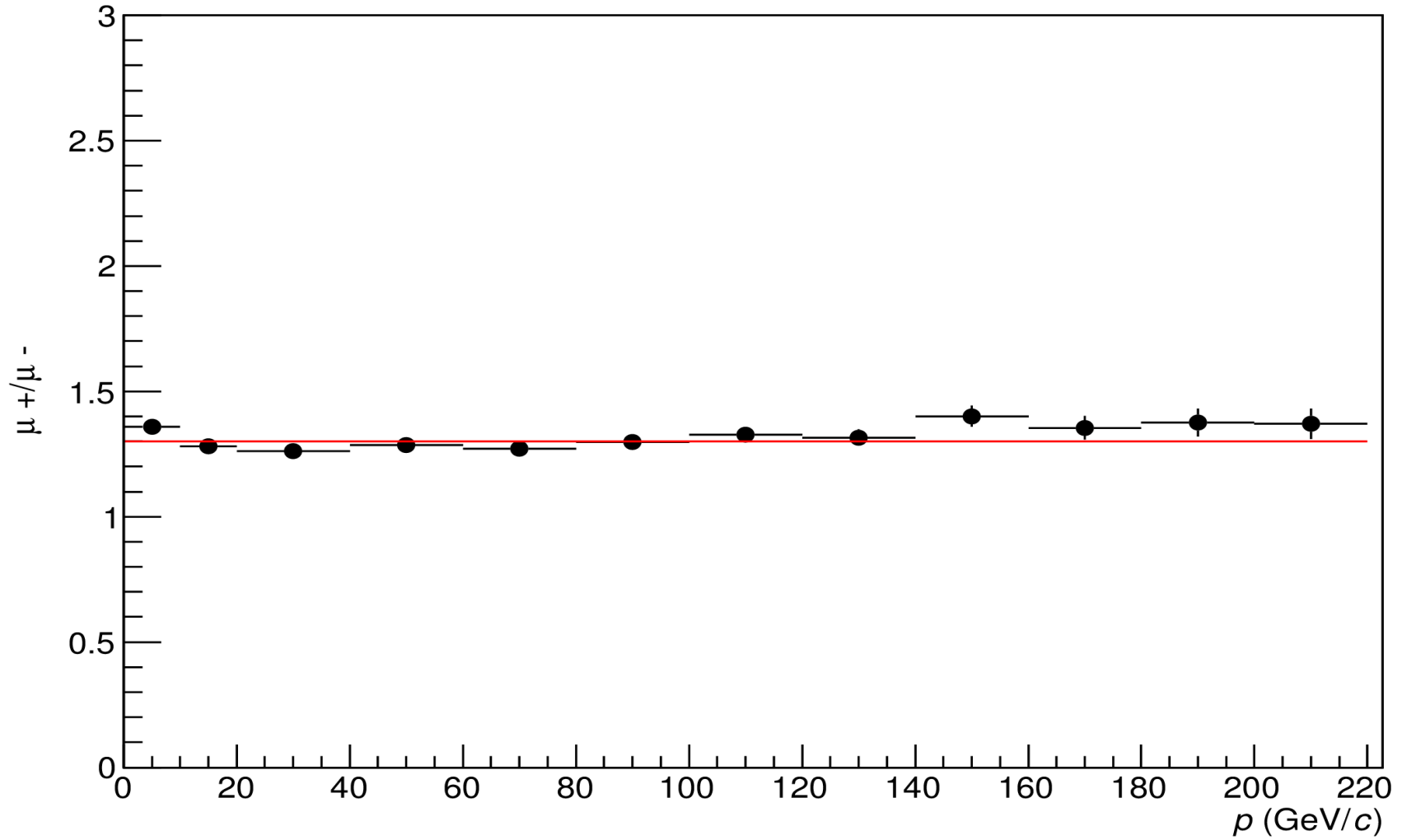
Momentum distribution μ^+ for iteracion=10



