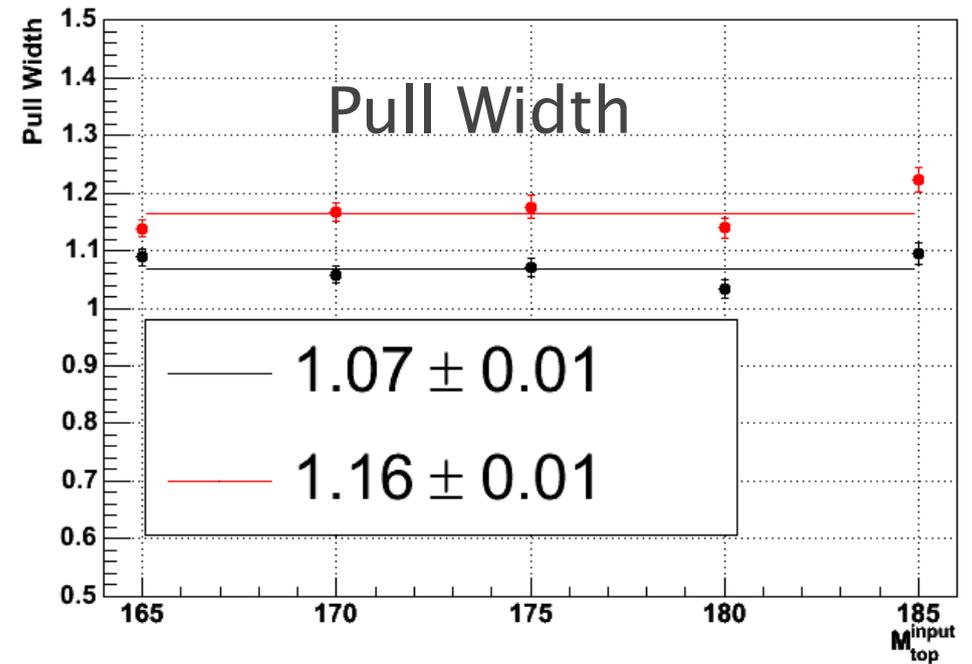
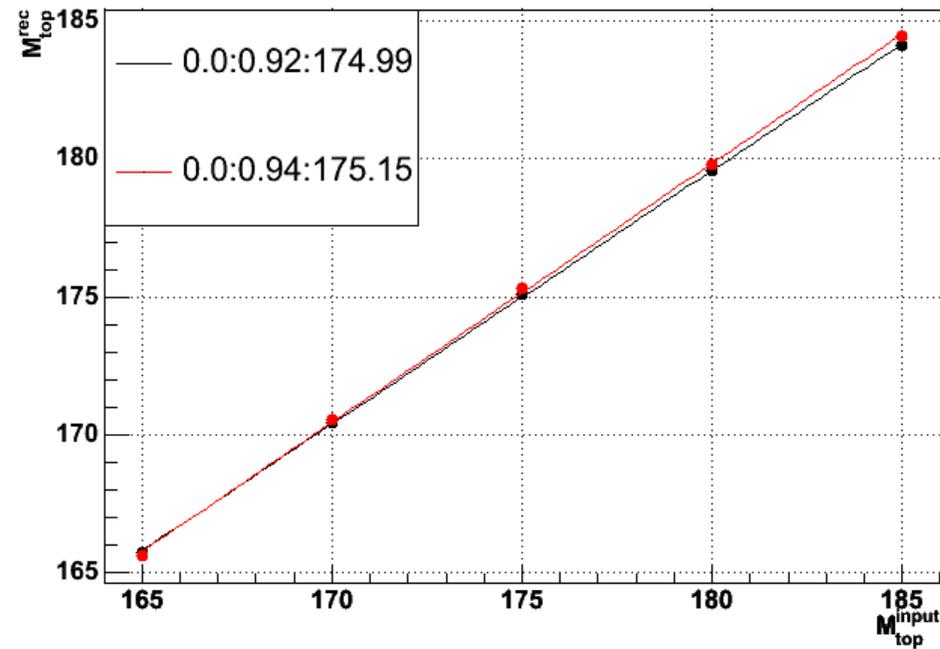


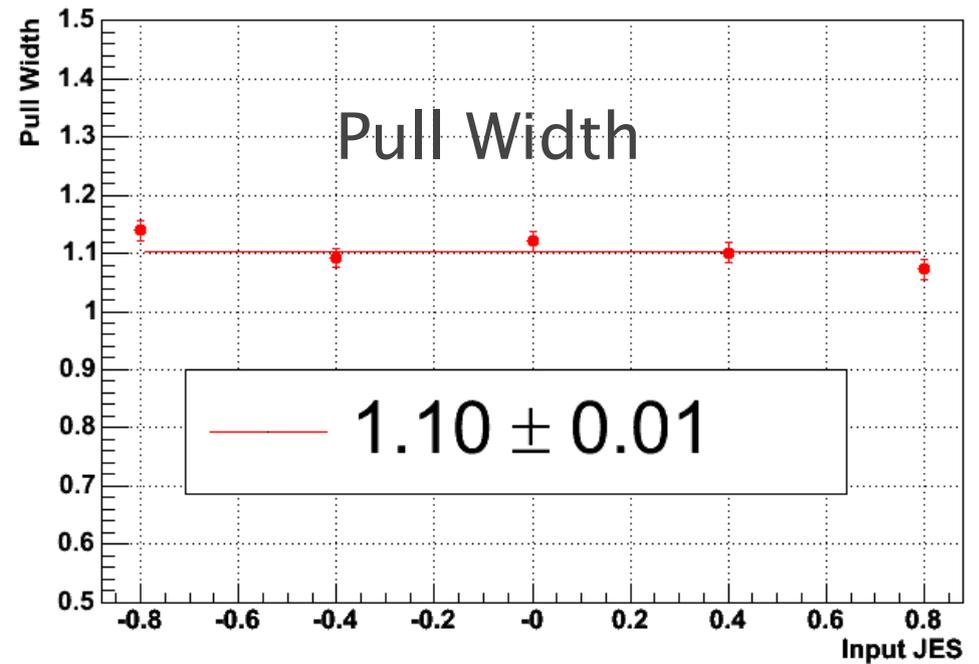
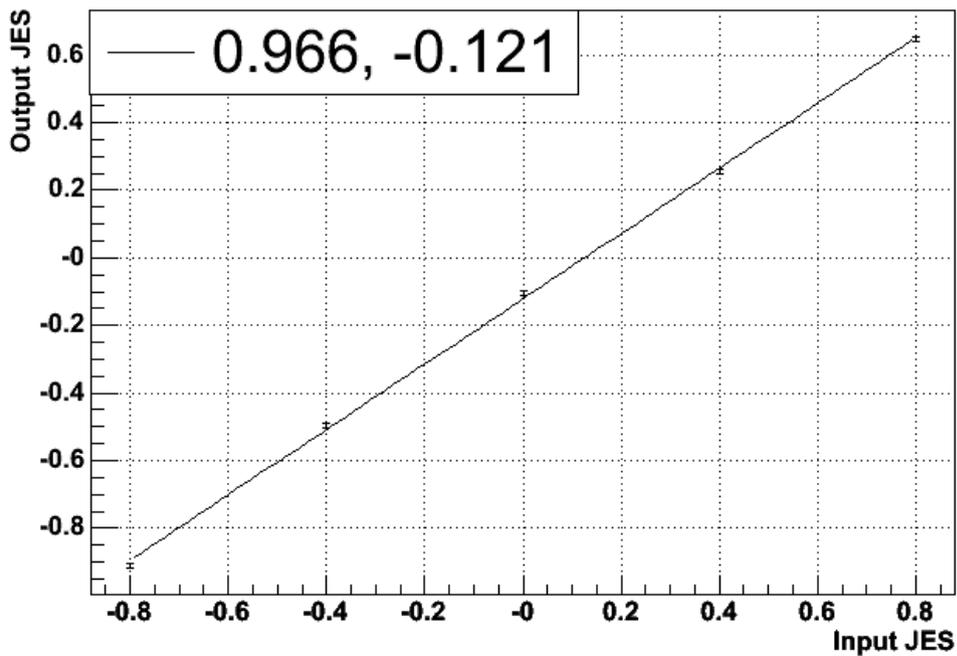
# Pseudo Experiments(Mtop)

