20171103
STATUS REPORT

Ahram lee

CERN data analysis
Data information

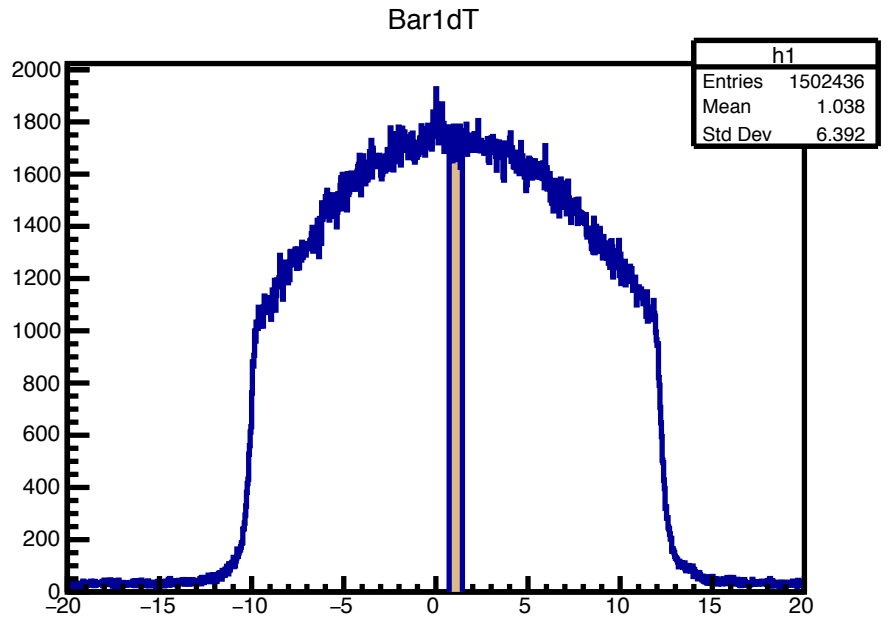
/dataRC_old/	#181	07-21 (3h)	11,528 entries	4bar trigger, th=200
	#202		19,632 entries	12bar trigger
/dataRC/	#48	08-17 ~ 08-18 (2d)	218,112 entries	6bar trigger, th=100
	#76	08-21 ~ 08-22 (2d)	177,860 entries	
	#120	08-25 ~ 08-29 (4d)	928,000 entries	
	#151	08-30 ~ 09-06 (7d)	1,502,436 entries	
	#170	bhokim(~10/2)	434,340 entries	
	#172	bhokim(10/2~)	204,244 entries	
	#174		518,896 entries	

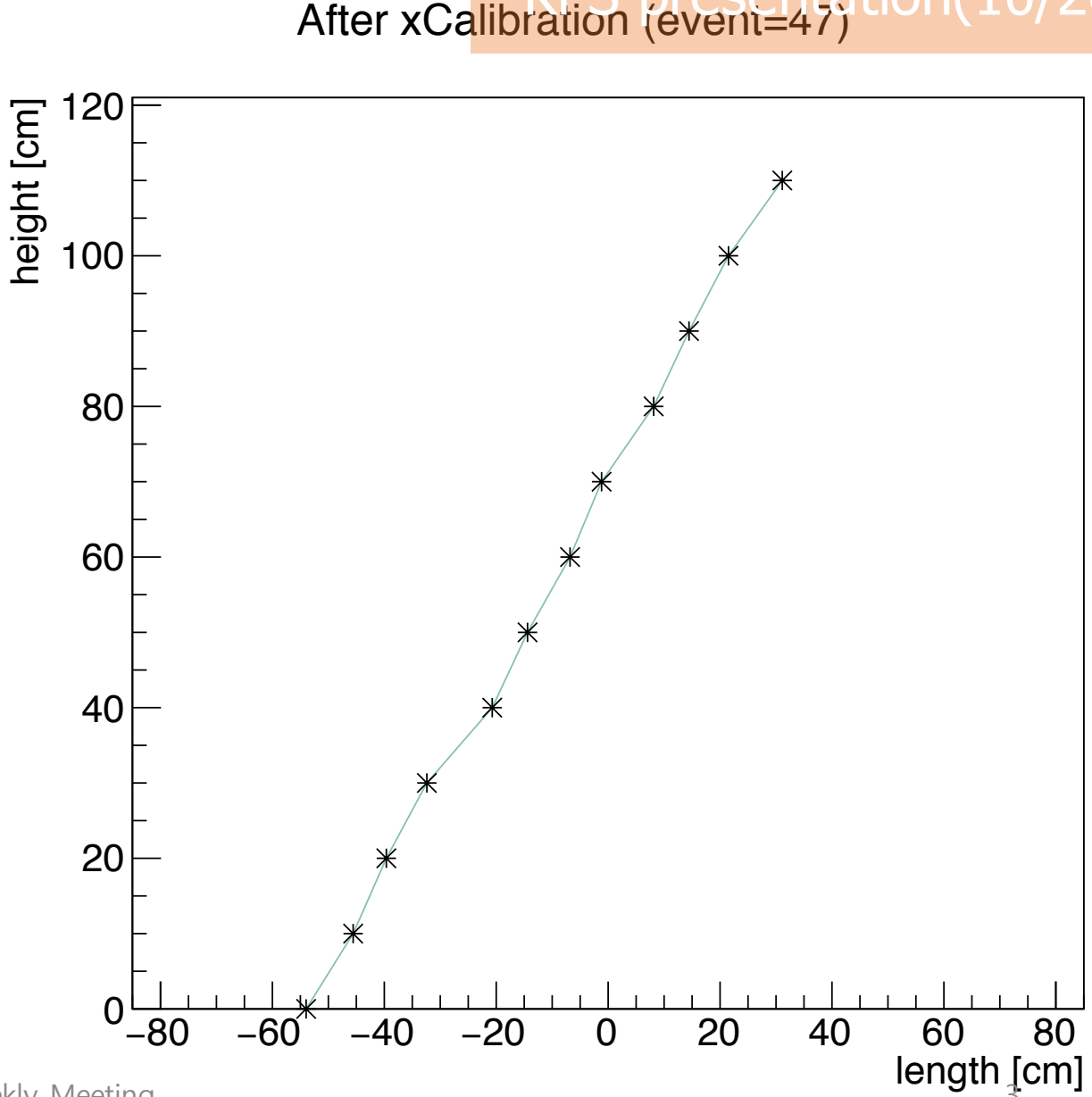
Performance

2D trajectory reconstruction

KPS presentation(10/26)

