

# Motivation

- VBF sample: forward topology (peak at  $\eta \sim 2.5$ , up to  $\sim 5$ ), need a good reconstruction/calibration in forward region
- validation of the actual moment-based calibration on a specific physics case
- can we improve it in the **forward region**? need for a dedicated sample?
- can we use **another moment** to improve the response?

eta-> <0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

E (GeV)

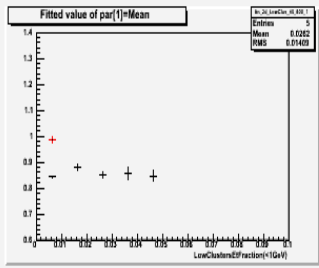
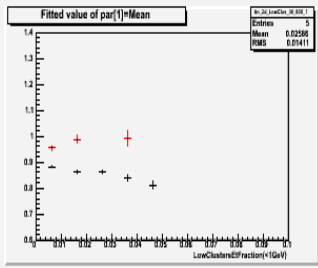
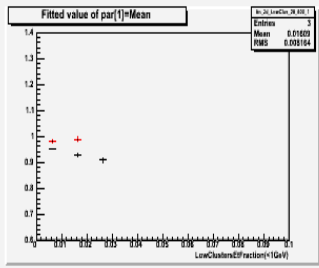
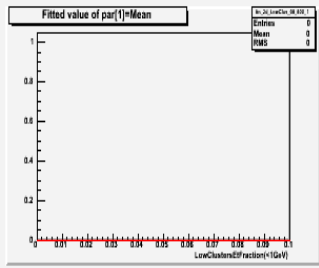
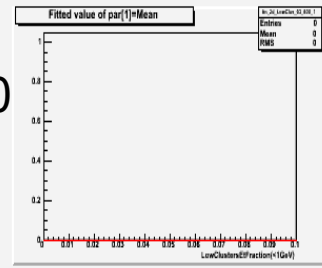
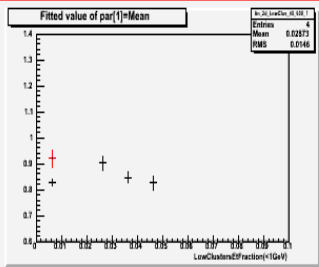
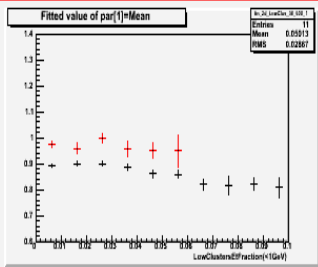