Momentum distribution μ^- for iteracion=10



Uncorrected muon charged ratio





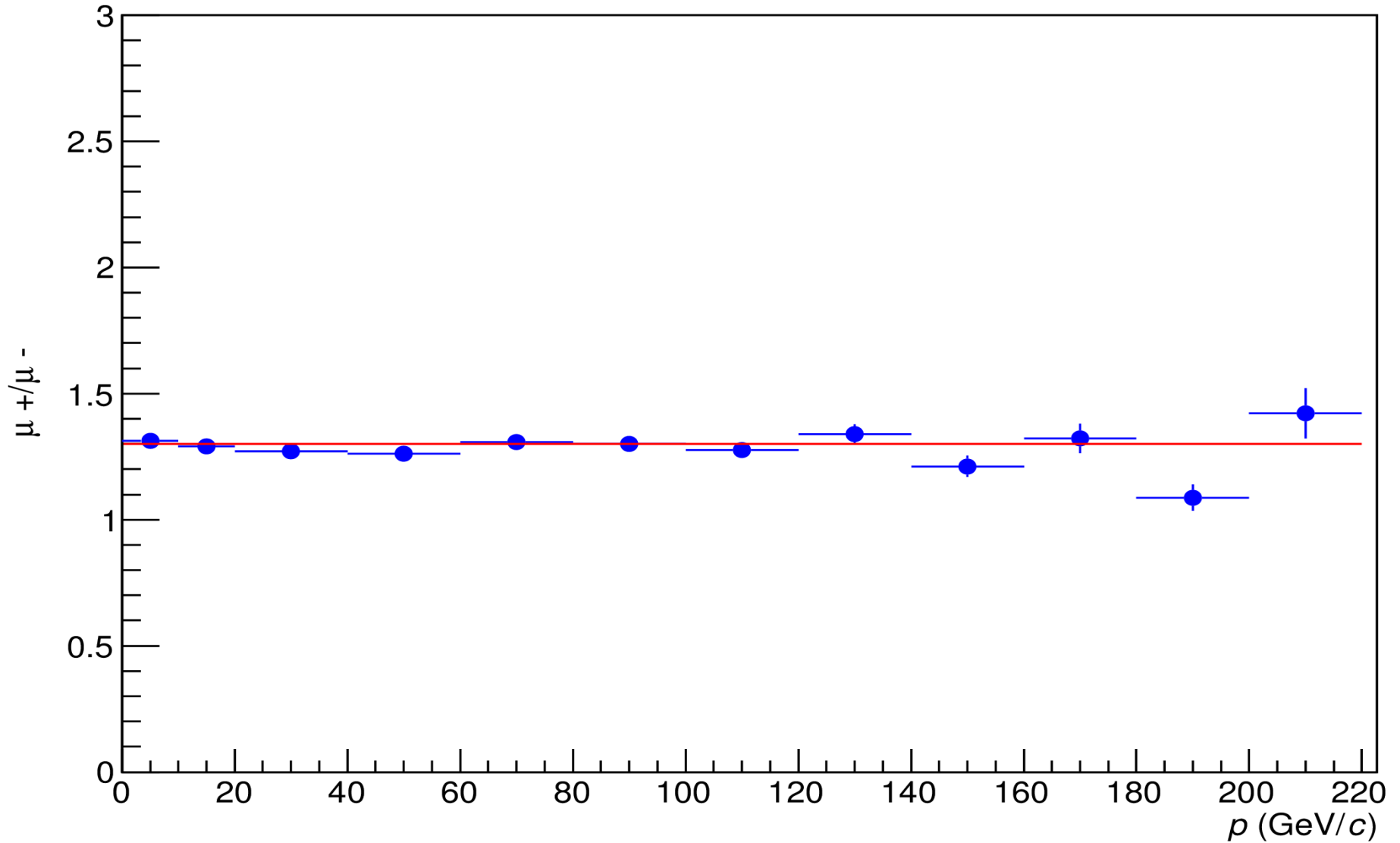
```
int_t nbin = 12;  
Double_t ptbin_min[12]={0,10,20,40,60,80,100,120,140,160,180,200};  
Double_t ptbin_max[12]={10,20,40,60,80,100,120,140,160,180,200,220};
```

```
for(Int_t i=0;i<nbin;i++)  
{  
    binmin_ptP[i]= muonPos_pCov->FindBin(ptbin_min[i]);  
    binmax_ptP[i]= muonPos_pCov->FindBin(ptbin_max[i]);  
    binmin_ptN[i]= muonNeg_pCov->FindBin(ptbin_min[i]);  
    binmax_ptN[i]= muonNeg_pCov->FindBin(ptbin_max[i]);  
    Int_t bin_p=binmin_ptP[i];  
    Int_t bin_n=binmin_ptN[i];  
    nbinPos[i] = muonPos_pCov->Integral(binmin_ptP[i],binmax_ptP[i]);  
