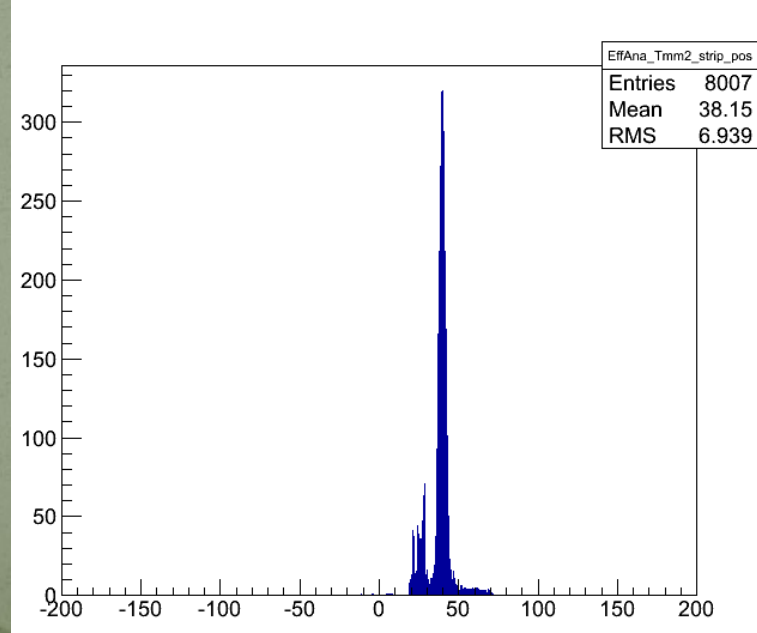
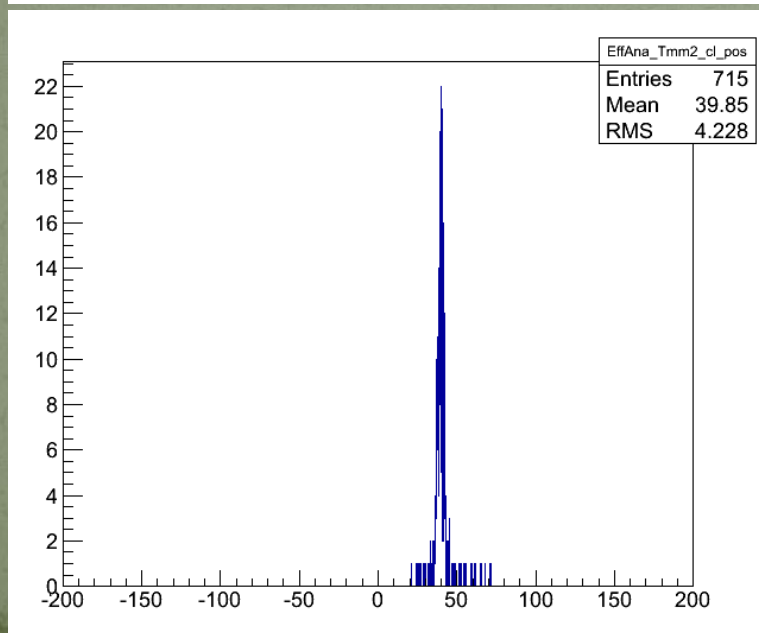
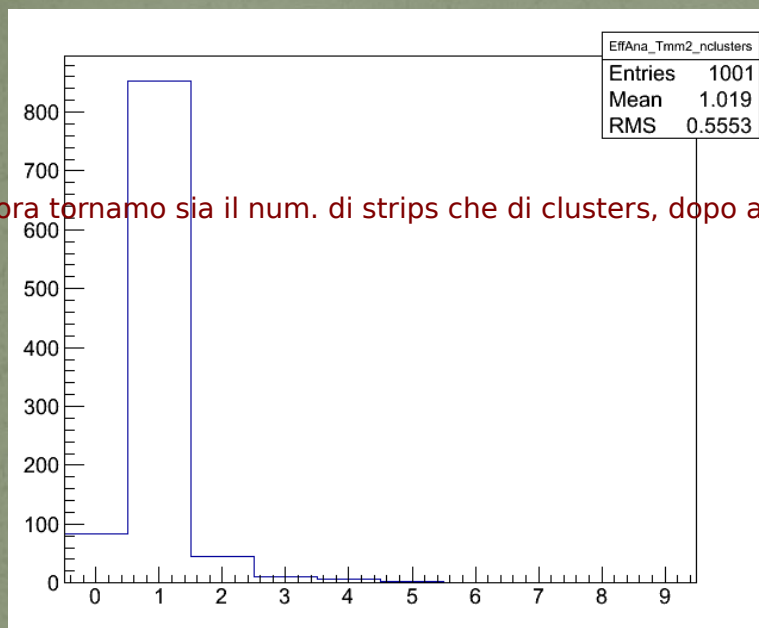
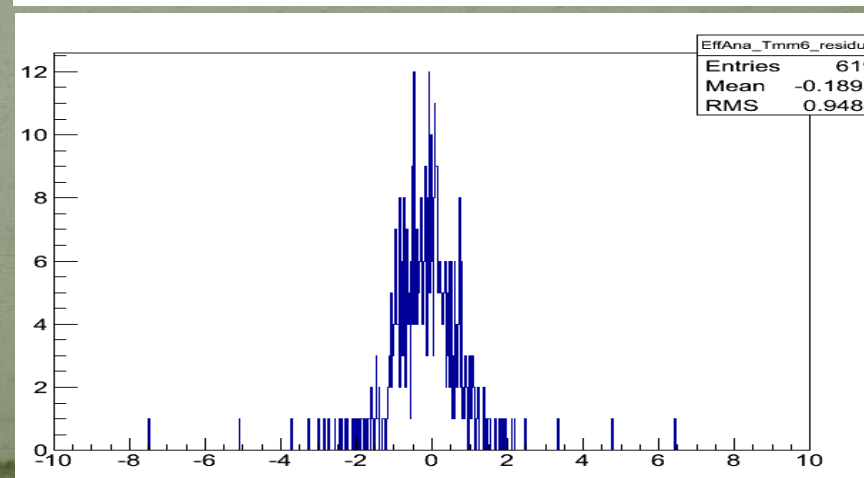
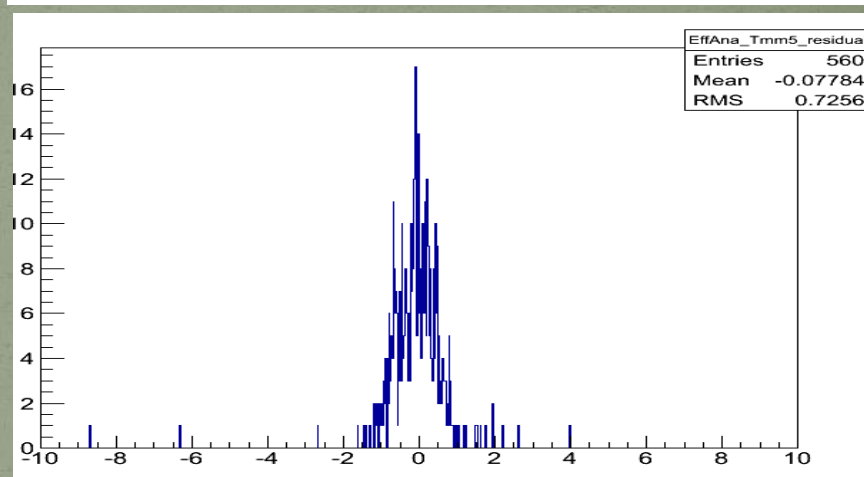
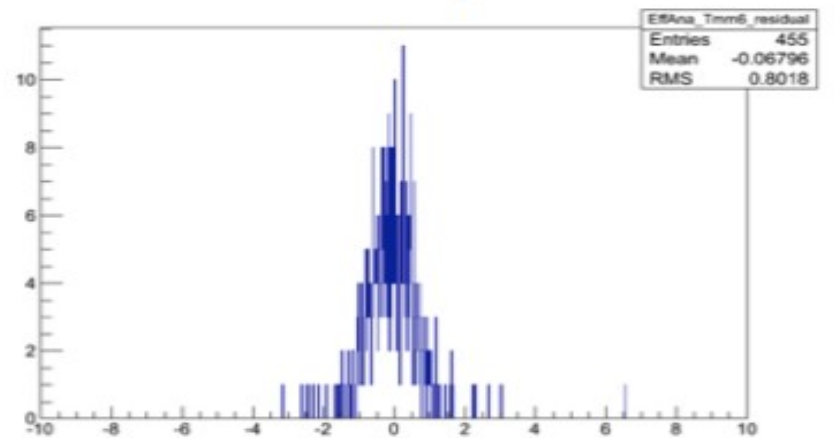
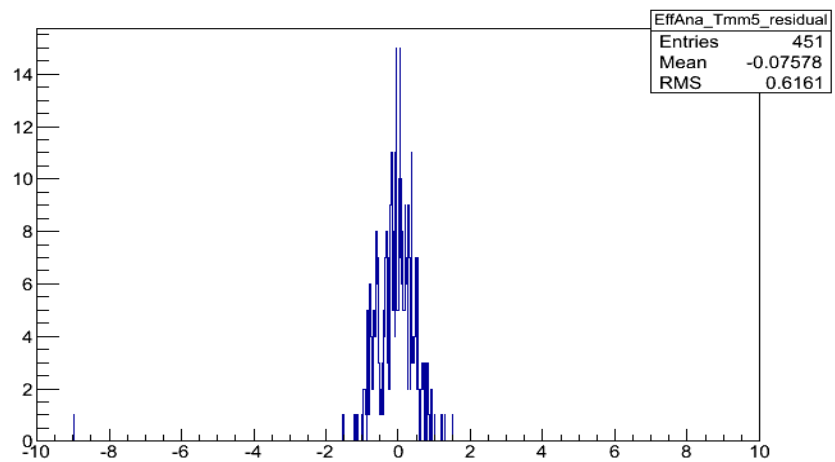
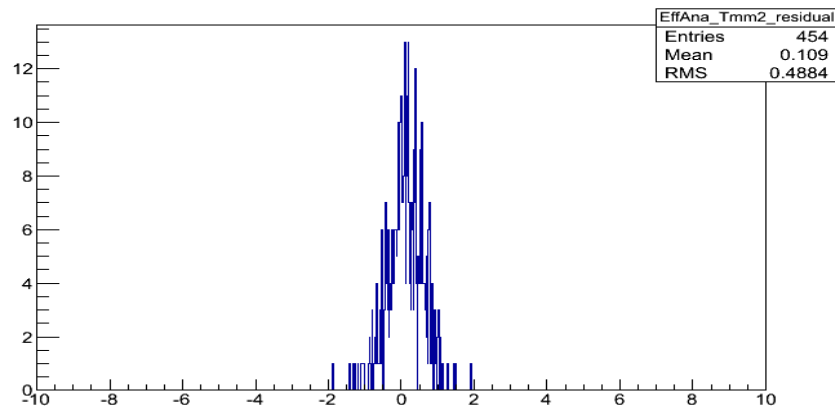


