



**MARSHALL B. C. SCOTT**

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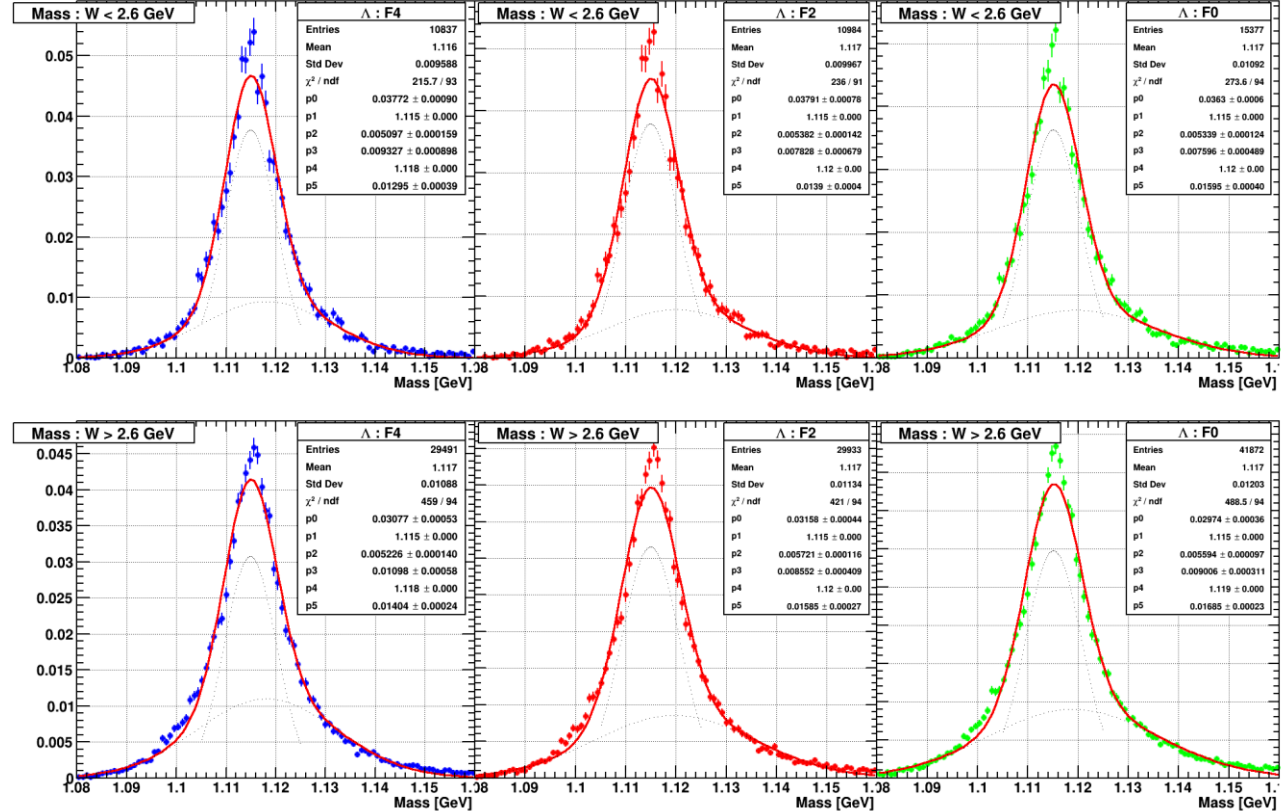
## KL4 RXN AND GENERATING STEPS

- KL4 :  $K^0_L + p \rightarrow \pi^+ + \Lambda$ 
  - $\Lambda \rightarrow p + \pi^-$  (63.9%) ; Current priority
  - $\Lambda \rightarrow n + \pi^0$  (35.8%)
- Generated histograms/root files (Monitoring Histograms, ReactionFilter, mcthrown\_tree)
  - `hd_root --nthreads=8 -PPLUGINS=PEVENTRFBUNCH:USE_TAG=KLong -PVERTEX:USEWEIGHTEDAVERAGE=1 -PPLUGINS=monitoring_hists foo_smeared.hddm`
  - `hd_root --nthreads=8 -PPLUGINS=PEVENTRFBUNCH:USE_TAG=KLong -PVERTEX:USEWEIGHTEDAVERAGE=1 -PPLUGINS=ReactionFilter -PReaction1=10_14__8_18 foo_smeared.hddm`
  - `hd_root --nthreads=8 -PPLUGINS=PEVENTRFBUNCH:USE_TAG=KLong -PVERTEX:USEWEIGHTEDAVERAGE=1 -PPLUGINS=mcthrown_tree foo_smeared.hddm`