    nbinNeg[i] = muonNeg_pCov->Integral(binmin_ptN[i],binmax_ptN[i]);  
    ratiomuon[i]=nbinPos[i]/nbinNeg[i];  
    ratioerror[i]= sqrt(nbinPos[i]/(nbinNeg[i]*nbinNeg[i]) + nbinPos[i]*nbinPos[i]/  
(nbinNeg[i]*nbinNeg[i]*nbinNeg[i]));  
    Double_t ptm = (ptbin_min[i]+ ptbin_max[i])*0.5 ;  
    Double_t ptdif= fabs(ptbin_min[i]- ptbin_max[i])*0.5 ;  
    muonsratio->SetPoint(i,ptm,ratiomuon[i]);  
    muonsratio->SetPointError(i,ptdif,ratioerror[i]);  
}
```

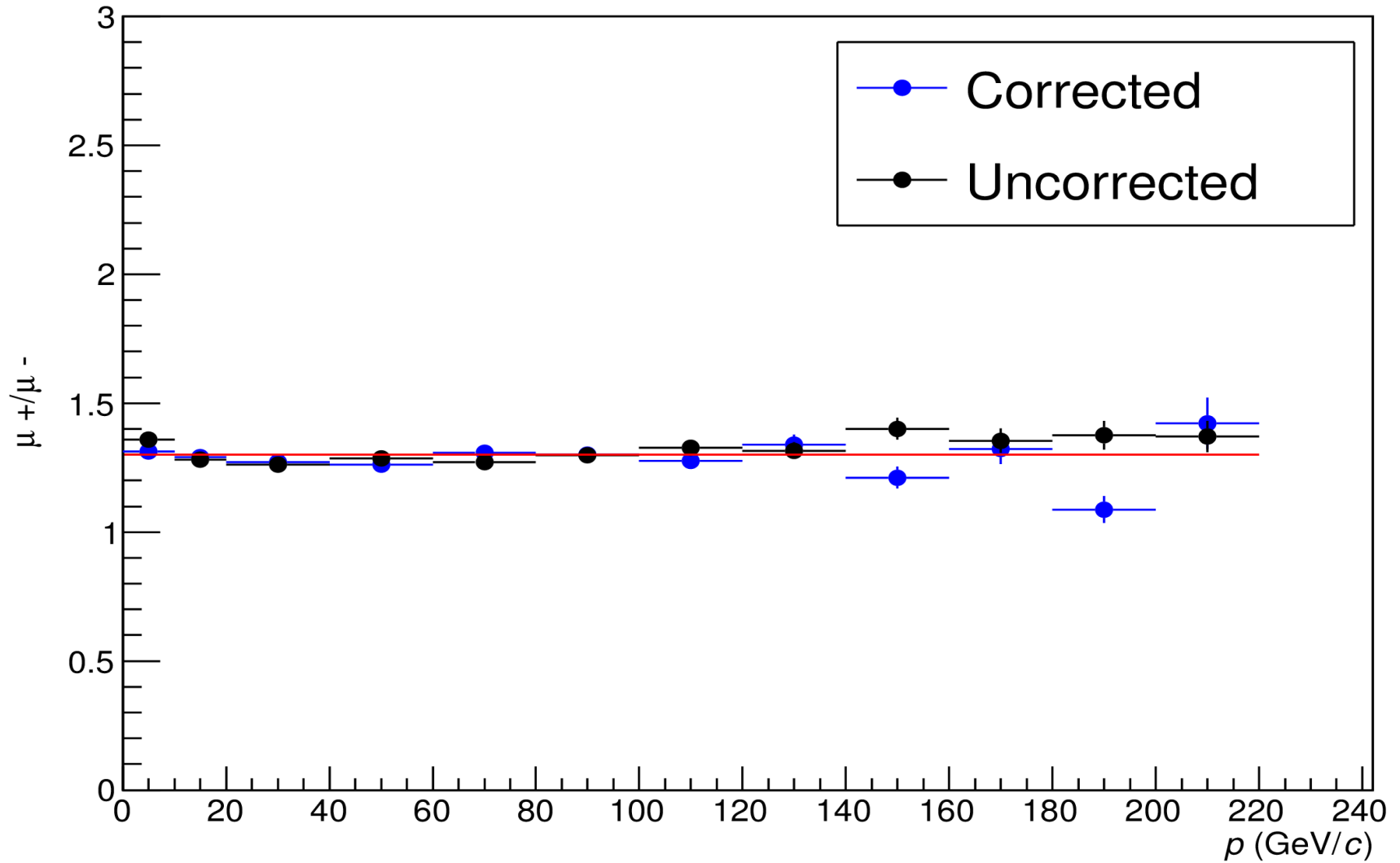
```
const Int_t nbins = 13;  
Double_t ptbin[nbins+1]={0,10,20,40,60,80,100,120,140,160,180,200,220};
```

```
frac= new TH1F("Corrected muon charged ratio","Corrected muon charged ratio", 500, 0, 500);  
frac->Divide(muonPos_pCov,muonNeg_pCov);
```