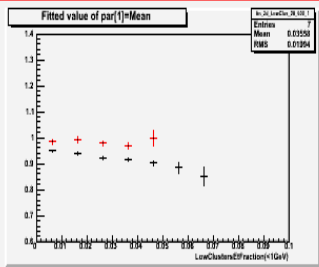
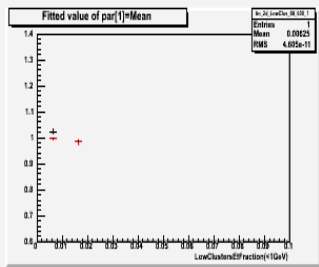
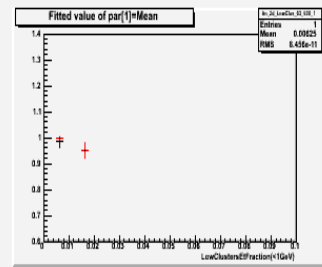
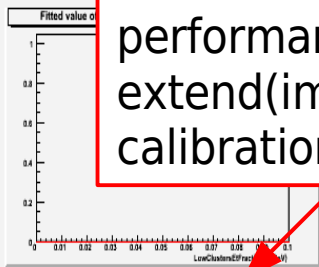
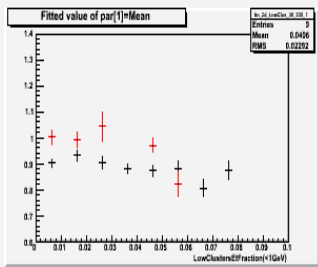
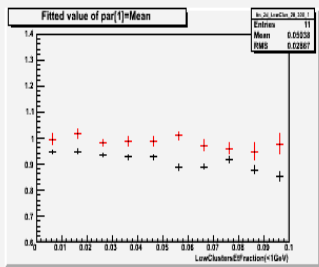
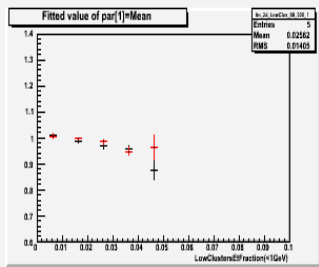
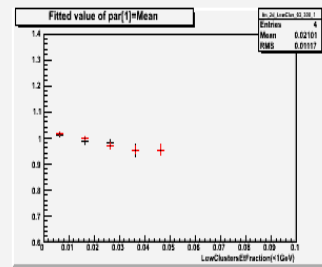
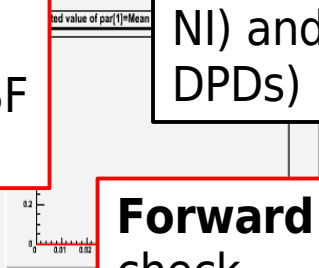
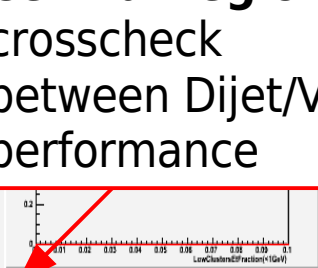
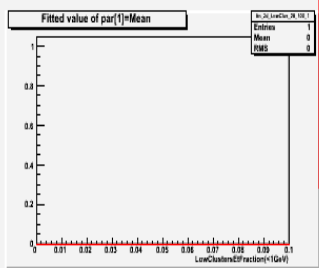
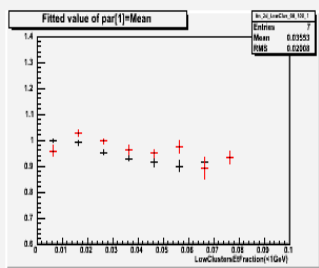
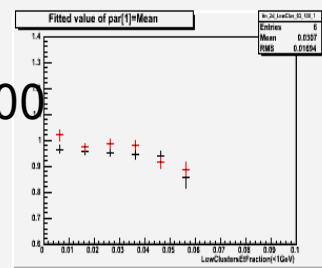
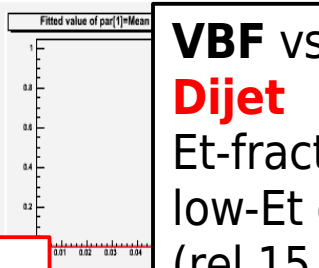
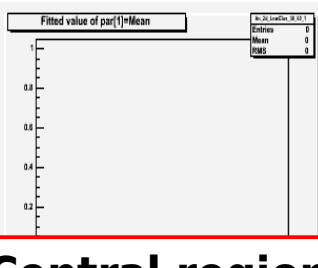
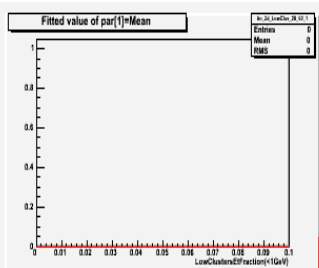
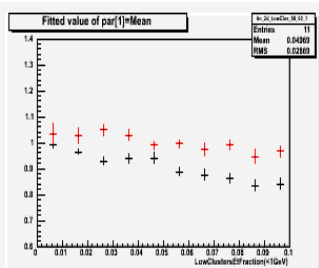
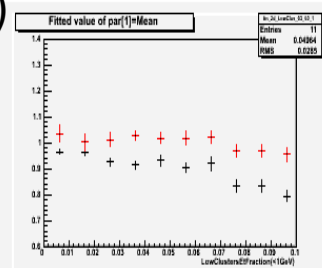
<60

