

# *Discussion on Kp2 energy resolution*

Based on ntuples on `bnlku7:/e949dsk/towa14/benjl/ntuples/kp21`  
( *All ntuples are used in this directory.* )

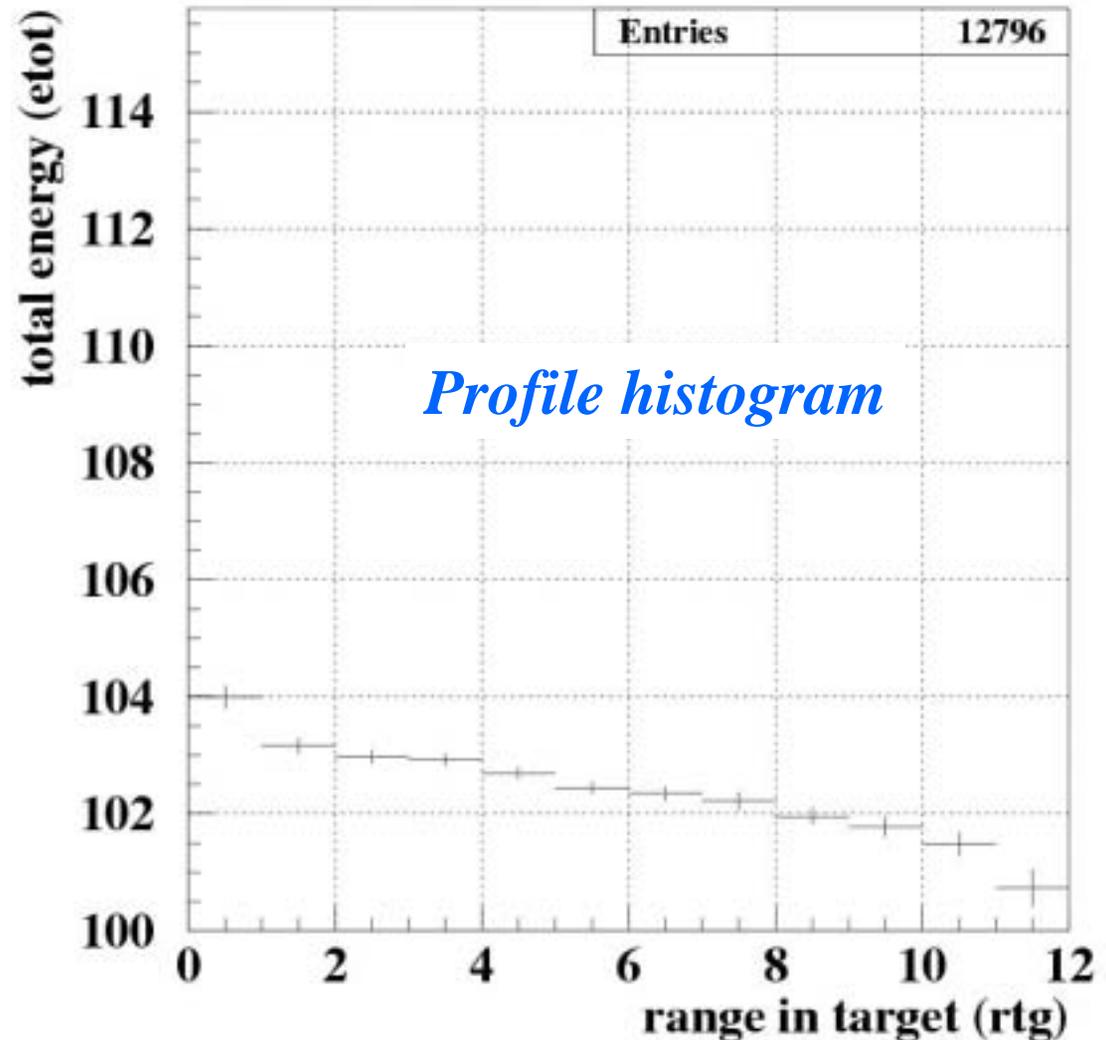
Kumac script files are available from  
`bnlku7:~mizouchi/public/kp21_kumac.tar.gz`

*Updated version*

# *Dependency to the Range in Target (*etot* vs *rtg*)*

Kp2 energy peak  
vs *rtg*.

