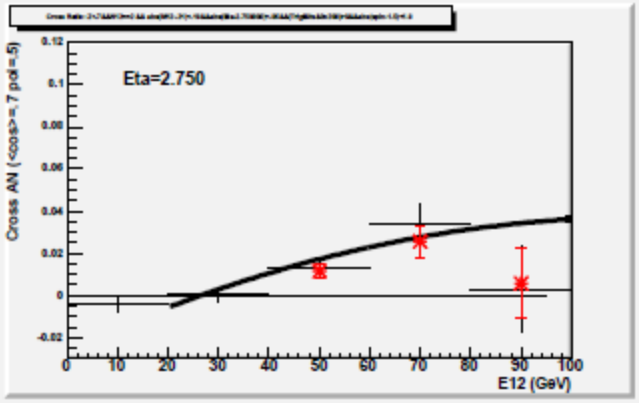
For Hal

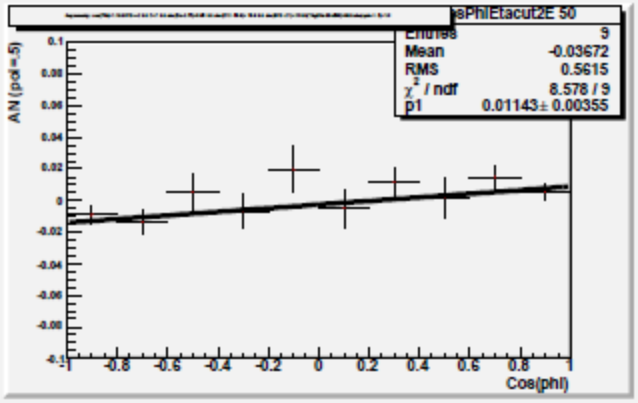
Here is something that I have on hand that shows the comparison
Between Cross Ratio Asymmetry and the 1 paramerer fit to A vs Cos(Phi)

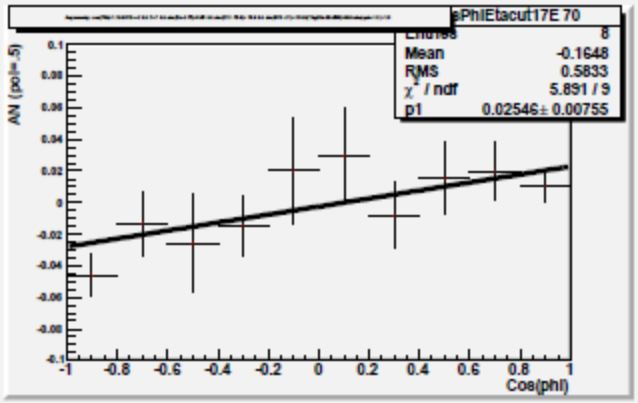
Each slide represents a pseudorapidity bin of width .1 from 2.7 to 4.0
Upper left frame :
Curve the fit to average over rapidity
Black Points are from Cross Ratio
Red are the slopes of the three A vs Cos(Phi) plots.

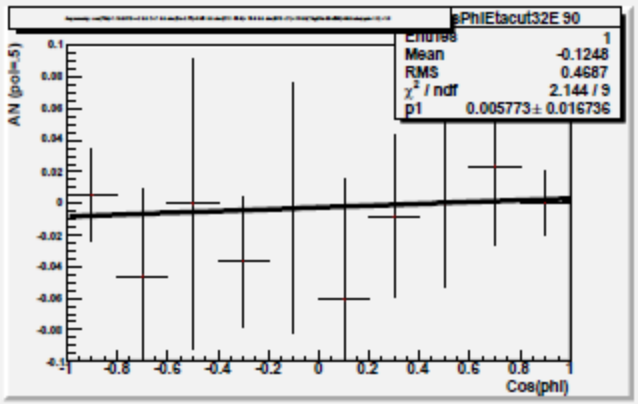
Right frames: Upper $40<Epi0<60$
Middel $60<Epi0<80$
Lower $80<Epi0<100$

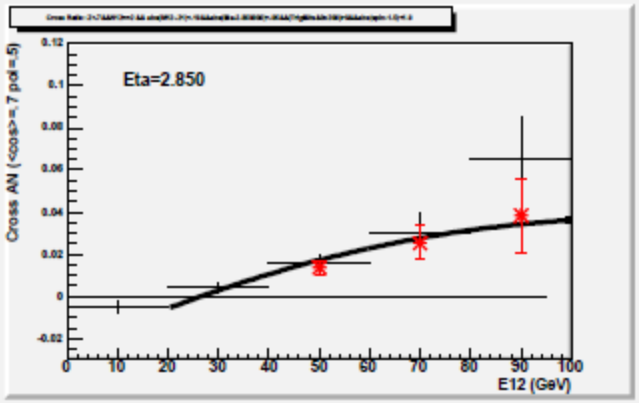
In the last frame, Eta=3.95 ; $80<Epi0<100$ we see an problem
in the cross ratio where on bad point at Cos(phi)=

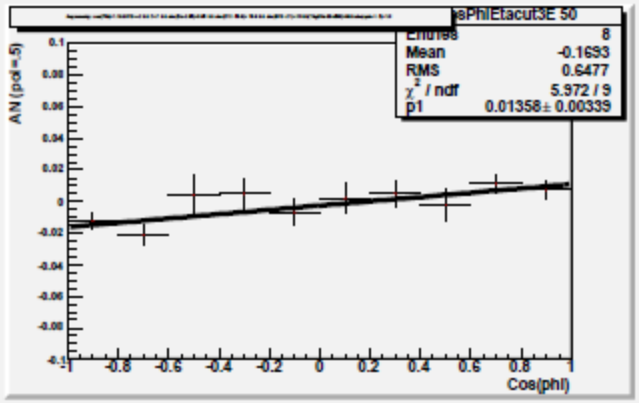

Eta=2.750
Cross AN (<cos>=.7 pol=.5)
E12 (GeV)

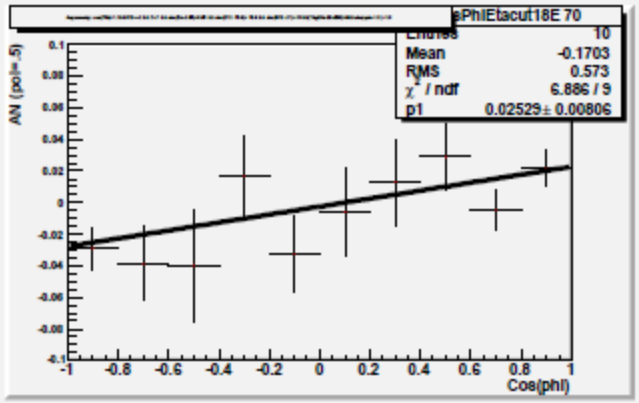

sPhiEtacut2E 50
Entries 9
Mean -0.03672
RMS 0.5615
χ² / ndf 8.578 / 9
p1 0.01143± 0.00355
AN (pol=.5)
Cos(phi)

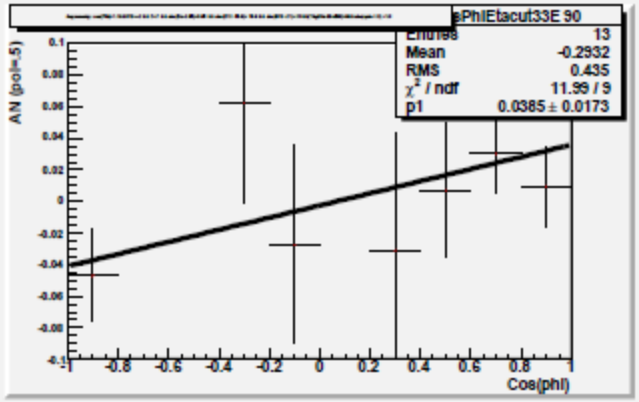

sPhiEtacut17E 70
Entries 8
Mean -0.1648
RMS 0.5833
χ² / ndf 5.891 / 9
p1 0.02546± 0.00755
AN (pol=.5)
Cos(phi)

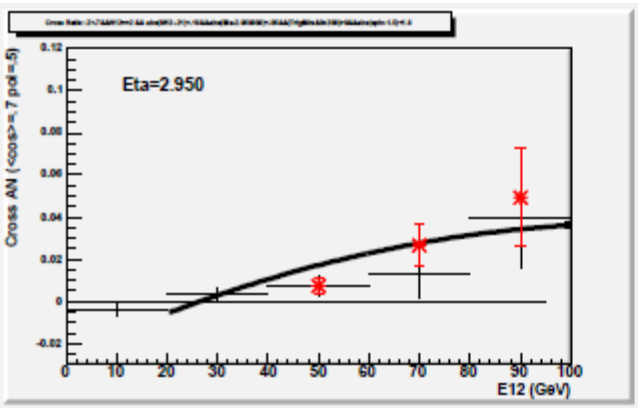

sPhiEtacut32E 90
Entries 1
Mean -0.1248
RMS 0.4687
χ² / ndf 2.144 / 9
p1 0.005773± 0.016736
AN (pol=.5)
Cos(phi)

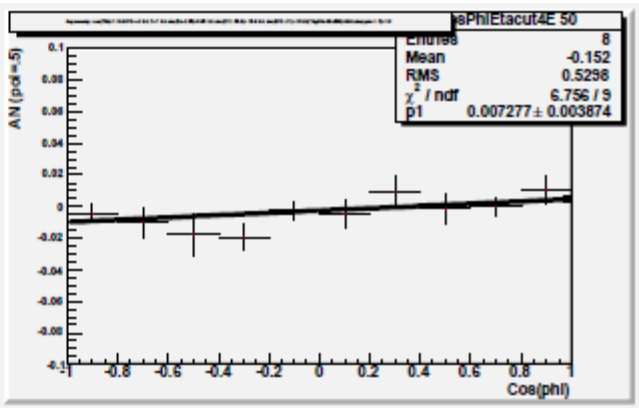

Eta=2.850
Cross AN (<cos>=.7 pol=-5)
E12 (GeV)