60-100

100-300

300-600

>600



**Central region:**  
crosscheck  
between Dijet/VBF  
performance

**Forward region:**  
check  
performance /  
extend(improve)  
calibration?

**VBF vs  
Dijet**  
Et-fraction of  
low-Et clusters  
(rel.15 VBF (no  
NI) and Dijet  
DPDs)

eta->

<0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

**VBF:**  
**noPileup**  
vs  
**Pileup**  
Et-fraction  
of low-Et  
clusters  
(rel.14  
samples)

E (GeV)

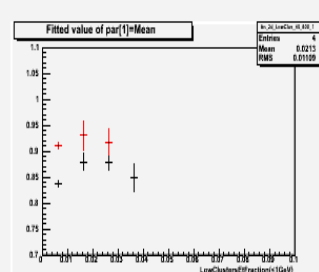
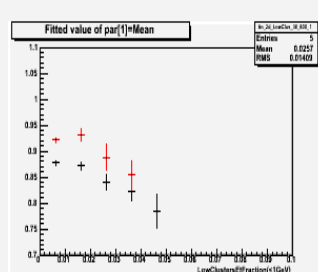
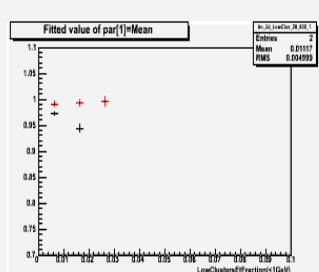
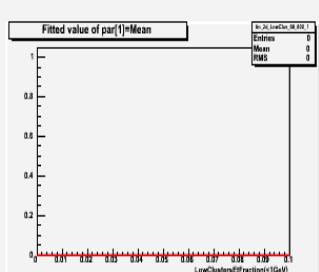
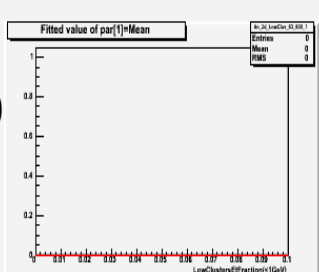
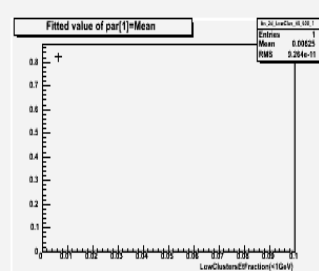
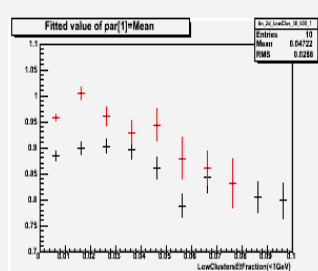
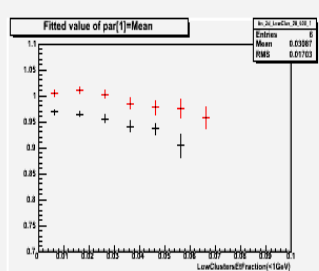