- ✓ 26/11/2015 Su consiglio di Marco, per attivare la uTPC, settare: TB_OPTION->setDoUTPCReco(true)...lasciare inalterato TB_OPTION->setDoSecondCoordReco(false) Gli istogrammi dei clusters di Tmm2, ma stesse cose si osservano per Tmm5

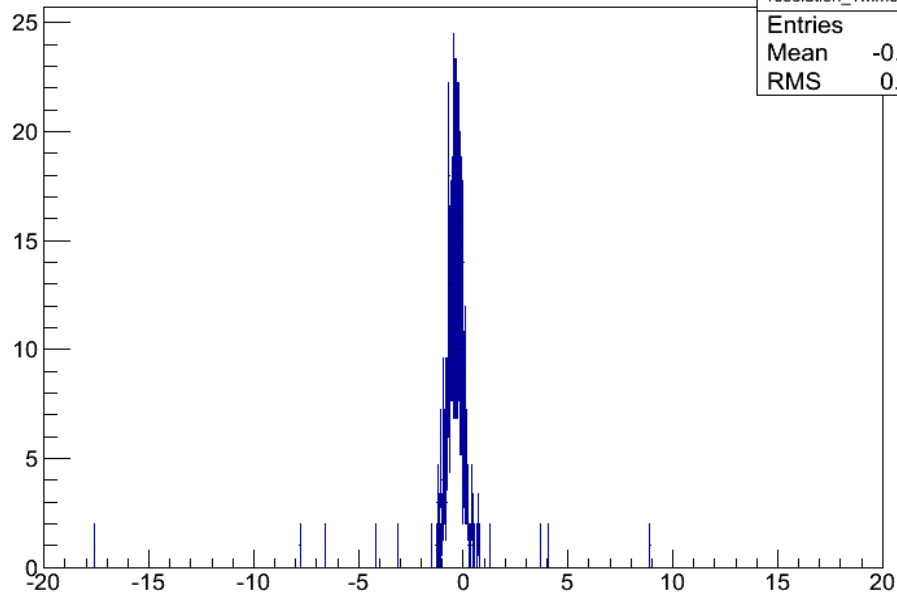


quindi ora tornamo sia il num. di strips che di clusters, dopo aver messo a false la sec. coord, pero' il numero di eventi con 0 clusters e' alto

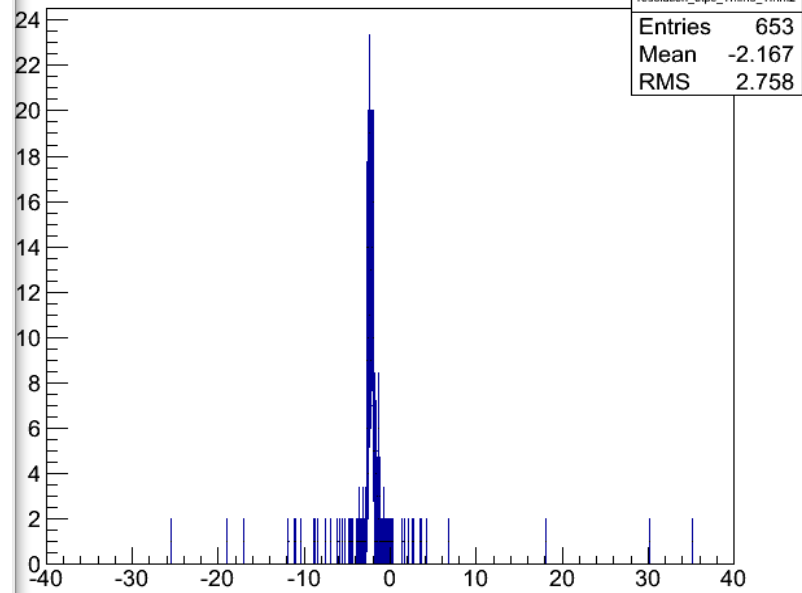
Questi sono i residui delle Tmm senza UTPC (sinistra) e con UTPC ma con sec. coord. a false (destra)



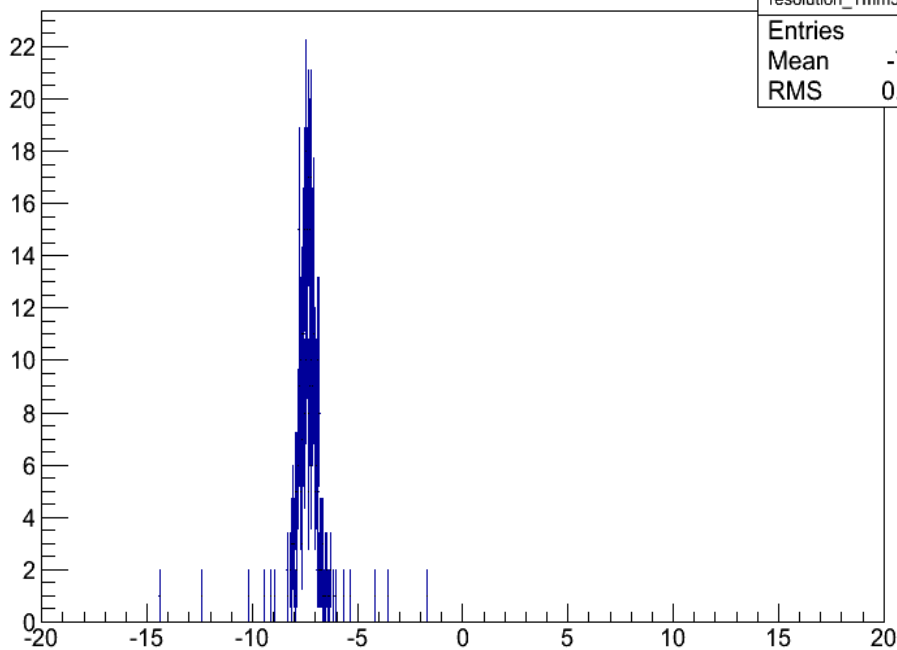
$$[x(\text{Tmm5}) - x(\text{Tmm2})]/\sqrt{2}$$



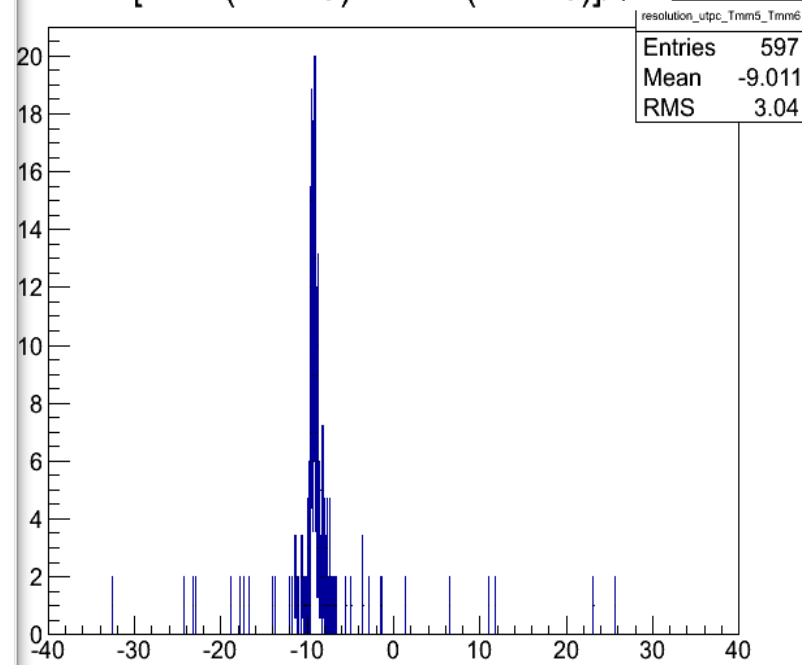
$$[x^{\text{uTPC}}(\text{Tmm5}) - x^{\text{uTPC}}(\text{Tmm2})]/\sqrt{2}$$