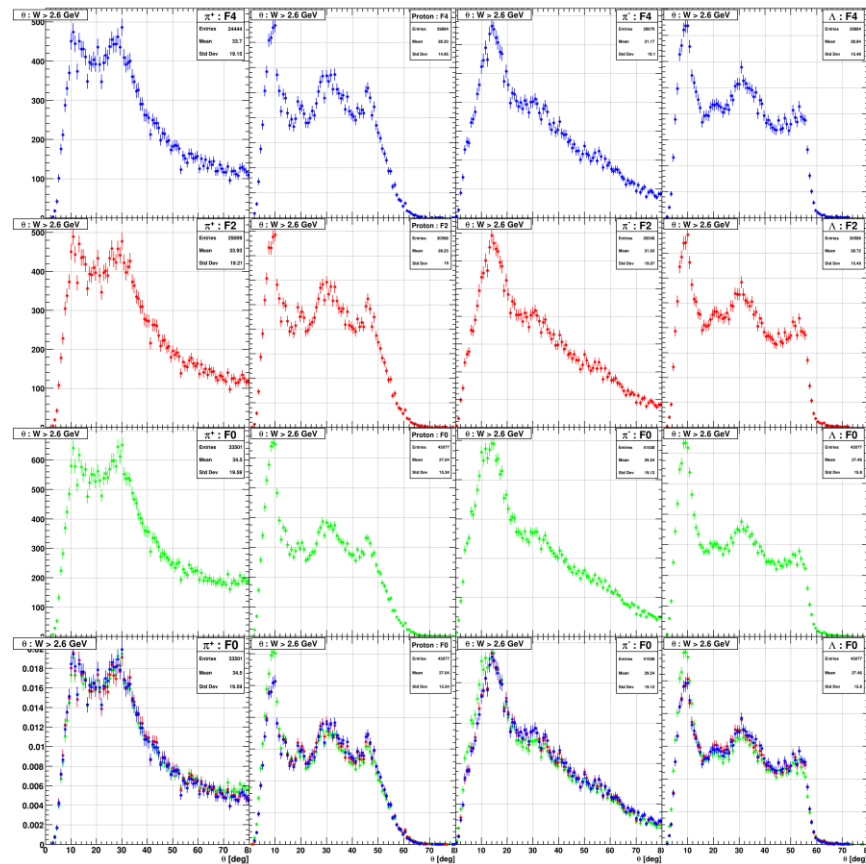
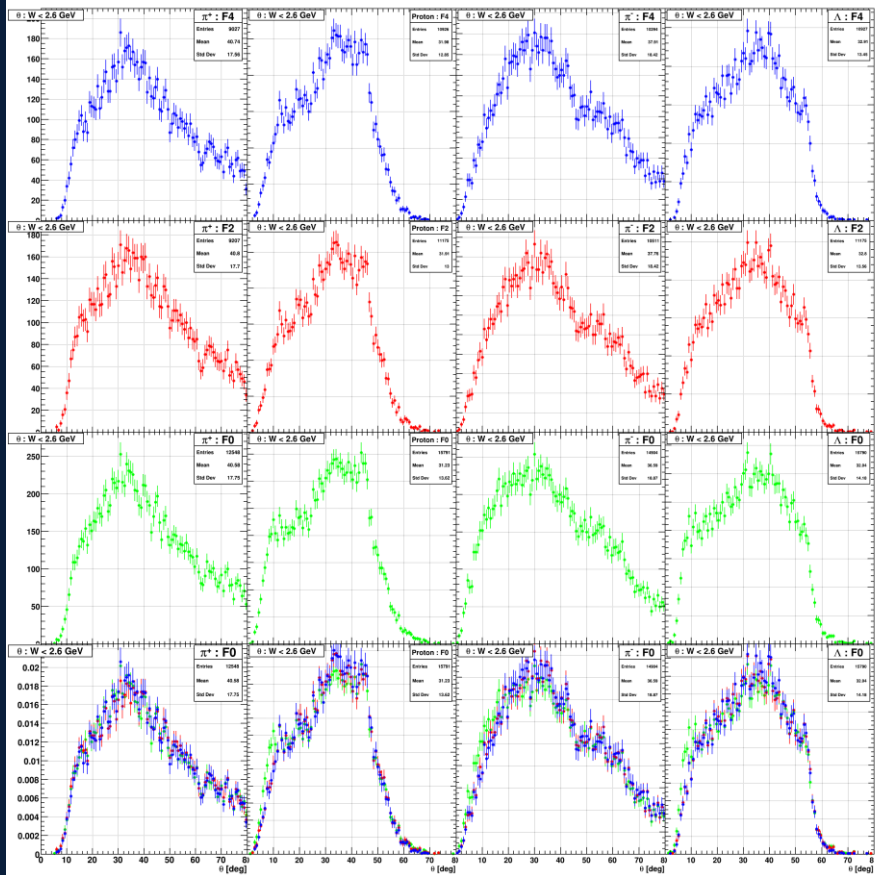