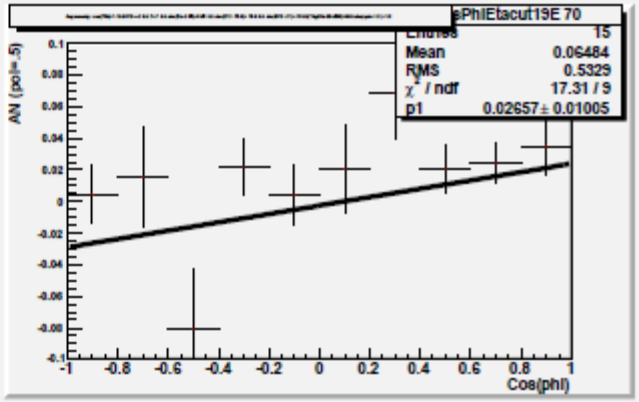

ePhiEtacut3E 50
Entries 8
Mean -0.1693
RMS 0.6477
χ² / ndf 5.972 / 9
p1 0.01358 ± 0.00339
AN (pol=-5)
Cos(phi)

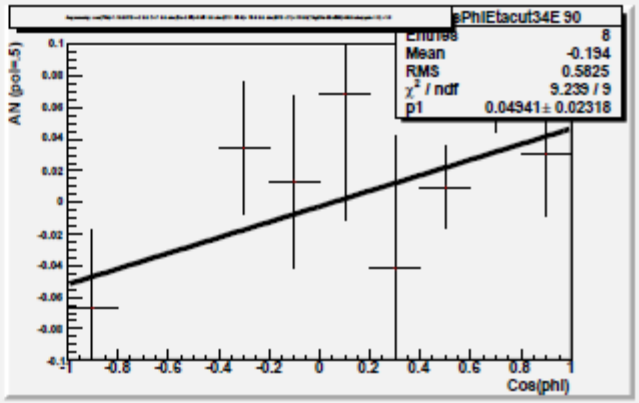

ePhiEtacut18E 70
Entries 10
Mean -0.1703
RMS 0.573
χ² / ndf 6.886 / 9
p1 0.02529 ± 0.00806
AN (pol=-5)
Cos(phi)

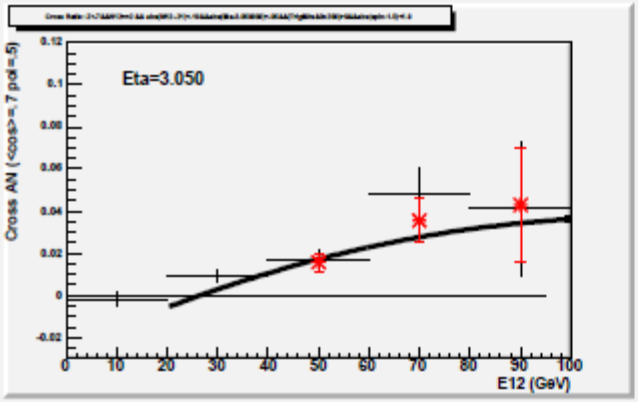

ePhiEtacut33E 90
Entries 13
Mean -0.2932
RMS 0.435
χ² / ndf 11.99 / 9
p1 0.0385 ± 0.0173
AN (pol=-5)
Cos(phi)

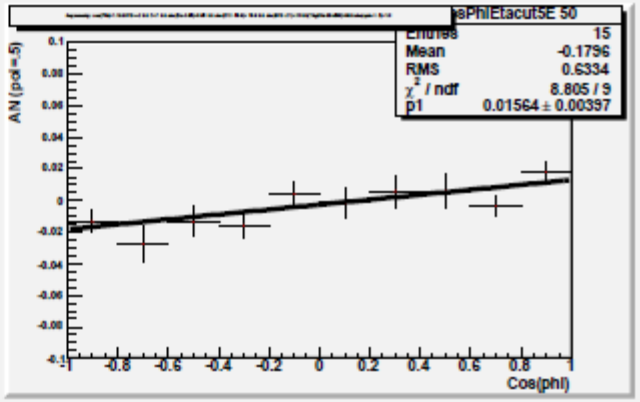

Eta=2.950
Cross AN (<cos>=.7 pol=.5)
E12 (GeV)

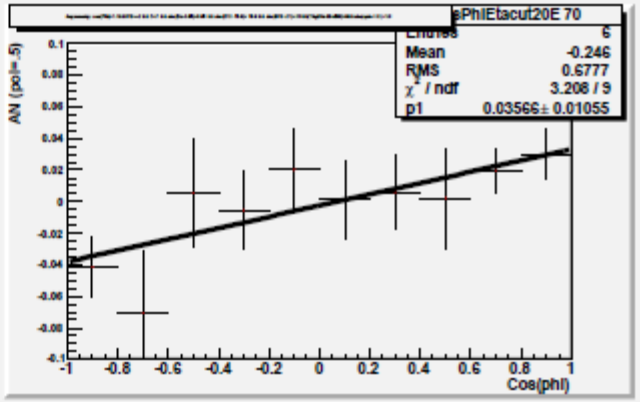

sPhiEtacut4E 50
Entries 8
Mean -0.152
RMS 0.5298
χ² / ndf 6.756 / 9
p1 0.007277 ± 0.003874
AN (pol=.5)
Cos(phi)

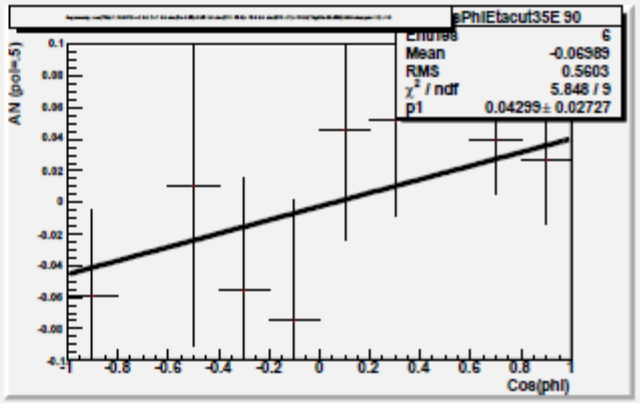

sPhiEtacut19E 70
Entries 15
Mean 0.06484
RMS 0.5329
χ² / ndf 17.31 / 9
p1 0.02657 ± 0.01005
AN (pol=.5)
Cos(phi)

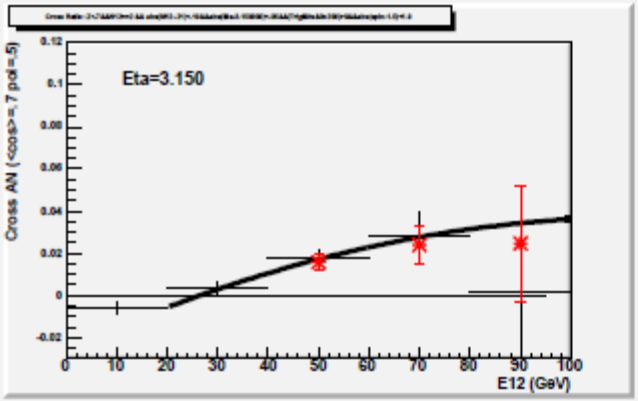

sPhiEtacut34E 90
Entries 8
Mean -0.194
RMS 0.5825
χ² / ndf 9.239 / 9
p1 0.04941 ± 0.02318
AN (pol=.5)
Cos(phi)

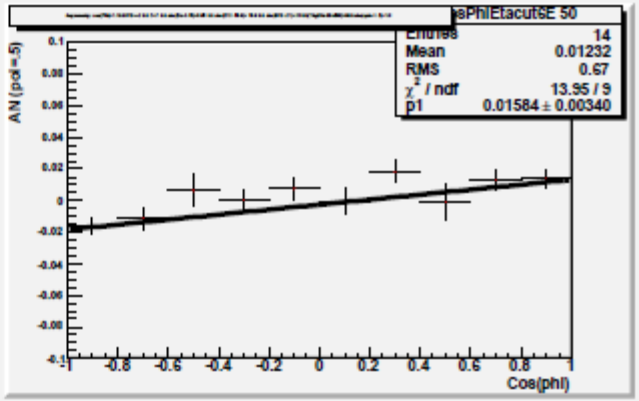

Eta=3.050
Cross AN (<cos>=.7 pol=-5)
E12 (GeV)

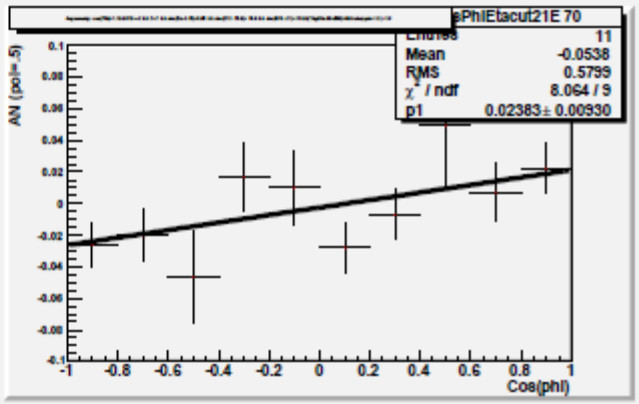

sPhlEtacut5E 50
Entries 15
Mean -0.1796
RMS 0.6334
χ² / ndf 8.805 / 9
p1 0.01564 ± 0.00397
AN (pol=-5)
Cos(phl)

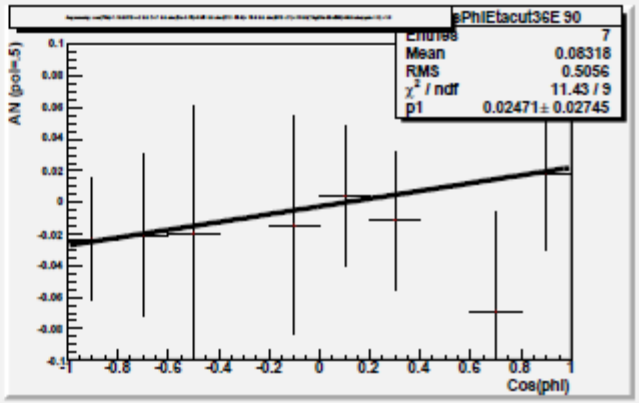

sPhlEtacut20E 70
Entries 6
Mean -0.246
RMS 0.6777
χ² / ndf 3.208 / 9
p1 0.03566 ± 0.01055
AN (pol=-5)
Cos(phl)