$$[x(\text{Tmm5}) - x(\text{Tmm6})]/\sqrt{2}$$

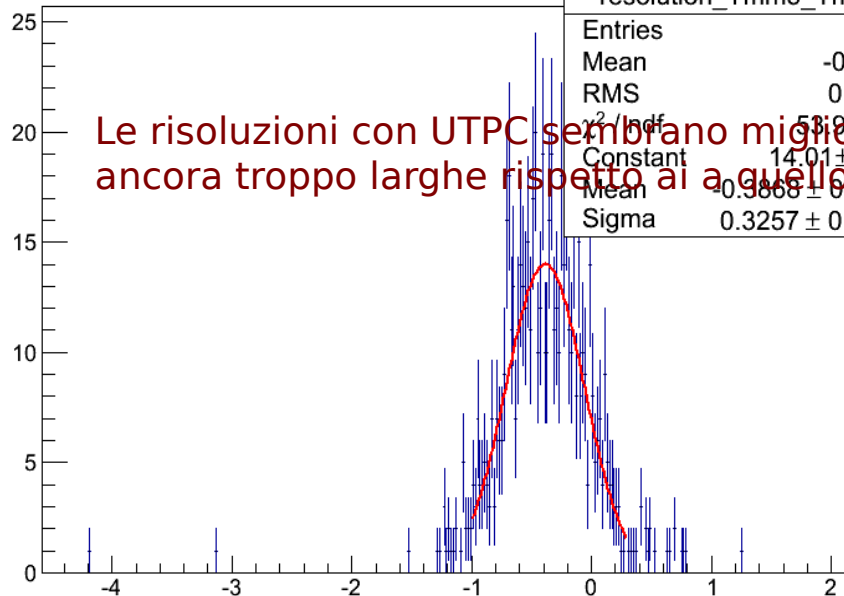


$$[x^{\text{uTPC}}(\text{Tmm5}) - x^{\text{uTPC}}(\text{Tmm6})]/\sqrt{2}$$



$$[x(\text{Tmm5}) - x(\text{Tmm2})]/\sqrt{2}$$

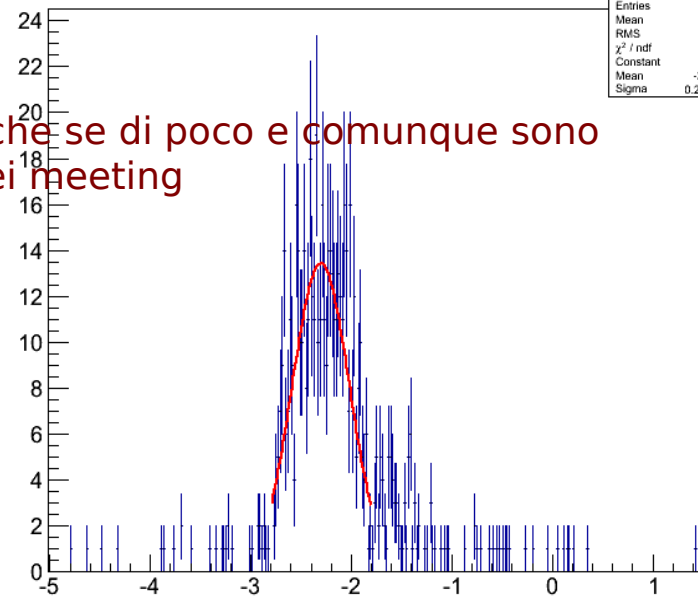
resolution_Tmm5_Tmm2	
Entries	655
Mean	-0.3901
RMS	0.4056
χ^2 / ndf	53.91 / 61
Constant	14.01 ± 0.78
Mean	-0.3868 ± 0.0162
Sigma	0.3257 ± 0.0155



Le risoluzioni con UTPC sembrano migliorare anche se di poco e comunque sono ancora troppo larghe rispetto ai a quello visto nei meeting

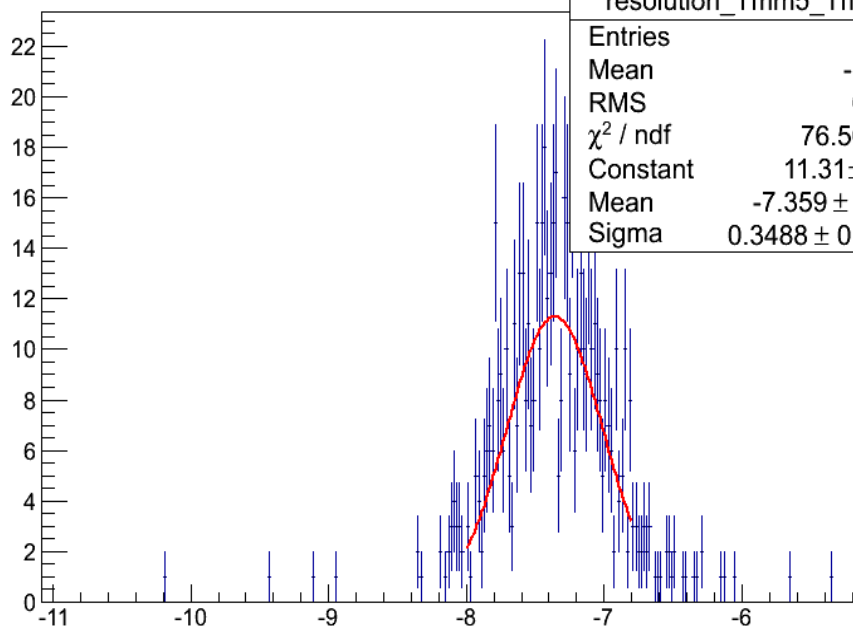
$$[x^{\text{uTPC}}(\text{Tmm5}) - x^{\text{uTPC}}(\text{Tmm2})]/\sqrt{2}$$

resolution_utpc_Tmm5_Tmm2	
Entries	653
Mean	-2.173
RMS	0.5904
χ^2 / ndf	51.89 / 46
Constant	13.43 ± 0.82
Mean	-2.304 ± 0.017
Sigma	0.2846 ± 0.0167



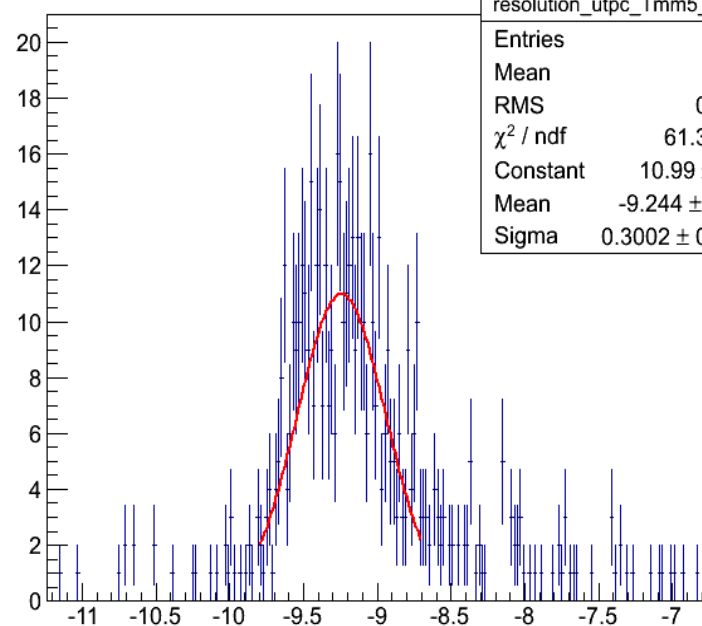
$$[x(\text{Tmm5}) - x(\text{Tmm6})]/\sqrt{2}$$

resolution_Tmm5_Tmm6	
Entries	601
Mean	-7.357
RMS	0.426
χ^2 / ndf	76.56 / 56
Constant	11.31 ± 0.71
Mean	-7.359 ± 0.021
Sigma	0.3488 ± 0.0226