# W STUDIES : LAMBDA MASS

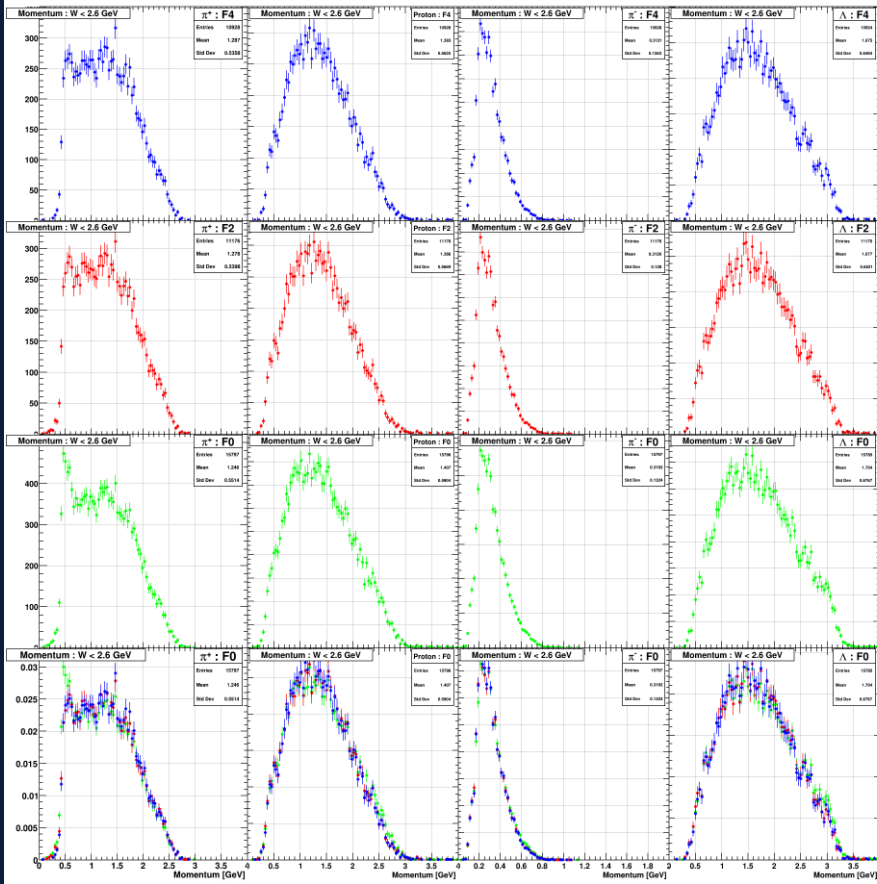
- Split the range in two
  - $W < 2.6$  GeV for ERR
  - $W > 2.6$  GeV
- $\chi^2/\text{ndf}$  for  $W < 2.6$  GeV is about half that of  $W > 2.6$  GeV
- Width of the signal and background gaussians are less for  $W < 2.6$  GeV.