Strong correction  
between *etot* vs *rtg* in  
kp2.

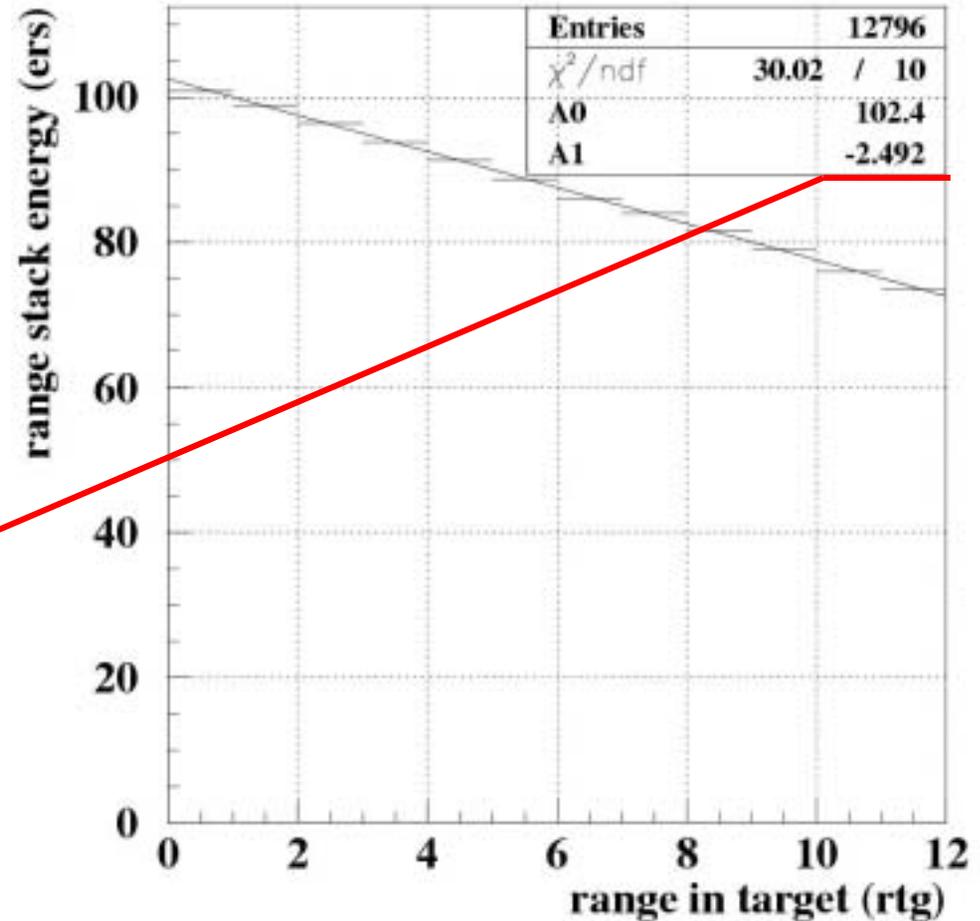


# Let's Play Silly Game...

Let's estimate the new target energy (etg) from rtg .