Corrected muon charged ratio



Corrected and Uncorrected muon charged ratio





The resolution of momentum is defined as

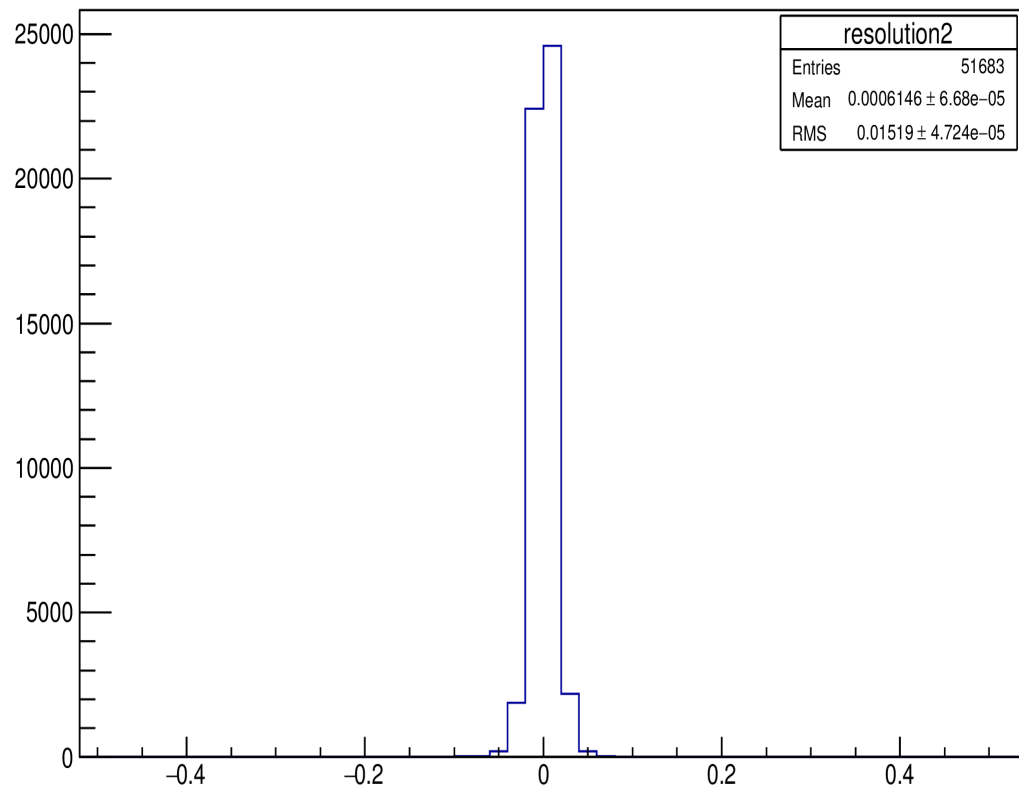
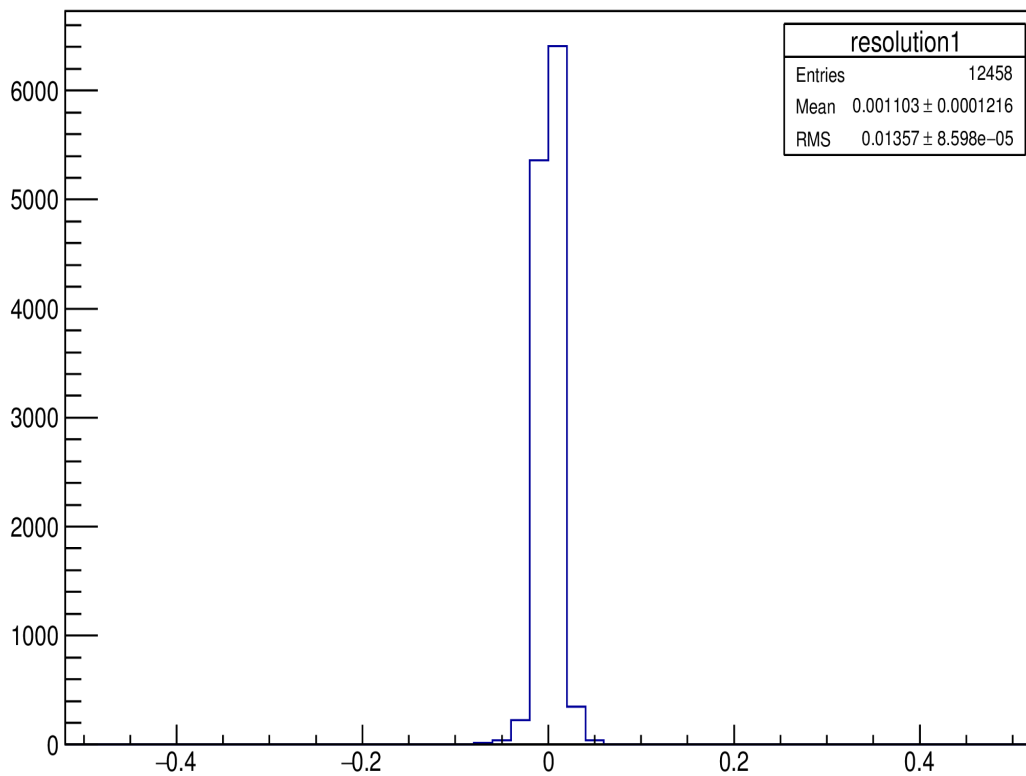
$$\frac{P_{Gen} - P_{Rec}}{P_{Gen}}$$