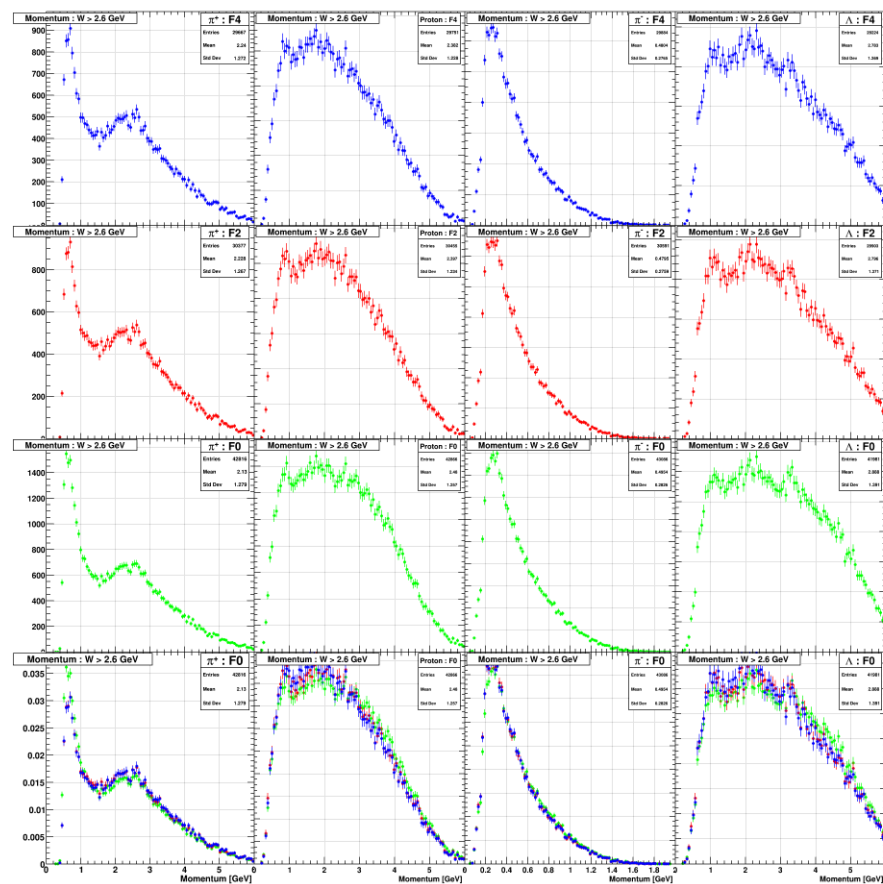
# W STUDIES : THETA



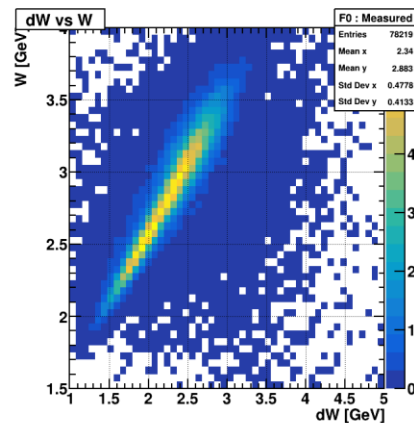
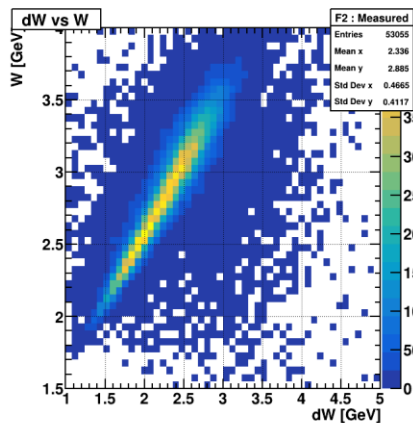
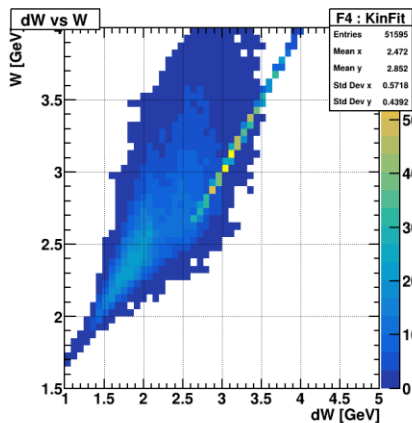
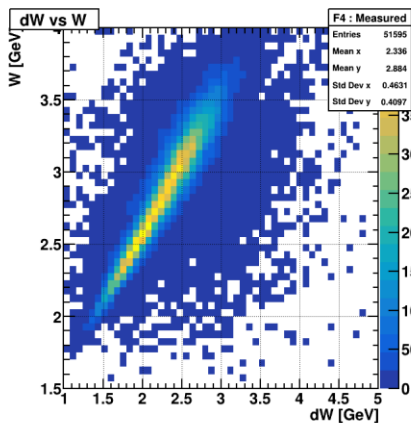