By conversion : dT[ns] → 170[cm]
Find hit positions of muon



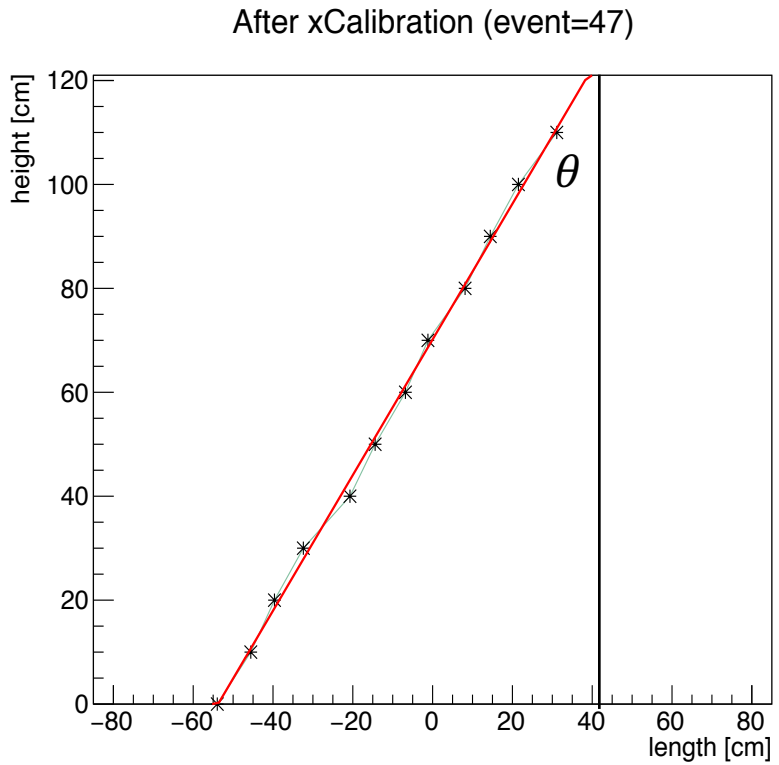


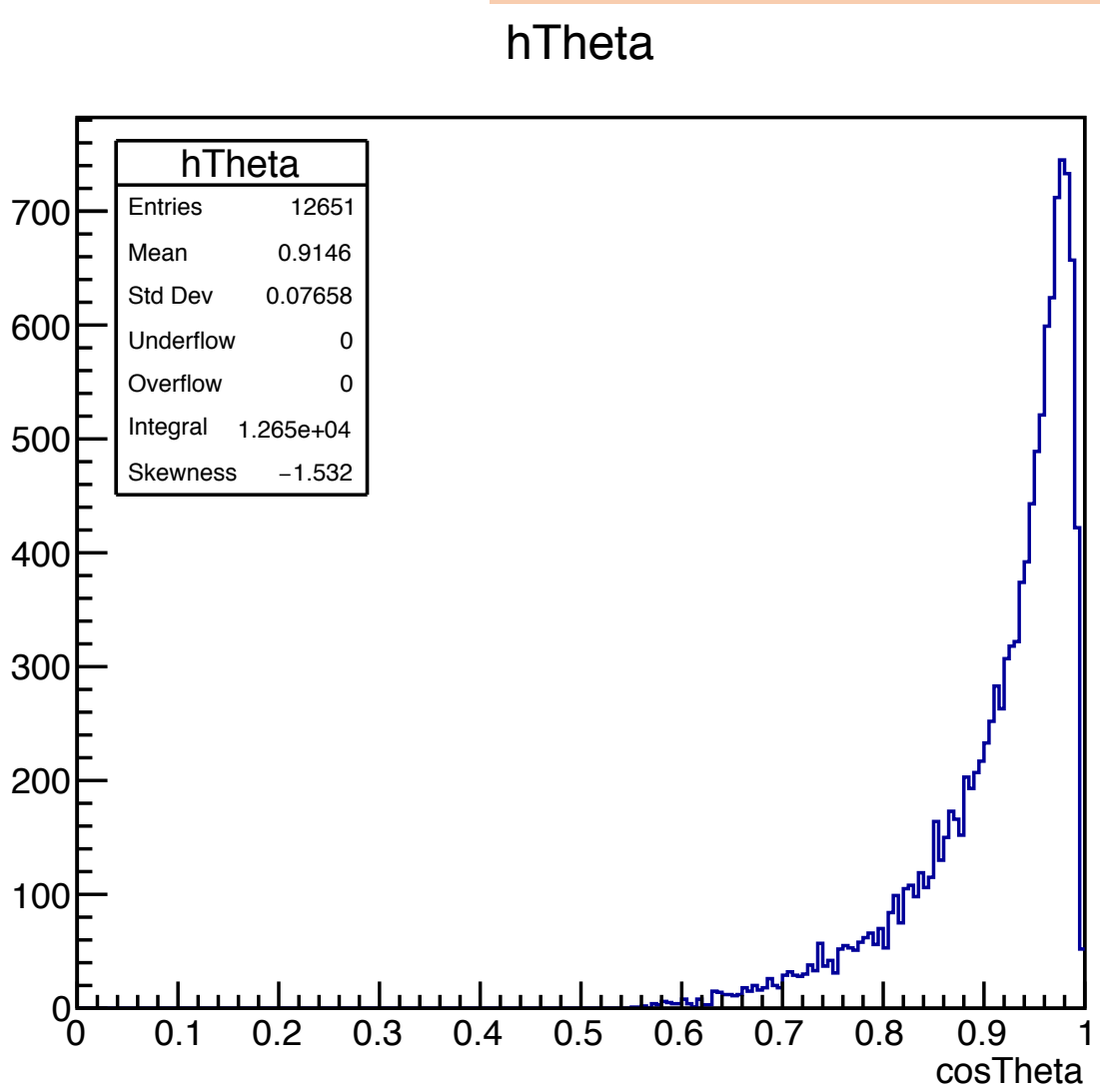
Performance

2D trajectory reconstruction

Angle distribution

KPS presentation(10/26)