Pgen->pMC

Prec->Pcov

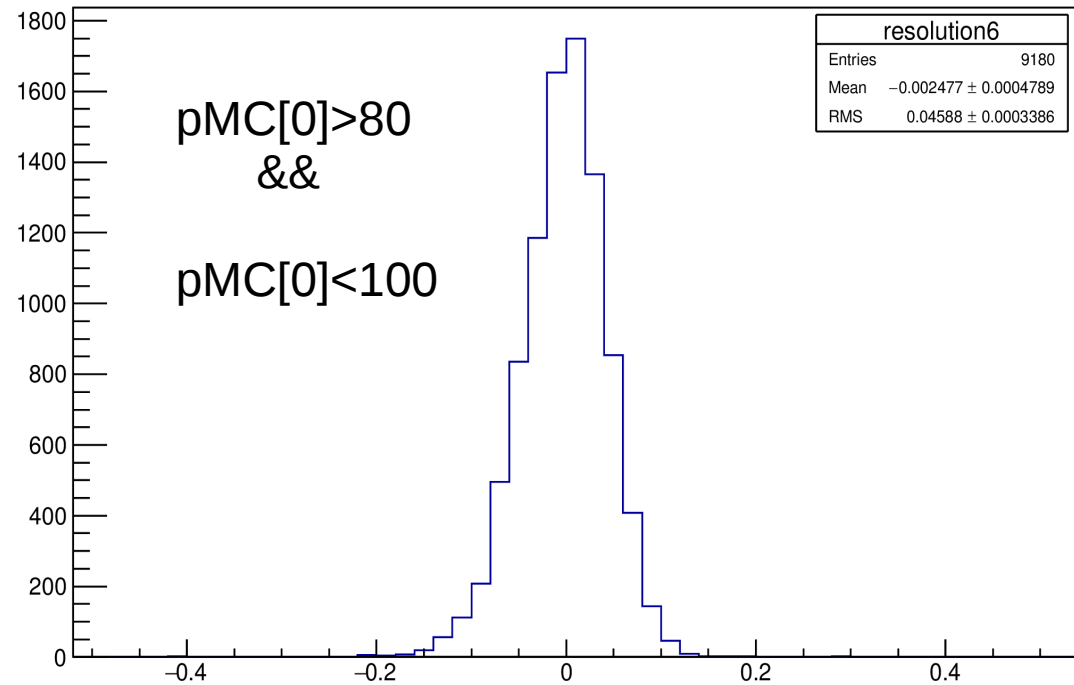
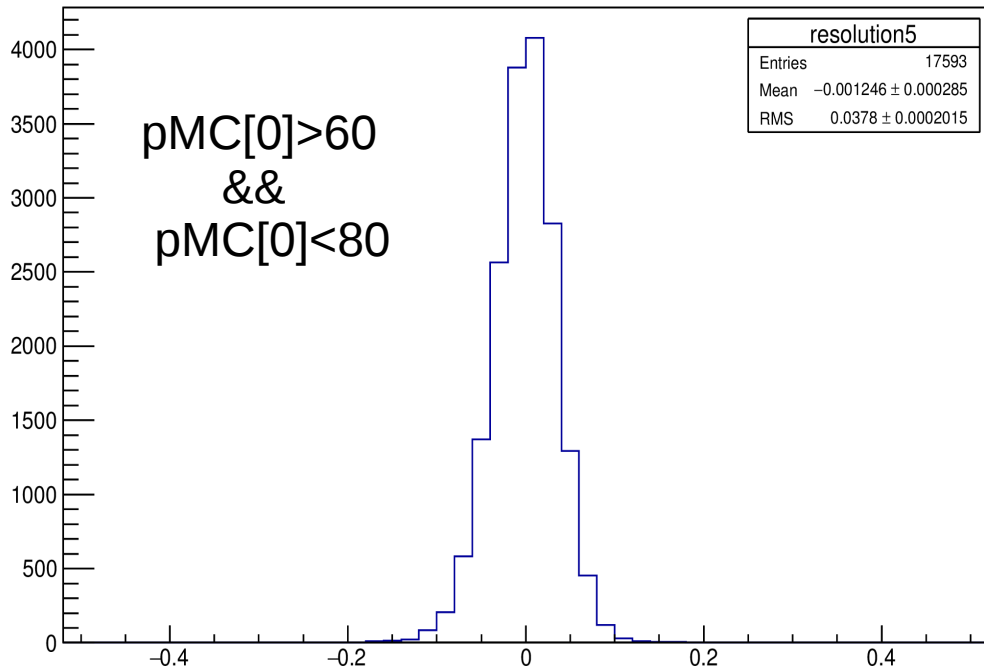
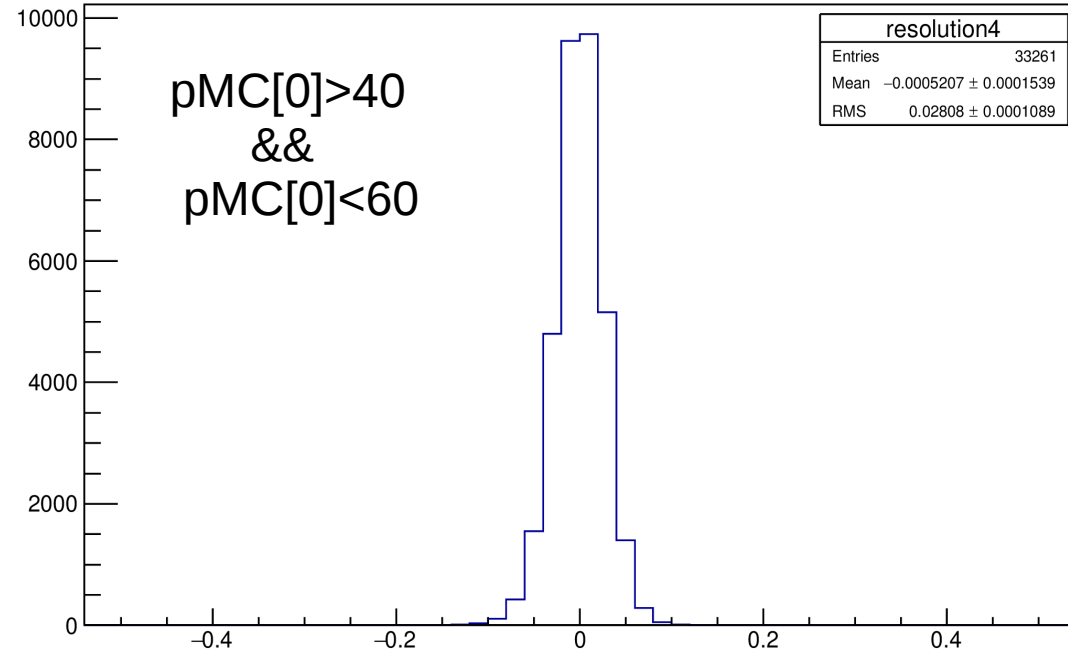
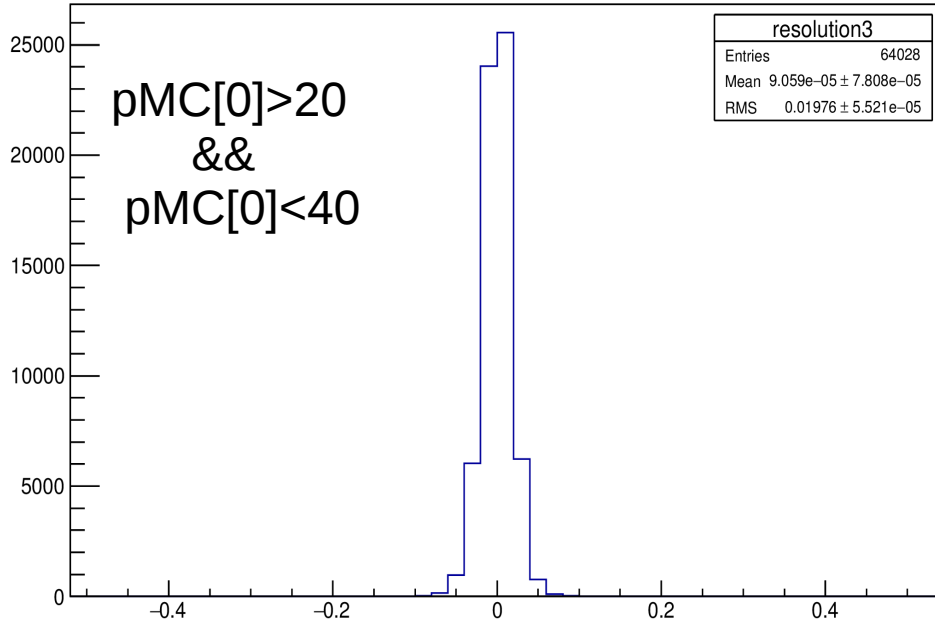
pMC[0]>0 && pMC[0]<10