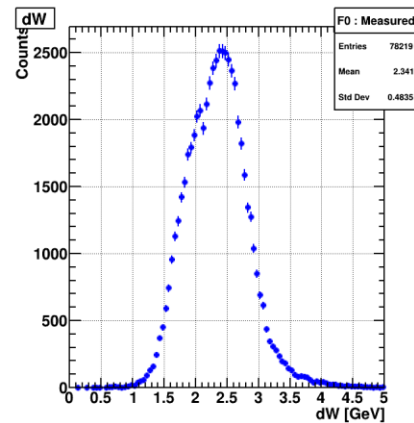
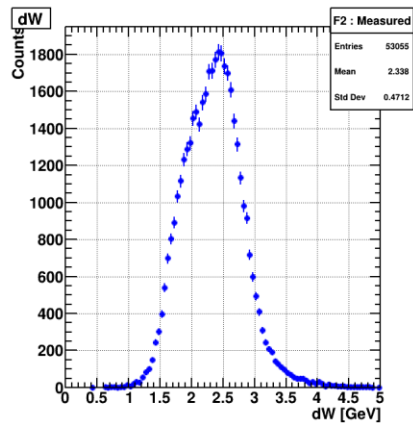
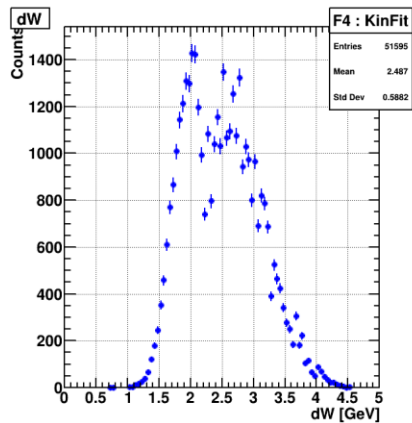
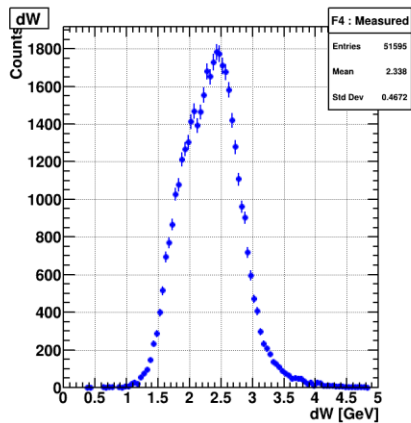
# W STUDIES : MOMENTUM