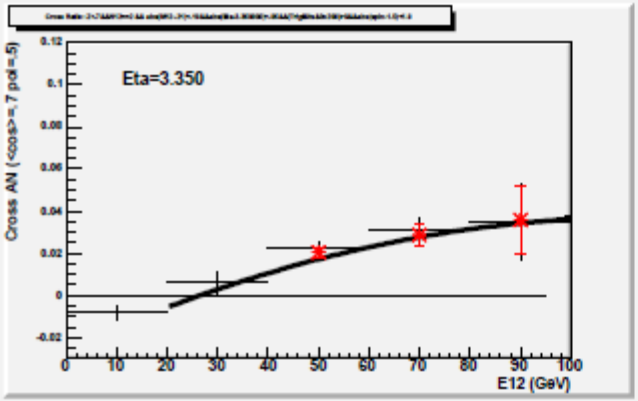

sPhlEtacut35E 90
Entries 6
Mean -0.06389
RMS 0.5603
χ² / ndf 5.848 / 9
p1 0.04299 ± 0.02727
AN (pol=-5)
Cos(phl)

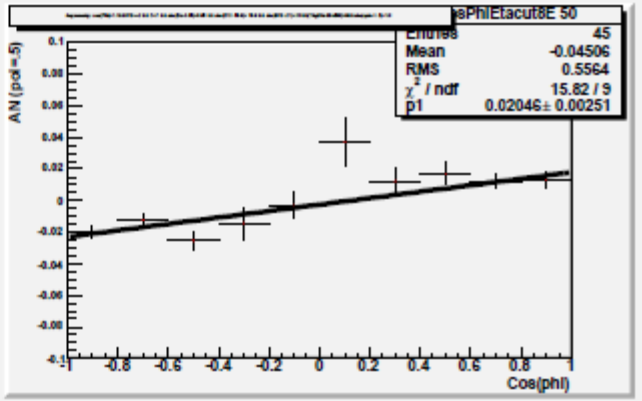

Eta=3.150
Cross AN (<cos>=.7 pol=.5)
E12 (GeV)

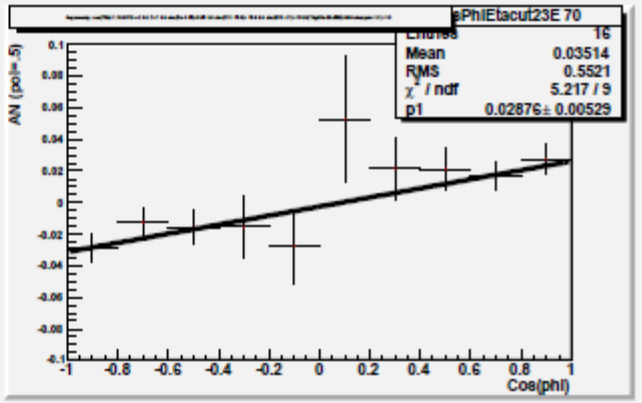

sPhlEtacut5E 50
Entries 14
Mean 0.01232
RMS 0.67
χ² / ndf 13.95 / 9
p1 0.01584 ± 0.00340
AN (pol=.5)
Cos(phl)

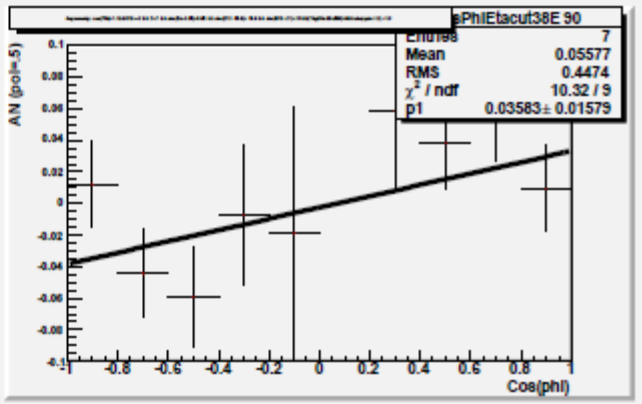

sPhlEtacut21E 70
Entries 11
Mean -0.0538
RMS 0.5799
χ² / ndf 8.064 / 9
p1 0.02383 ± 0.00930
AN (pol=.5)
Cos(phl)

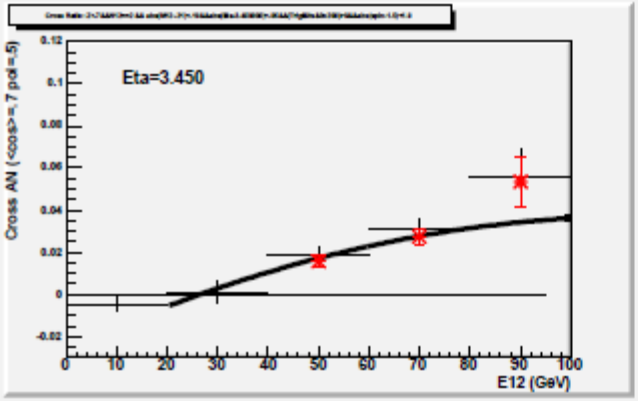

sPhlEtacut36E 90
Entries 7
Mean 0.08318
RMS 0.5056
χ² / ndf 11.43 / 9
p1 0.02471 ± 0.02745
AN (pol=.5)
Cos(phl)

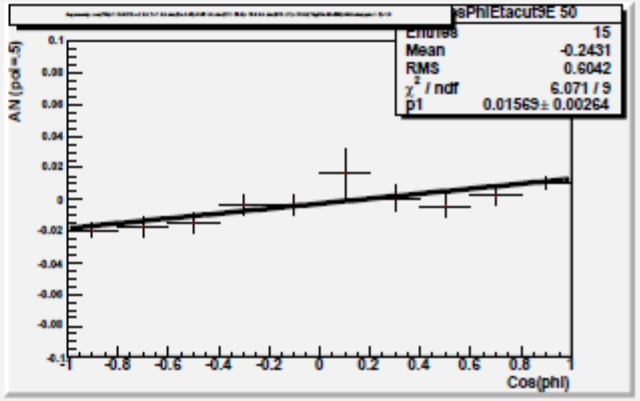

Eta=3.350
Cross AN (<cos>=.7 pol=-5)
E12 (GeV)

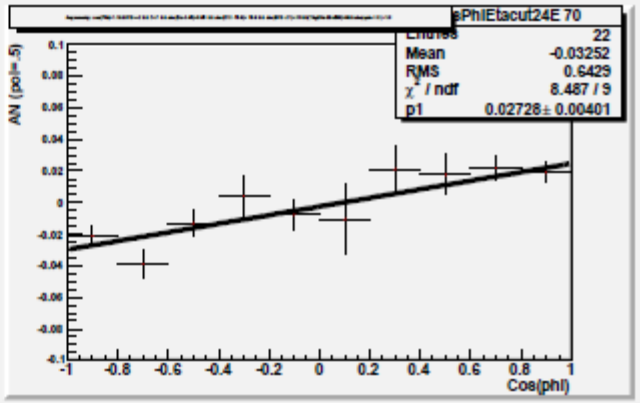

sPhiEtacut8E 50
Entries 45
Mean -0.04506
RMS 0.5564
χ² / ndf 15.82 / 9
p1 0.02046 ± 0.00251
AN (pol=-5)
Cos(phi)

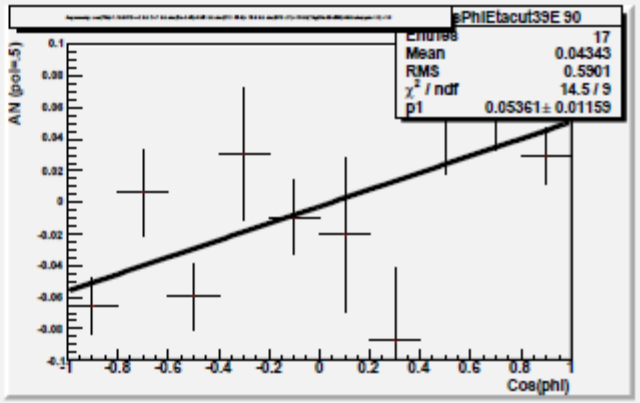

sPhiEtacut23E 70
Entries 16
Mean 0.03514
RMS 0.5521
χ² / ndf 5.217 / 9
p1 0.02876 ± 0.00529
AN (pol=-5)
Cos(phi)

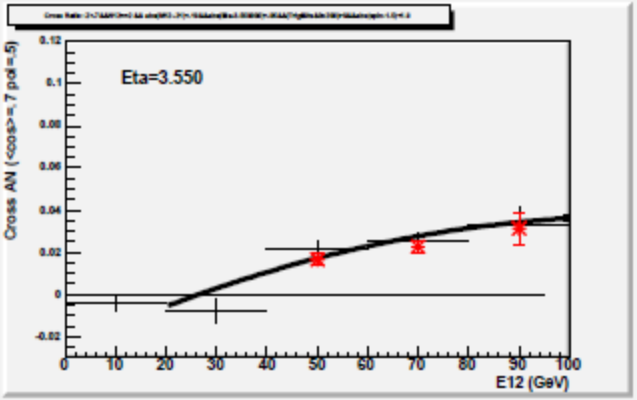

sPhiEtacut38E 90
Entries 7
Mean 0.05577
RMS 0.4474
χ² / ndf 10.32 / 9
p1 0.03583 ± 0.01579
AN (pol=-5)
Cos(phi)

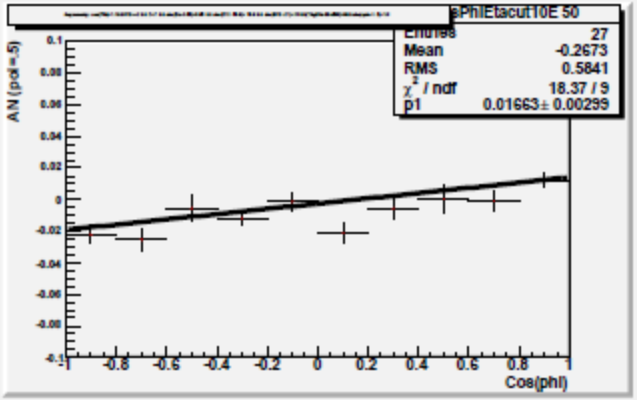

Eta=3.450
Cross AN (<cos>=.7 pol=-5)
E12 (GeV)

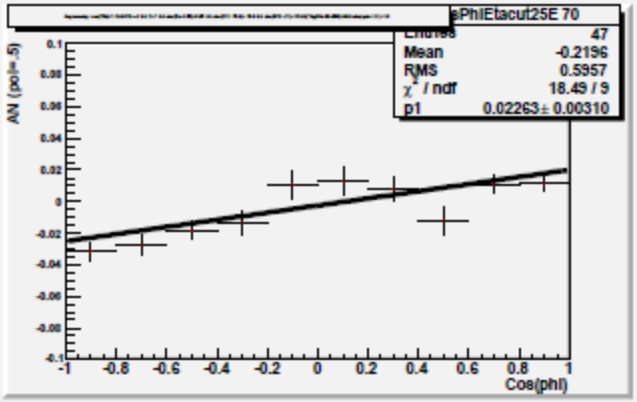

sPhiEtacut3E 50
Entries 15
Mean -0.2431
RMS 0.6042
χ² / ndf 6.071 / 9
p1 0.01569± 0.00264
AN (pol=-5)
Cos(phi)