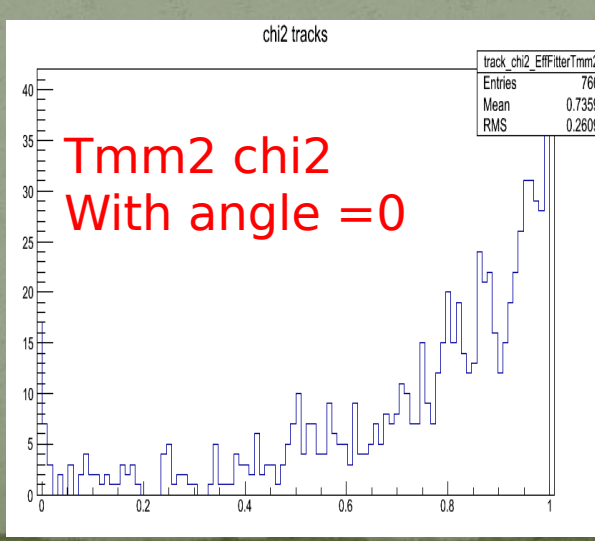
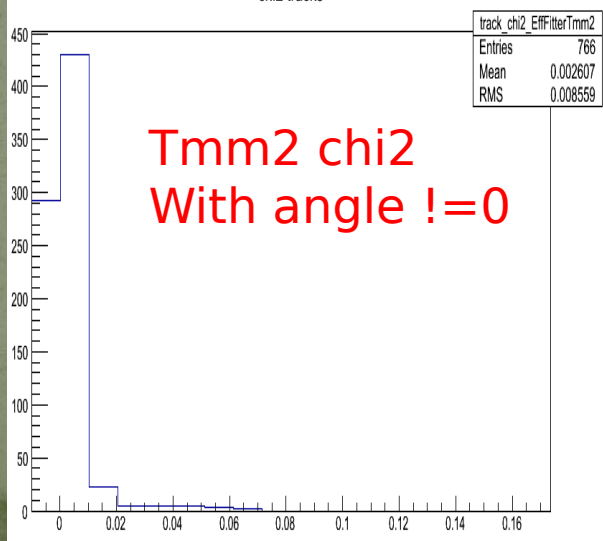
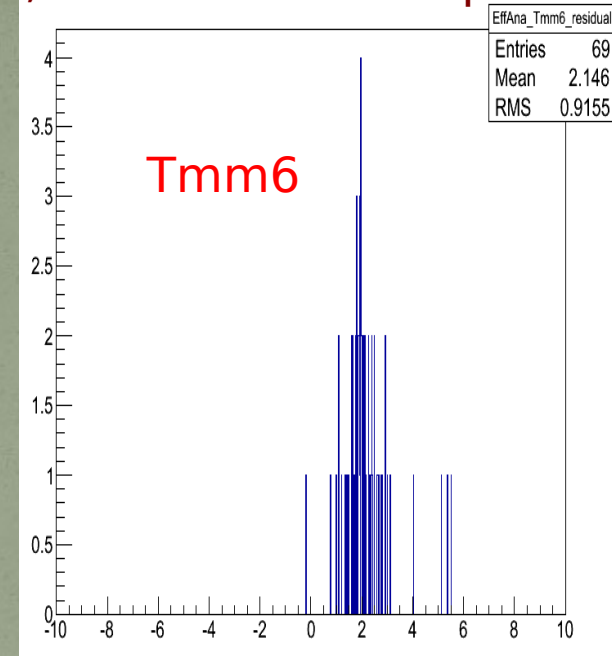
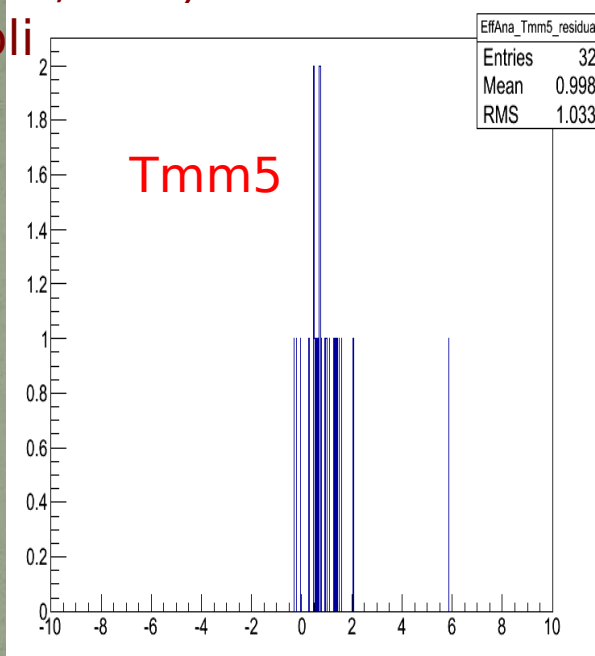
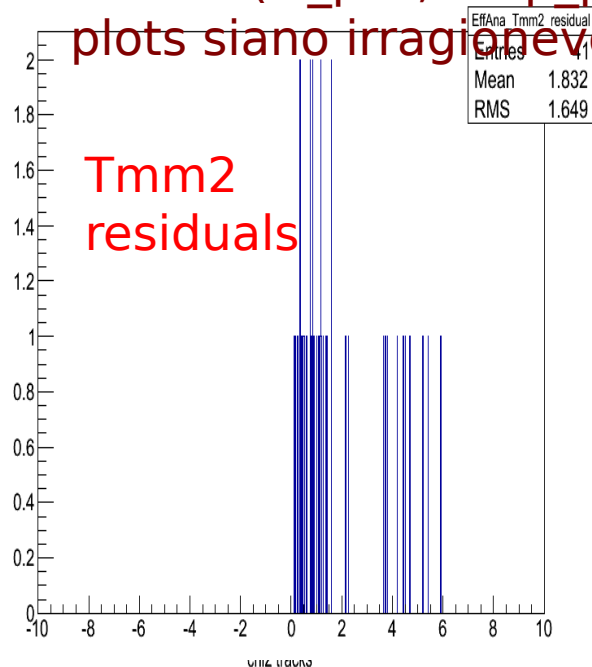
$$[x^{\text{uTPC}}(\text{Tmm5}) - x^{\text{uTPC}}(\text{Tmm6})]/\sqrt{2}$$

resolution_utpc_Tmm5_Tmm6	
Entries	597
Mean	-9.119
RMS	0.5875
χ^2 / ndf	61.38 / 52
Constant	10.99 ± 0.74
Mean	-9.244 ± 0.019
Sigma	0.3002 ± 0.0188



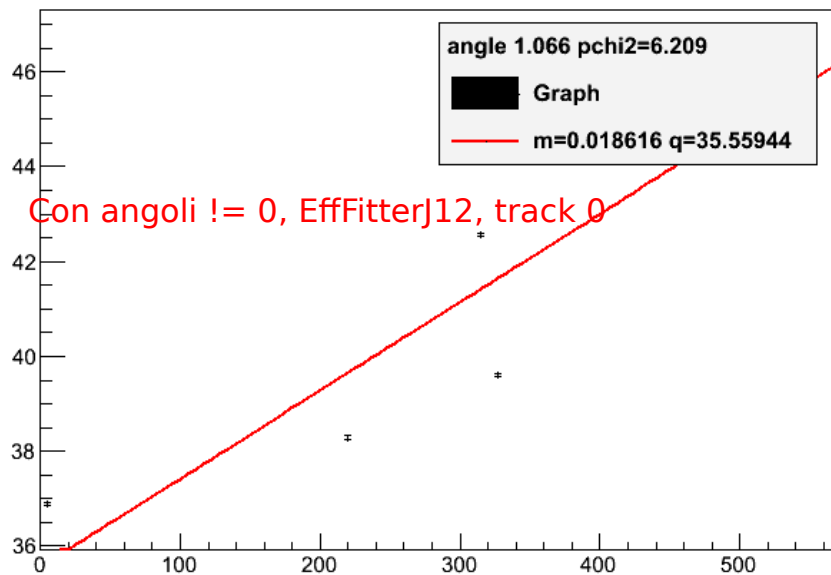
- ✓ Ancora 26/11/2015 Lasciamo tutto come stava finora, ma settiamo gli angoli XZ in RunBook.cxx a $\text{ang}[0]=25.;$ $\text{ang}[1]=25.;$ $\text{ang}[2]=35.;$ $\text{ang}[3]=35.;$ $\text{ang}[4]=35.;$ $\text{ang}[5]=35.;$ $\text{ang}[6]=25.;$ $\text{ang}[7]=0.;$ come sta scritto sul logbook TestBeam_SPS_H6_Sep2015_V2 per il run 13060. Runniamo con UTPC attivata e quindi ci confrontiamo con $\text{angle}=0$ (UTPC attivata, ossia con la situazione dei plots a destra nelle slides precedenti).

Il resto (cl_pos , strip_pos , ecc.) E' ancora sensato, ma sembra che questi plots siano irrragionevoli

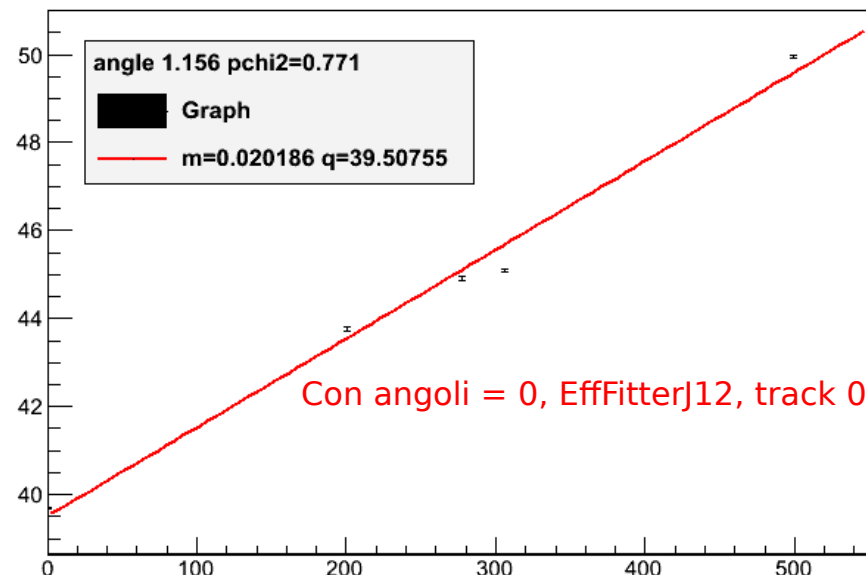


che per le J le cose si rovinano (residui compresi, vedi pag. Succ):