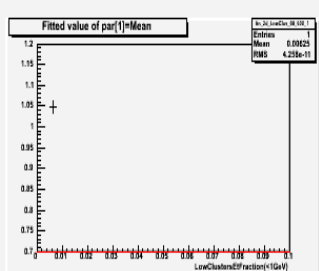
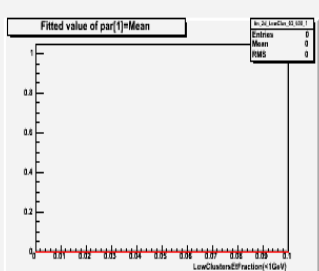
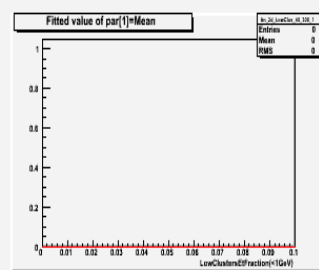
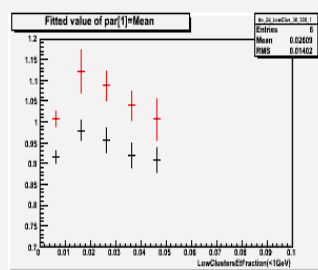
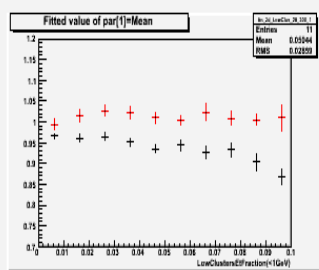
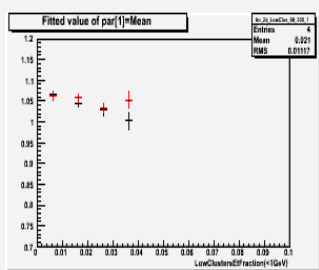
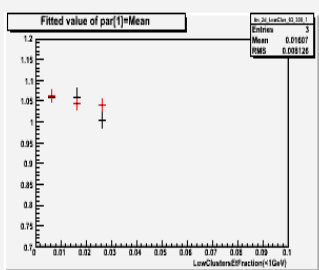
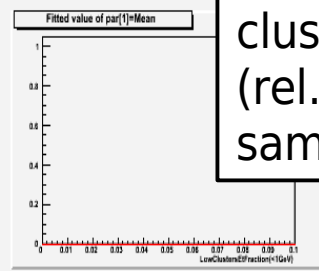
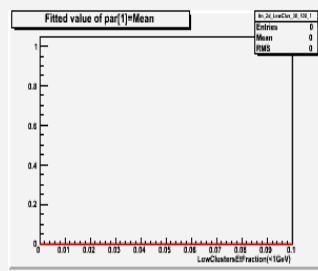
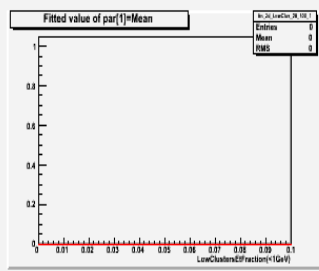
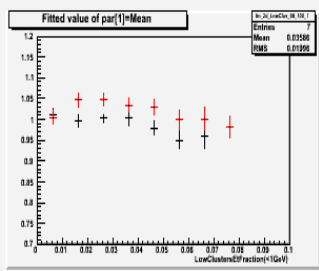
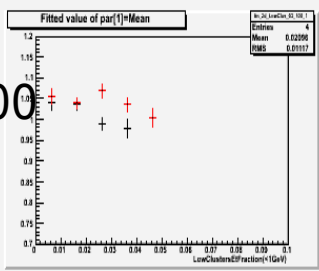
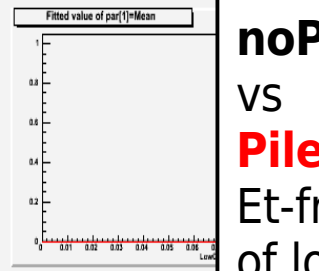
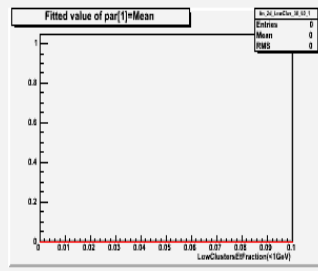
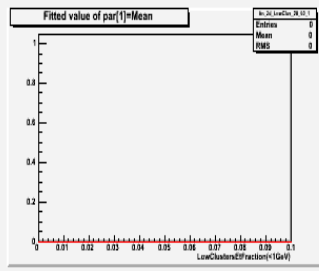
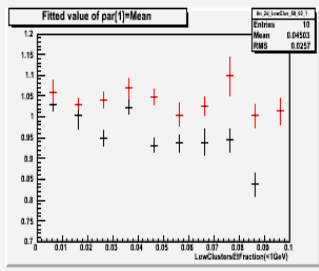
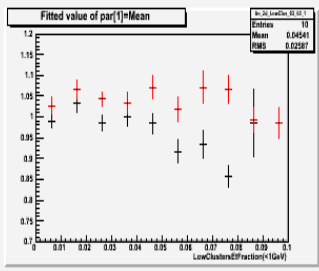
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60-100