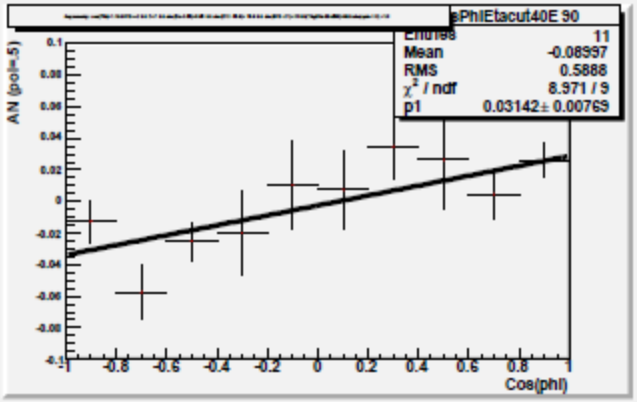

sPhiEtacut24E 70
Entries 22
Mean -0.03252
RMS 0.6429
χ² / ndf 8.487 / 9
p1 0.02728± 0.00401
AN (pol=-5)
Cos(phi)

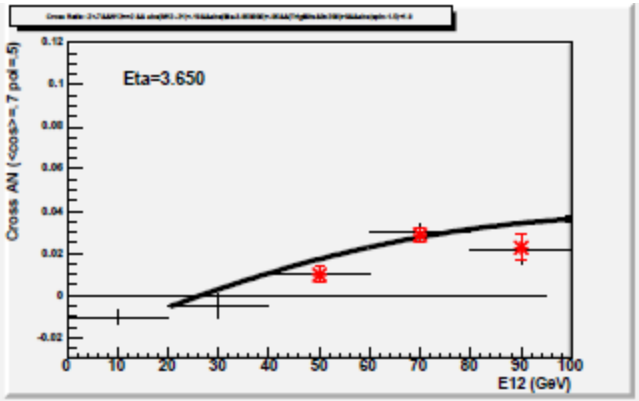

sPhiEtacut39E 90
Entries 17
Mean 0.04343
RMS 0.5901
χ² / ndf 14.5 / 9
p1 0.05361± 0.01159
AN (pol=-5)
Cos(phi)

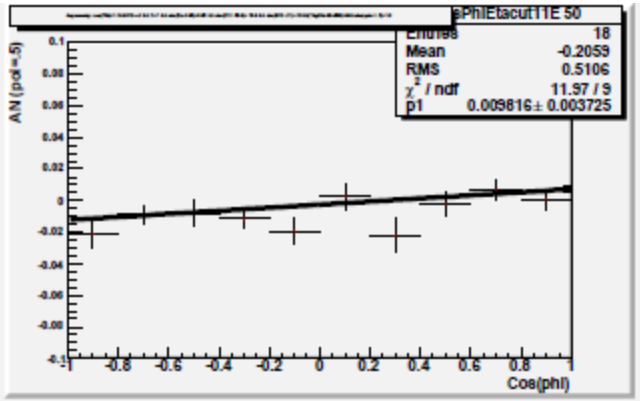

Eta=3.550
Cross AN (<cos>=.7 pol=-5)
E12 (GeV)

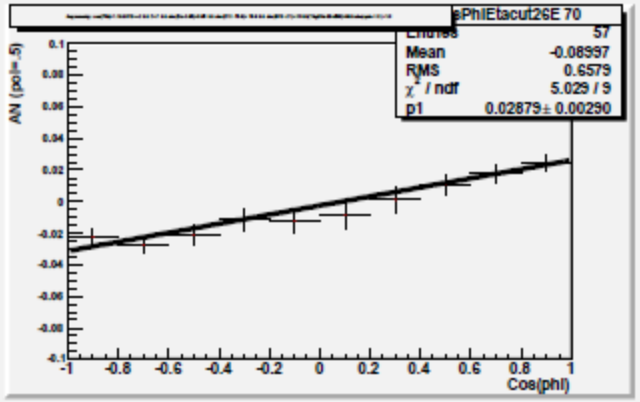

ePhiEtacut10E 50
Entries 27
Mean -0.2673
RMS 0.5841
χ² / ndf 18.37 / 9
p1 0.01663± 0.00299
AN (pol=-5)
Cos(phi)

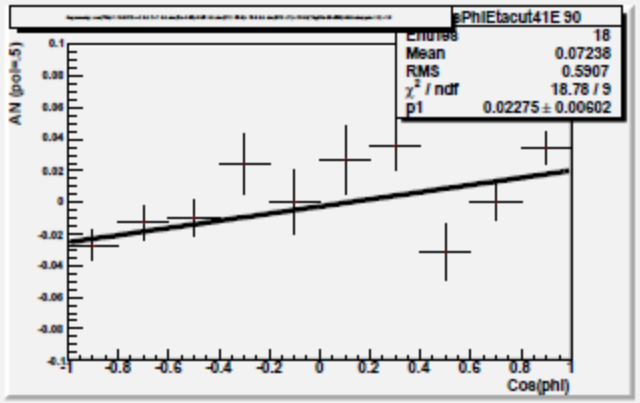

ePhiEtacut25E 70
Entries 47
Mean -0.2196
RMS 0.5957
χ² / ndf 18.49 / 9
p1 0.02263± 0.00310
AN (pol=-5)
Cos(phi)

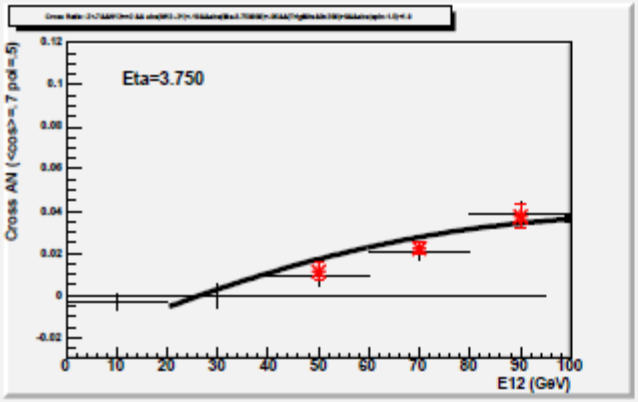

ePhiEtacut40E 90
Entries 11
Mean -0.08997
RMS 0.5888
χ² / ndf 8.971 / 9
p1 0.03142± 0.00769
AN (pol=-5)
Cos(phi)

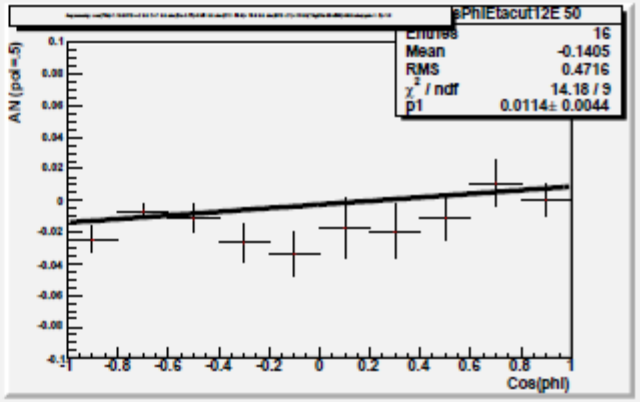

Eta=3.650
Cross AN (<cos>=.7 pol=.5)
E12 (GeV)

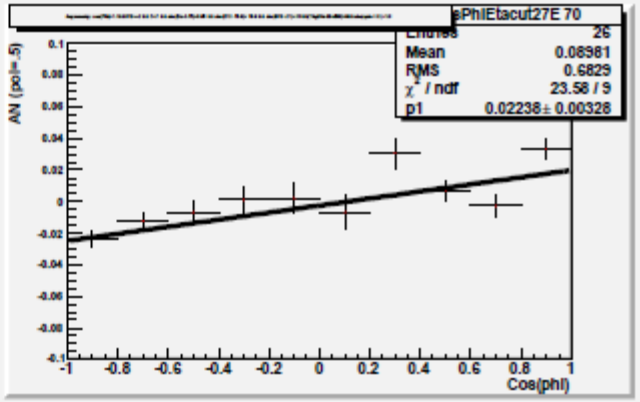

sPhiEtacut11E 50
Entries 18
Mean -0.2059
RMS 0.5106
χ² / ndf 11.97 / 9
p1 0.009816 ± 0.003725
AN (pol=.5)
Cos(phi)

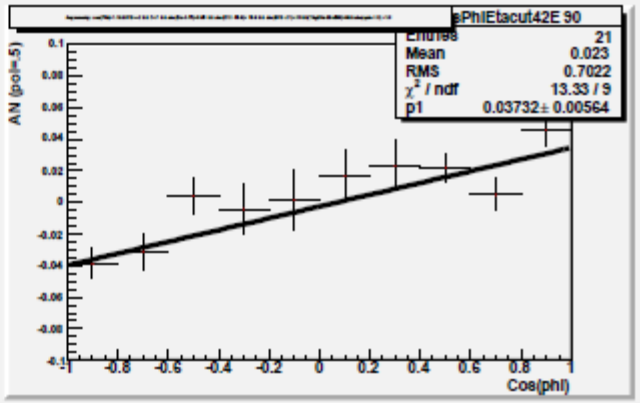

sPhiEtacut26E 70
Entries 57
Mean -0.08997
RMS 0.6579
χ² / ndf 5.029 / 9
p1 0.02879 ± 0.00290
AN (pol=.5)
Cos(phi)

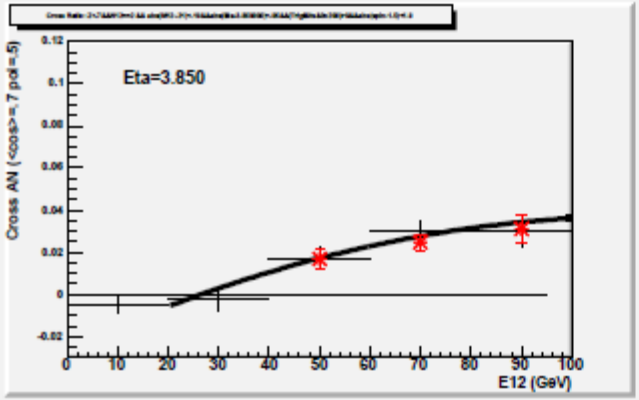

sPhiEtacut41E 90
Entries 18
Mean 0.07238
RMS 0.5907
χ² / ndf 18.78 / 9
p1 0.02275 ± 0.00602
AN (pol=.5)
Cos(phi)