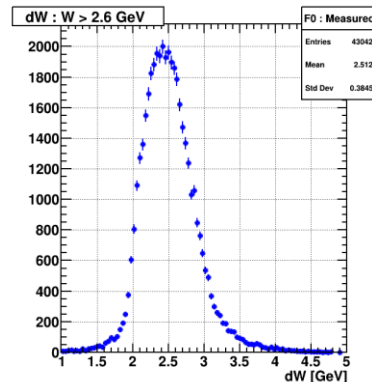
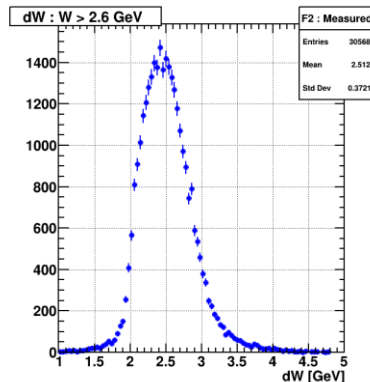
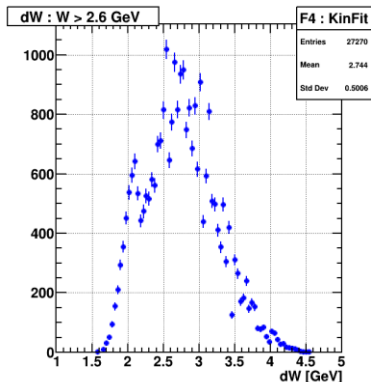
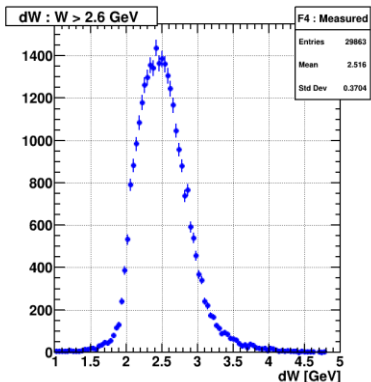
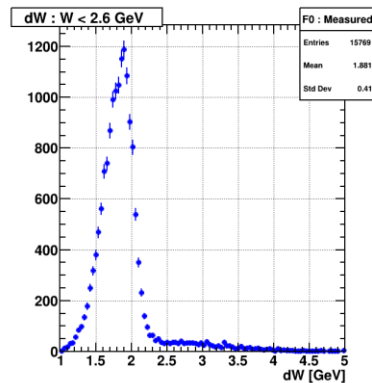
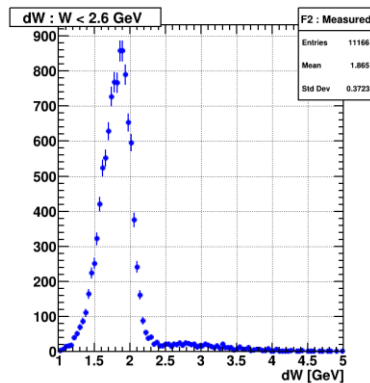
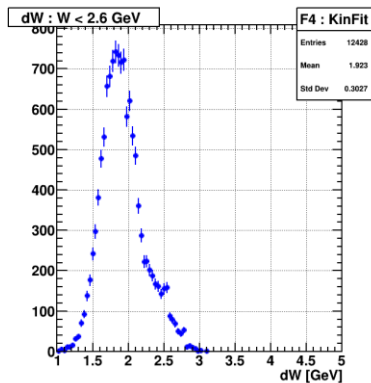
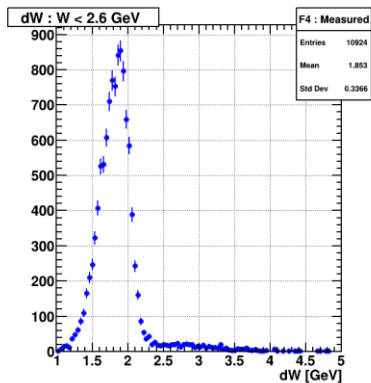
5