100-300

300-600

>600



# Backup: Additional plots

$\eta \rightarrow$

<0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

E (GeV)

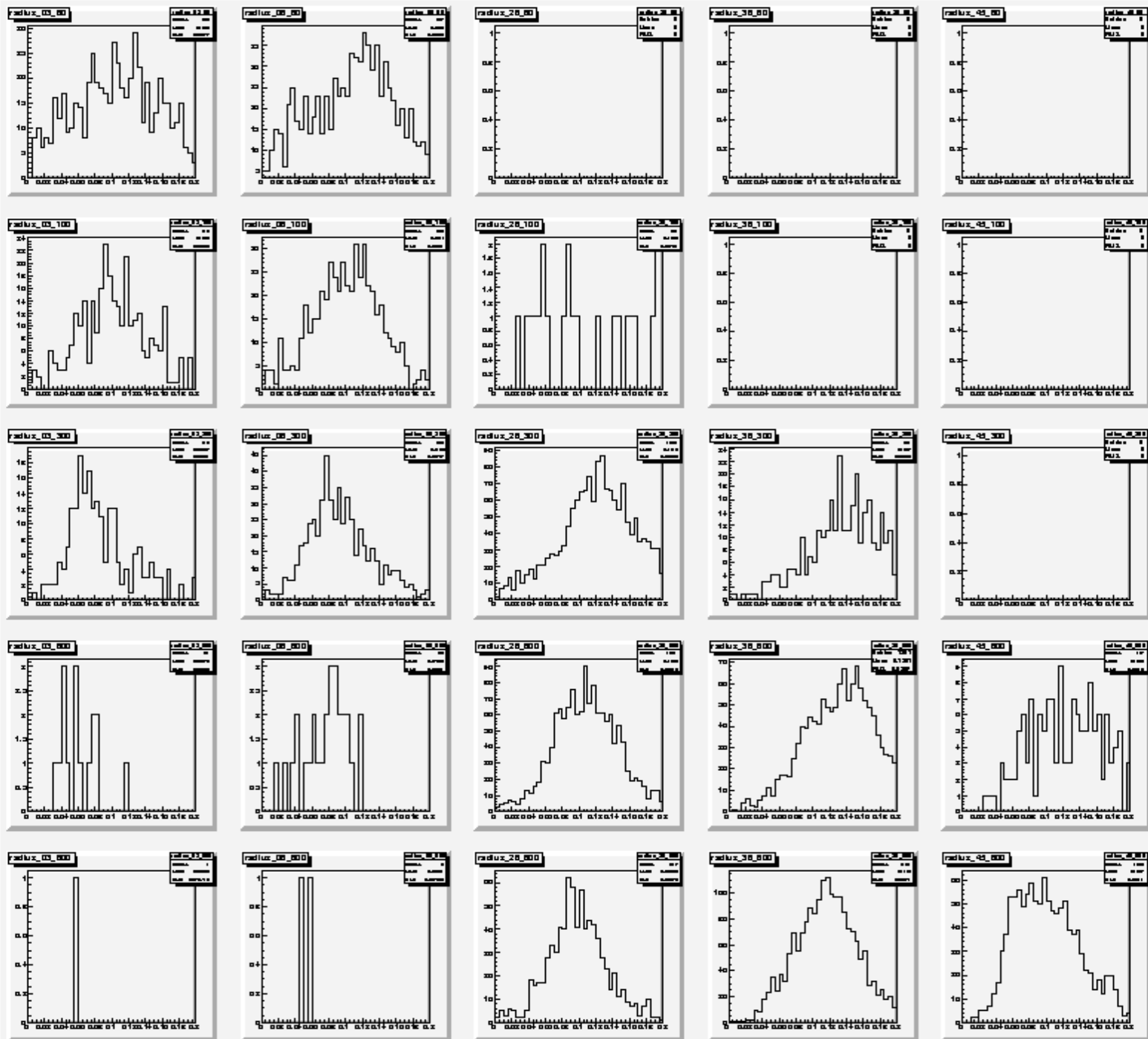
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60-100