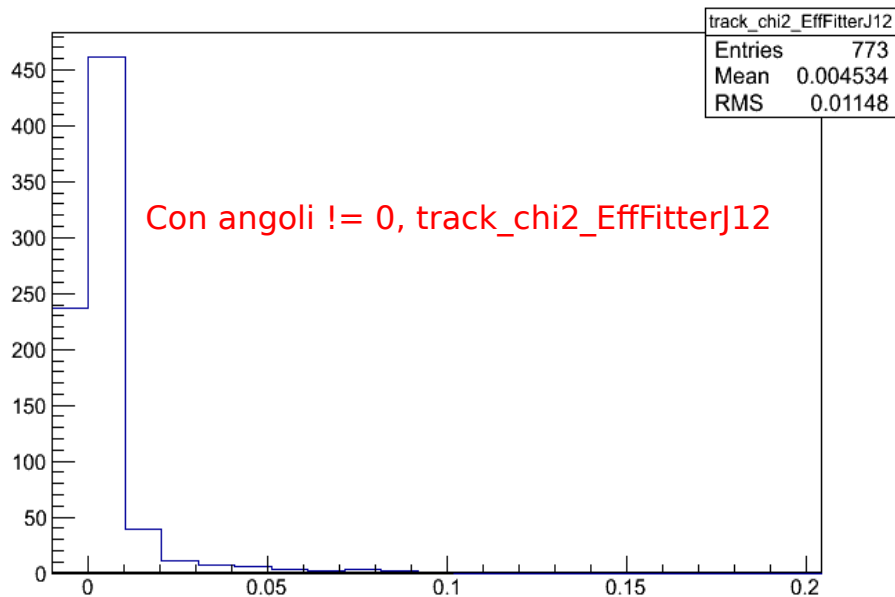
Graph



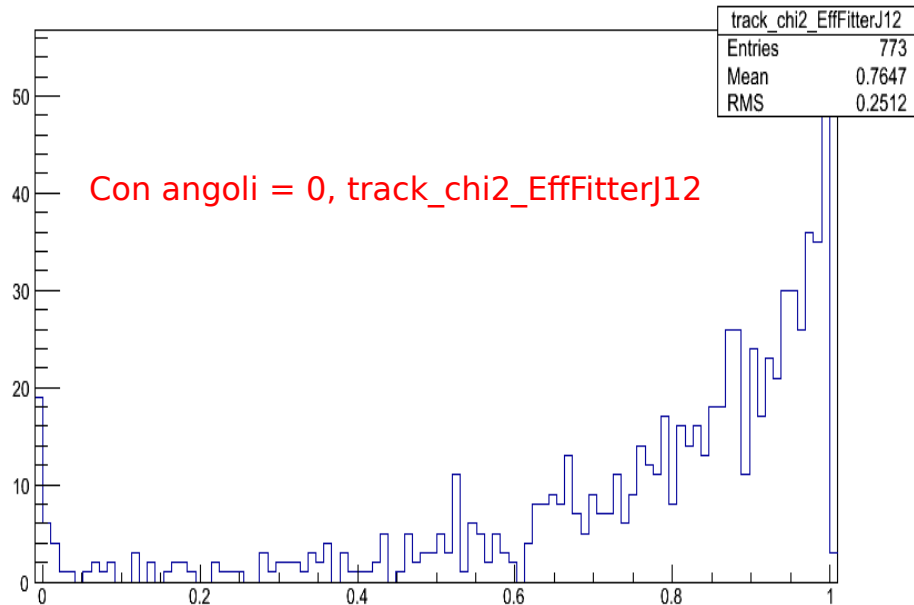
Graph

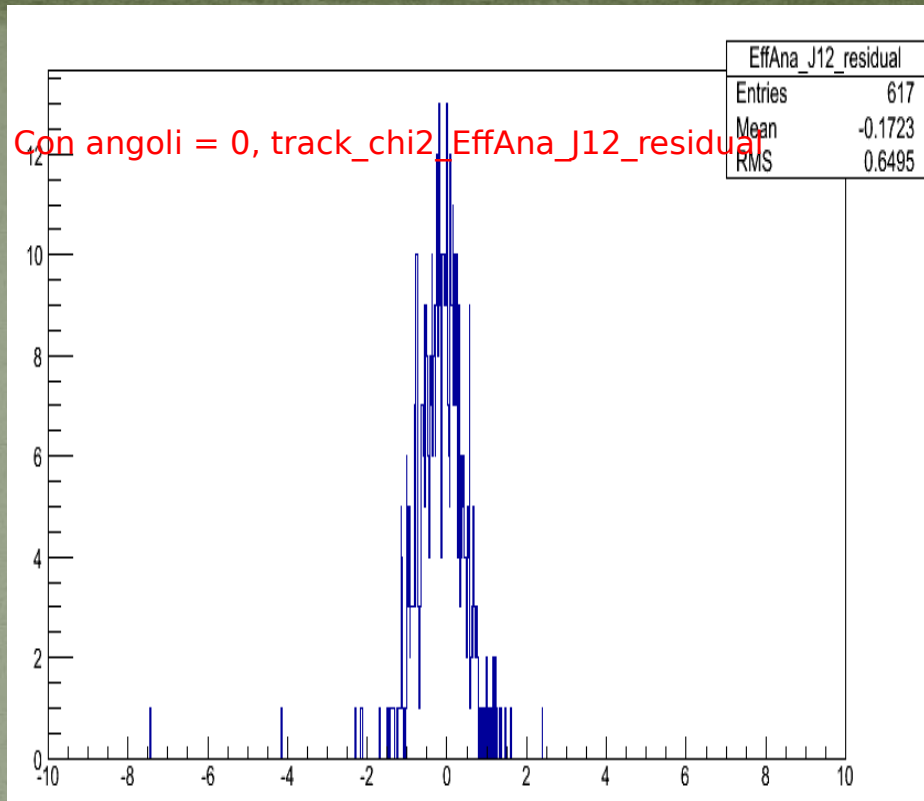
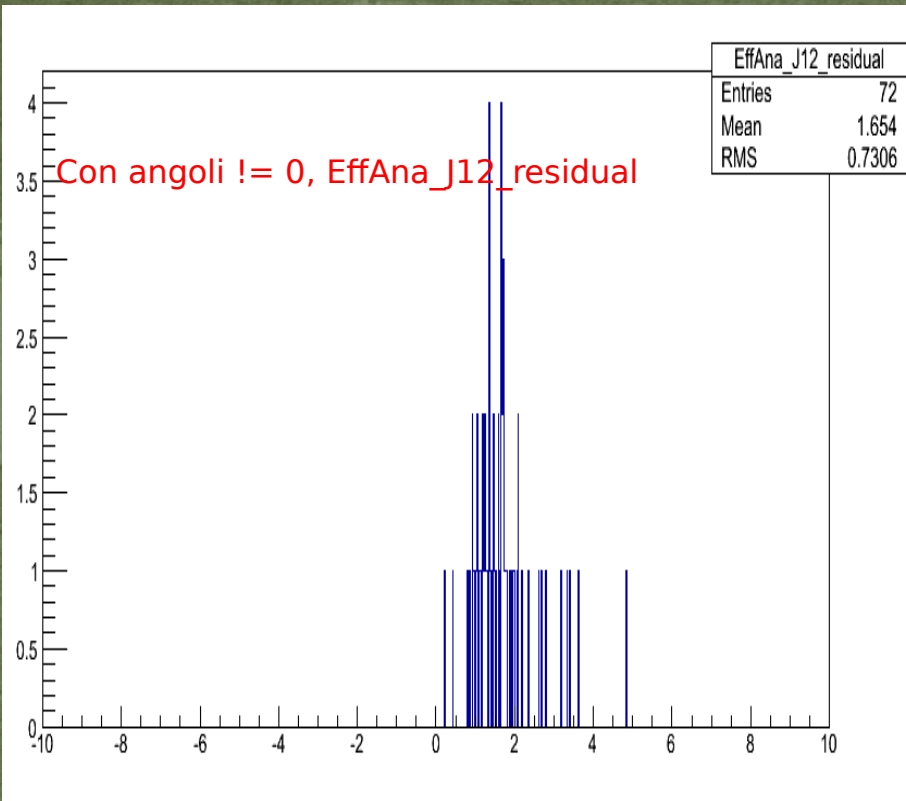


chi2 tracks



chi2 tracks





Angles (RMS) & Chi2 Values (RMS) (At 0° angles for all chambers)

Tmm2: 1.205 (1.975) / 0.736 (0.261) ----- Entries: 766

Tmm5: 1.107 (0.855) / 0.74 (0.26) ----- Entries: 761

J12: 1.122 (0.475) / 0.76 (0.25) ----- Entries: 773

J13: 1.19 (1.98) / 0.75 (0.25) ----- Entries: 764

J14: 1.15 (1.2) / 0.75 (0.26) ----- Entries: 773

J15: 1.15 (1.15) / 0.755 (0.25) ----- Entries: 757

Tmm6: 1.19 (2.04) / 0.76 (0.25) ----- Entries: 767

Angles (RMS) & Chi2 Values (RMS) (At 35° for J chambers and 25° for Tmm ones)