# W STUDIES : dW

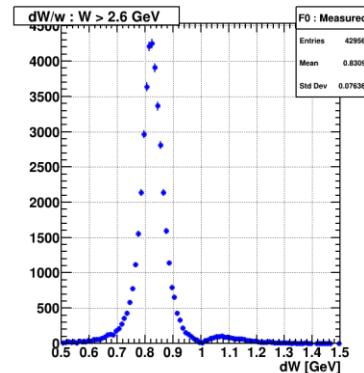
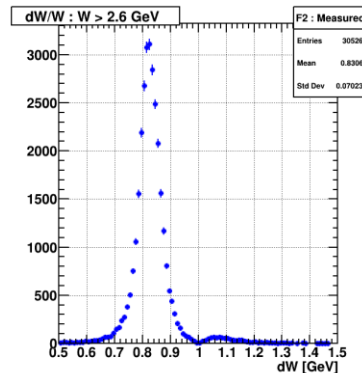
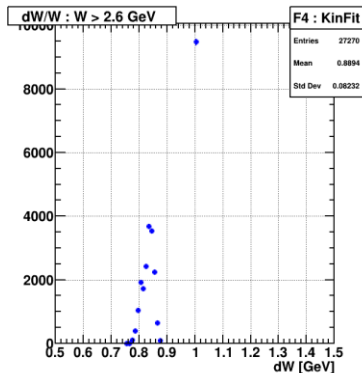
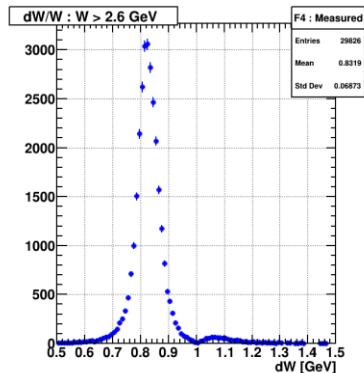
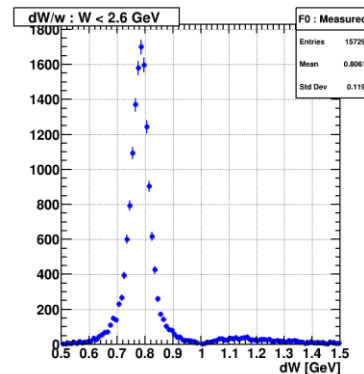
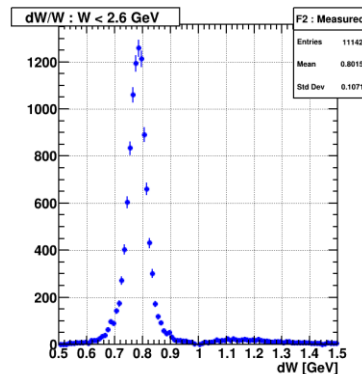
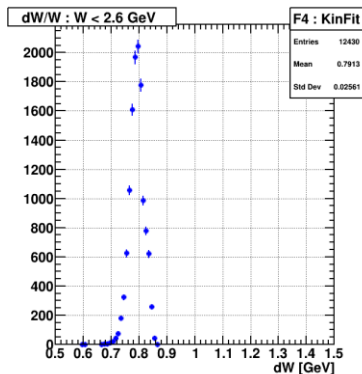
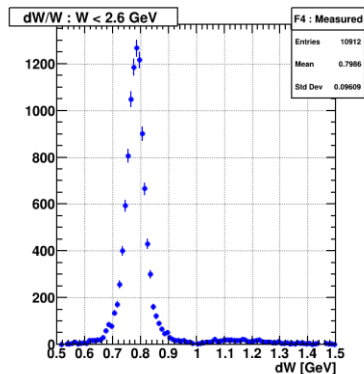


# W STUDIES : dW



# W STUDIES : DW/W

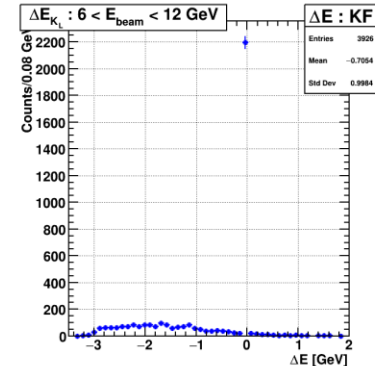
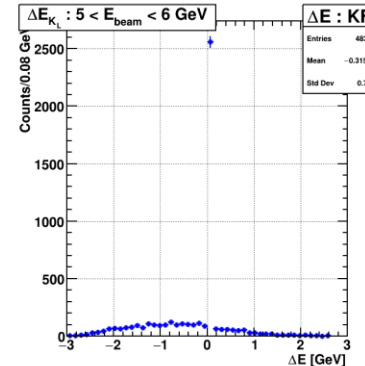
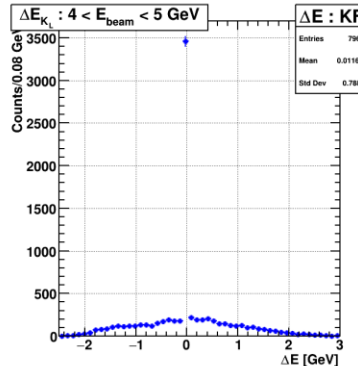
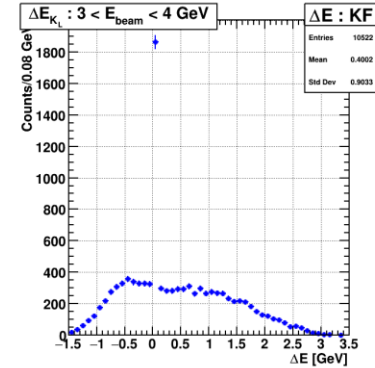
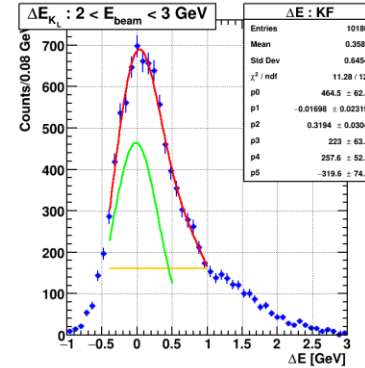
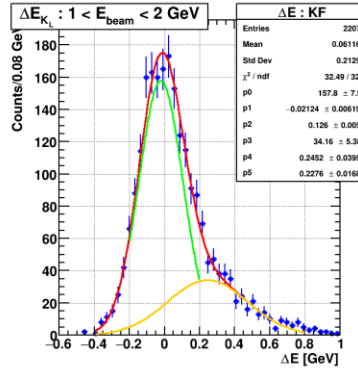
$W < 2.6$  GeV ( $W > 2.6$  GeV) have means at 0.8(0.83)