100-300

300-600

>600



VBF  
radius

$\eta \rightarrow$

<0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

E (GeV)

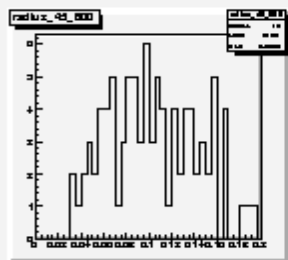
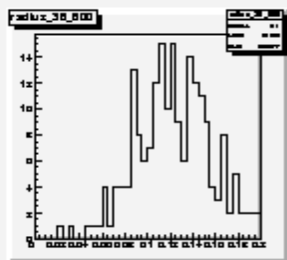
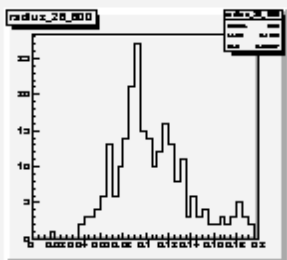
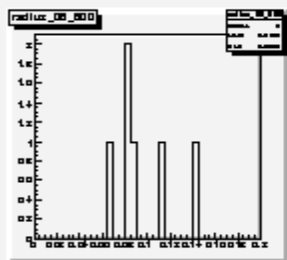
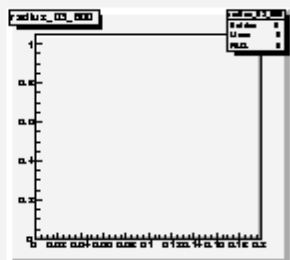
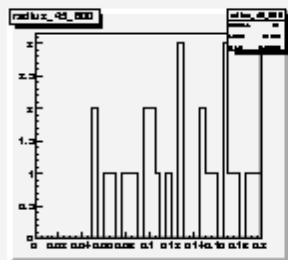
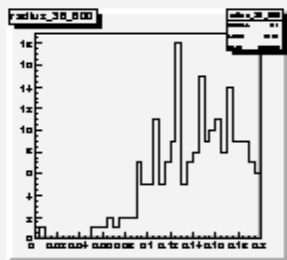
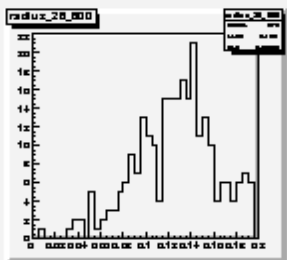
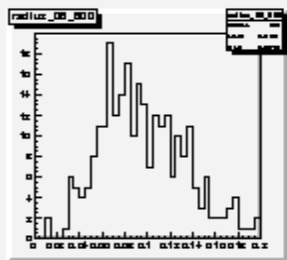
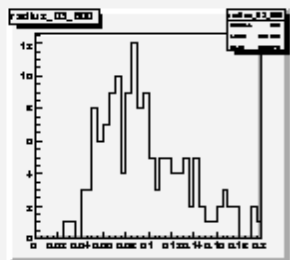
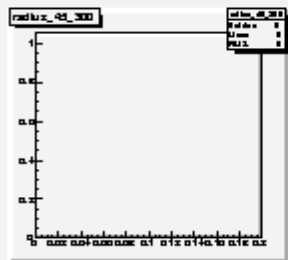