1D vs 2D  
Right combination  
2500 PE's/point

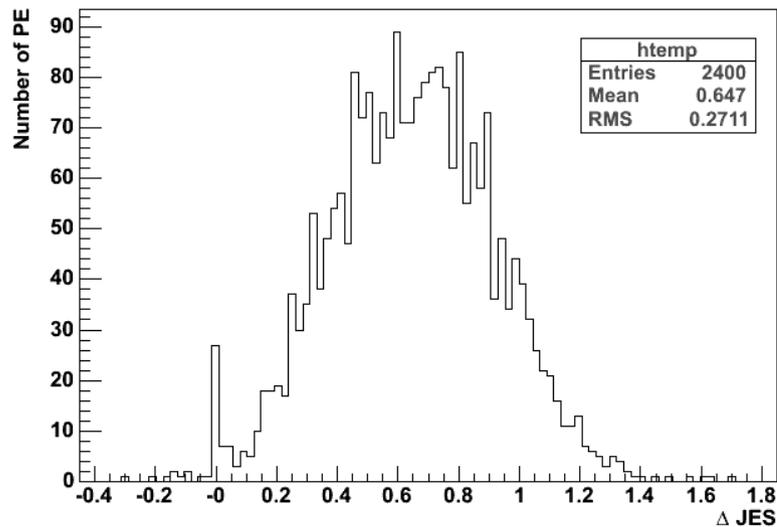
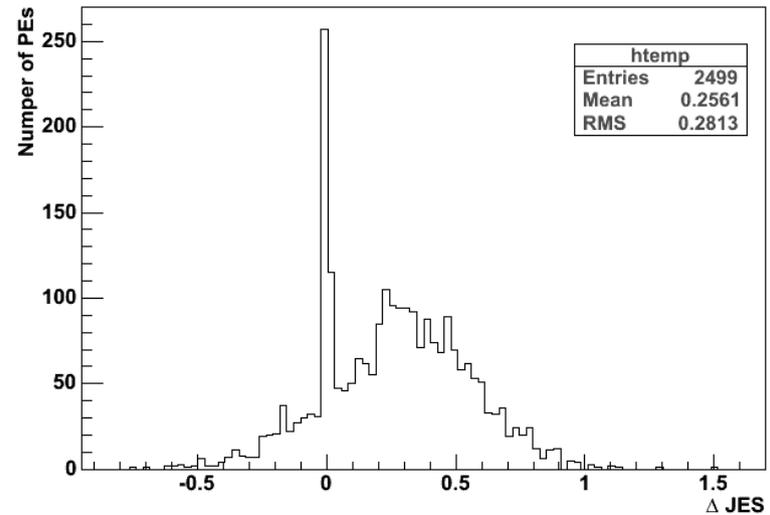
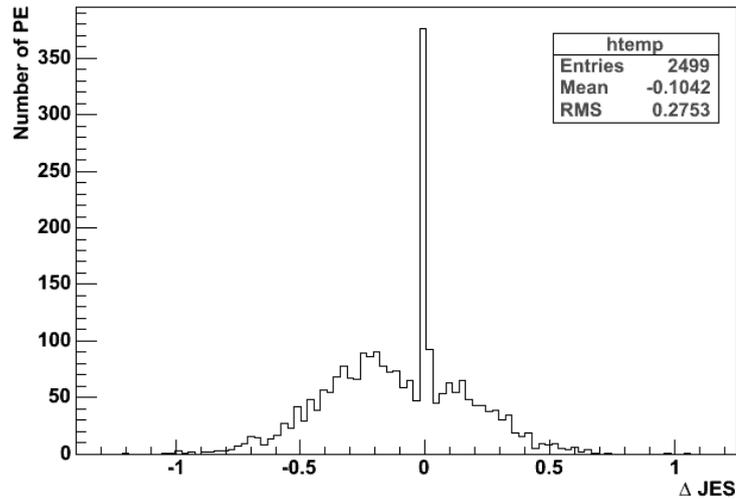