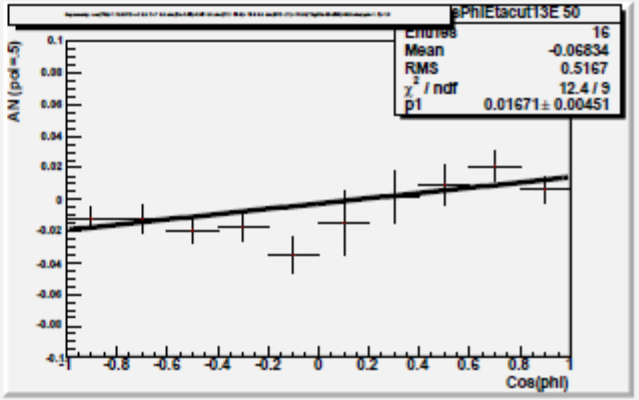

Eta=3.750
Cross AN (<cos>=.7 pol=-5)
E12 (GeV)

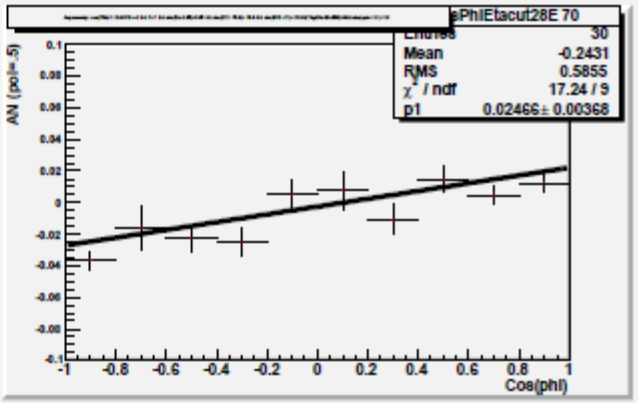

sPhiEtacut12E 50
Entries 16
Mean -0.1405
RMS 0.4716
χ² / ndf 14.18 / 9
p1 0.0114± 0.0044
AN (pol=-5)
Cos(phi)

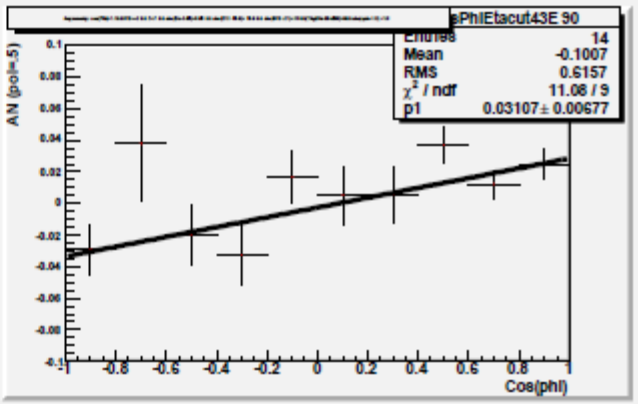

sPhiEtacut27E 70
Entries 26
Mean 0.08981
RMS 0.6829
χ² / ndf 23.58 / 9
p1 0.02238± 0.00328
AN (pol=-5)
Cos(phi)


sPhiEtacut42E 90
Entries 21
Mean 0.023
RMS 0.7022
χ² / ndf 13.33 / 9
p1 0.03732± 0.00564
AN (pol=-5)
Cos(phi)

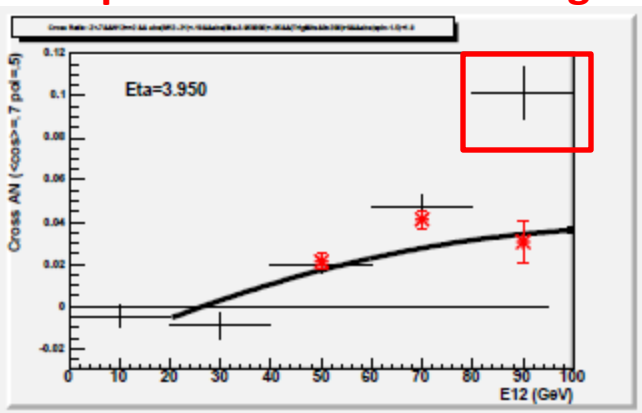

Eta=3.850
Cross AN (<cos>=.7 pol=.5)
E12 (GeV)

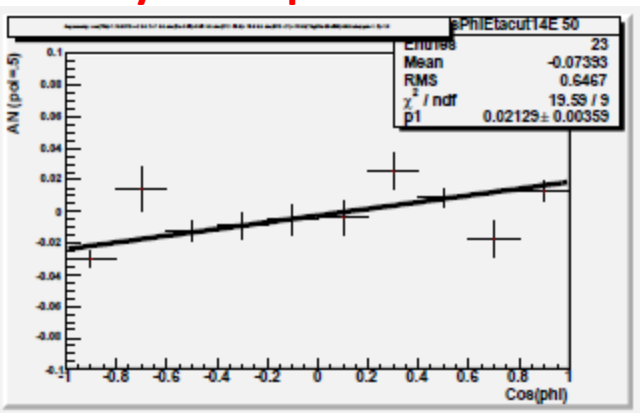

sPhiEtacut13E 50
Entries 16
Mean -0.06834
RMS 0.5167
χ² / ndf 12.4 / 9
p1 0.01671± 0.00451
AN (pol=.5)
Cos(phi)

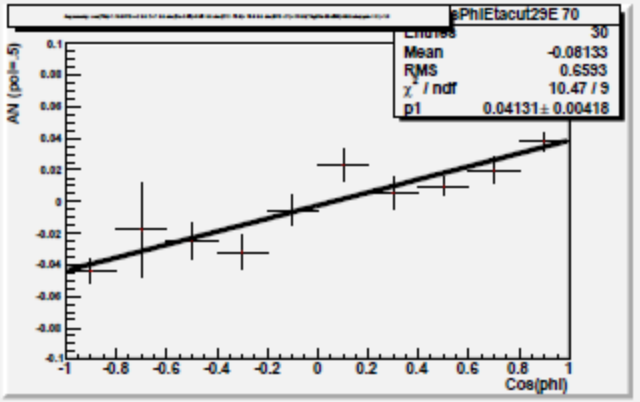

sPhiEtacut28E 70
Entries 30
Mean -0.2431
RMS 0.5855
χ² / ndf 17.24 / 9
p1 0.02466± 0.00368
AN (pol=.5)
Cos(phi)

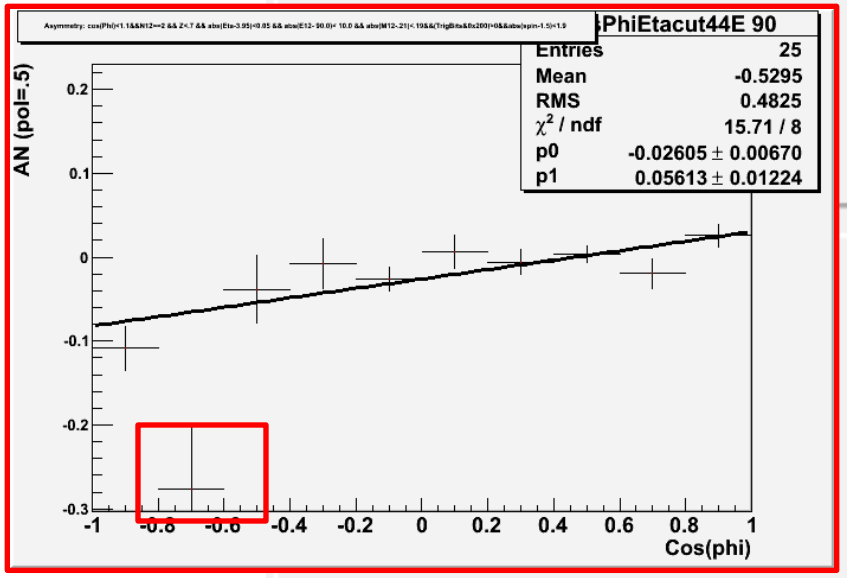

sPhiEtacut43E 90
Entries 14
Mean -0.1007
RMS 0.6157
χ² / ndf 11.08 / 9
p1 0.03107± 0.00677
AN (pol=.5)
Cos(phi)

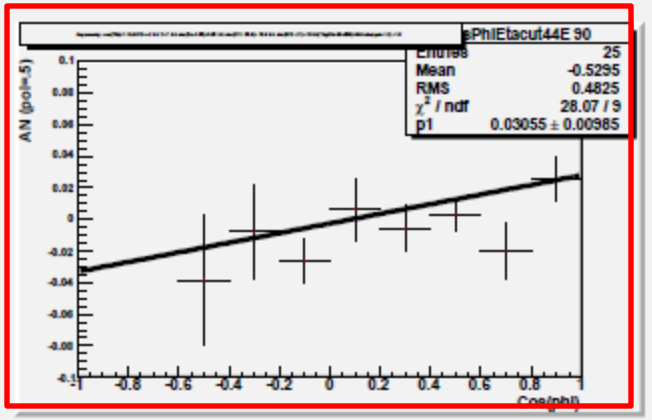
Here is an example of a cross ratio brought down by 1 bad point