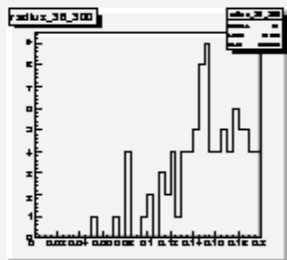
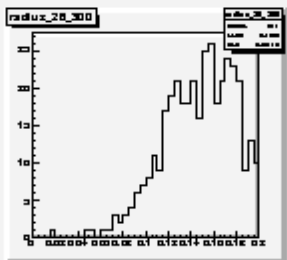
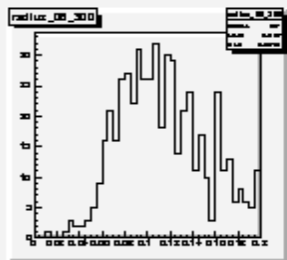
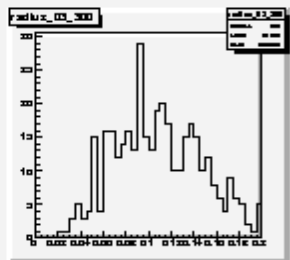
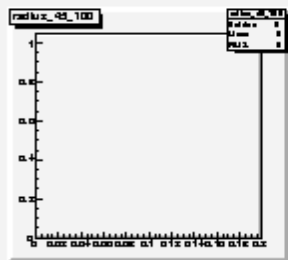
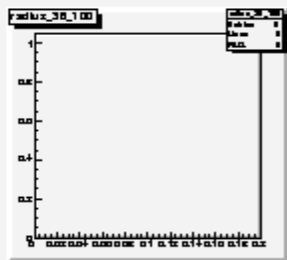
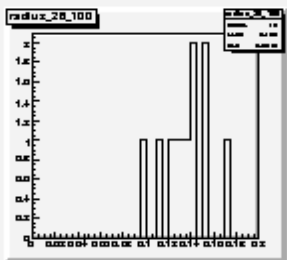
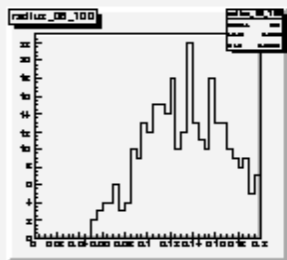
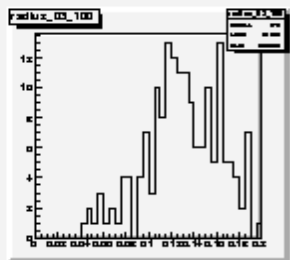
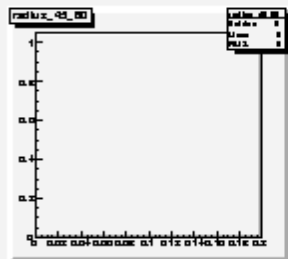
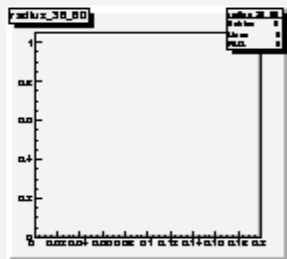
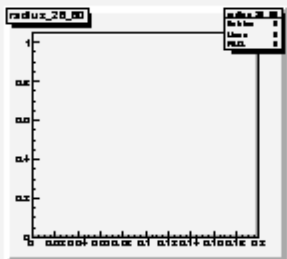
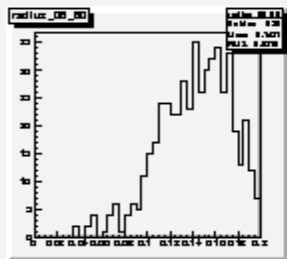
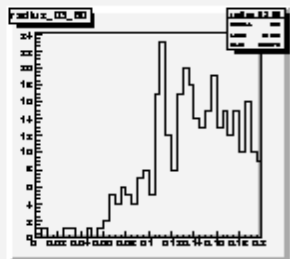
<60