Tmm2: 1.08 (1.04) / 0.004 (0.036) ----- Entries: 766

Tmm5: 0.98 (0.94) / 0.0045 (0.043) ----- Entries: 761

J12: 0.97 (0.45) / 0.005 (0.031) ----- Entries: 773

J13: 0.97 (1.03) / 0.04 (0.12) ----- Entries: 764

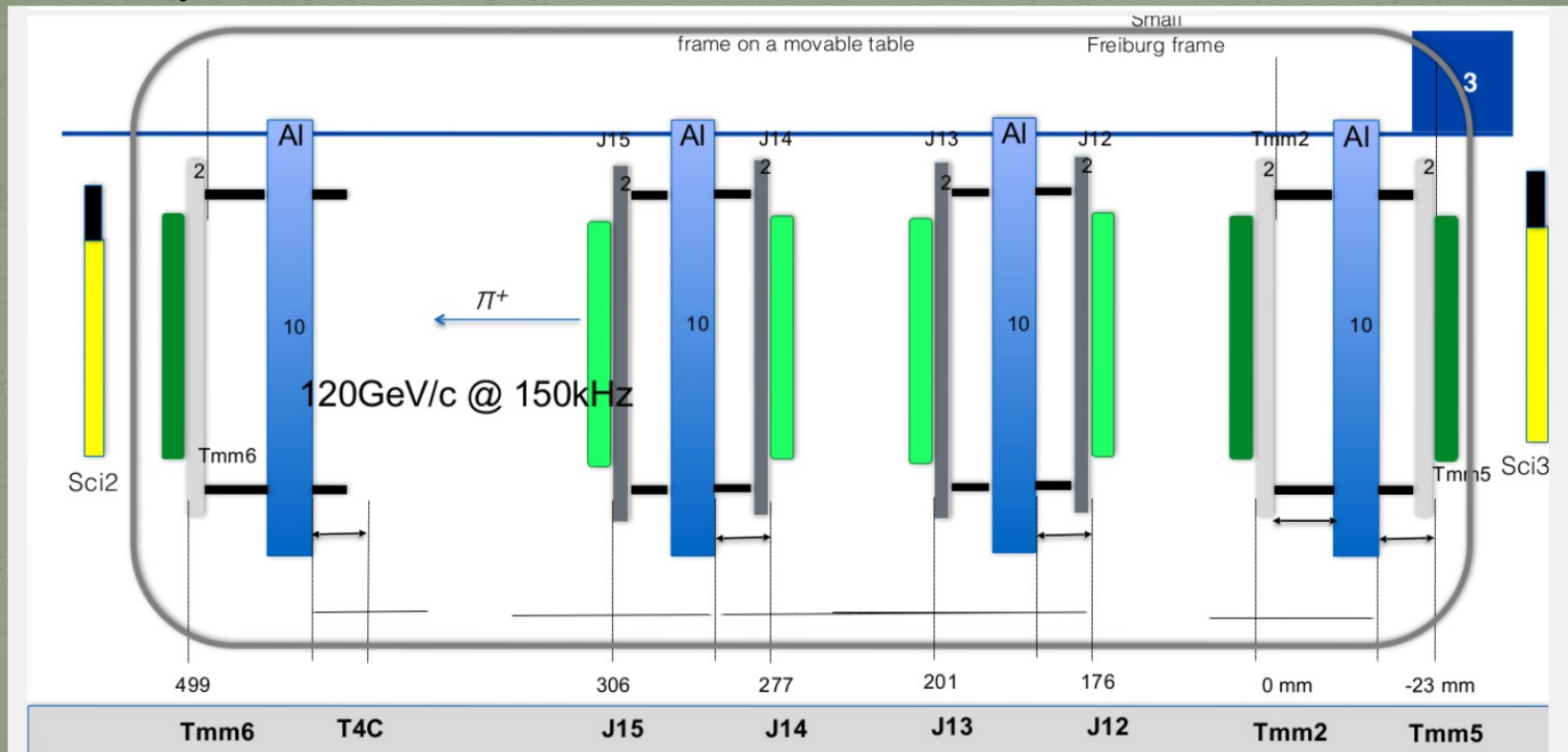
J14: 0.92 (0.82) / 0.02 (0.09) ----- Entries: 773

J15: 1.04 (0.74) / 0.04 (0.14) ----- Entries: 757

Tmm6: 0.84 (1.13) / 0.009 (0.062) ----- Entries: 767

30/11 ----> 1st change: Chamber ORIENTATION in Runbook.cxx
+1 ----> if the chamber is oriented in the direction of the beam
-1 ----> otherwise

Since the layout should be



Tmm2 – J13 – J15 – Tmm6 -----> Orientation +1

Tmm5 – J12 – J14 -----> Orientation -1

RESULT: nothing changes after this implementation

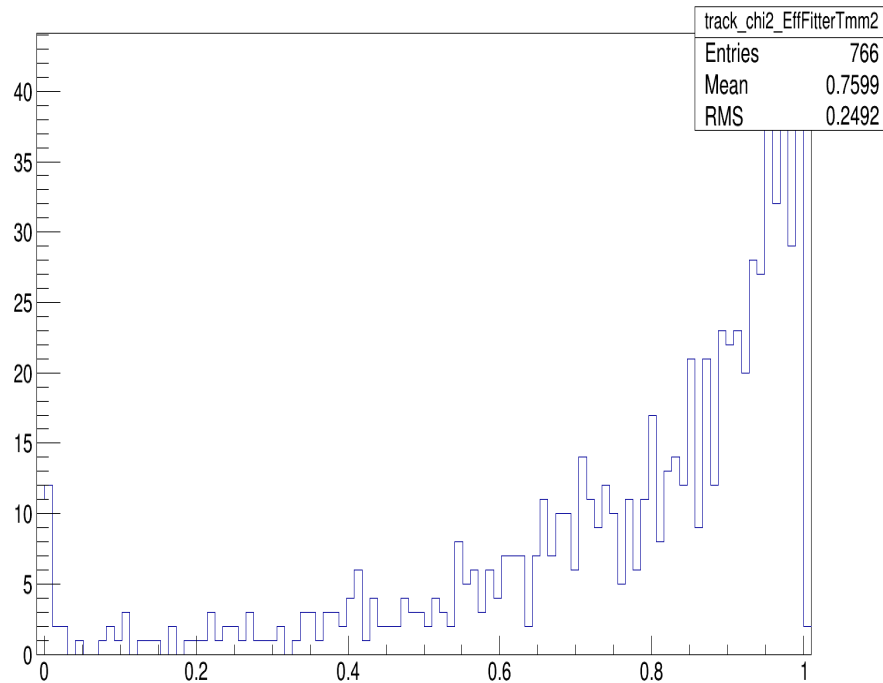
30/11 ---> 2nd change: Angles sign. According to Marco, the sign isn't well defined. What I figured out is that the sign should be set according to the orientation:

+1 ---> The angle has to be positive

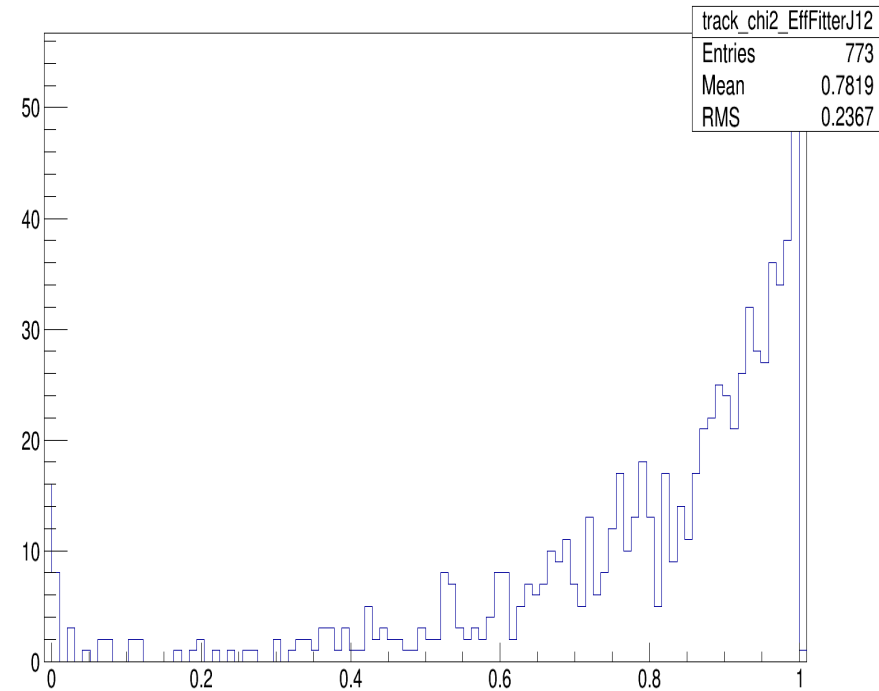
-1 ---> The angle has to be negative

The final angular layout should be: Tmm5 (-25°) --- Tmm2 (25°) --- J12 (-35°)
--- J13 (35°) --- J14 (-35°) --- Tmm6 (25°)

chi2 tracks



chi2 tracks



Angles (RMS) & Chi2 Values (RMS) (Angles with signs)