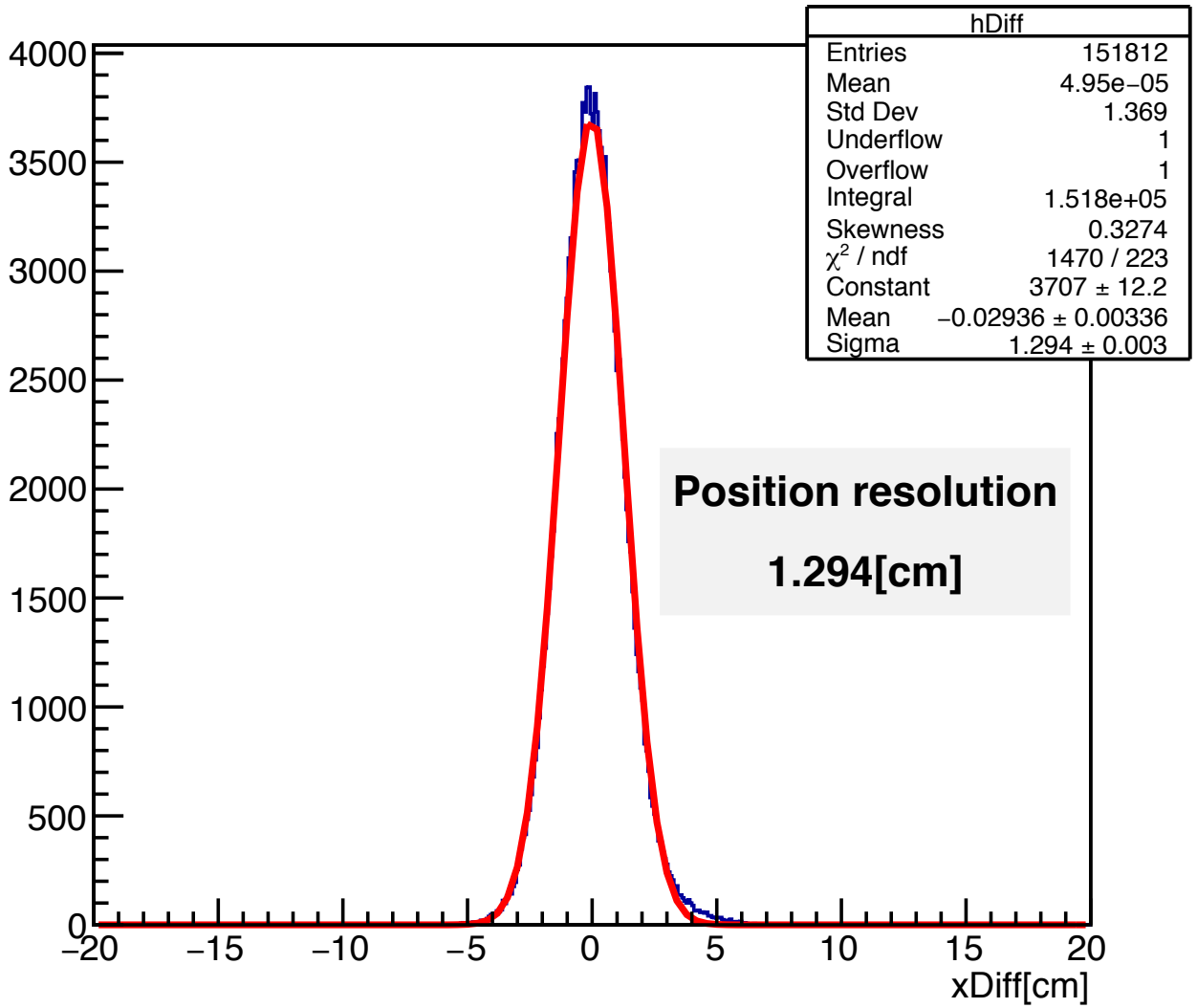
Performance

2D trajectory reconstruction

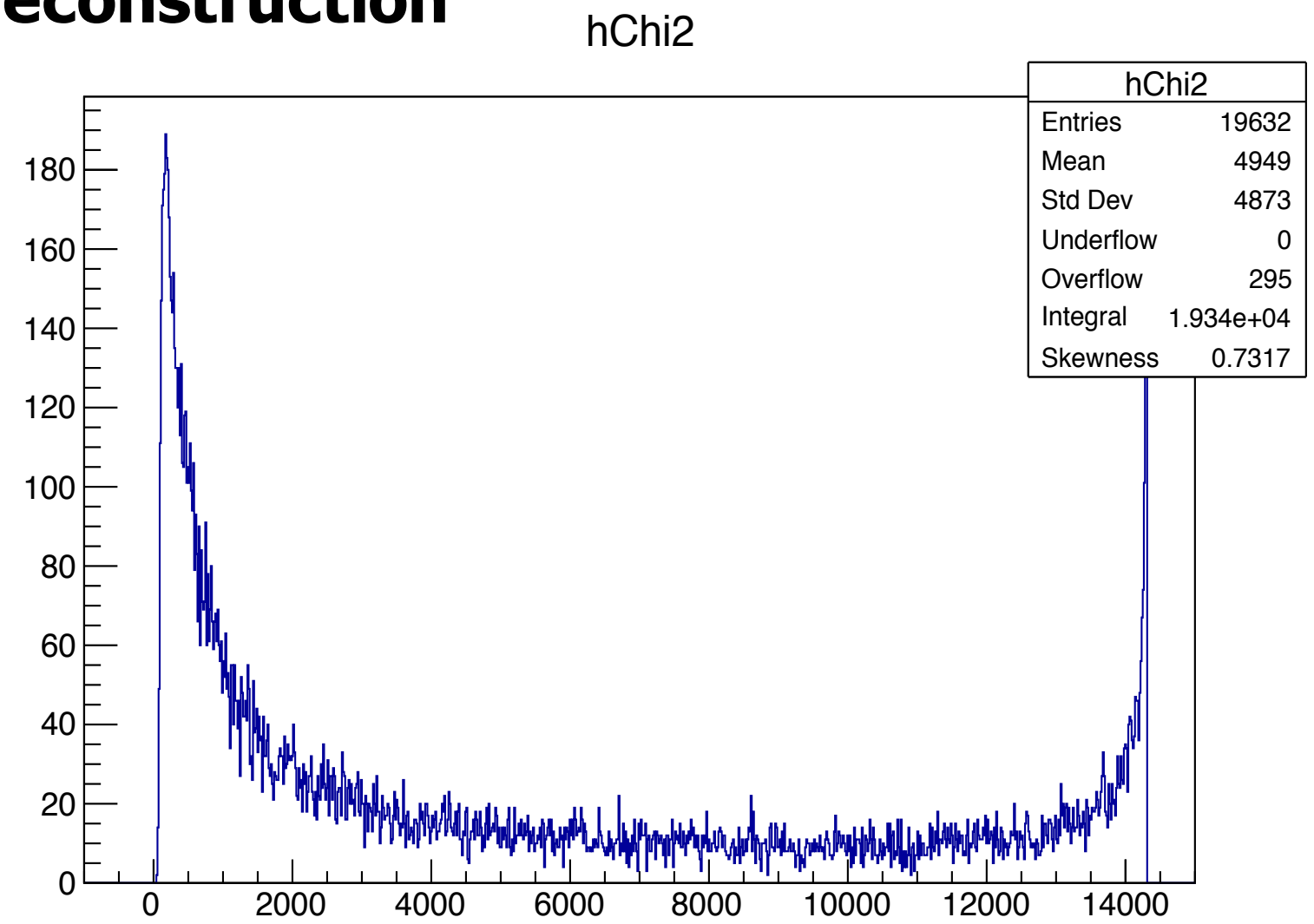
Position resolution

From the distribution that the difference between Linear fit ~ hit position,

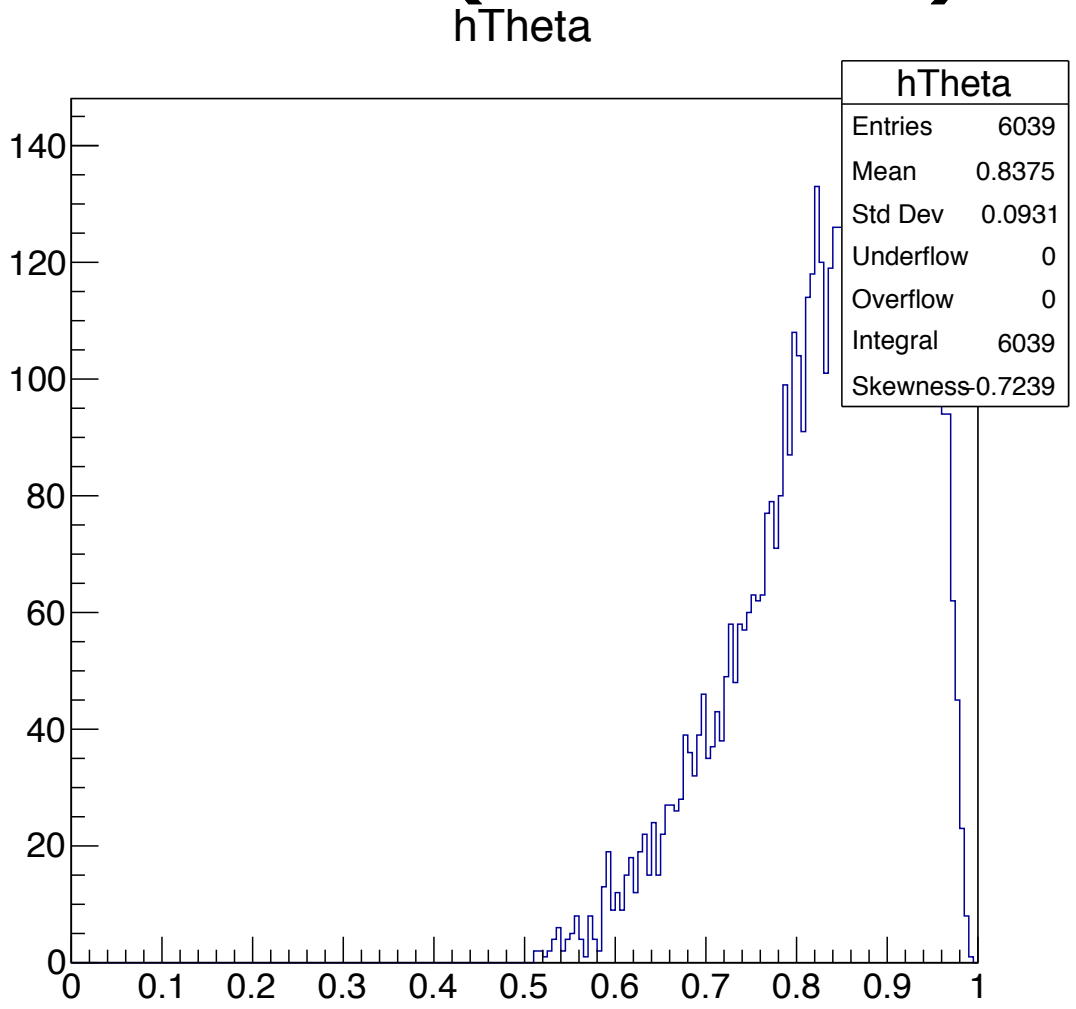
Position resolution = 1.294[cm]

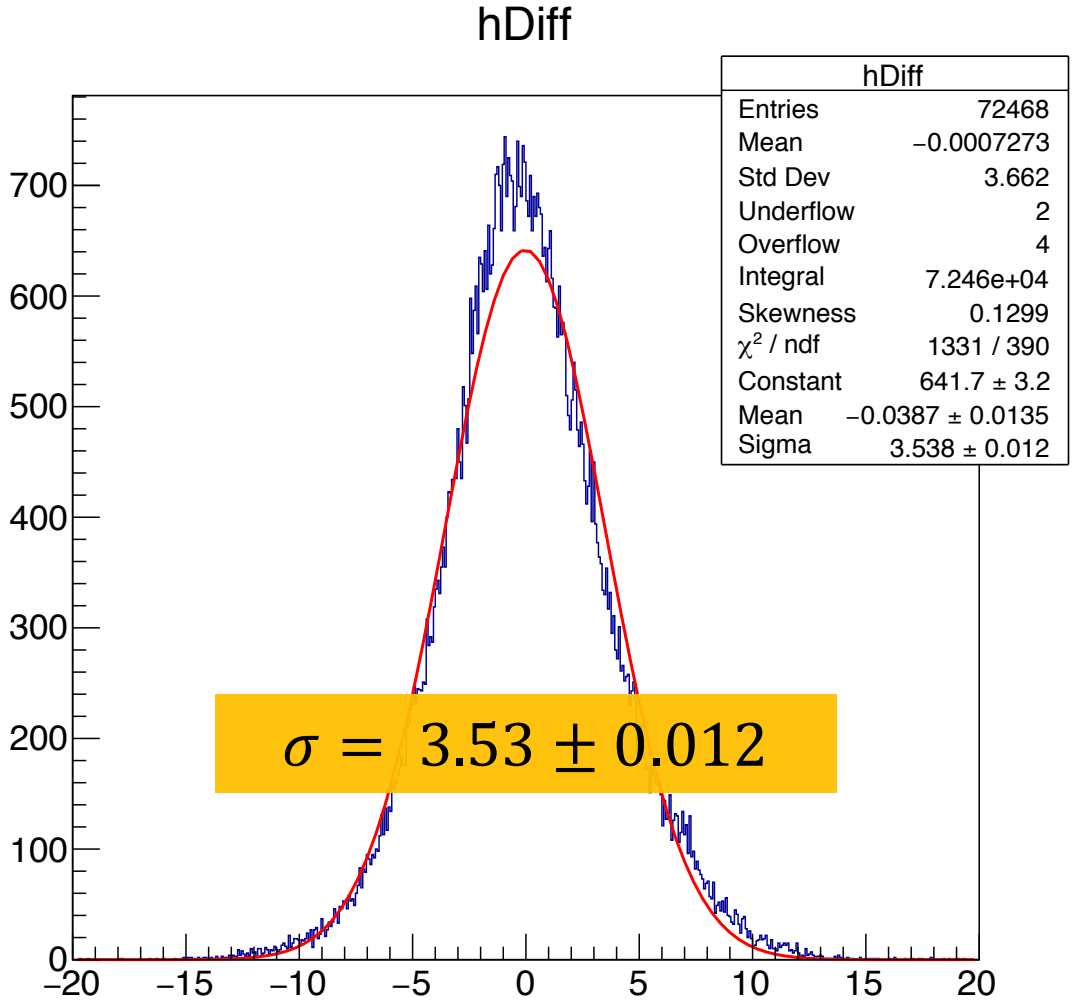


CERN data analysis
2D muon trajectory reconstruction
Chi2 distribution
With old#202