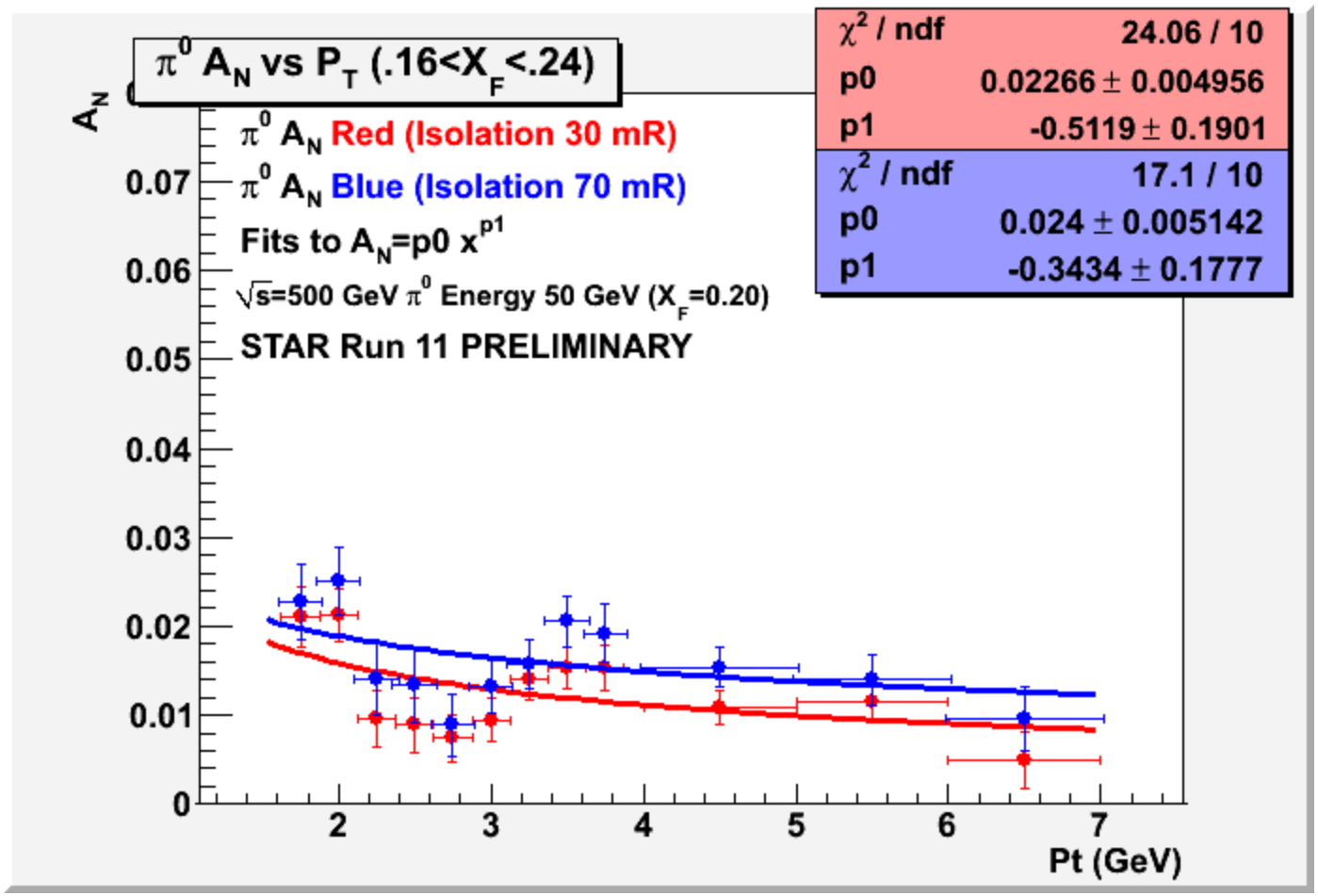








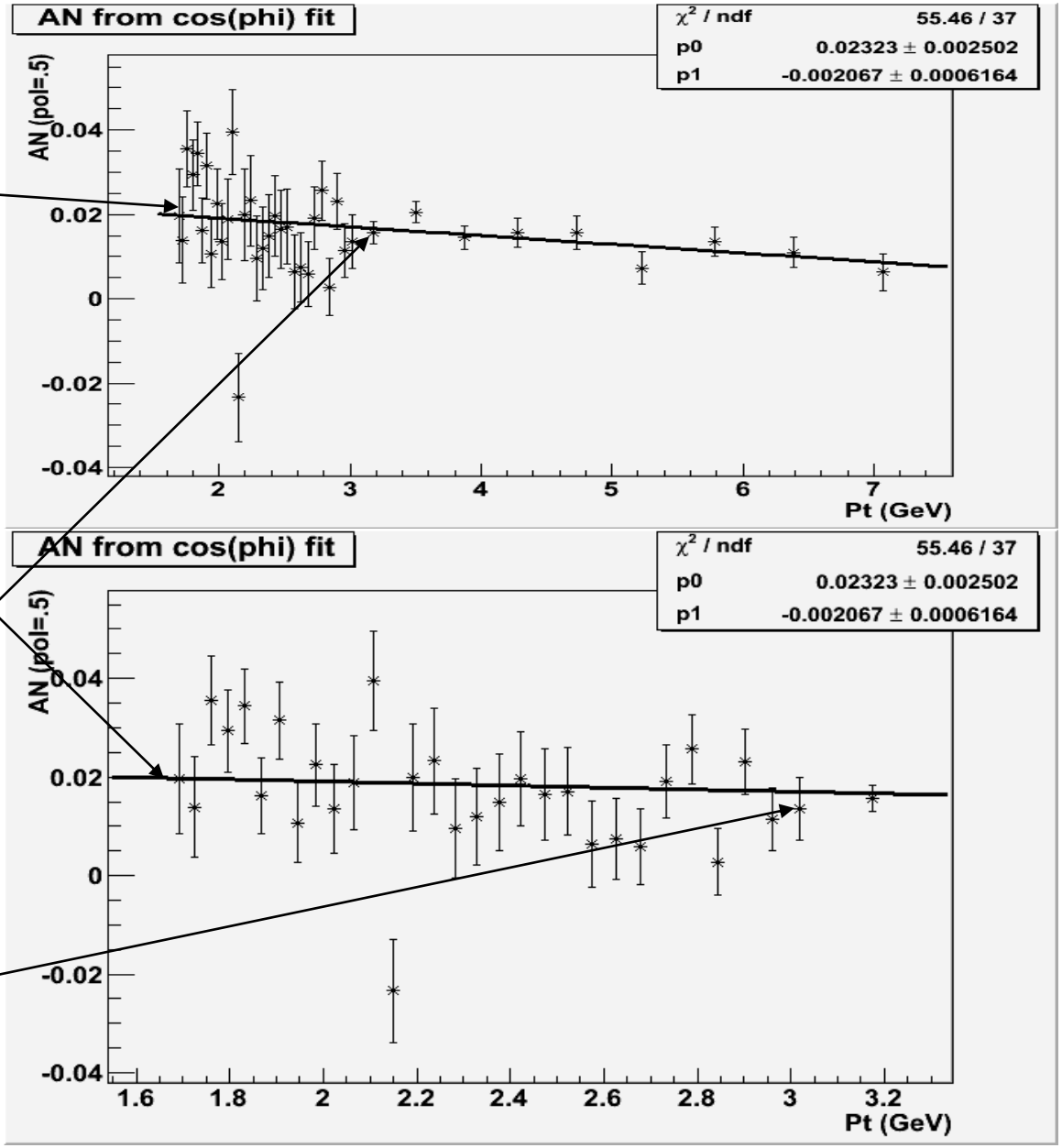
Now I will show some of the underlying plots for data in the 1.6<Pt<3.4 Gev region.



Details of fits for these points: This link is to a pdf showing the fits to Cos(Phi) at each of 3 energies (50,70,90 GeV). The Slopes are shown as a function of Pt(nominal Pt for bin) in the fourth (lower left pane).
http://www.star.bnl.gov/protected/spin/heppelmann/May12/AN_Fits_ETA_BINS.pdf

Y BINS
4.08
4.06
4.04

3.52
3.50



Link to Higher Resolution PT,M,E,Phi plots.

The plots on the following page are presented to indicate the quality of the data in different slices of pseudorapidity for energies 50-60 GeV and pseudorapidity from 3.5 to 4.0.

This covers the Pt range (from 1.6 GeV/c to 3.5) that we were talking about Thursday.