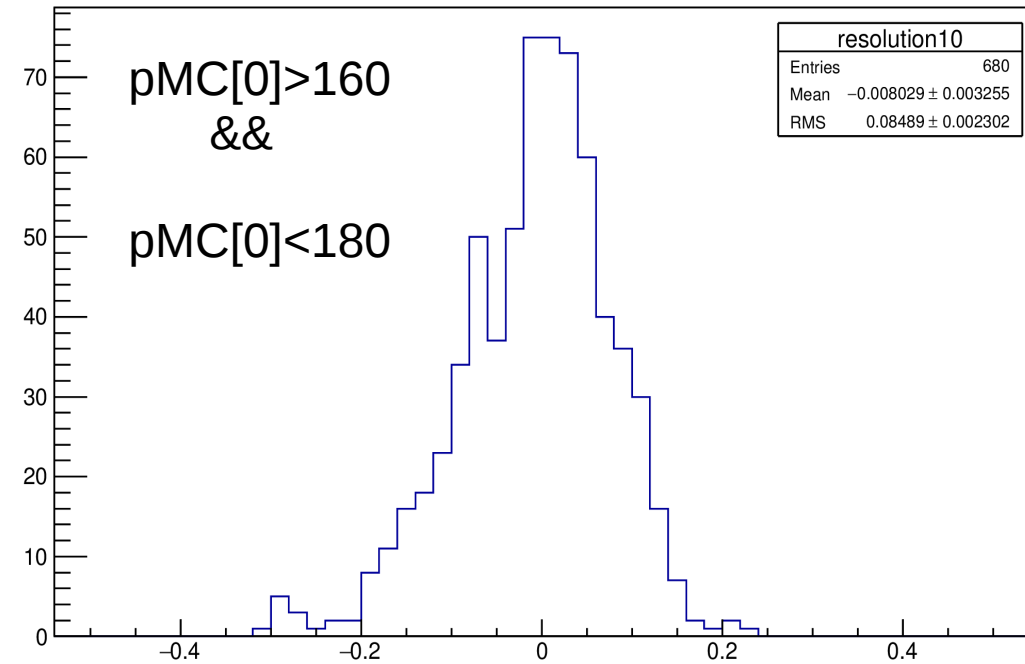
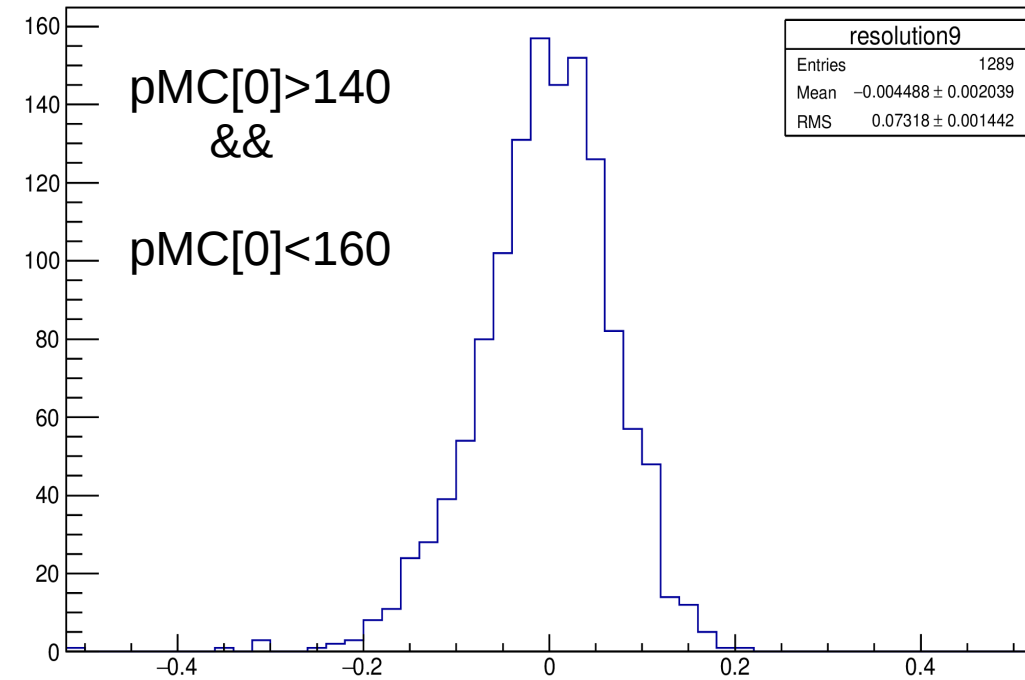
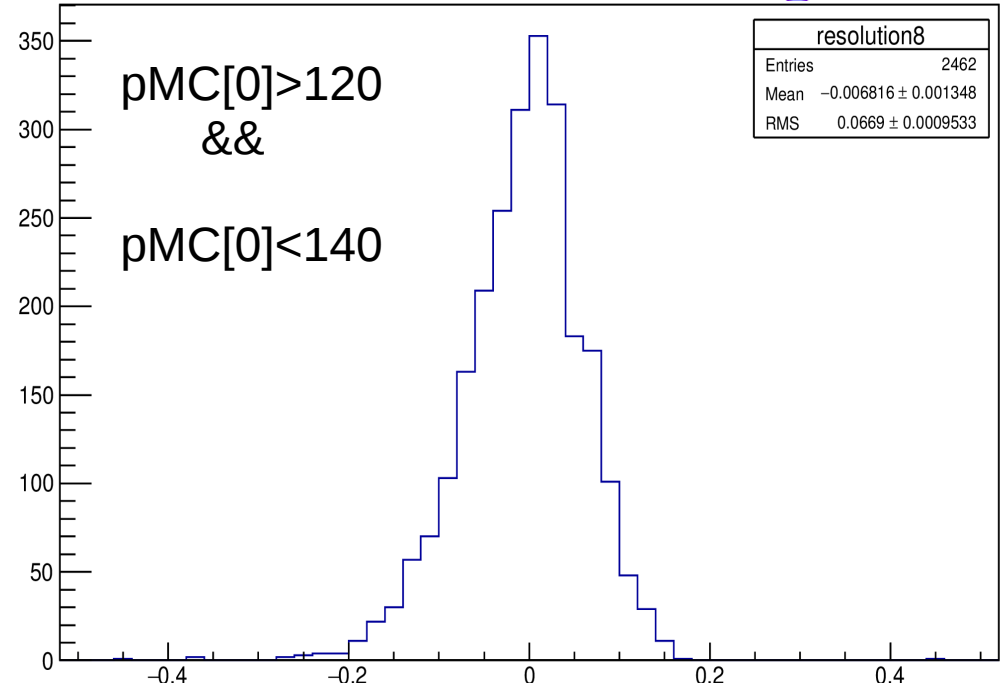
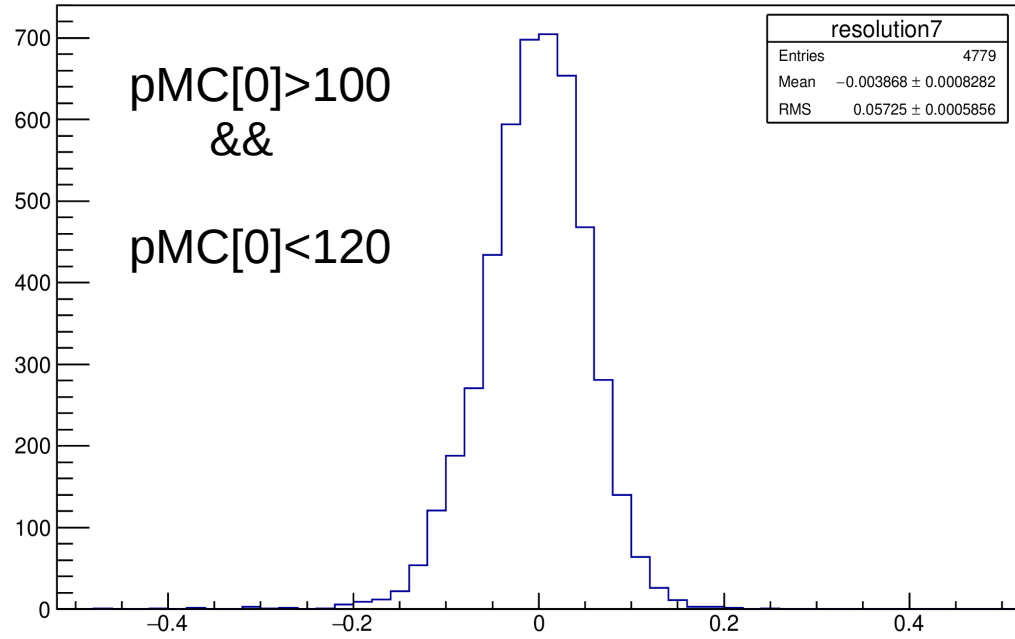
pMC[0]>10 && pMC[0]<20