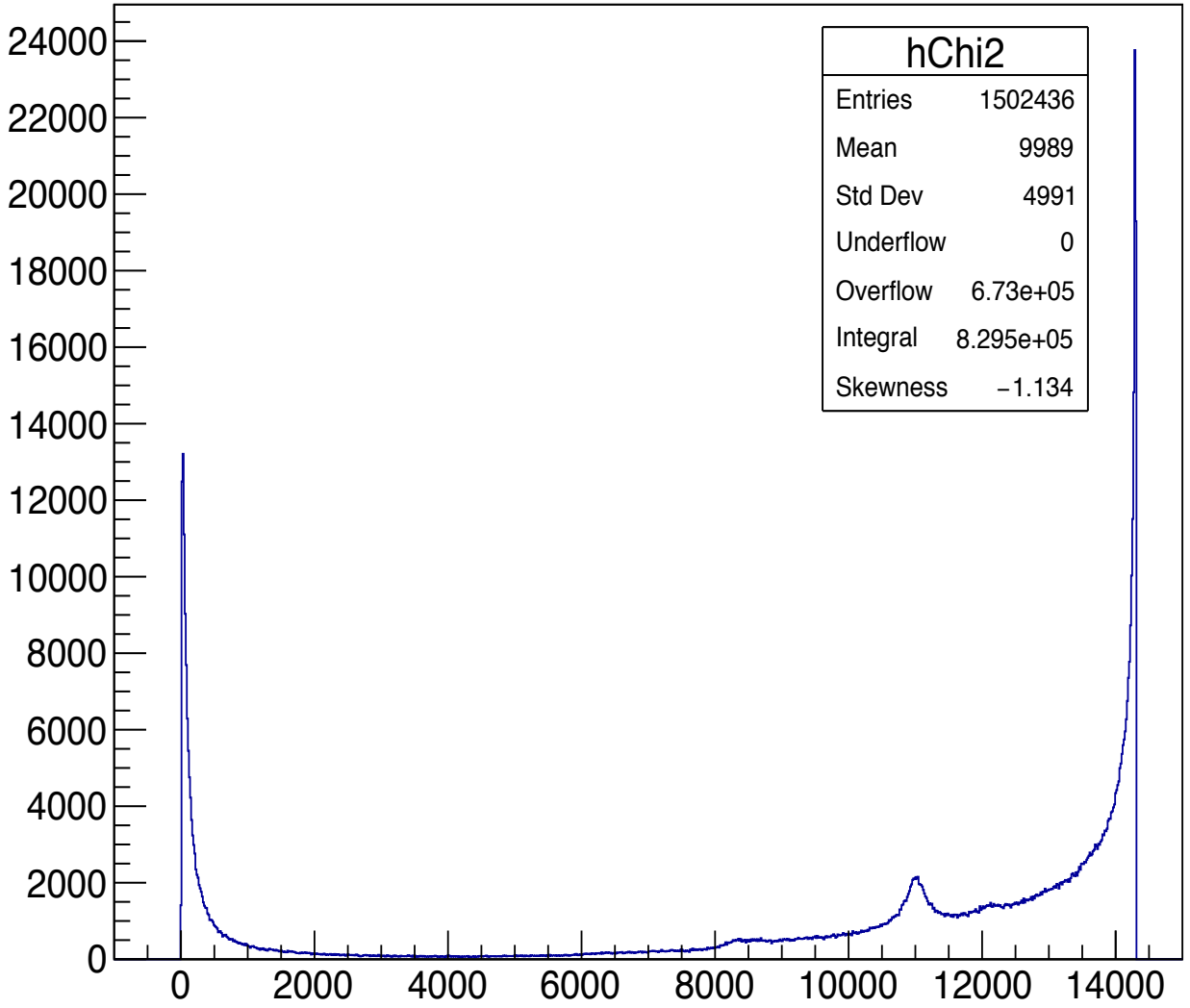


CERN data analysis
2D muon trajectory reconstruction
With old#202 (Chi2 <1000)