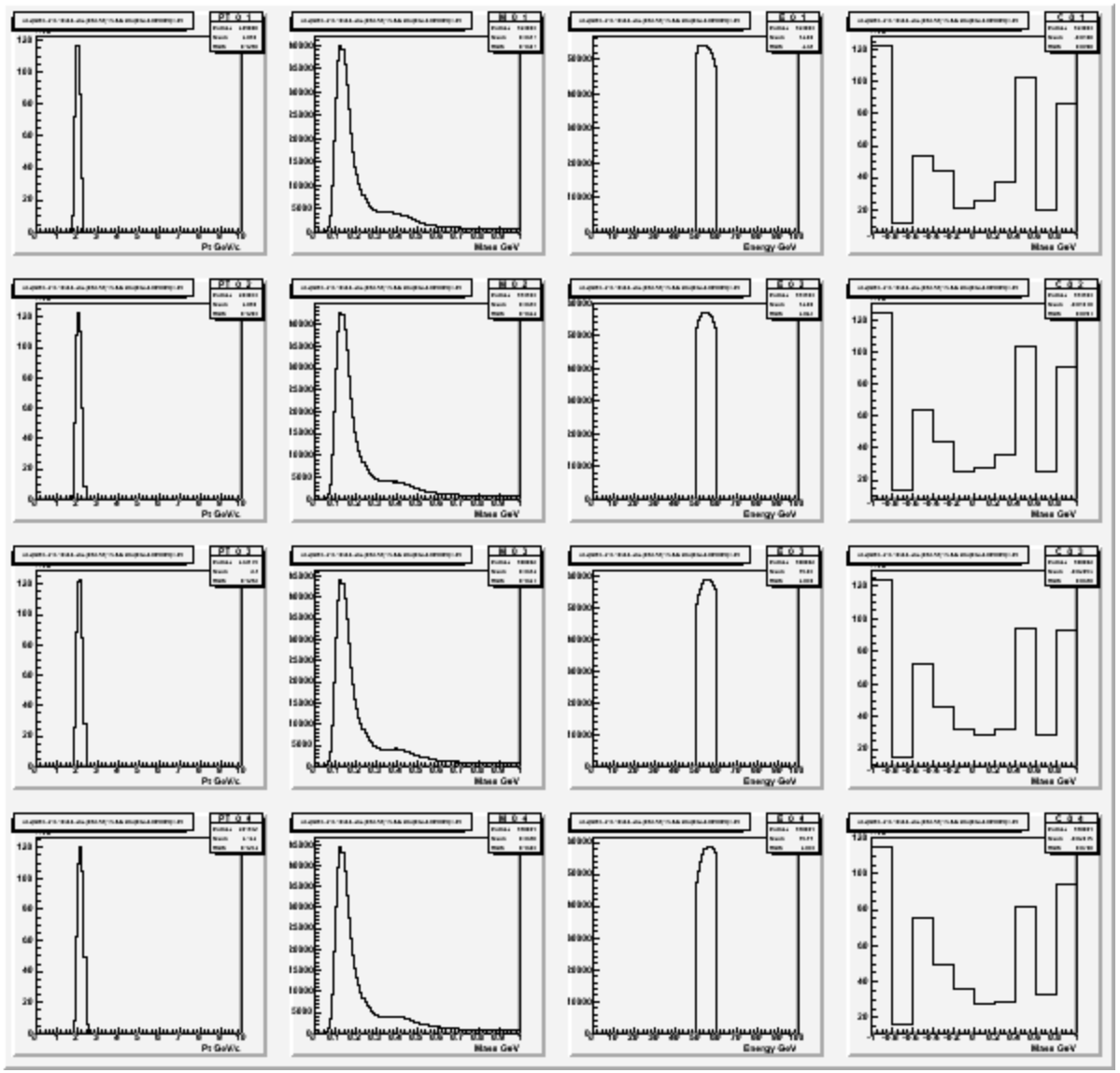
P_T *Mass* *E* $Cos(\phi)$

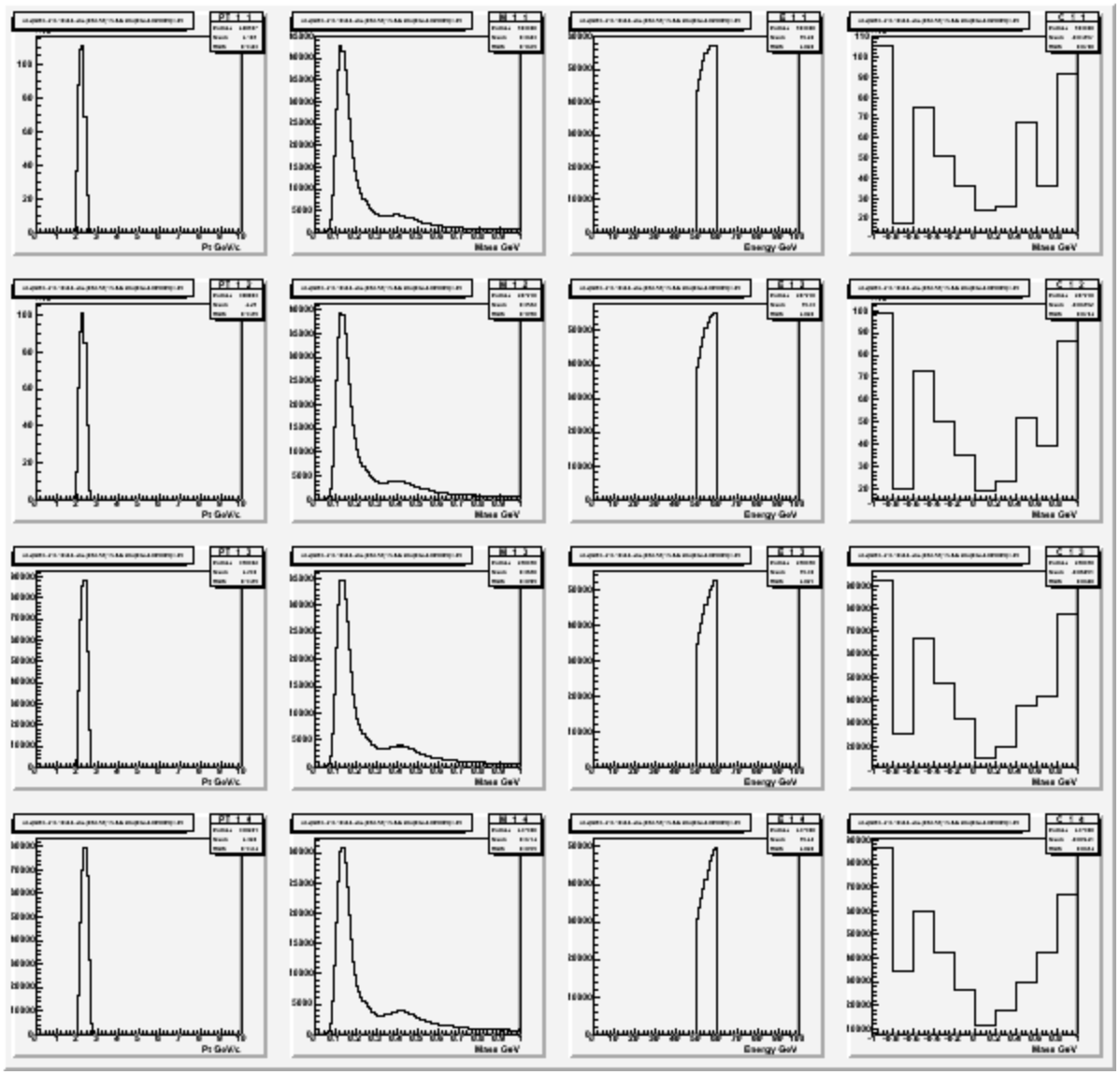
Y=4.00

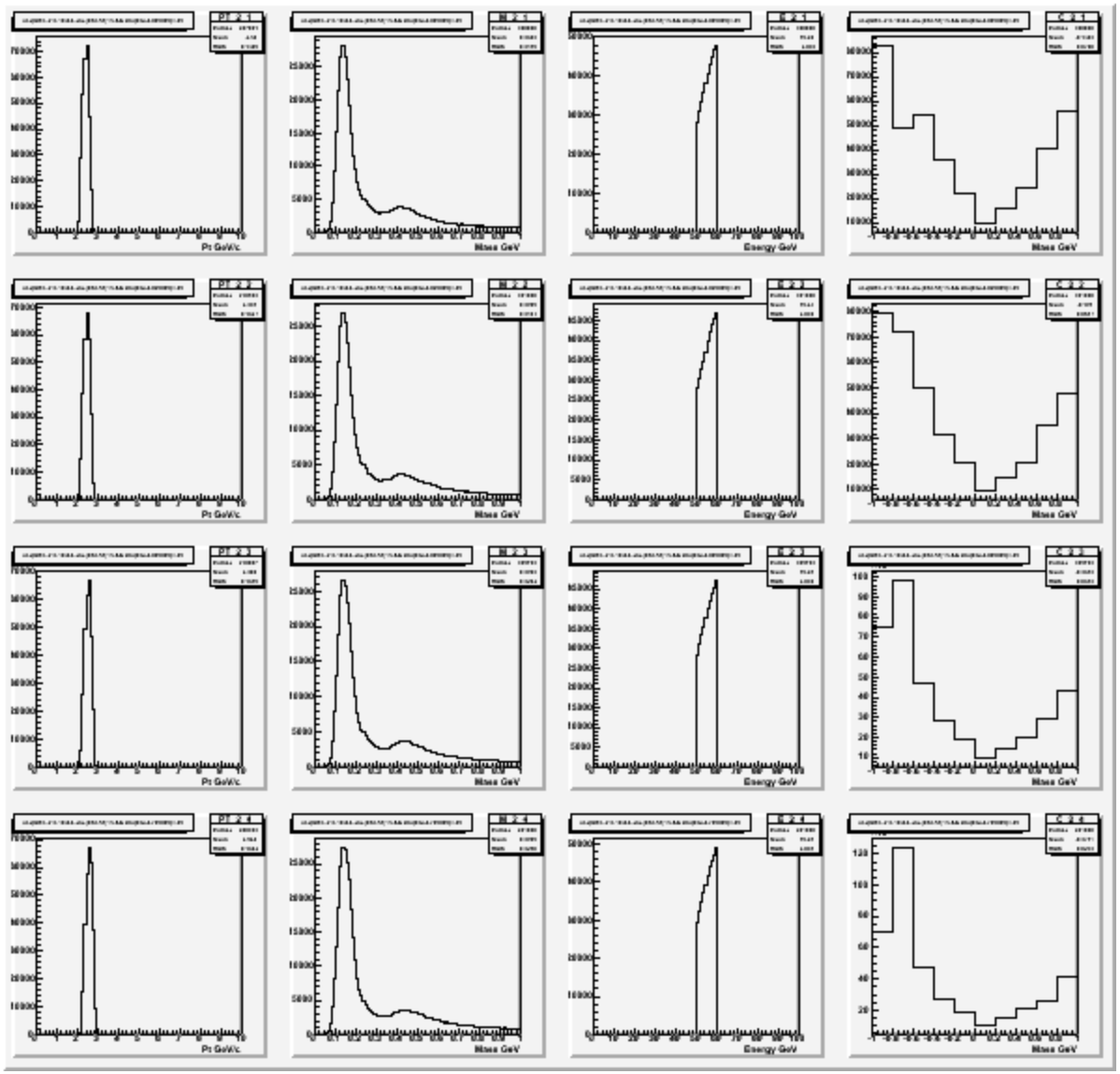
Y=3.98

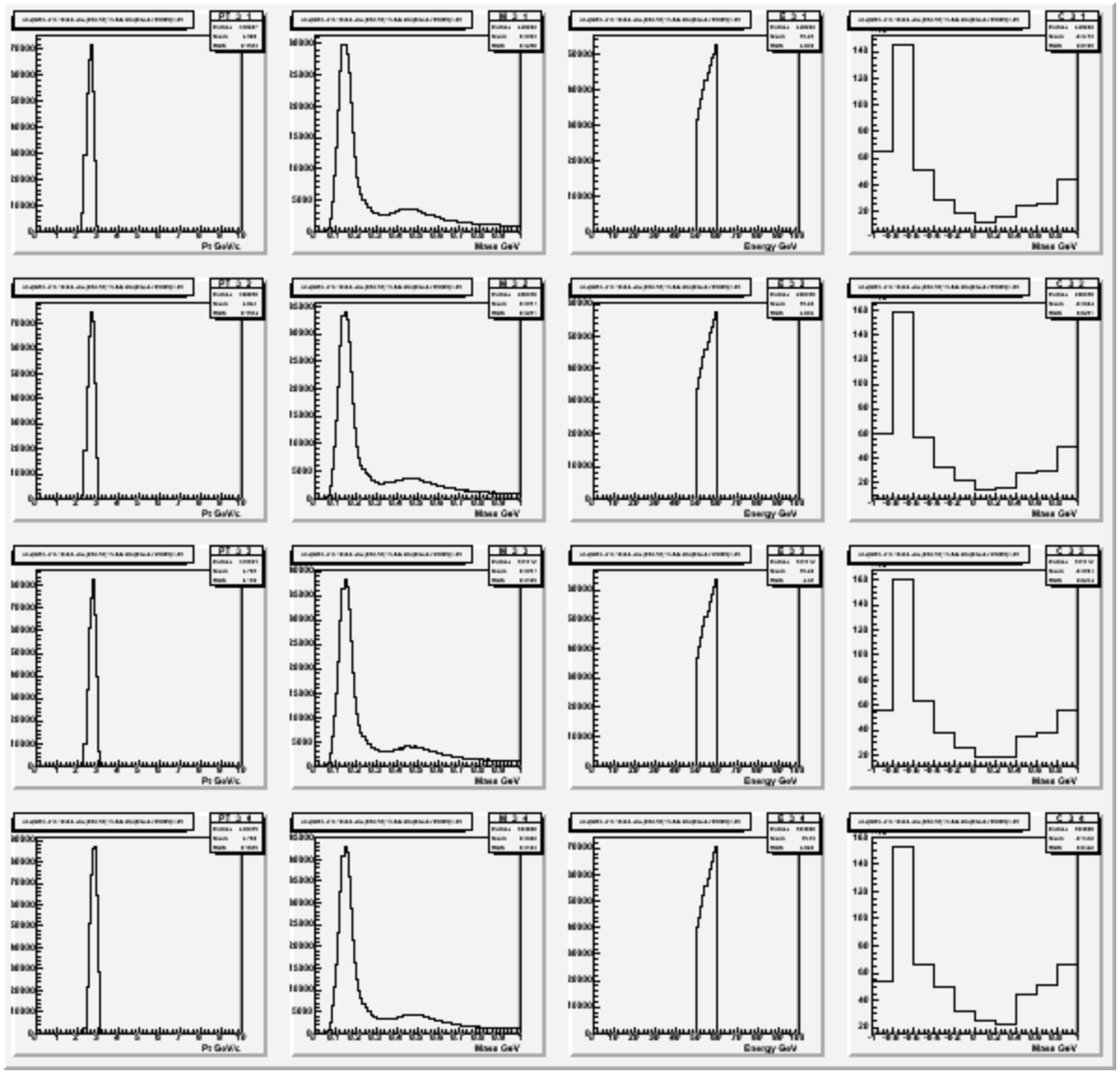
Y=3.96

Y=3.94



	P_T	*Mass*	*E*	$Cos(\phi)$
Y=3.92				
Y=3.90				
Y=3.88				
Y=3.86				

	P_T	*Mass*	*E*	$Cos(\phi)$
Y=3.84				
Y=3.82				