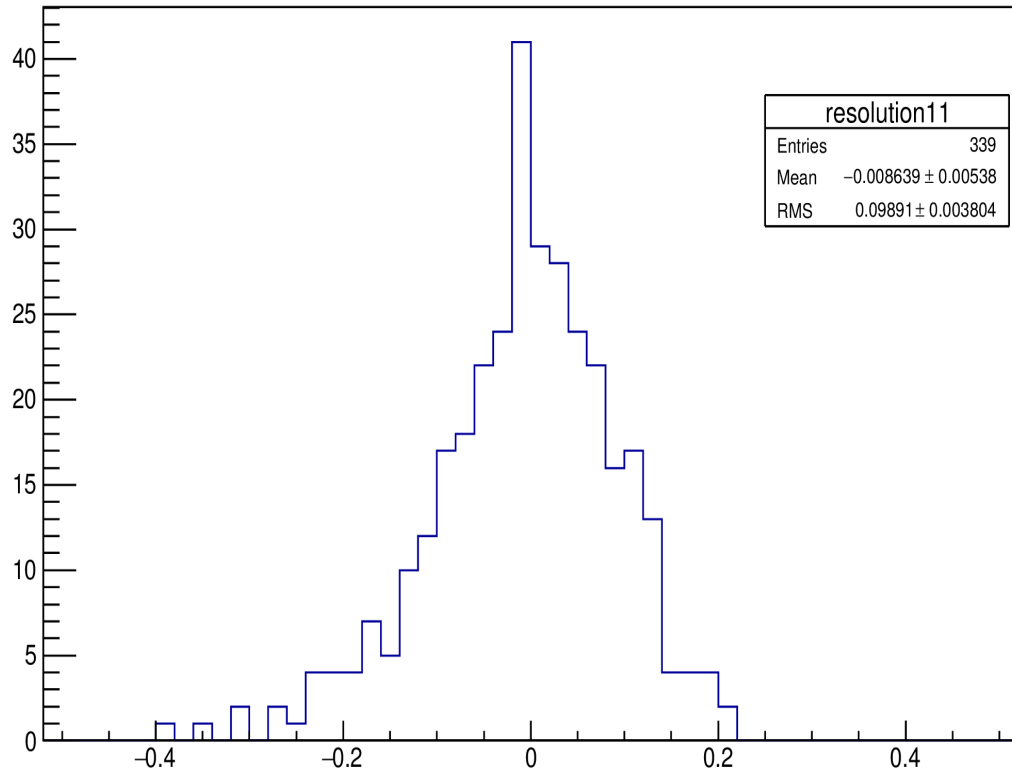


ALICE

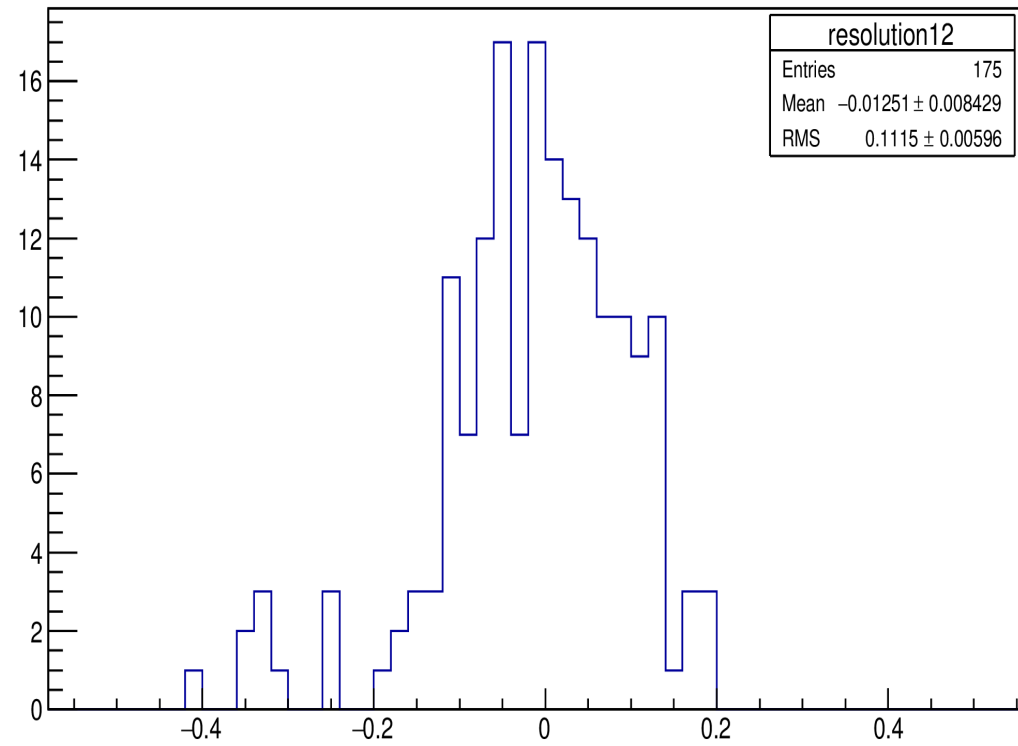




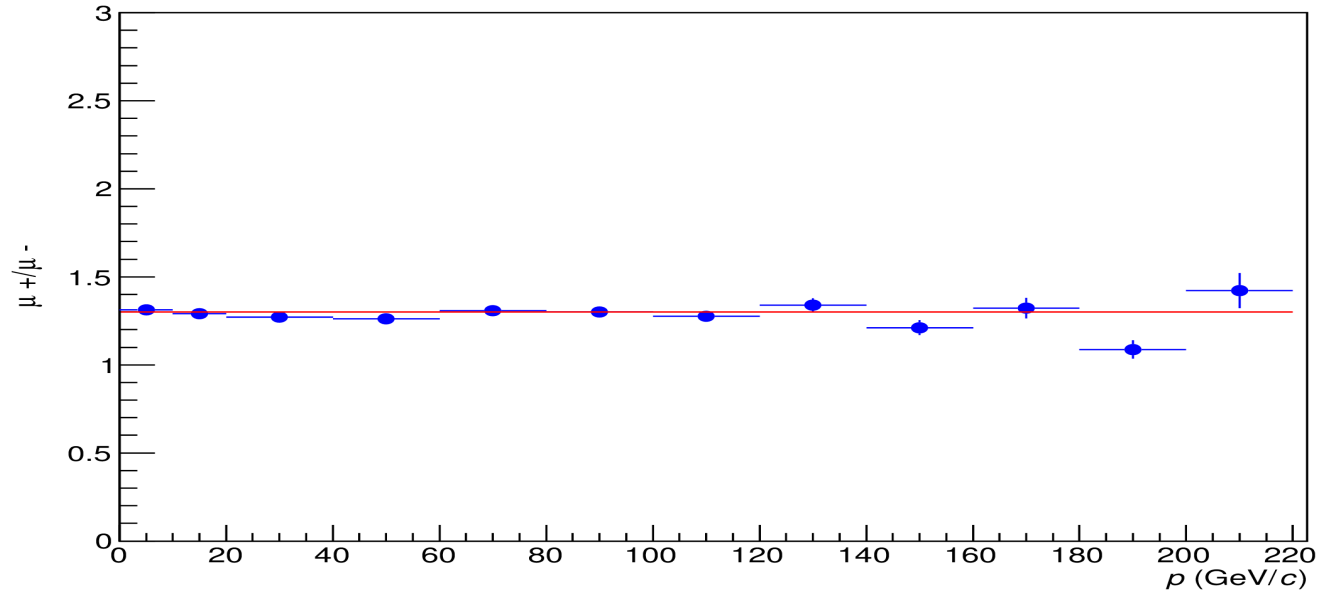
PMC[0]>180 && pMC[0]<200



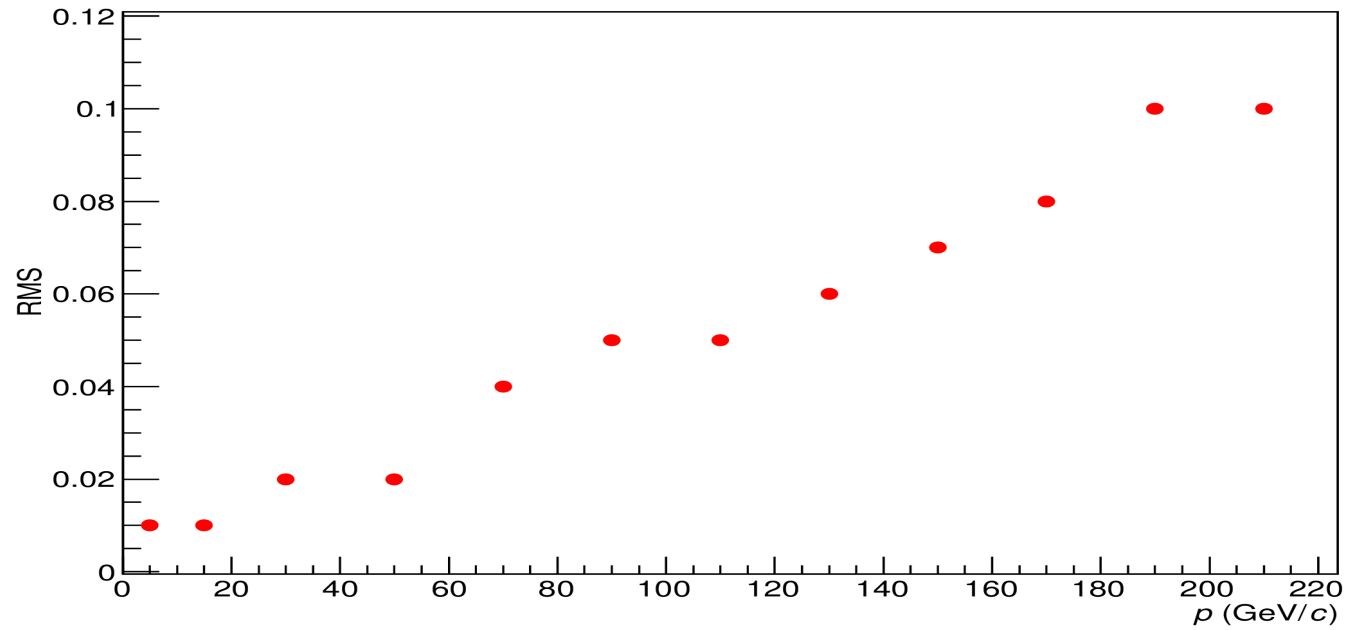
PMC[0]>200 && pMC[0]<220



Corrected muon charged ratio



Momentum Resolution



se comenzó el estudio de la carga

#event	Pdg	Ups	Dws	RecoCh	pMC	pCov
1	MU+	-1	1	MU+	22.5198	22.2171
2	MU+	-1	1	MU+	28.7746	28.5215
3	MU-	1	-1	MU-	70.0617	65.0606
7	MU+	-1	1	MU+	40.841	41.4538
24	MU+	-1	1	MU+	14.0397	13.6966
33	MU-	1	-1	MU-	26.1167	25.3906
79	MU+	-1	1	MU+	11.1911	11.2273
80	MU+	-1	1	MU+	32.6065	33.0913
90	MU-	1	-1	MU-	20.1523	19.9266
94	MU+	-1	1	MU+	36.9185	36.8018
96	MU+	-1	1	MU+	31.6693	31.3199
118	MU+	-1	1	MU+	27.0945	26.4556
136	MU+	-1	1	MU+	13.9779	14.1495
138	MU-	1	-1	MU-	48.4989	48.2858
144	MU+	-1	1	MU+	42.4239	42.7062
154	MU+	-1	1	MU+	129.68	134.183
156	MU+	-1	1	MU+	37.0043	38.2138
163	MU+	-1	1	MU+	27.6424	27.8342
168	MU-	1	-1	MU-	89.5454	84.4764