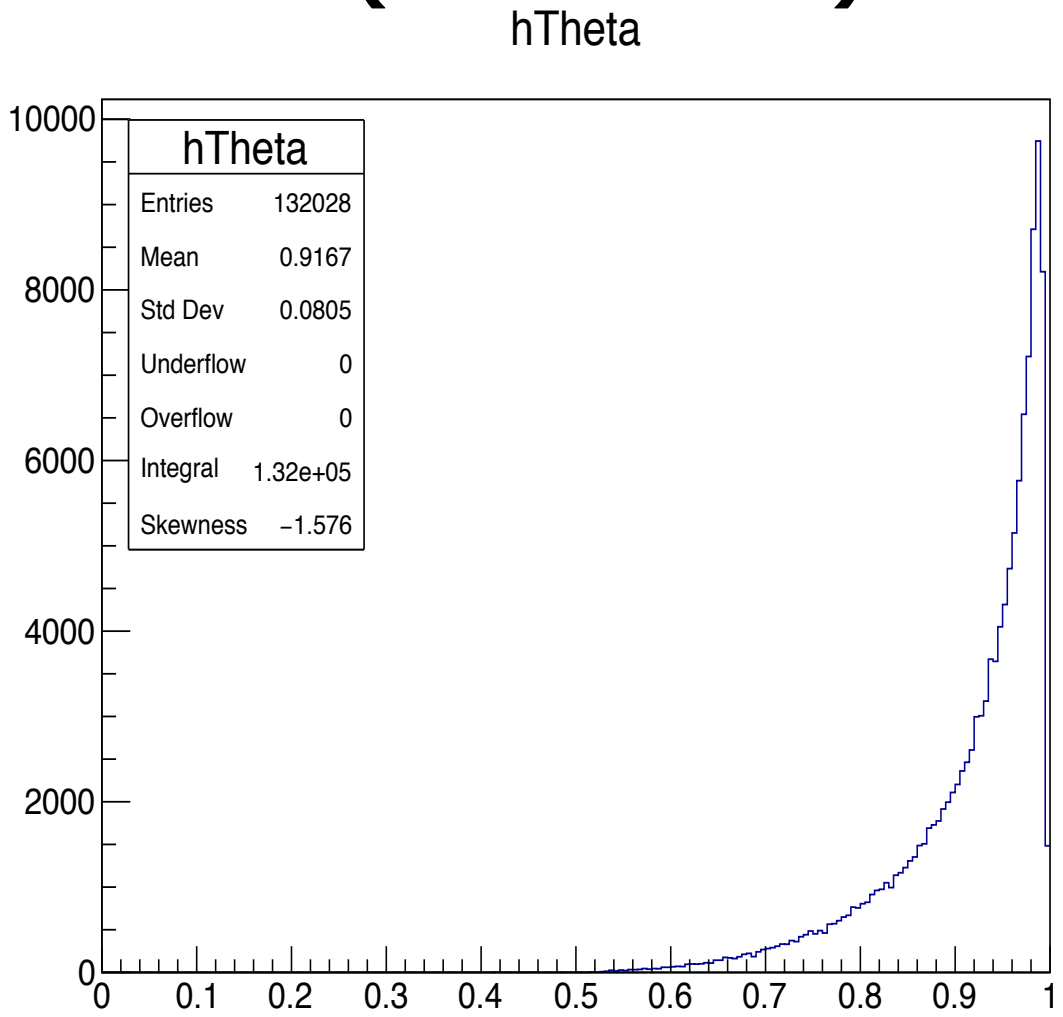


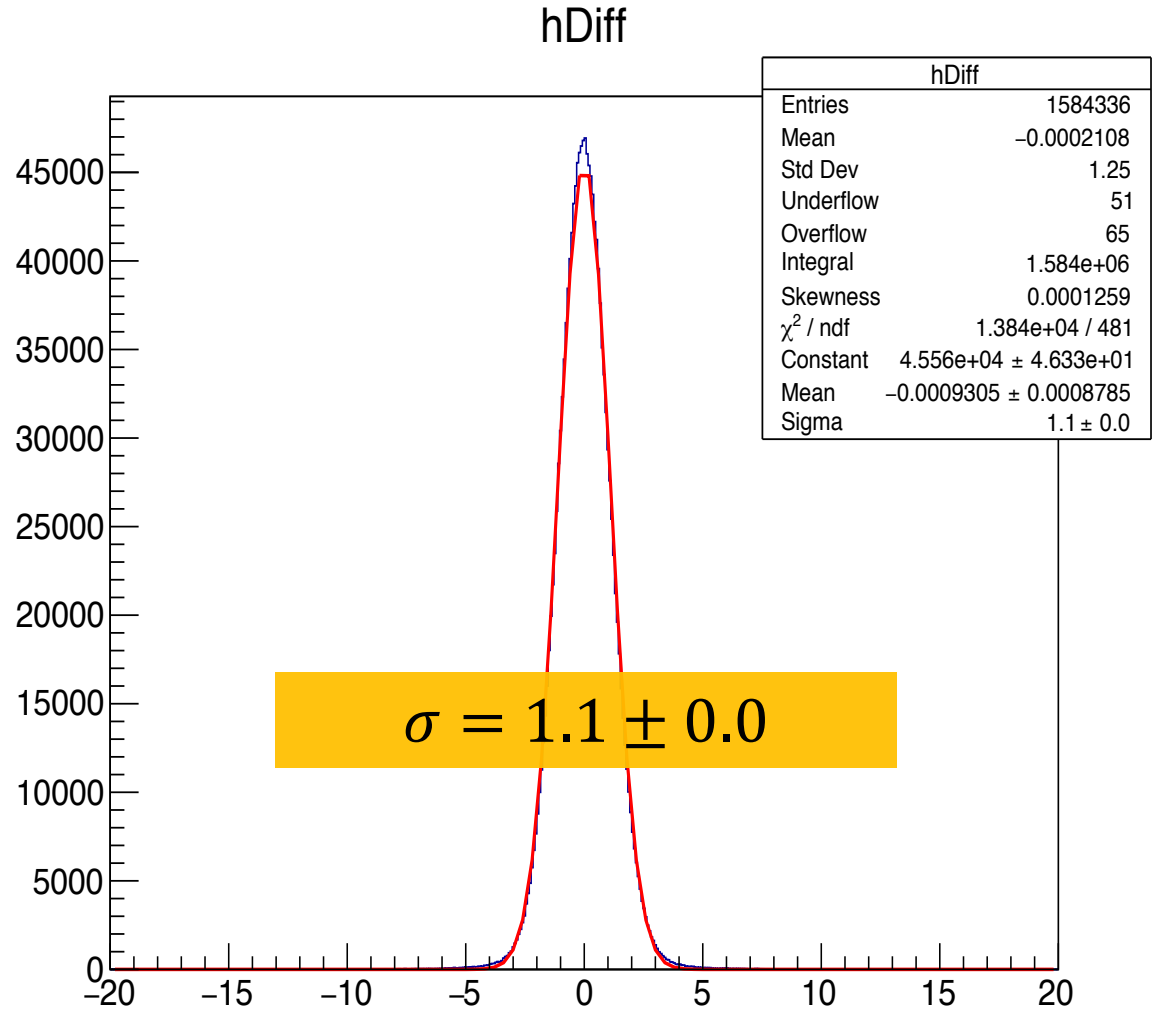


CERN data analysis
2D muon trajectory reconstruction
Chi2 distribution
With #151

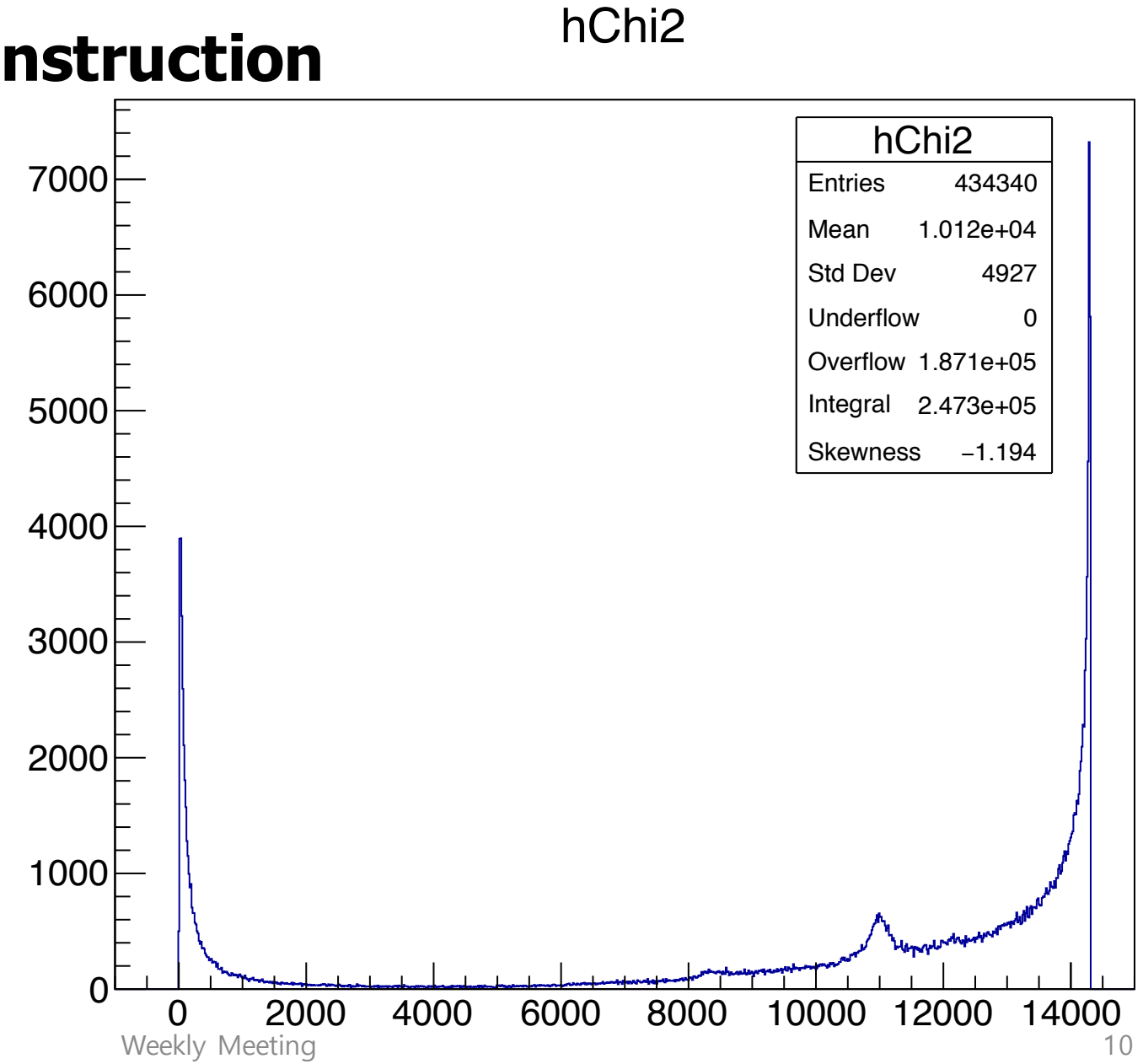


CERN data analysis
2D muon trajectory reconstruction
With #151 (Chi2 <1000)