Y=3.80				
Y=3.78				

	P_T	*Mass*	*E*	$Cos(\phi)$
Y=3.76				
Y=3.74				
Y=3.72				
Y=3.70				

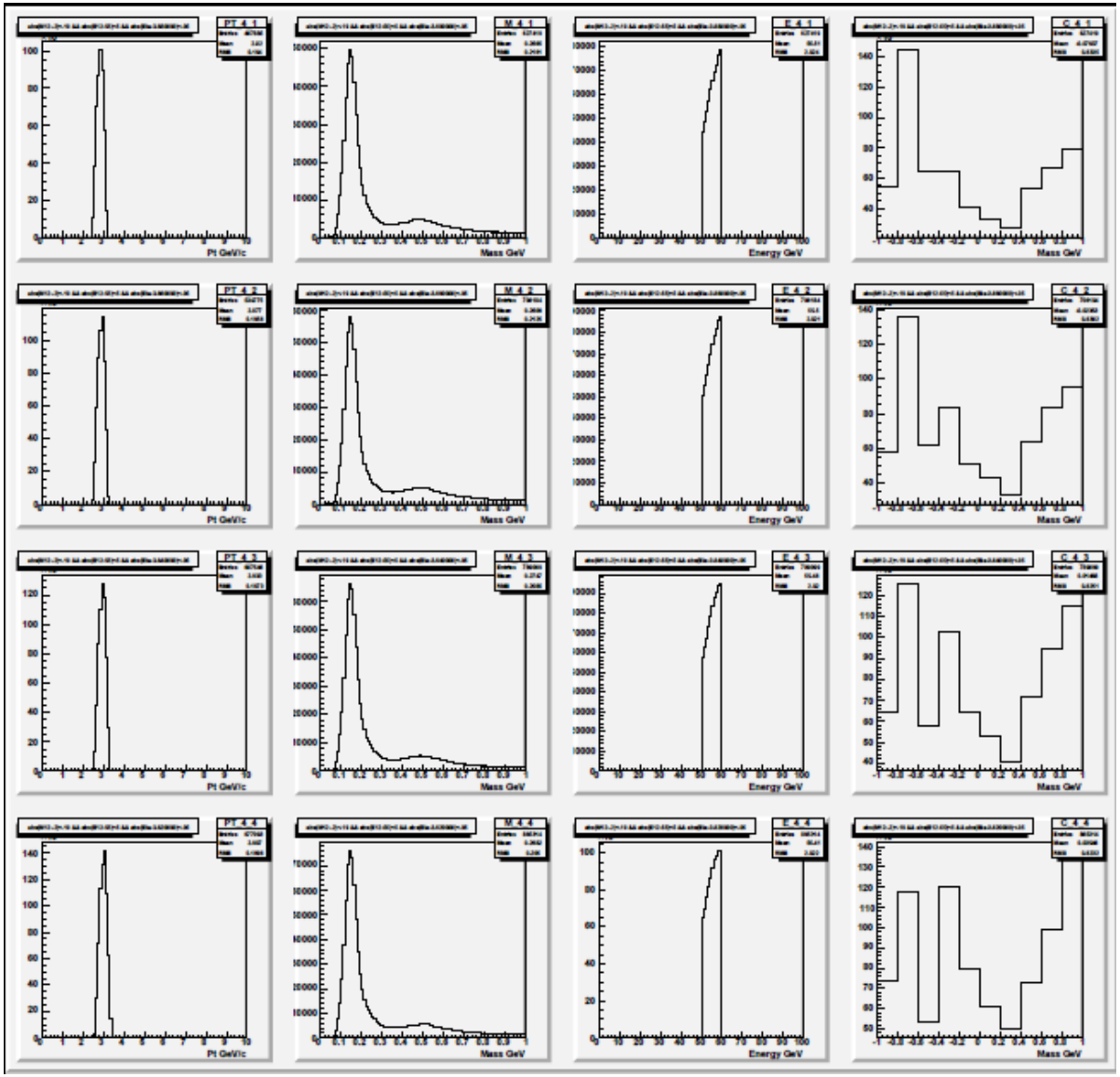
P_T *Mass* *E* $Cos(\phi)$

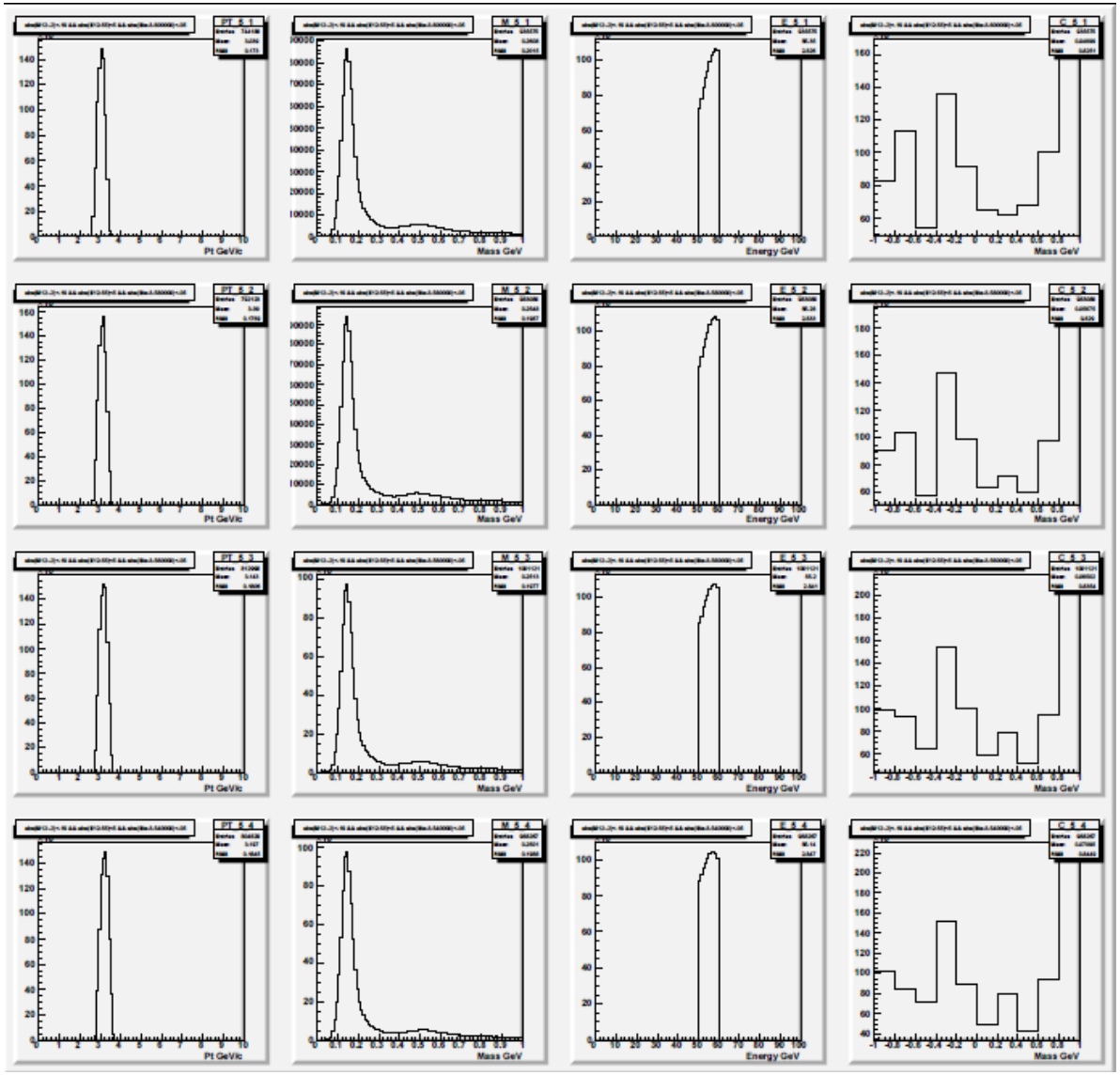
Y=3.68

Y=3.66

Y=3.64

Y=3.62



	P_T	*Mass*	*E*	$Cos(\phi)$
Y=3.60				
Y=3.58				
Y=3.56				
Y=3.54				

P_T $Mass$ E $Cos(\phi)$

Y=52

Y=3.50