173	MU+	-1	1	MU+	84.4973	83.6826
174	MU-	1	-1	MU-	40.6991	40.5728
190	MU-	1	-1	MU-	56.7897	54.8355
212	MU+	-1	1	MU+	112.35	109.19
213	MU+	-1	1	MU+	72.113	72.6813
226	MU-	1	-1	MU-	24.8319	24.8726
232	MU+	-1	1	MU+	28.9429	29.1013
236	MU+	-1	1	MU+	11.0789	11.0761
239	MU+	-1	1	MU+	12.8959	13.0548
263	MU+	-1	1	MU+	34.3017	34.4201
283	MU+	-1	1	MU+	18.7715	19.0537
322	MU-	1	-1	MU-	15.4156	15.7791
332	MU+	-1	1	MU+	45.0951	44.563
357	MU+	-1	1	MU+	27.9812	27.1954
360	MU-	1	-1	MU-	116.179	115.438
365	MU-	1	-1	MU-	10.0555	9.98607
368	MU+	-1	1	MU+	17.8243	17.583
407	MU+	-1	1	MU+	28.9289	29.3132
414	MU+	-1	1	MU+	107.96	123.196
429	MU-	1	-1	MU-	61.1821	61.0532
430	MU-	1	-1	MU-	23.4624	22.9994

Tareas por realizar

- Rratio solo con $B > 0$
- Ratio solo con $B < 0$
- Como es la reconstrucción de la carga

- $\epsilon\mu^+ = \#\mu^+_{rec} / \#\mu^+_{gen}$
- $\epsilon\mu^- = \#\mu^-_{rec} / \#\mu^-_{gen}$

Gráficas: pMC

- pMC
- PMC vs pCov
- PMC vs pMed
- Pcov
- Pmed
- Pcov vs pMed
- Pup vs pDw