# Pseudo Experiments(JES)

Right combination  
2500 PE's/point

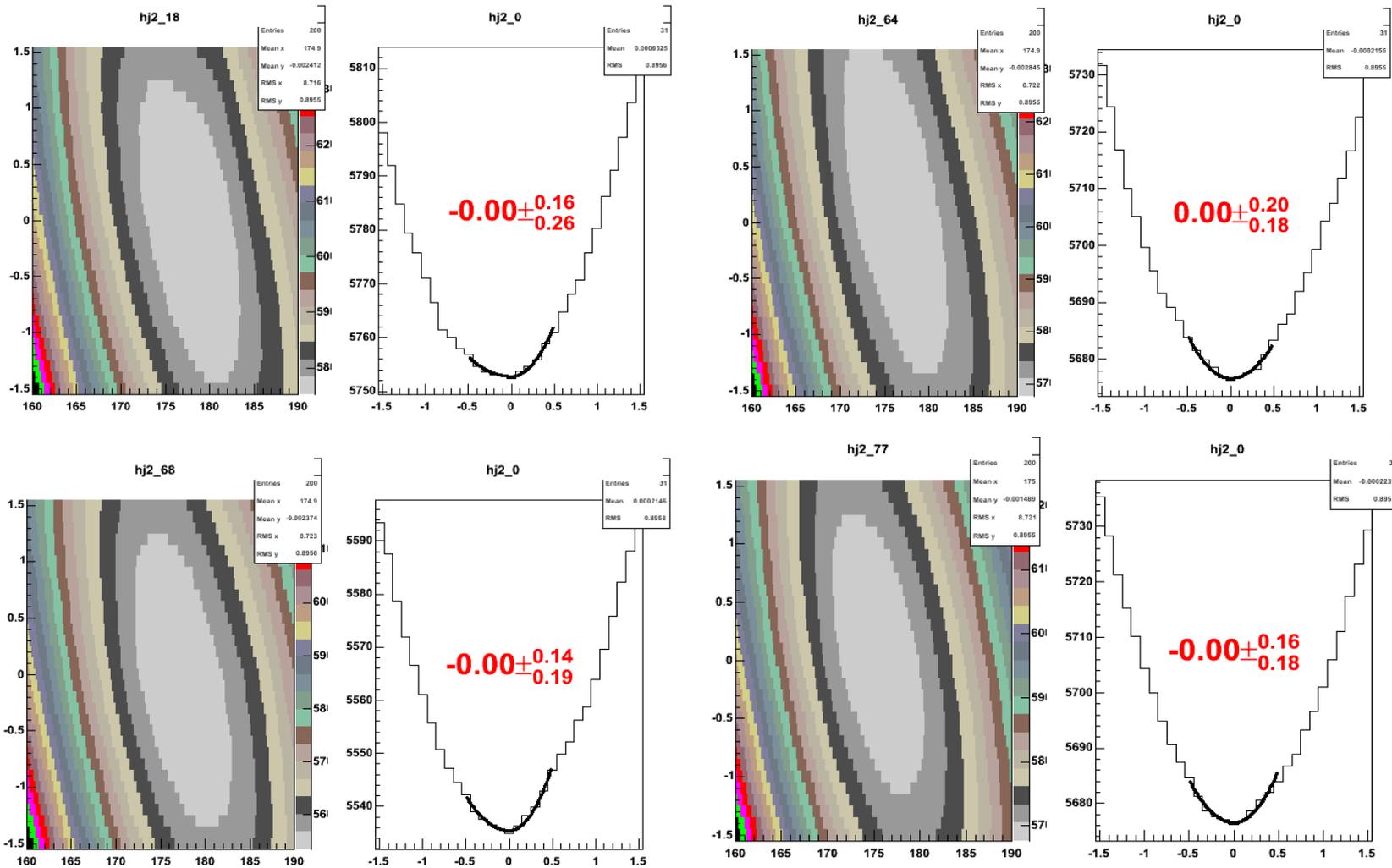


# Pseudo Experiments(JES)



**Bug?**

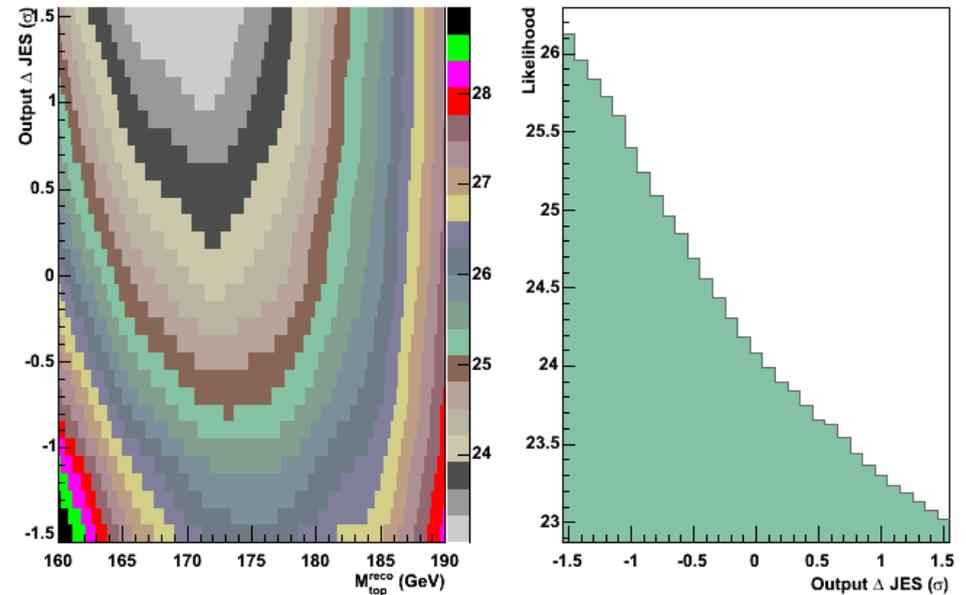
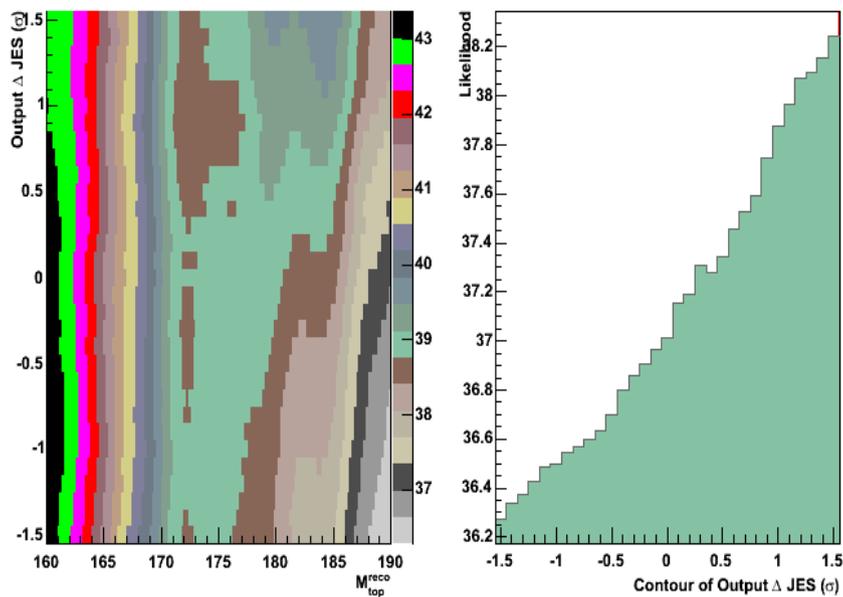
# JES likelihood/PE



Investigating now...

# Event likelihood

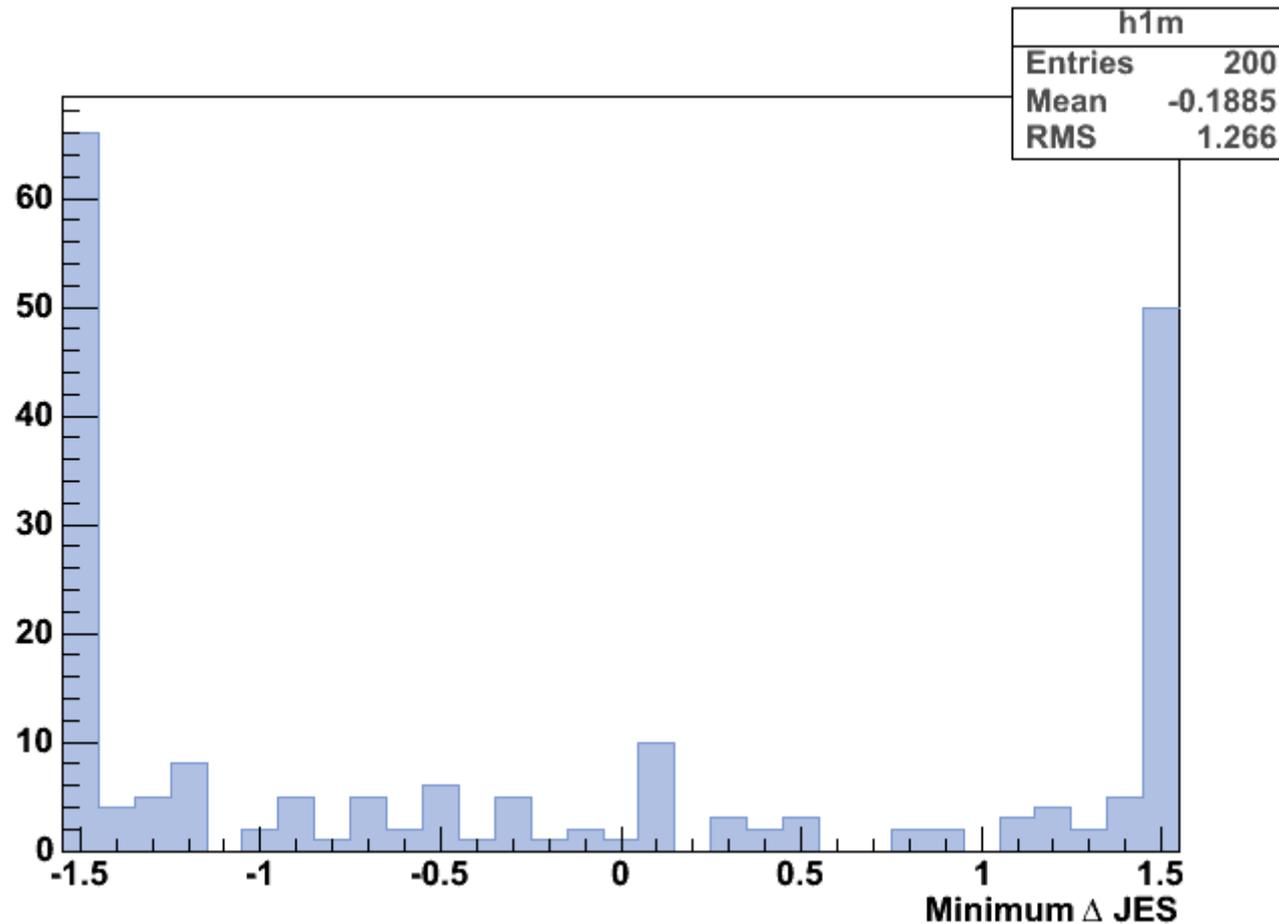
## Two examples of event likelihood



minimum point of these examples are out of range  
(-1.5~1.5)