Let's suppose new etg is  
 $etg = 2.492 * rtg$

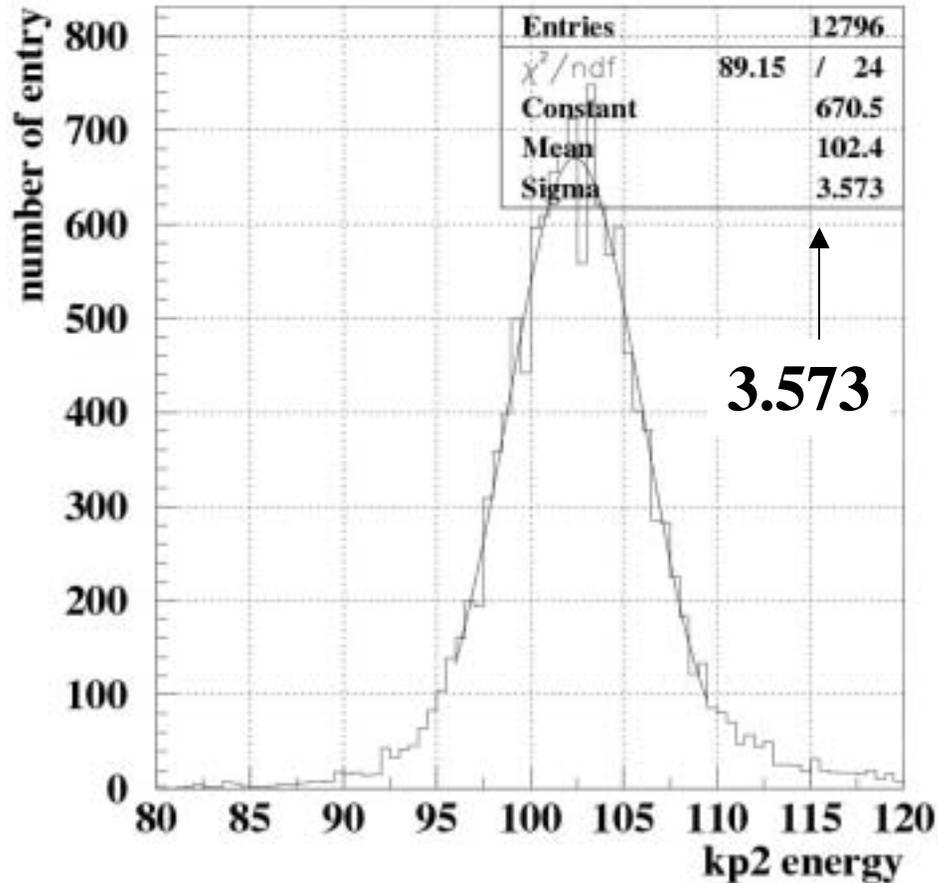
( This is silly estimation, but anyway, let's try...)