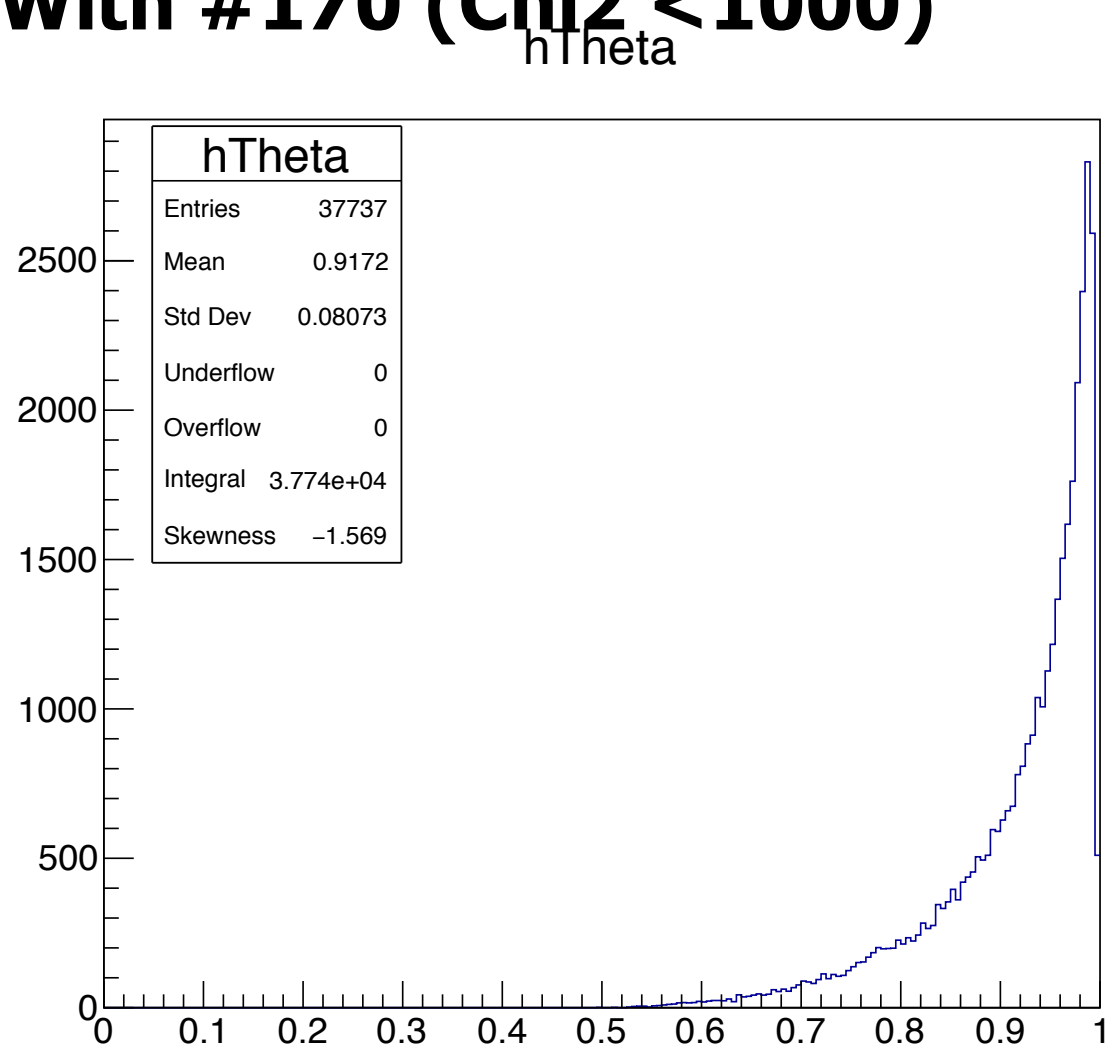


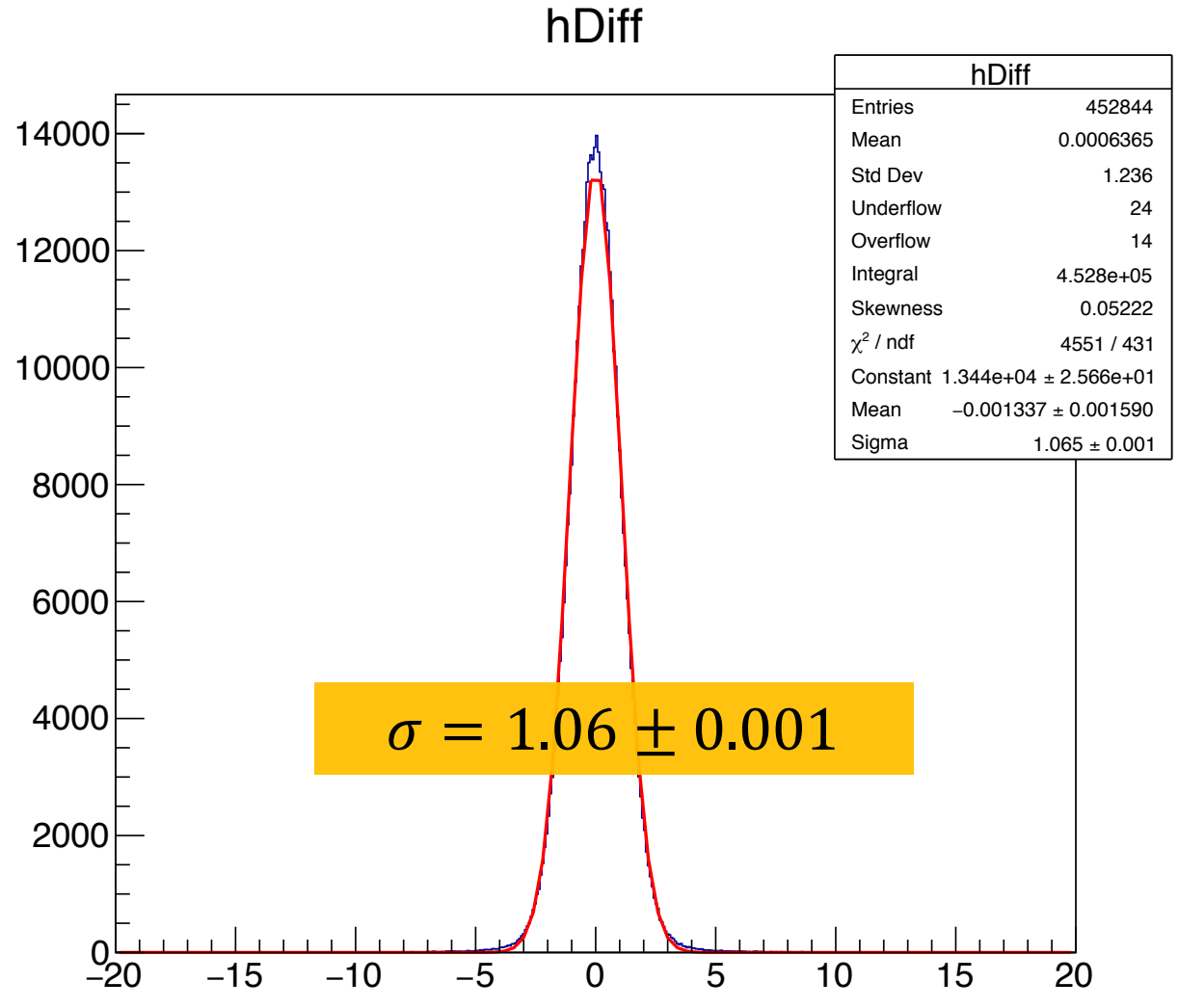


CERN data analysis
2D muon trajectory reconstruction
Chi2 distribution
With #170

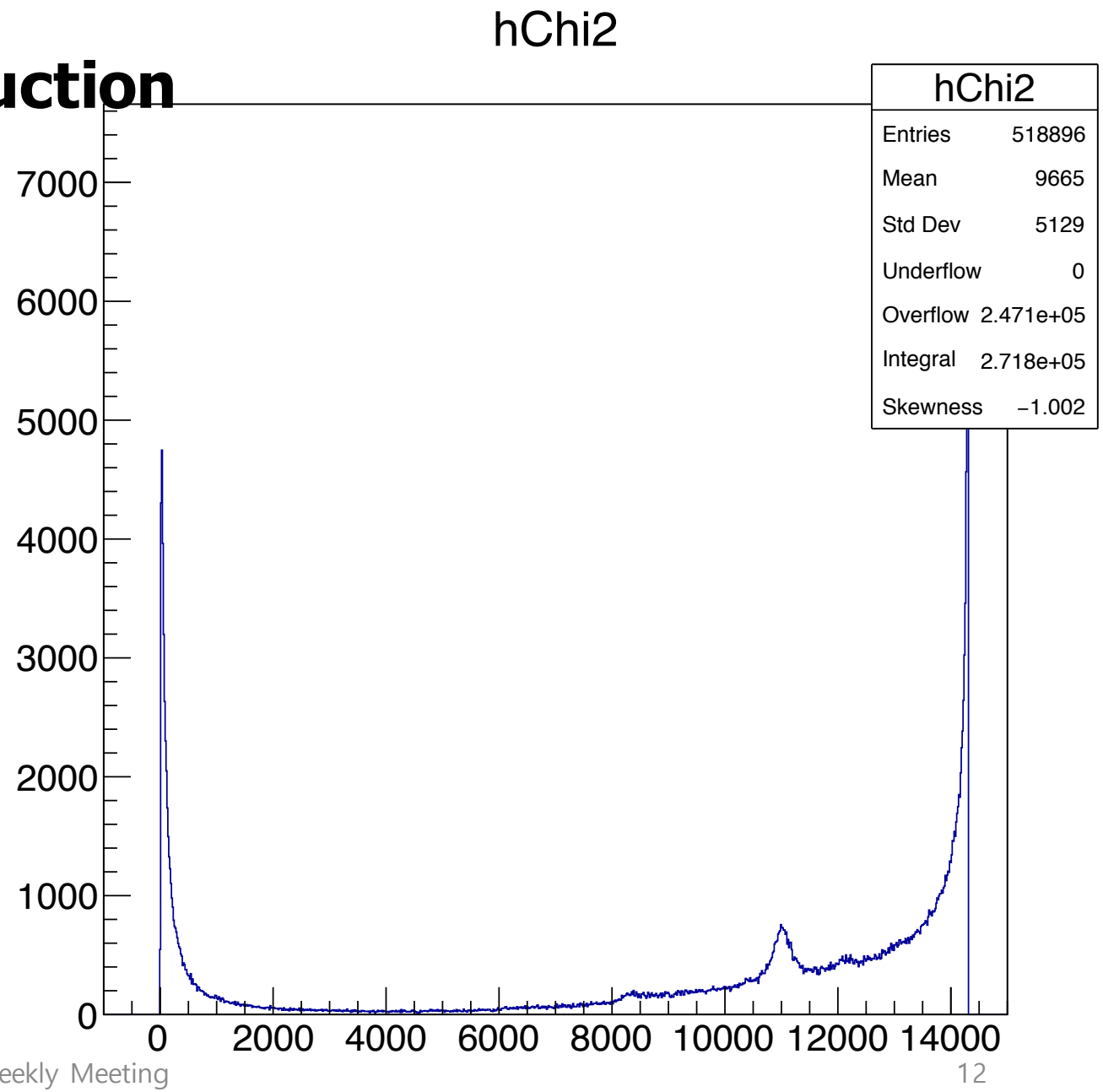


CERN data analysis
2D muon trajectory reconstruction
With #170 (Chi2 <1000)