# Minimum JES

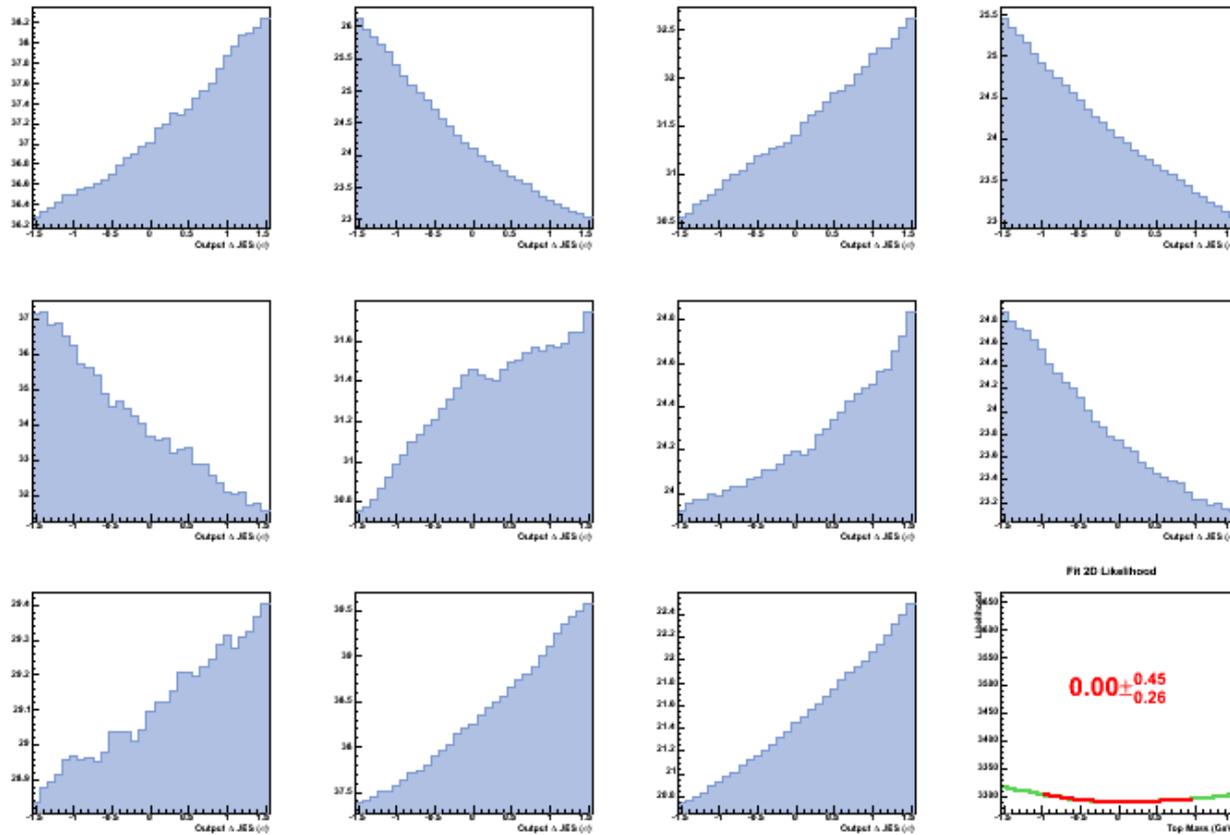
Minimum points for each event likelihood



There are many minimum points on boundary of range.

# Event/Joint likelihood

Joint likelihoods whose minimum point is on boundary.



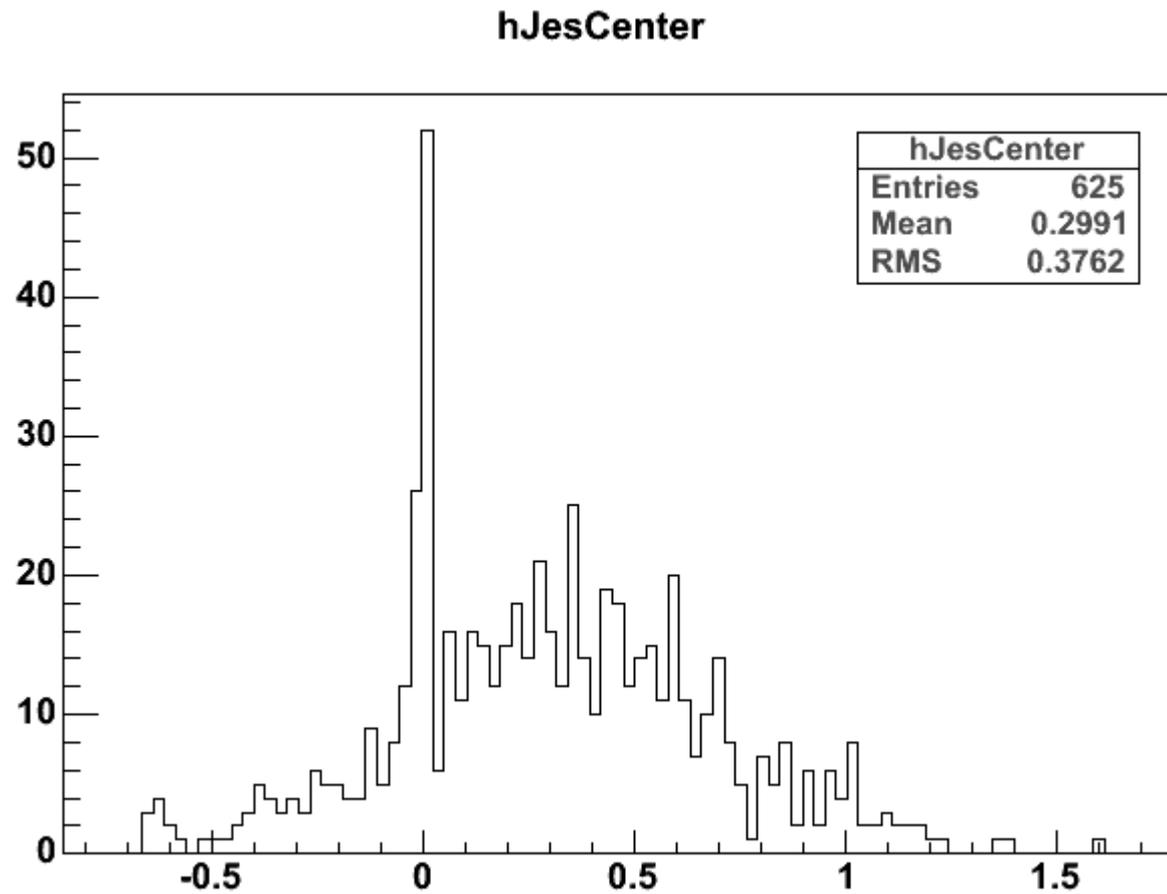
Scan range on JES should be extended.