# BEAM ENERGY RESOLUTION AS A FUNCTION OF BEAM ENERGY

- Above 3 GeV, the resolution is essentially a delta function with a background
- Below 3 GeV
  - Width is 0.126 GeV for  $1 < E < 2$  GeV
  - Width is 0.319 GeV for  $2 < E < 3$  GeV
  - Both have a long tail toward higher dE



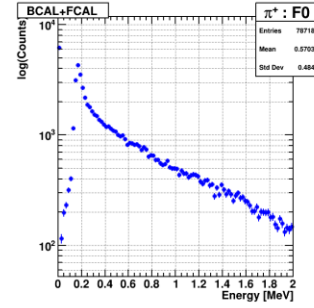
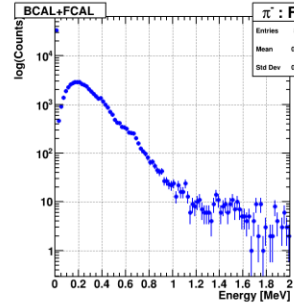
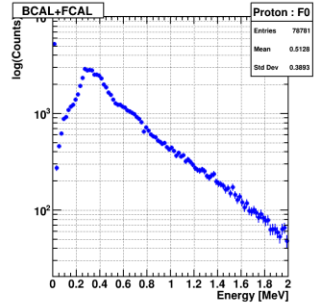
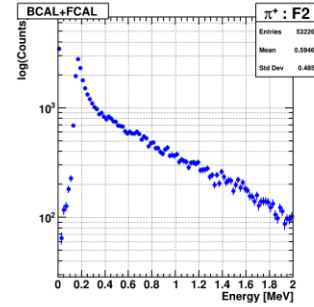
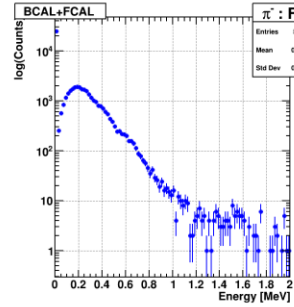
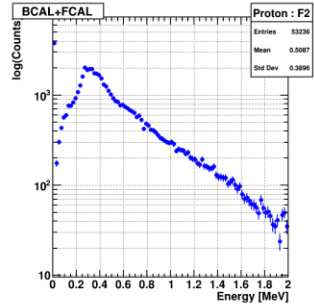
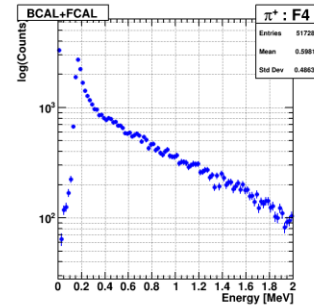
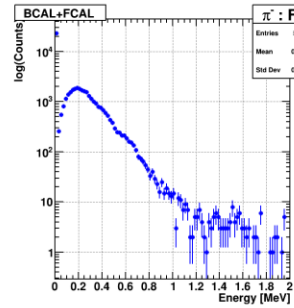
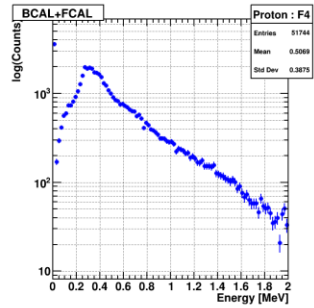
# Back up slides



# ENERGY DEPOSIT

## Deposit = BCAL + FCAL

Particle	% w/ E. Deposit	Mean Deposit (MeV)
Proton	92.9	0.507
Pi+	93.6	0.598
Pi-	54.9	0.153



# W STUDIES : $M_x$