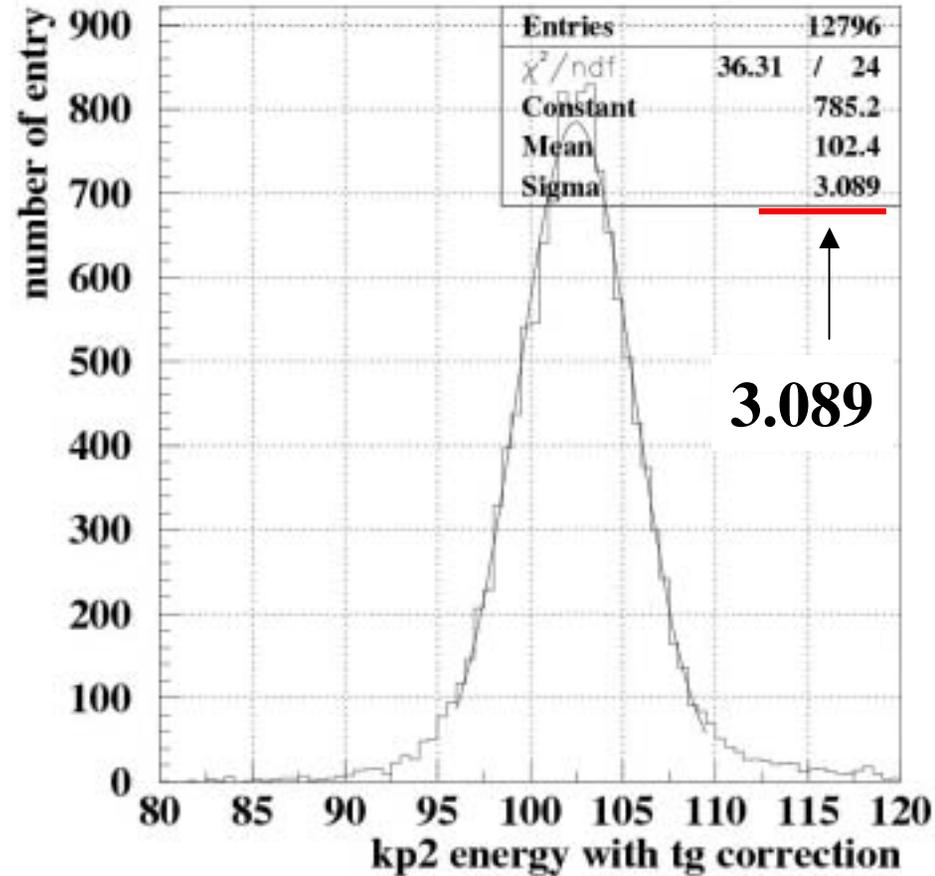
Profile histogram of **ers** vs rtg

# *Kp2 peak width*

kp2 energy



kp2 energy with new etg



Energy resolution is much improved ...

# *Summary*

As you know, the width of range stack energy (**Ers**) itself is much narrower than that of **etot**, if proper correction based on **rtg** is applied.

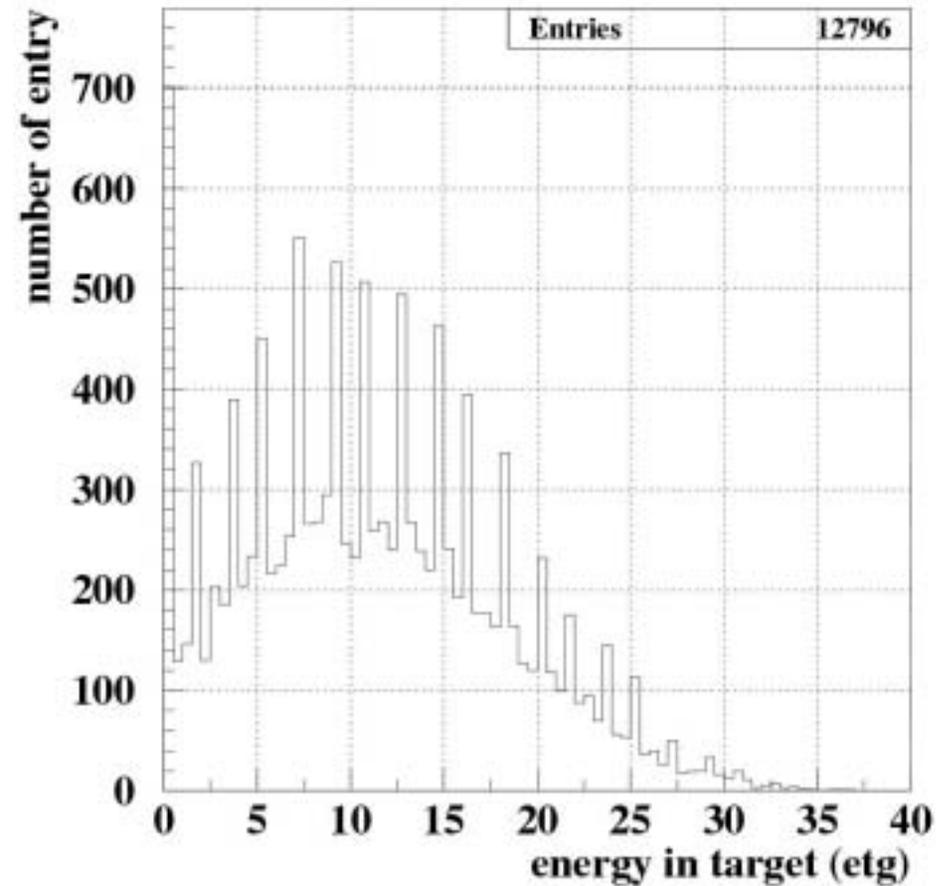
That is why I thought that we could get **narrower etot** if **etg** was modified to the value which is gotten somewhat based on **rtg**.