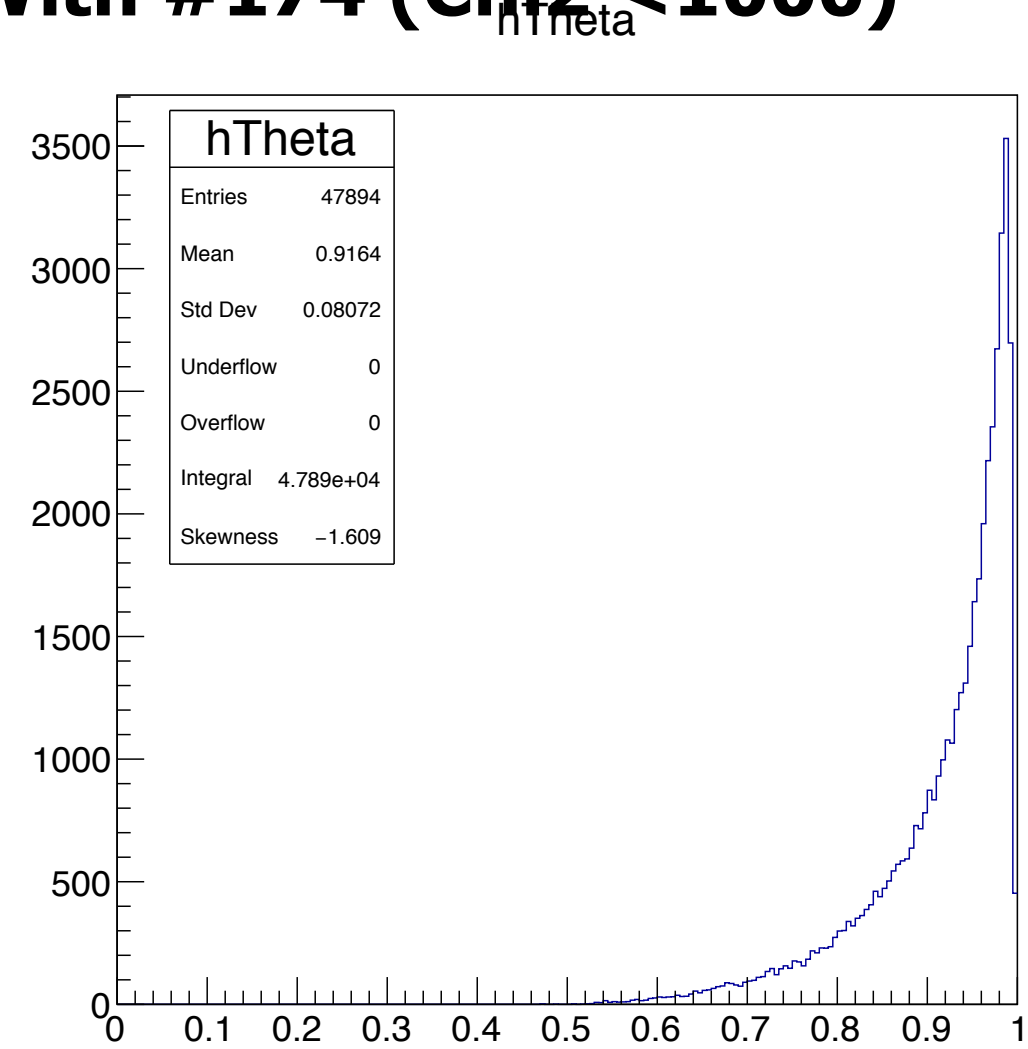


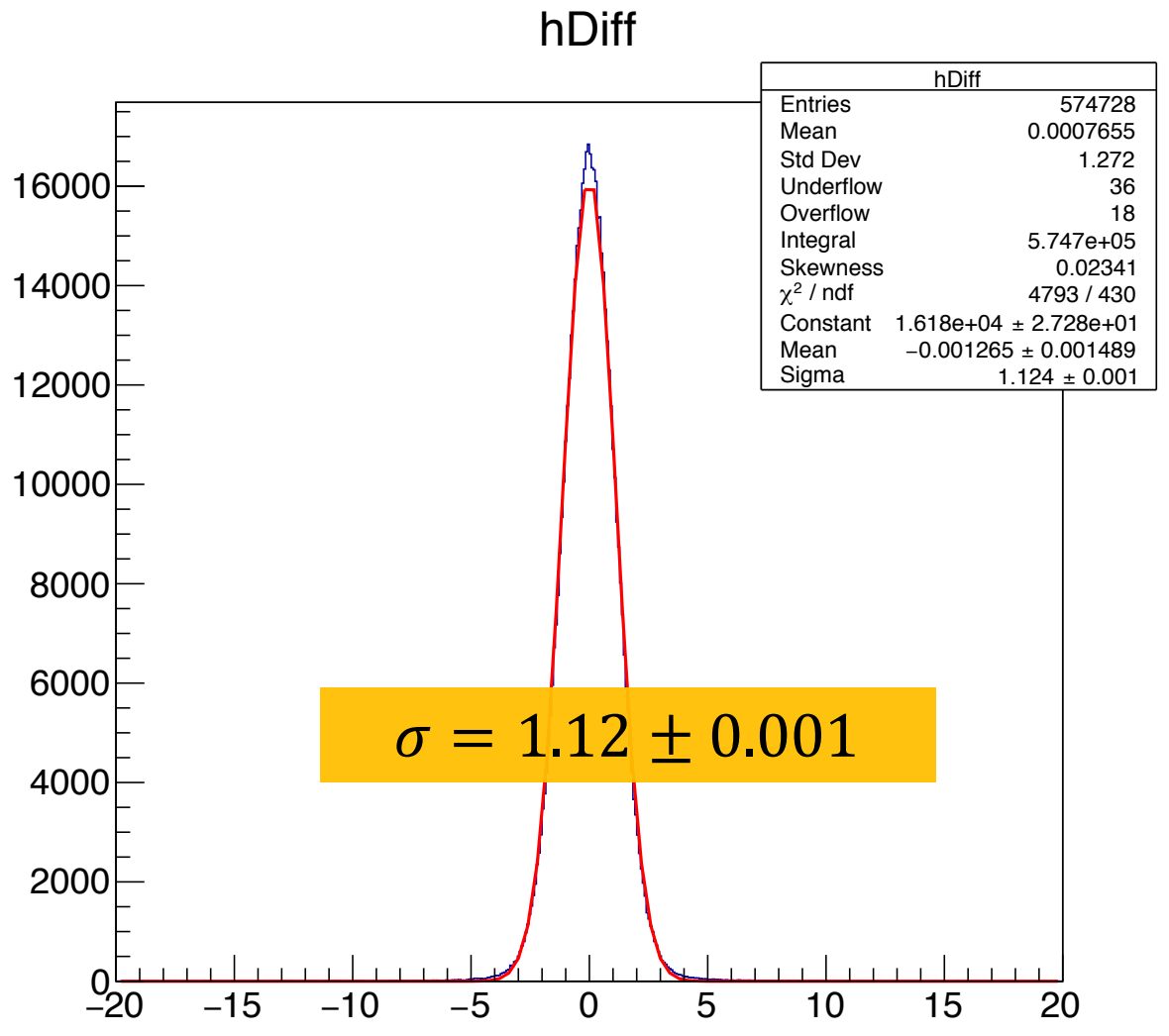


CERN data analysis
2D muon trajectory reconstruction
Chi2 distribution
With #174

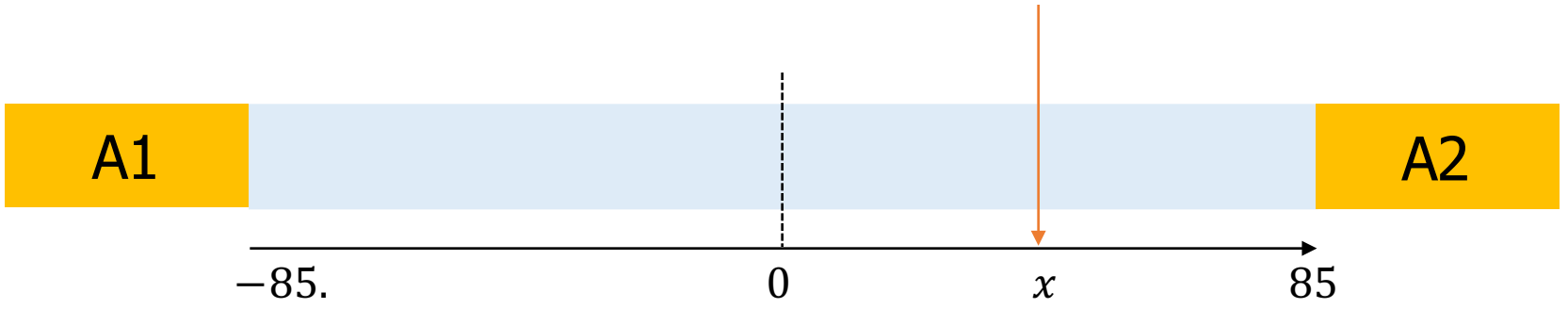


CERN data analysis
2D muon trajectory reconstruction
With #174 (Chi2 <1000)





CERN data analysis
2D muon trajectory reconstruction
Amplitude ratio distribution



Consider the fact that $Amplitude, A = C * e^{-\frac{x}{\lambda}}$

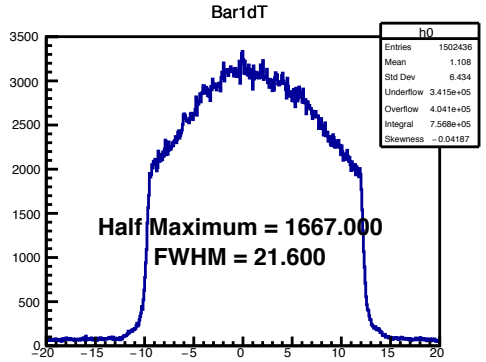
So log(A1/A2) distribution can act same as dT distribution.
We can estimate the hit position(x) from it.

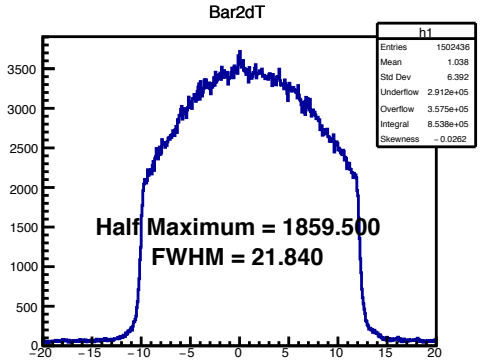
$$A_1(x) = A_1 * e^{-\frac{x+85}{\lambda}}$$

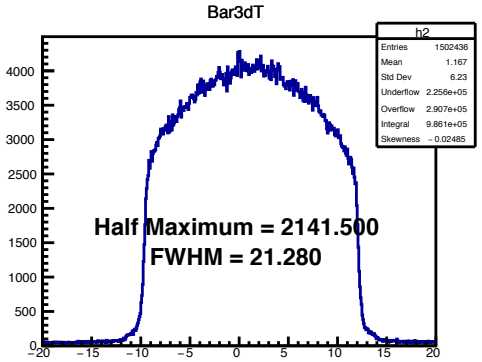
$$A_2(x) = A_2 * e^{\frac{x-85}{\lambda}}$$

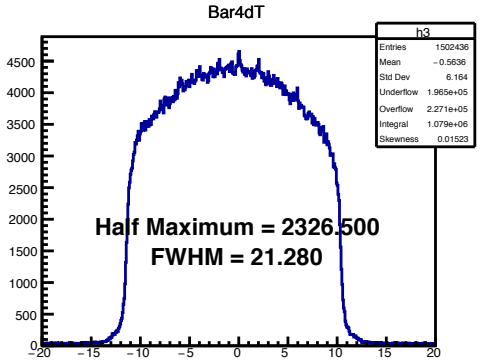
$$\rightarrow \mathrm{x} = -\frac{\lambda}{2}\log\left(\frac{A_1}{A_2}\right) + C$$