# Plans

- **JES scan range**
  - **Make additional TF for extended range(Done)**
  - **Processing time will increase(~3000jobs on CAF)**
- **Shape study**
  - **Event selection for all backgrounds is almost done.**
- **Apply backgrounds**
- **Estimate systematic error**
  
- **Full status report on early June.**
  
- **1.2/fb or 1.7/fb**
  - **ntuple for 1.7/fb is ready**
  - **Background estimation for 1.7/fb is not done yet.**

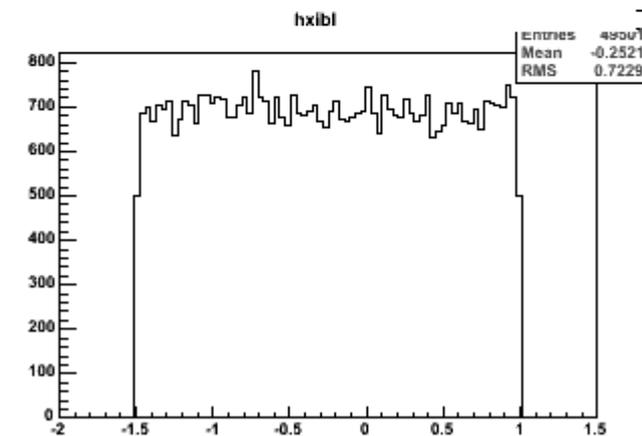
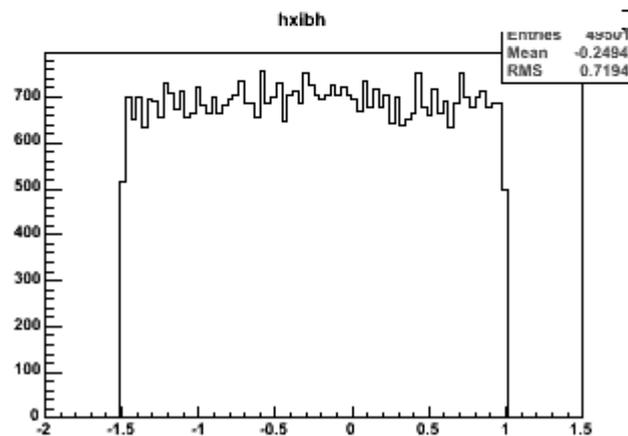
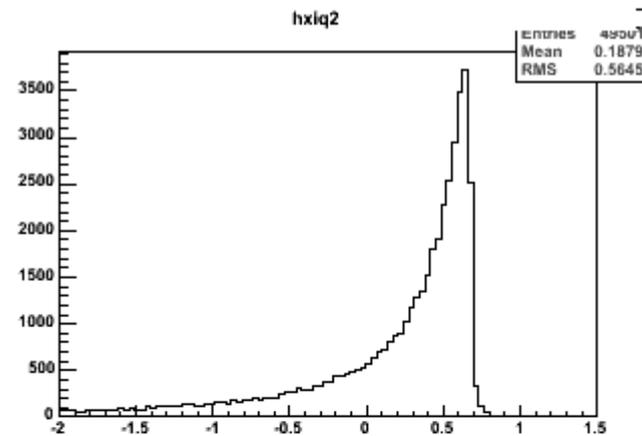
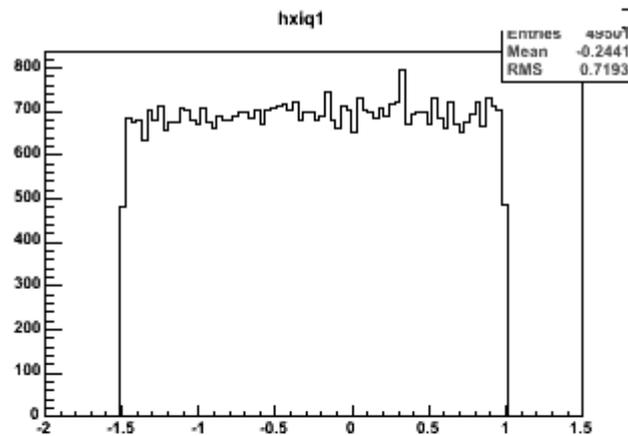
# Bug for JES calibration

After extended scan range for delta JES



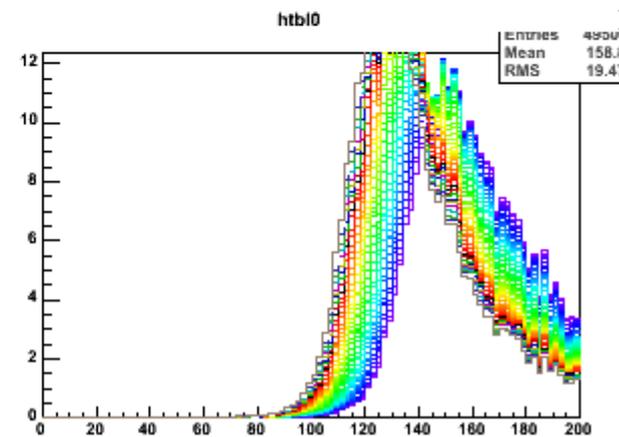
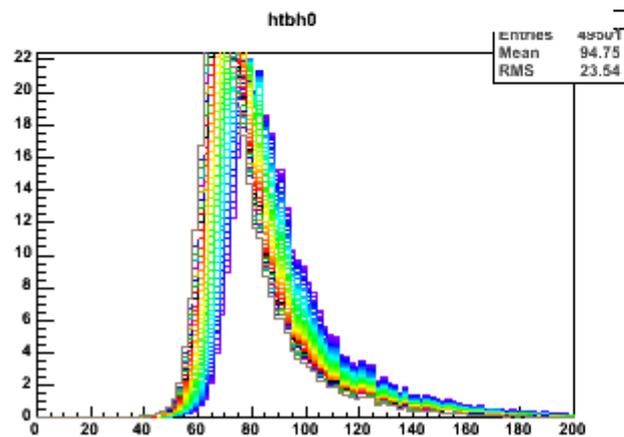
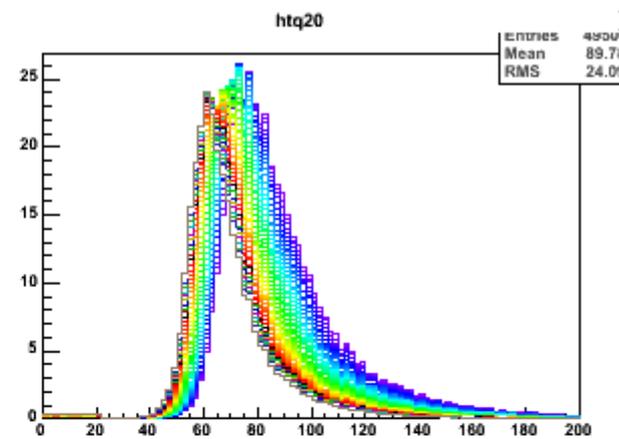
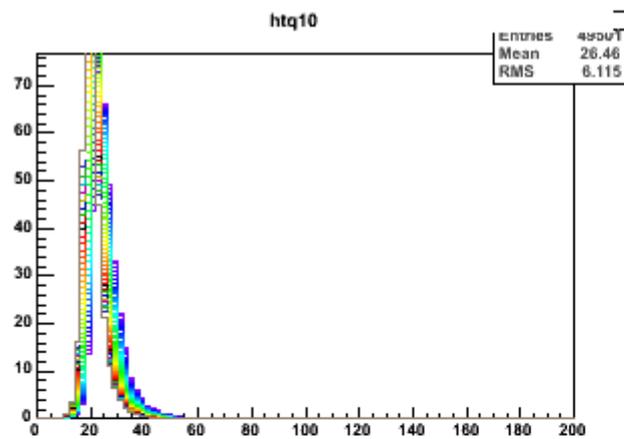
# Checking weight from TF