And I did a test, the correction in this test have **no reliable basis**, however we could get **narrower** distribution...

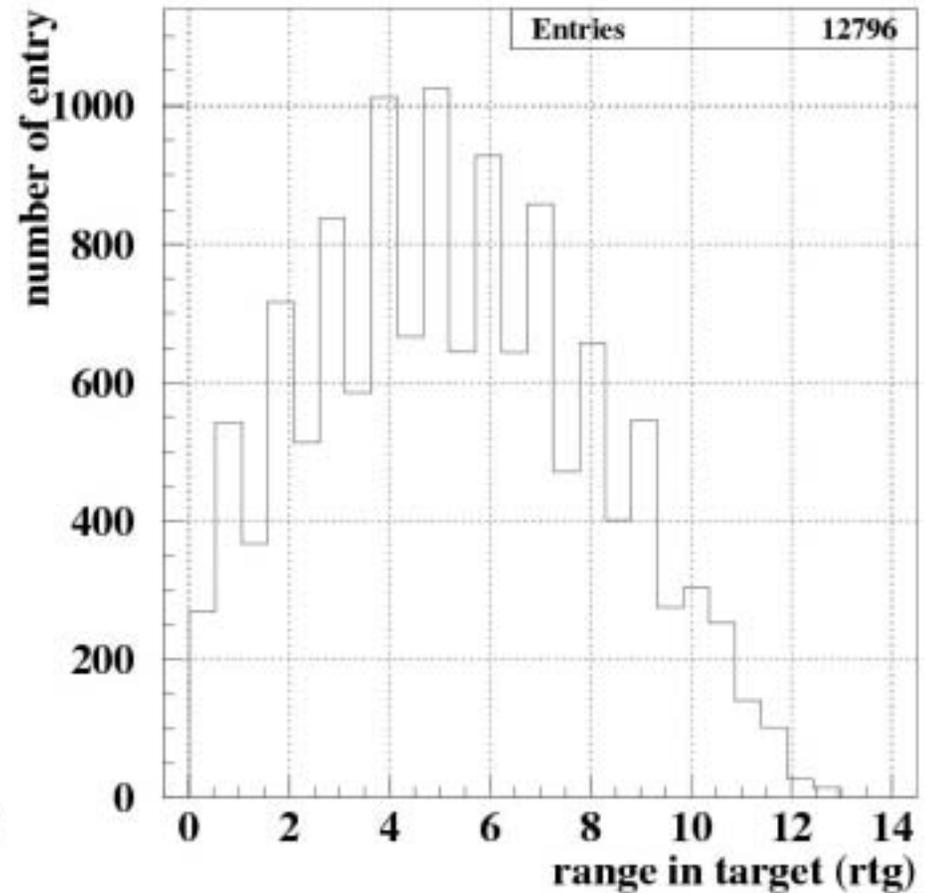
*What do you think of it ?  
Comments are welcome .*