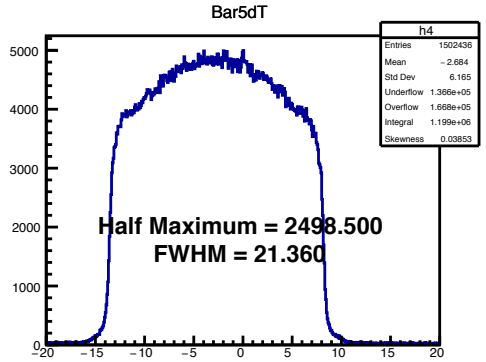
#151 dT distribution

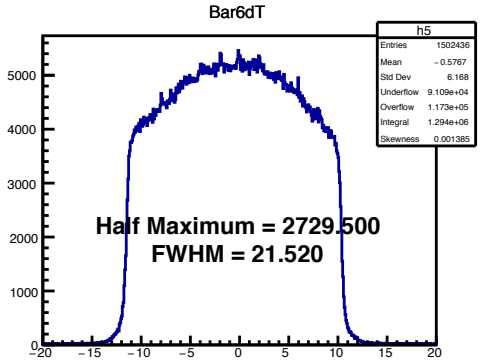


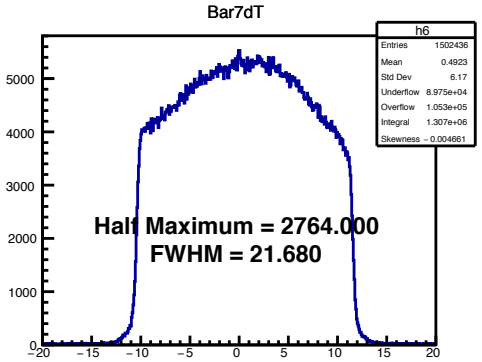


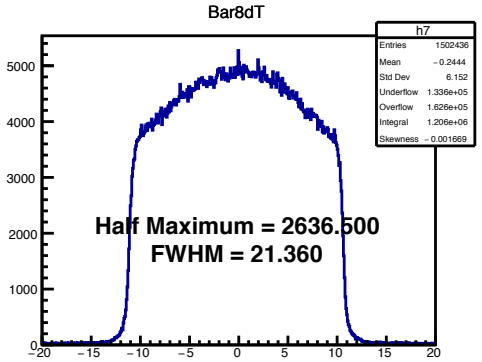


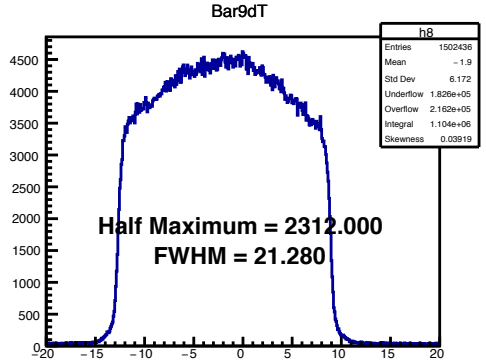


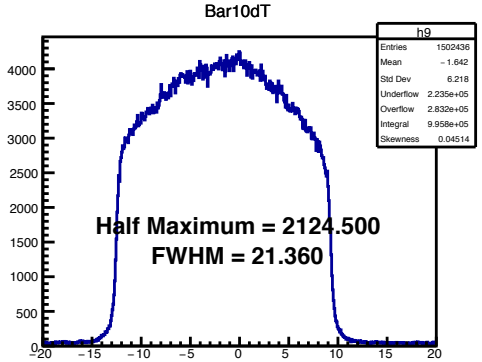


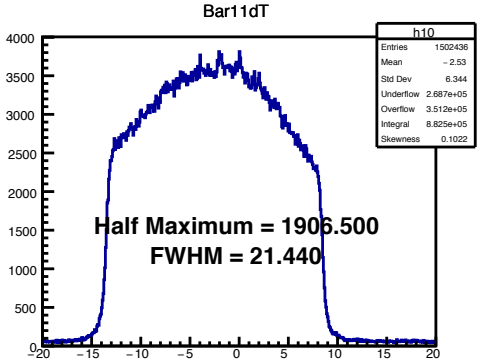


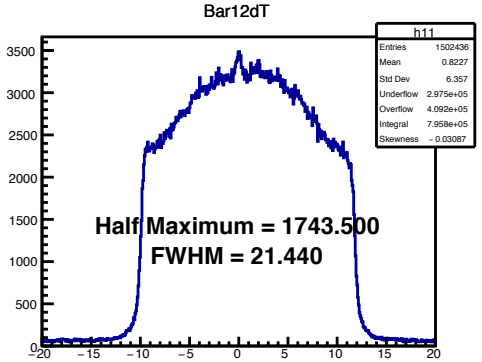




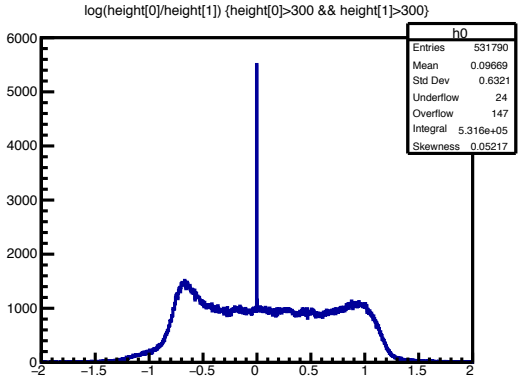


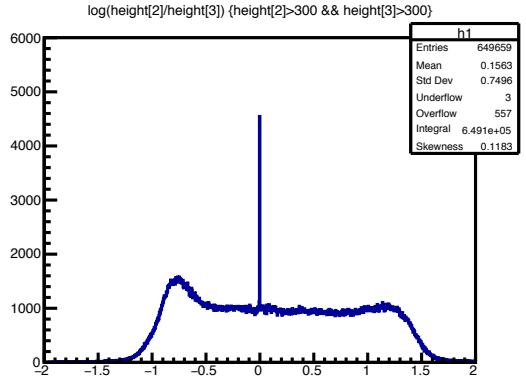


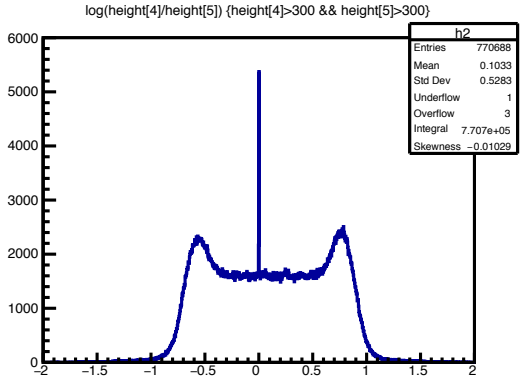


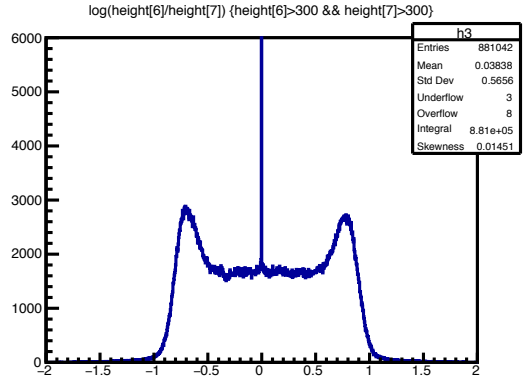


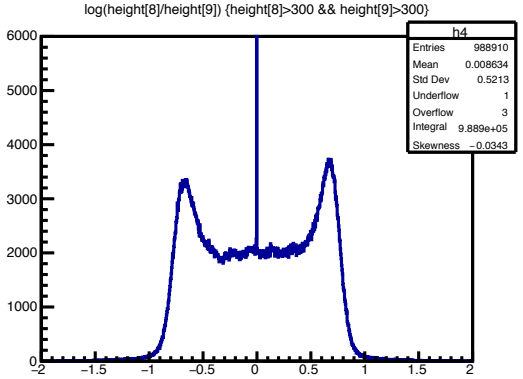
#151 log(A1/A2) distribution

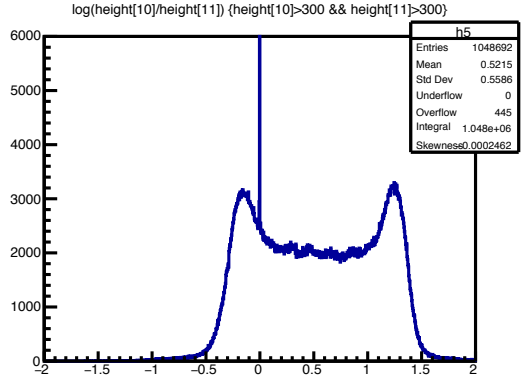


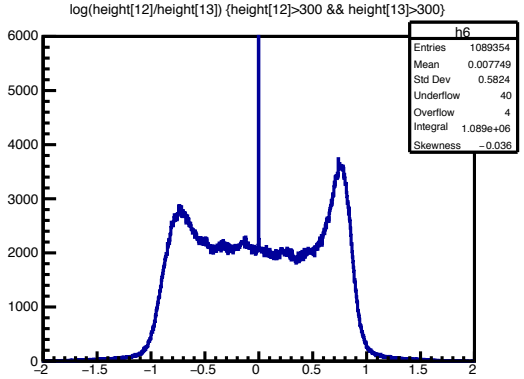


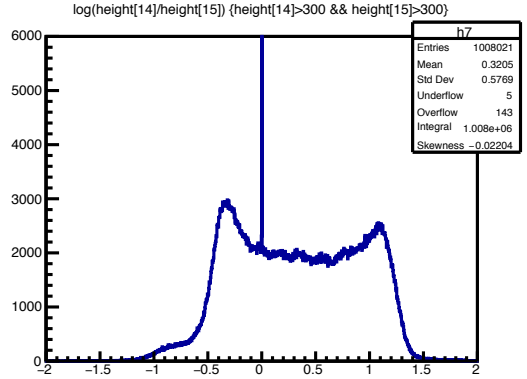


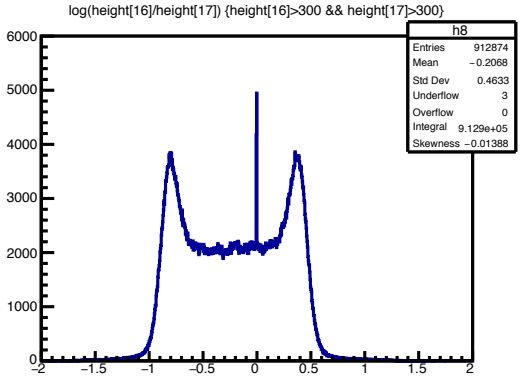


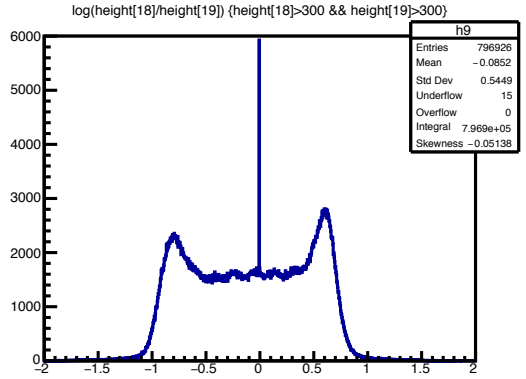


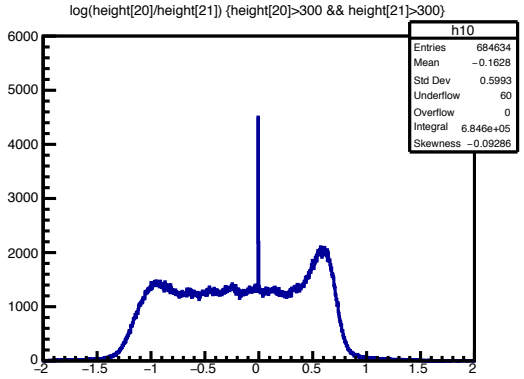


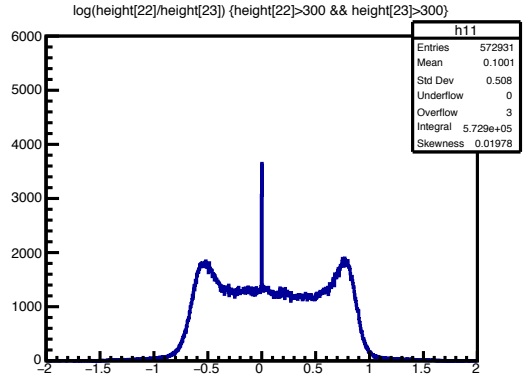












CERN data analysis
(Time resolution) vs (position)

With #151