Tmm5: 0.96 (0.66) / 0.75 (0.24) ----- Entries: 761

Tmm2: 1.07 (2.16) / 0.76 (0.25) ----- Entries: 766

J12: 0.96 (0.39) / 0.78 (0.24) ----- Entries: 773

J13: 1.04 (2.16) / 0.75 (0.24) ----- Entries: 764

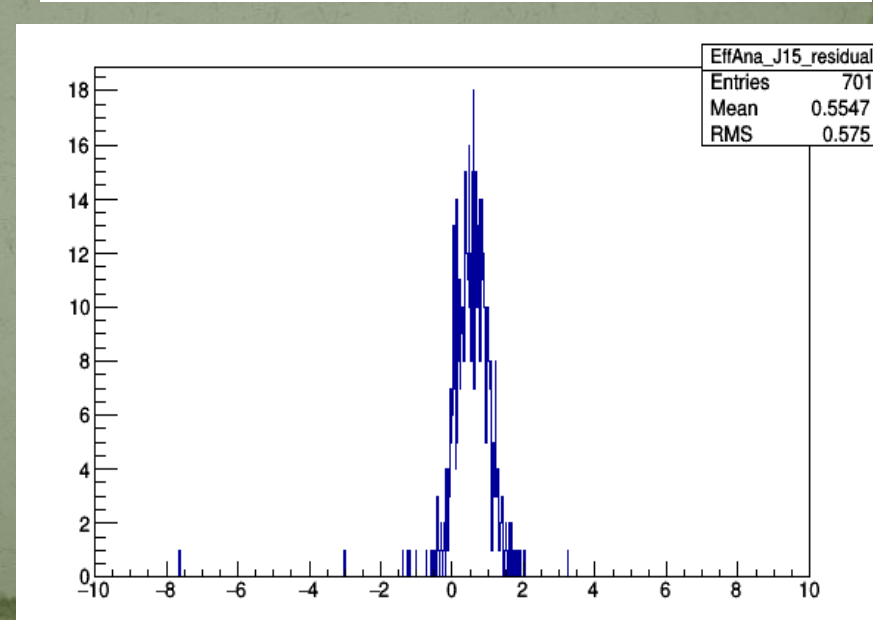
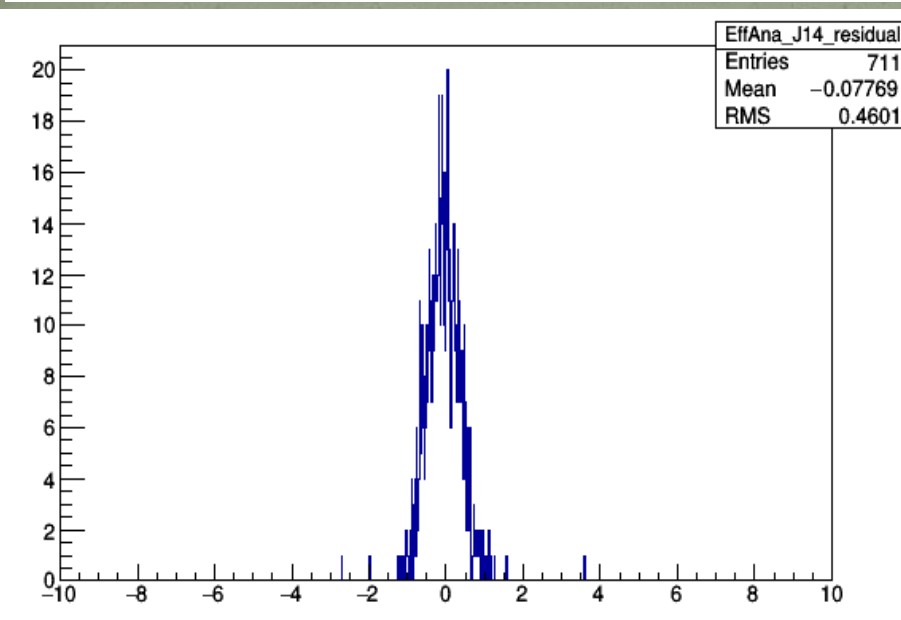
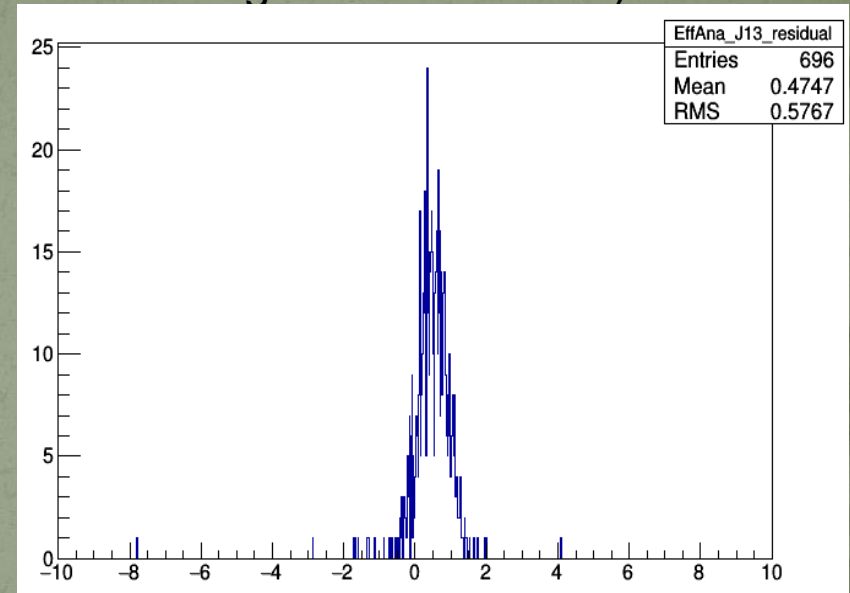
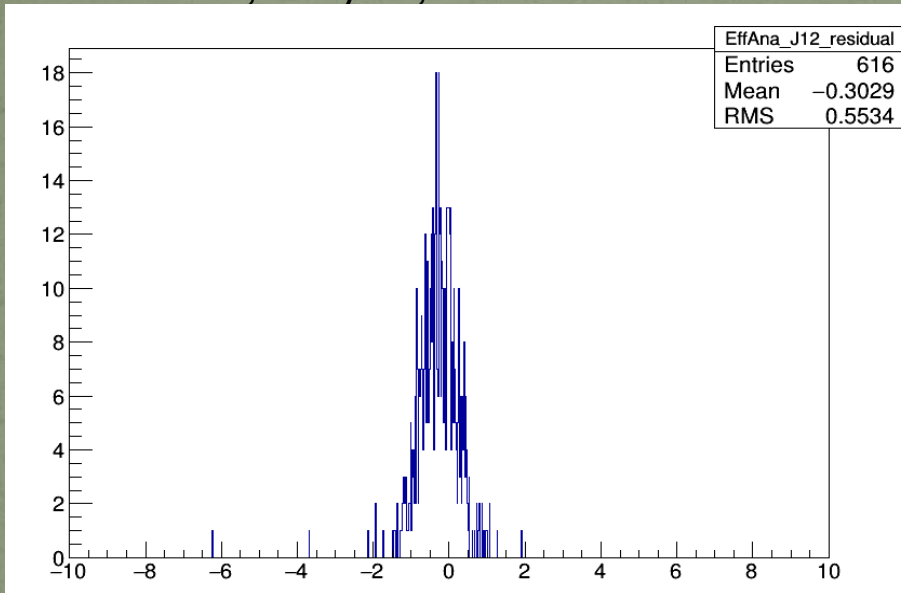
J14: 0.99 (1.12) / 0.74 (0.25) ----- Entries: 773

J15: 0.98 (1.01) / 0.74 (0.25) ----- Entries: 757

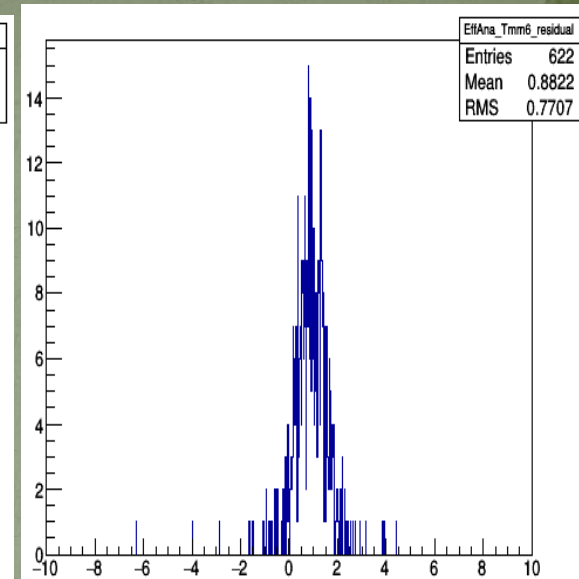
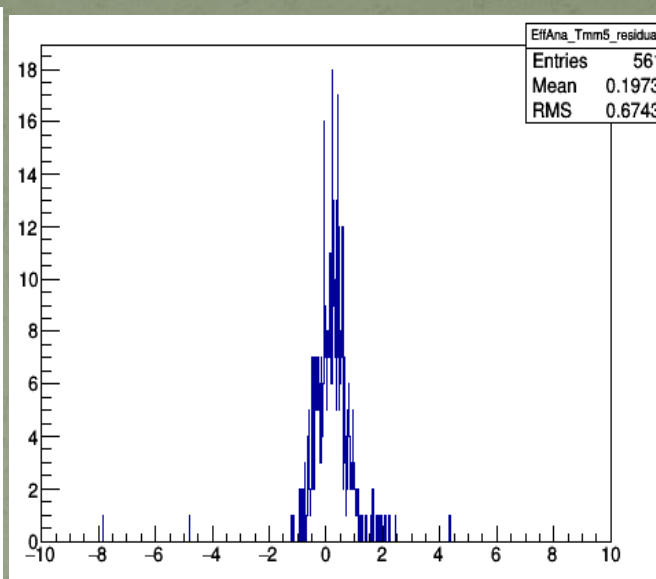
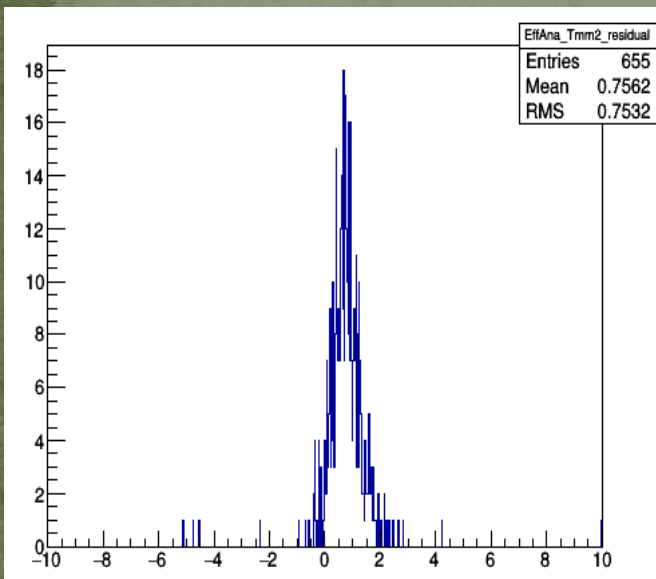
Tmm6: 0.98 (2.20) / 0.78 (0.24) ----- Entries: 767

RMS Values for angles seem to be quite high...or at least 5 of them...