# Appendix

etg distribution

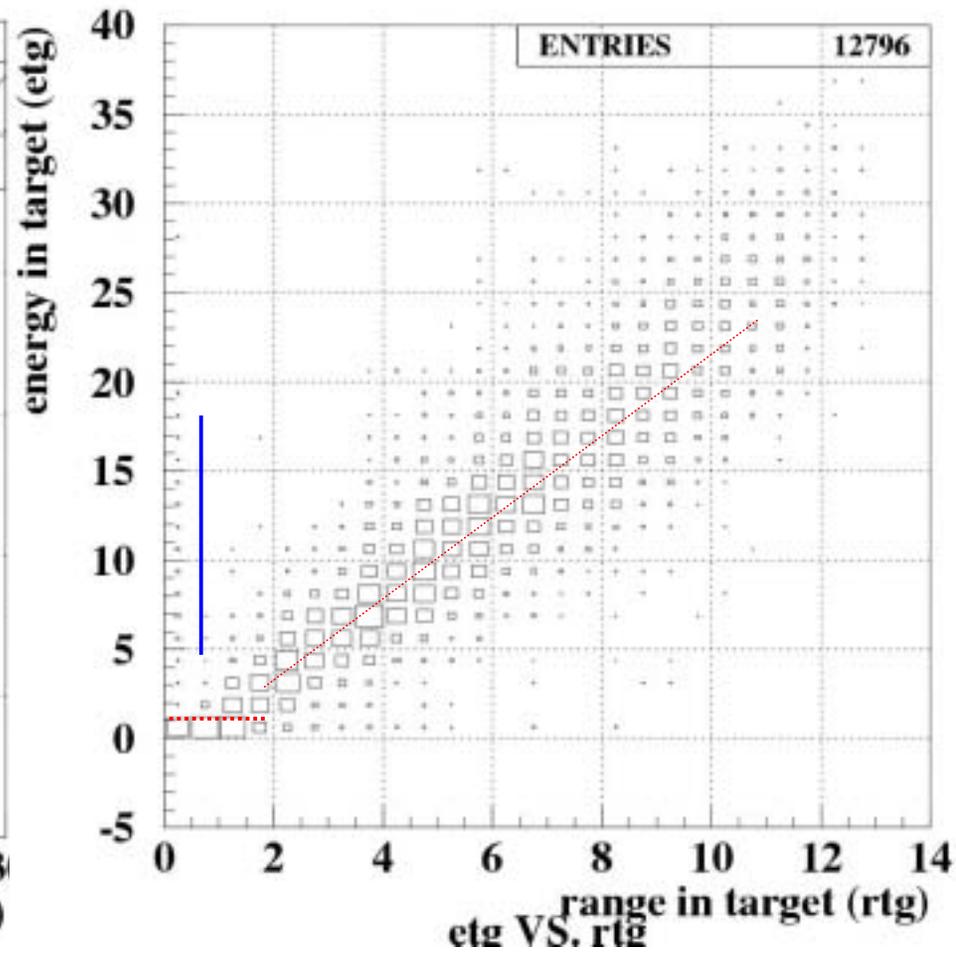
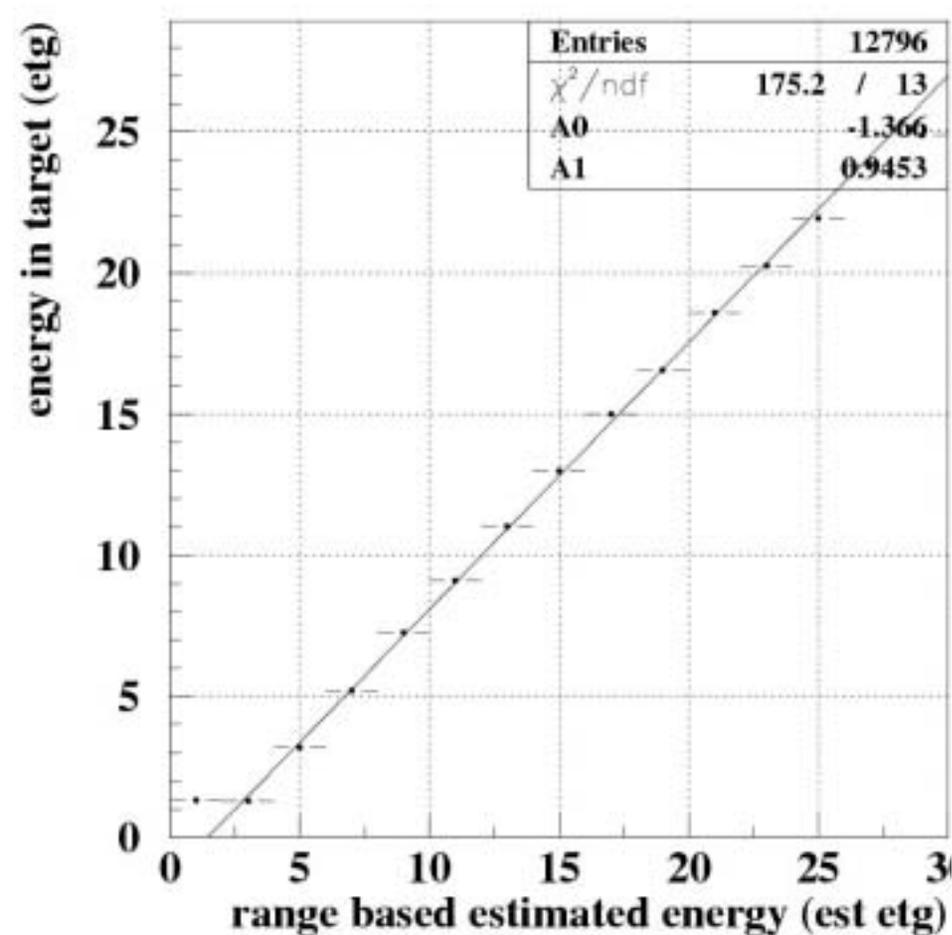