## Distributions for generated xi randomly



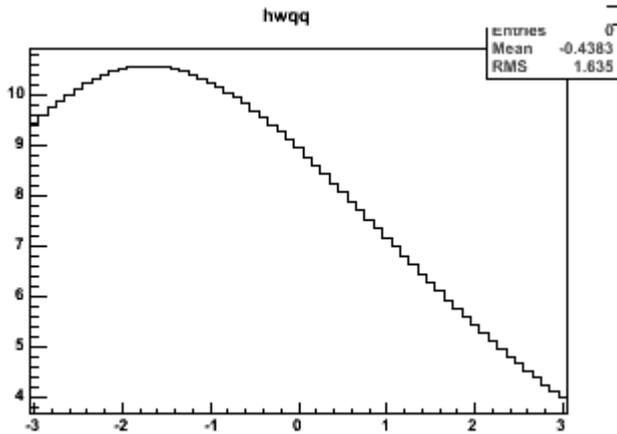
# Checking weight from TF

## Reconstructed jets with TF for one event

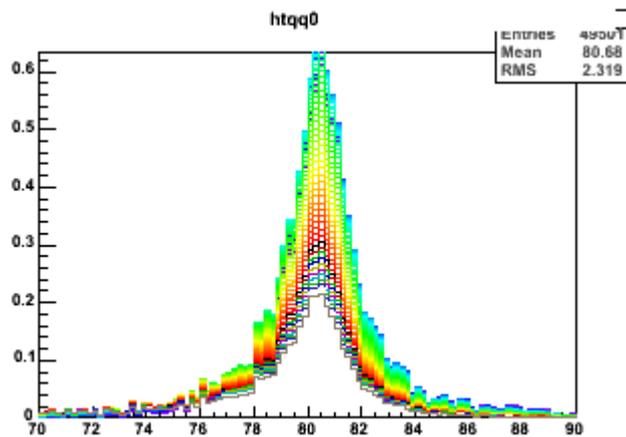
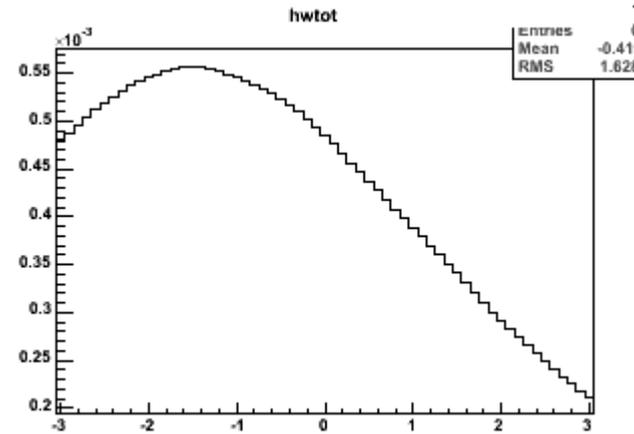


# Checking weight from TF

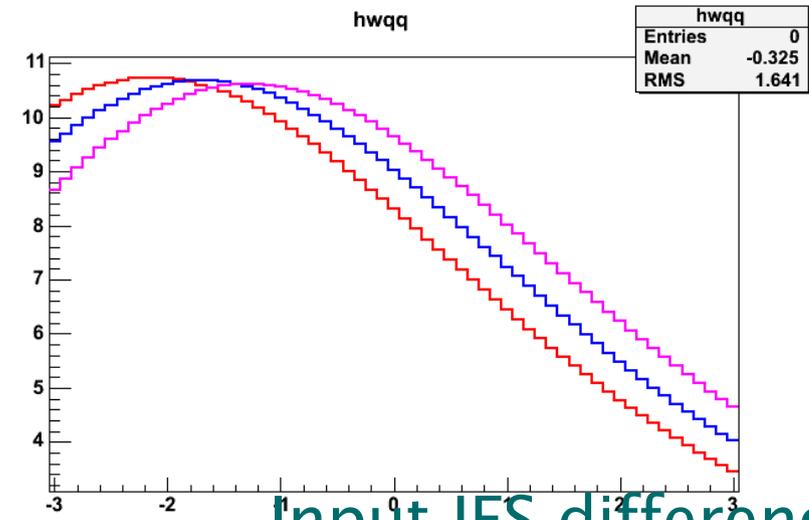
## Weight for $W \rightarrow 2j$



## Weight for $4j$

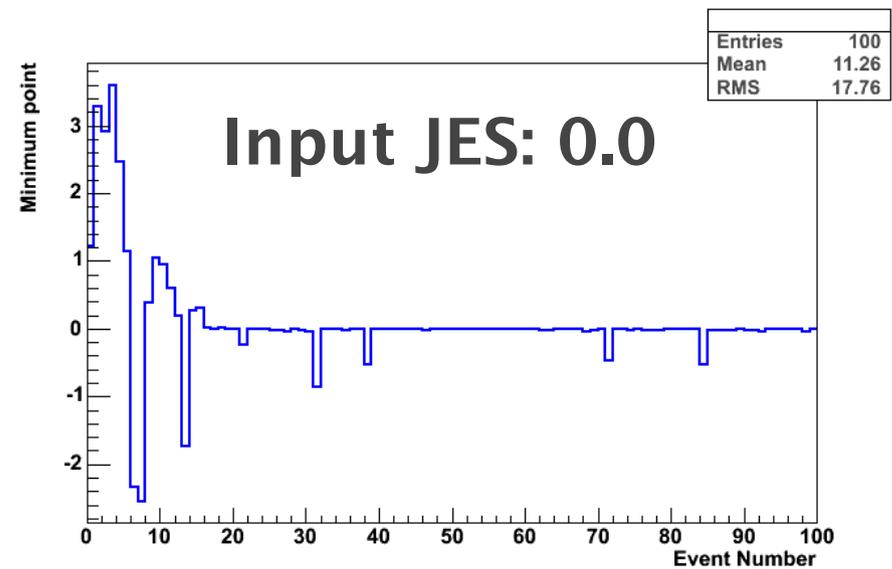
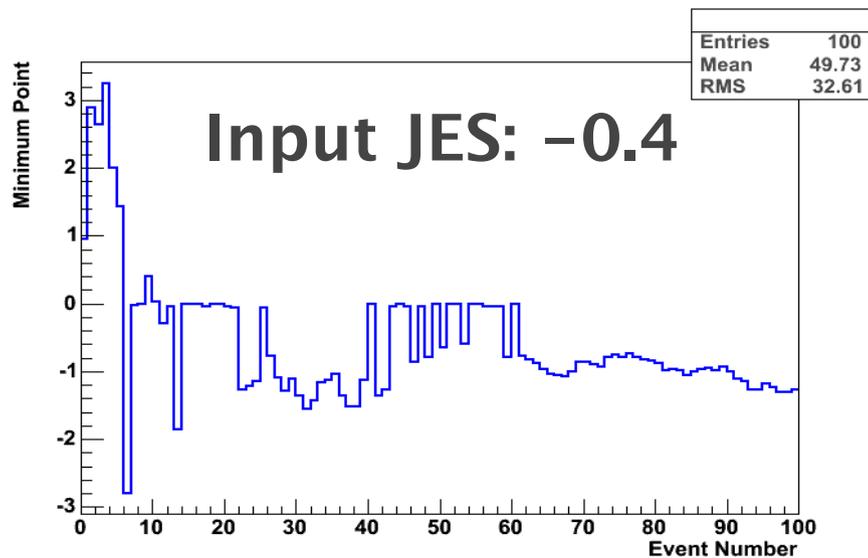