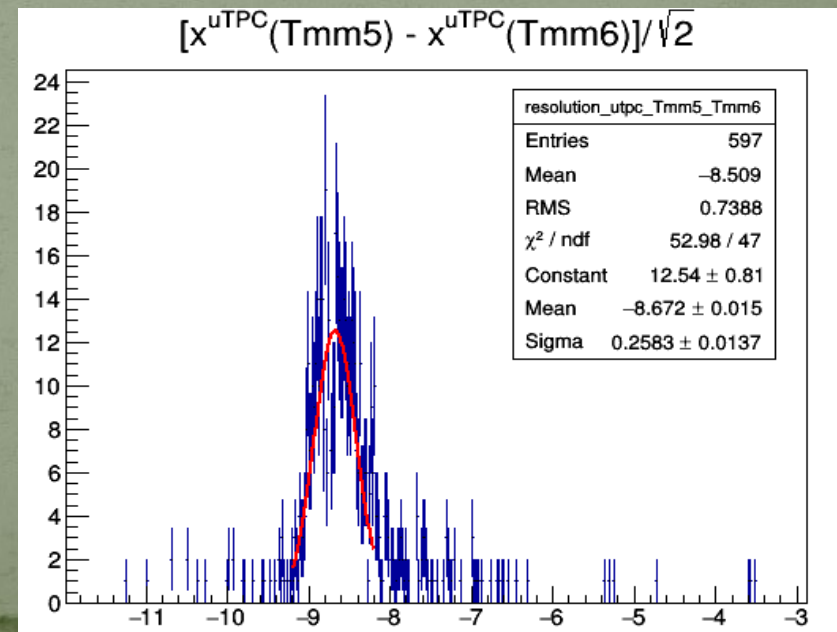
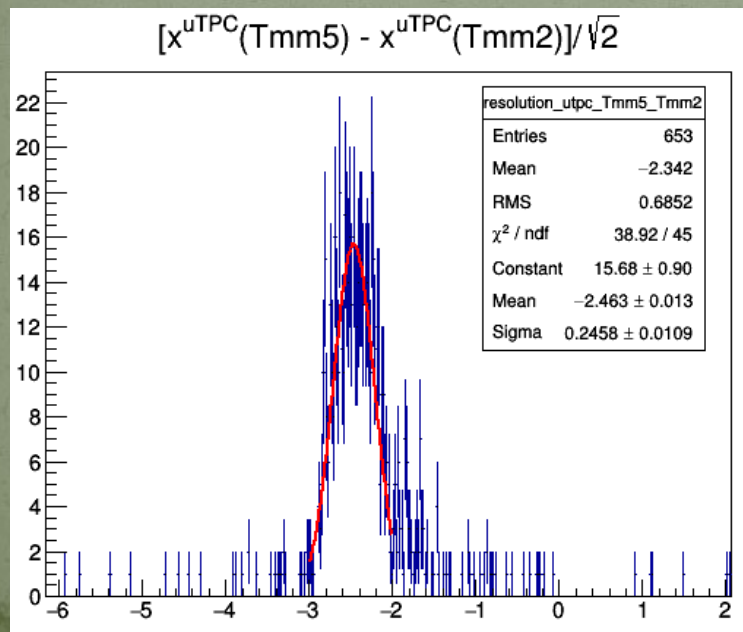
Residual plots show a shape which is more reasonable, even though for some chambers the peak is not perfectly centered at zero as before, i.e. without using uTPC...But, maybe, our statistic is too low (we're running on 1000 events)



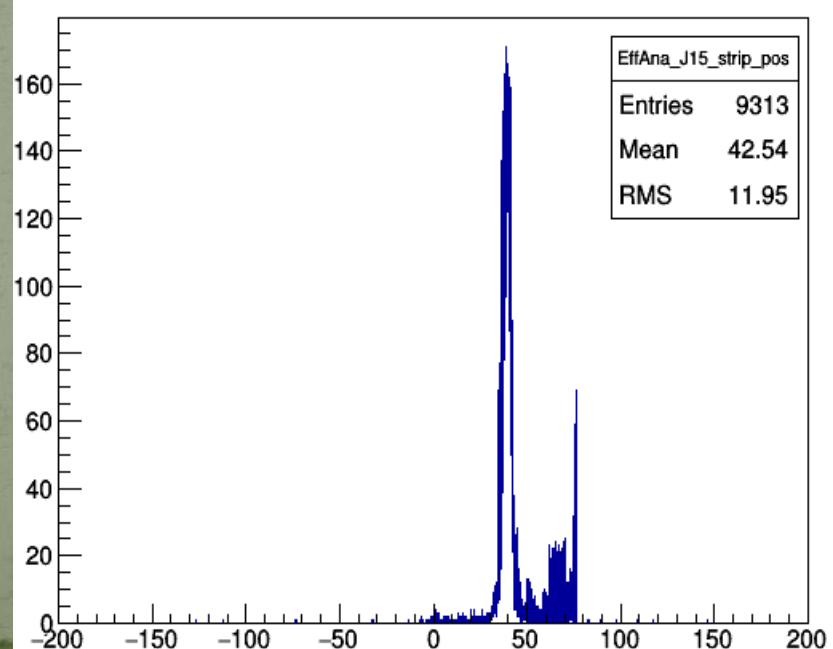
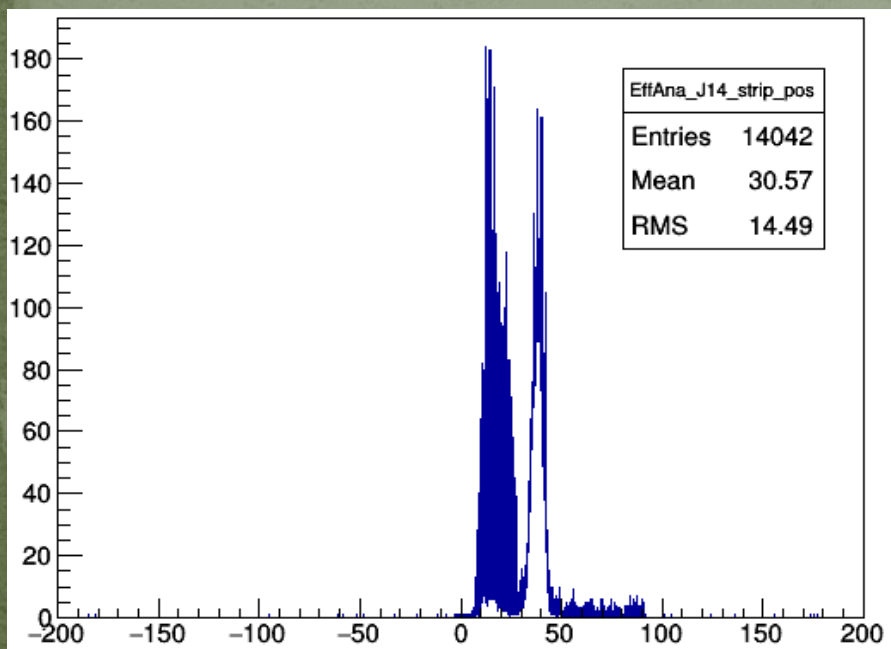
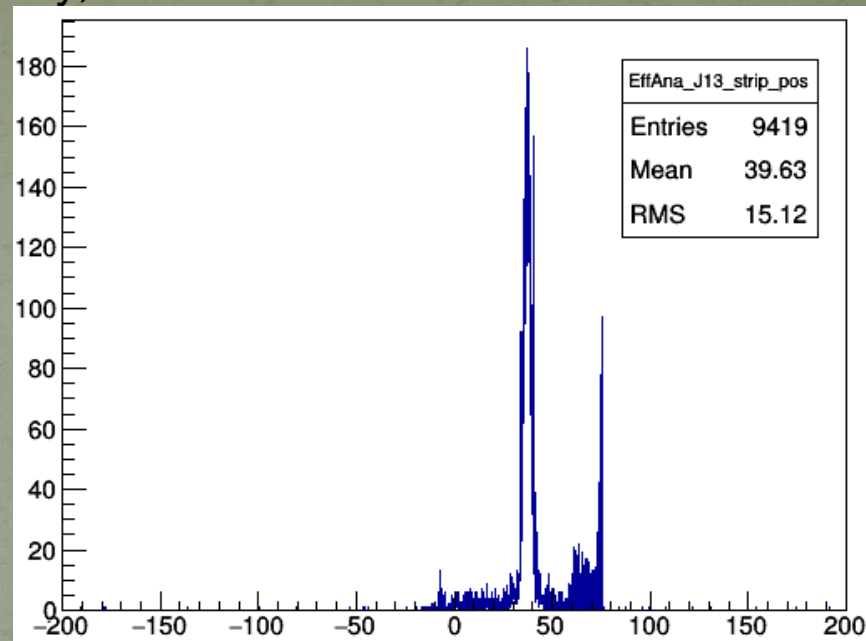
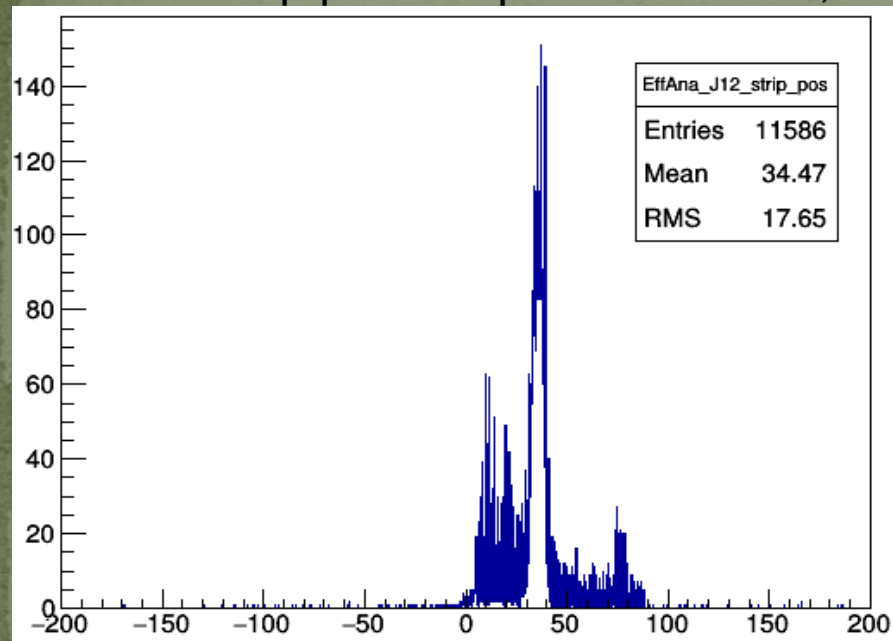
Similar plots for Tmm...



Resolution plots seem to be slightly improved...



But the strip position plots are rather, let's say, 'awkward'...



Tmm chambers look a little bit different...