rtg distribution



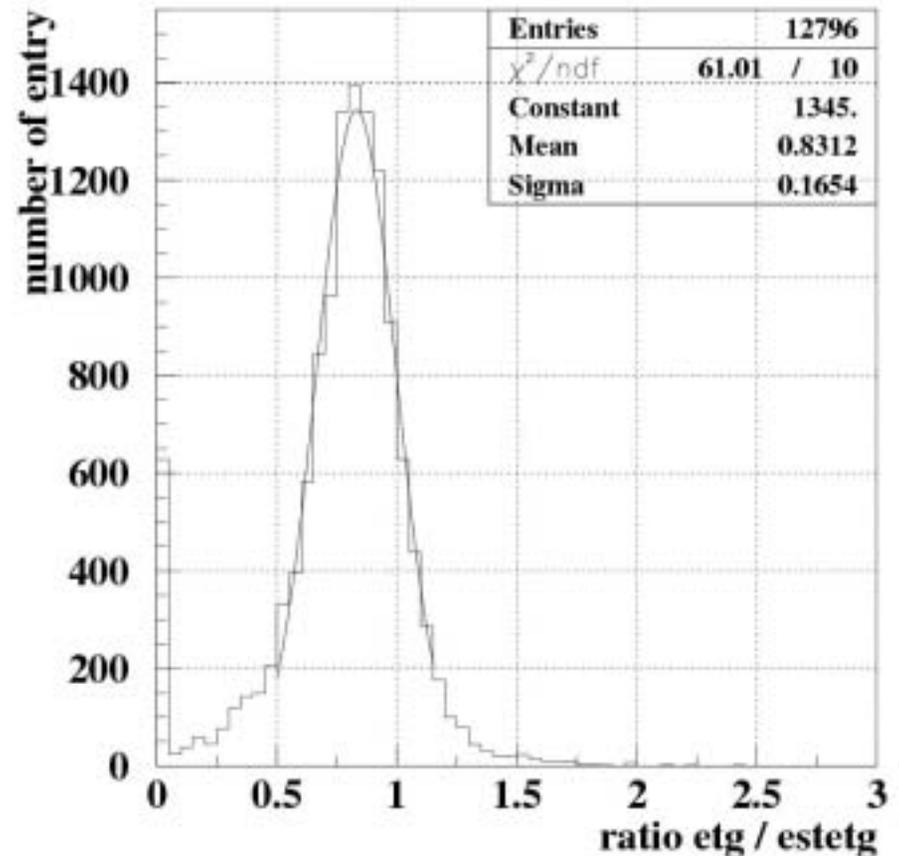
# *Difference between etg and estimated etg from rtg*

*What is different between etg and estimated etg from rtg ?*



# *Difference between etg and estimated etg from rtg*

$$\frac{\sigma}{\mu} = \frac{0.1654}{0.8312} \cong 0.199$$



*Etg over estimated etg from rtg*