## Reconstructed $S_w$ in a event

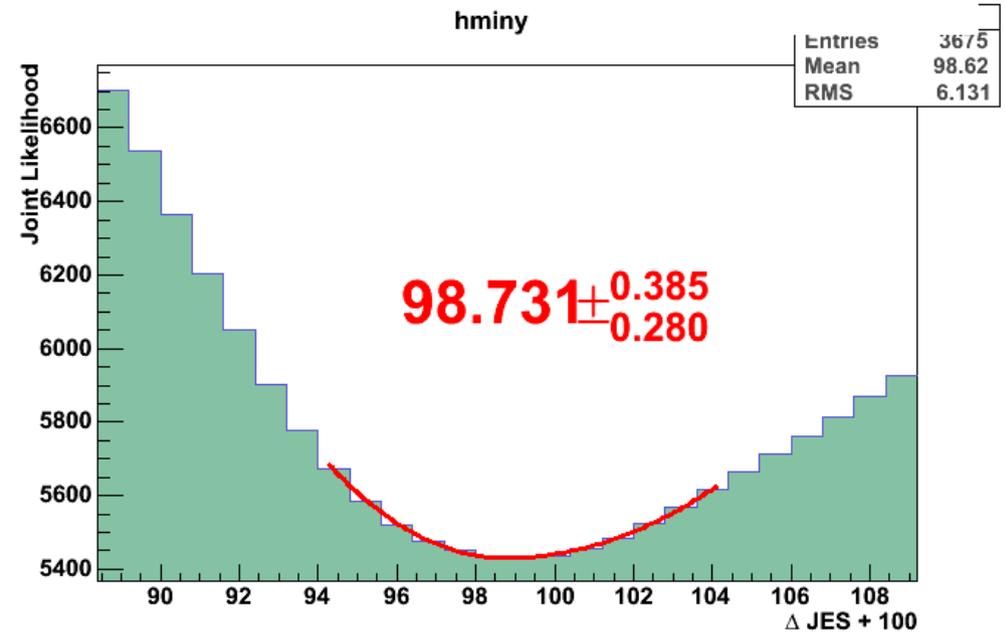
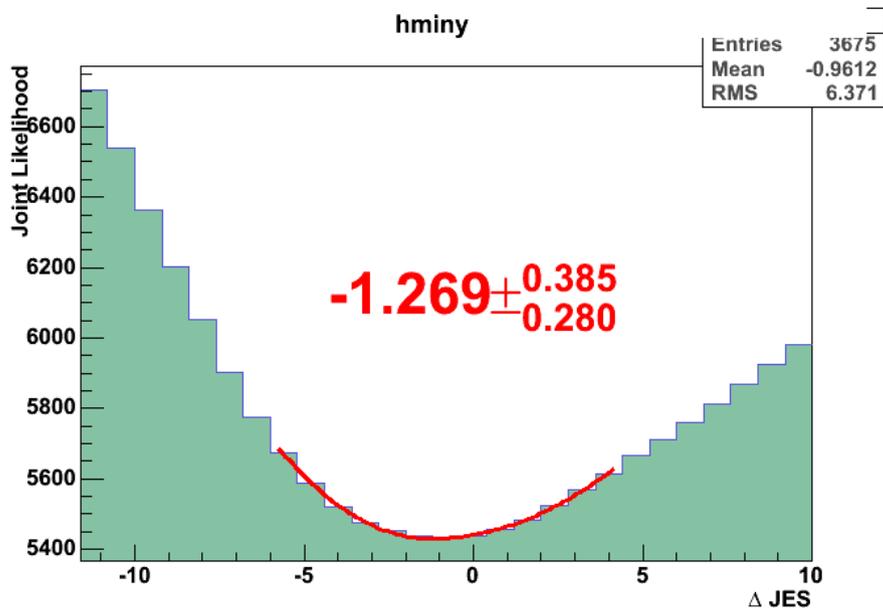


## Input JES differences

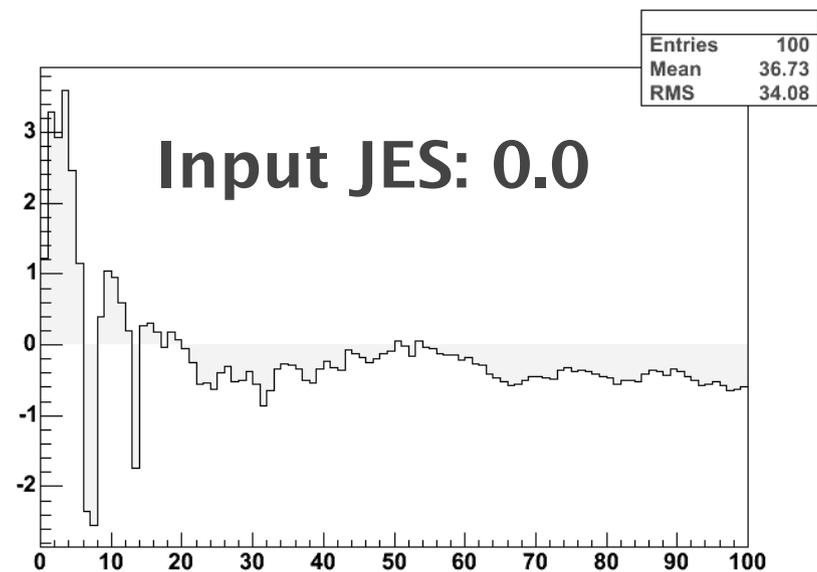
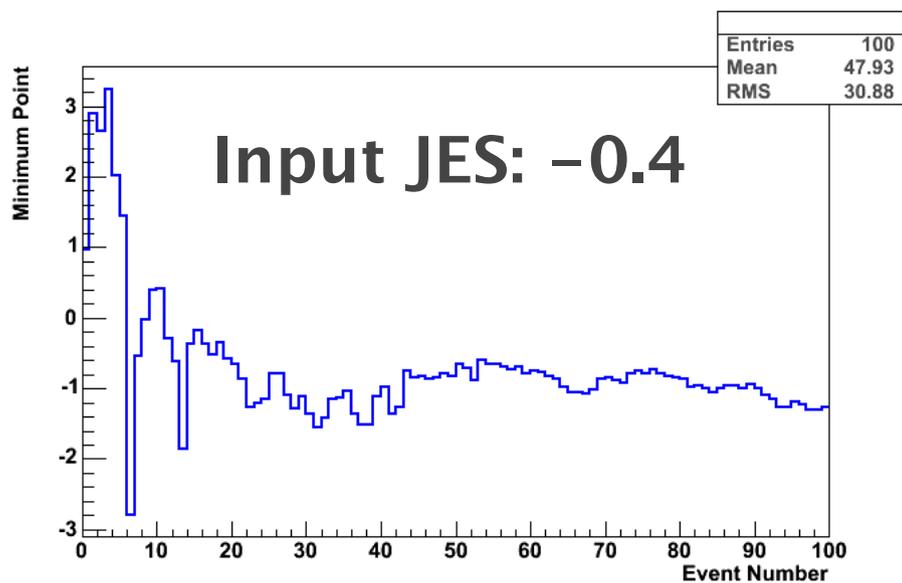
# Checking weight from TF



# Checking weight from TF

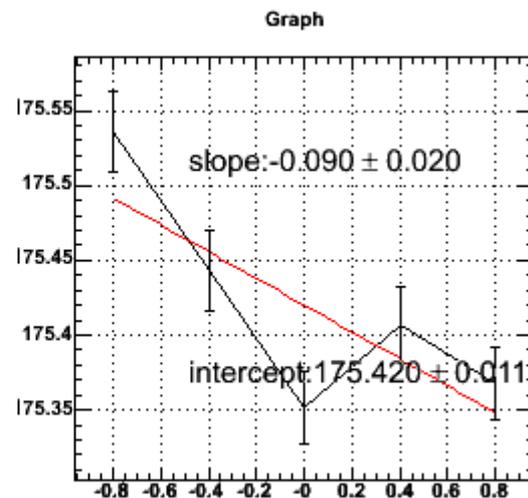
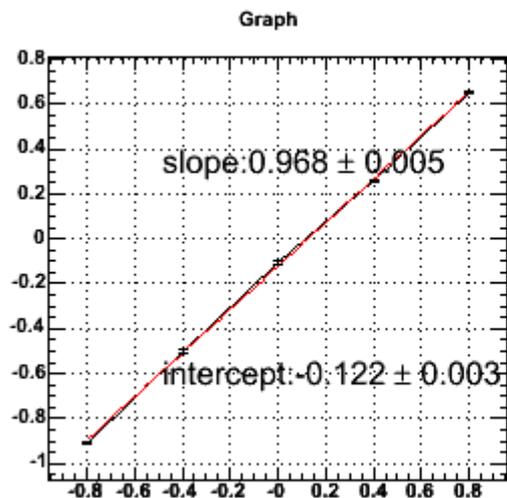


# Checking weight from TF



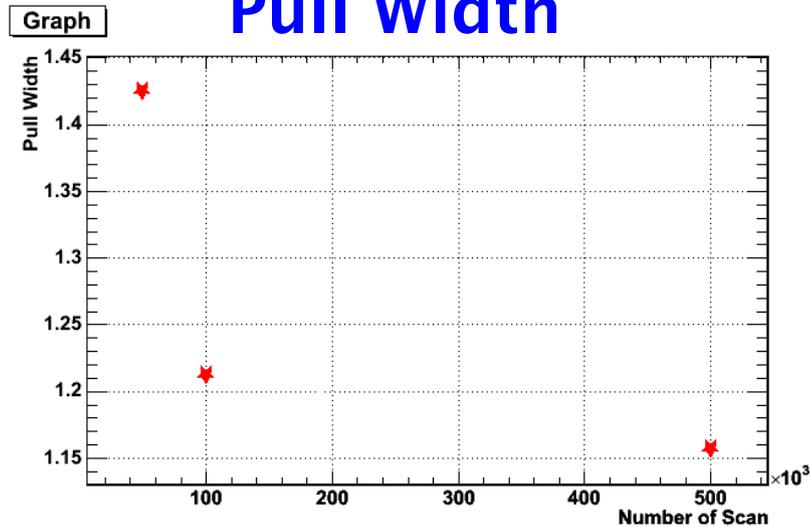
# Pseudo Experiments

- Slope for JES is almost 1.
- Output JES shift lower
- Dispersion of reconstructed mass is taken as systematic uncertainty.



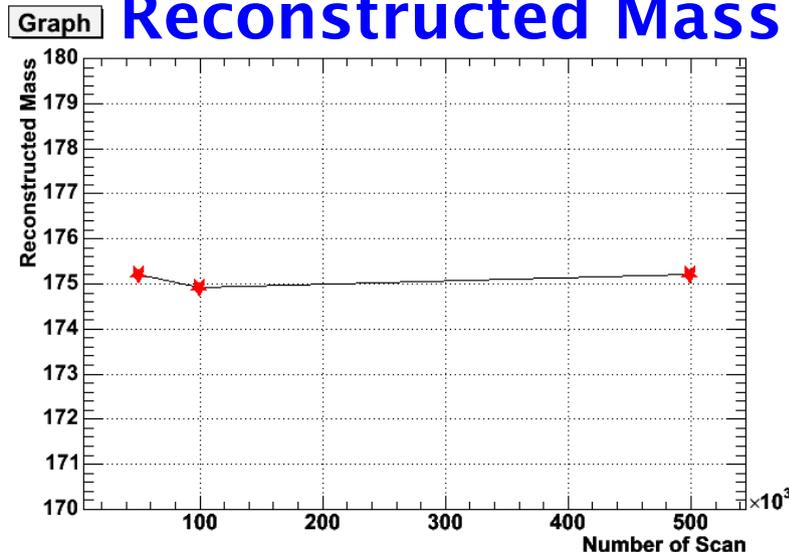
# Pull Width for Mass Reconstruction

## Pull Width

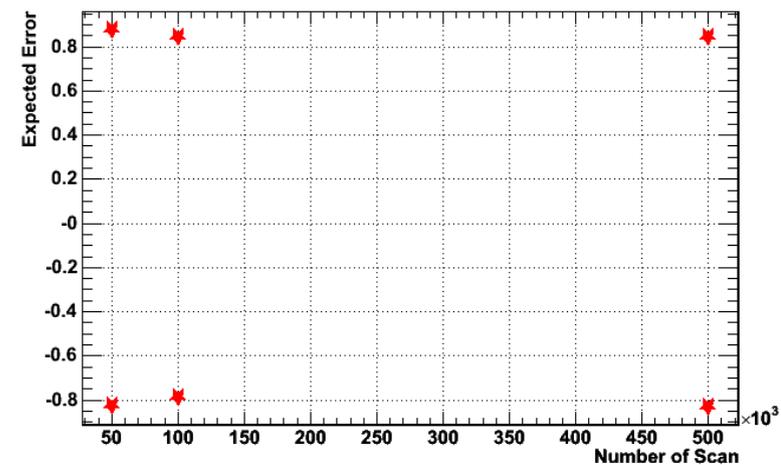


- Pull Width goes down as # of scan increase although it still high.
  - Effect of removing importance sampling??
- Reconstructed Mass and Expected Error is almost flat as a function of # of scan

## Reconstructed Mass

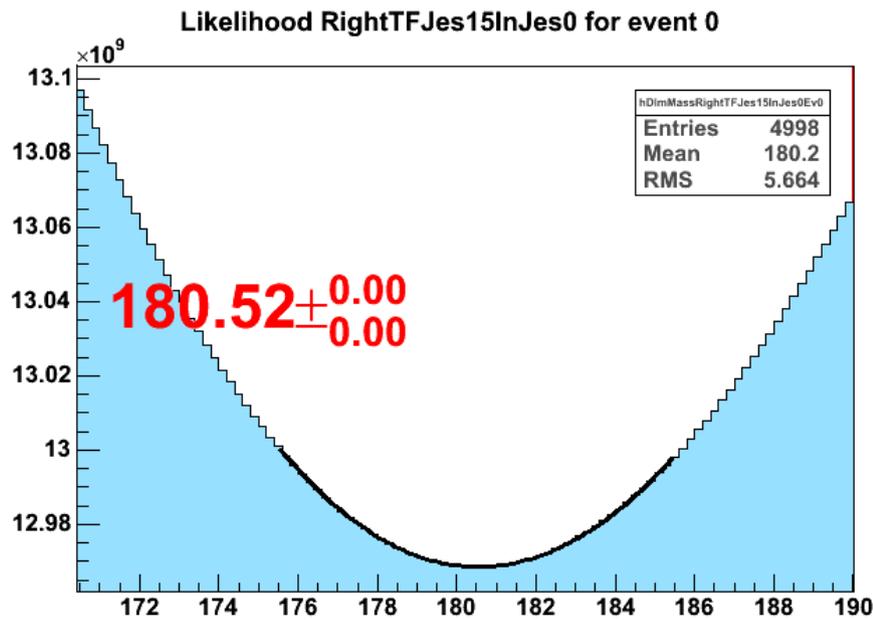


## Expected Error



# Joint likelihood/path

with M\*Gamma



w/o M\*Gamma