60-100

100-300

300-600

>600



Dijet  
radius

eta-> <0.3

0.3-0.8

2.1-2.8

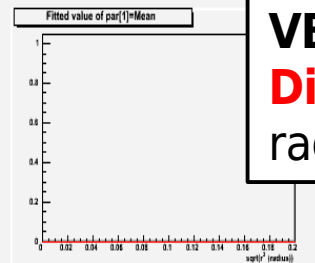
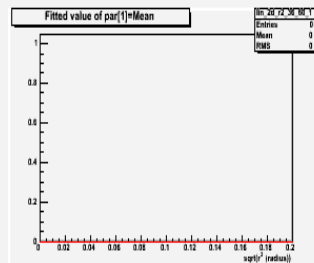
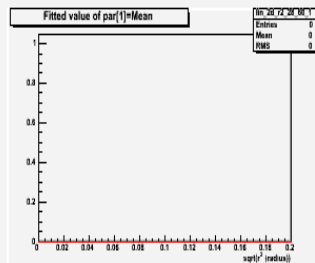
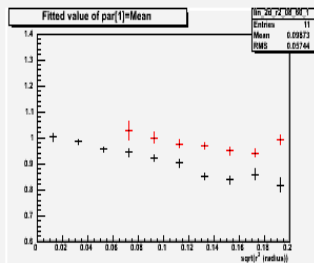
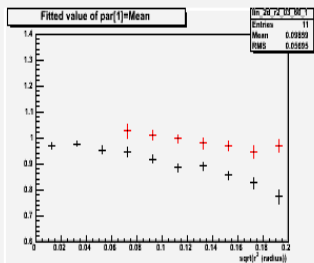
2.8-3.6

3.6-4.5

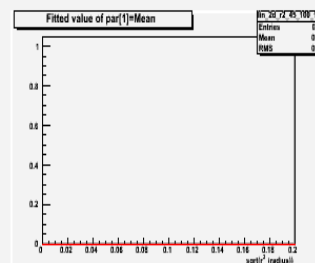
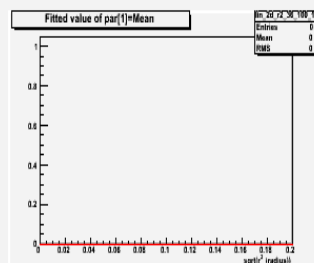
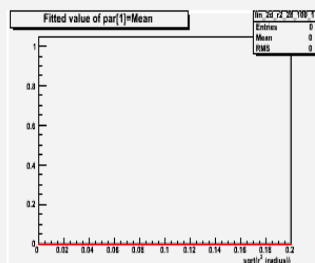
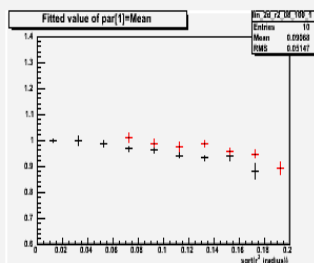
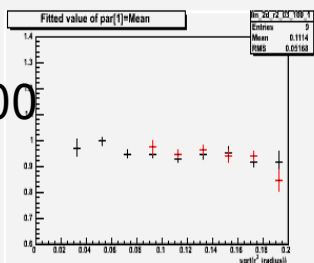
**VBF vs  
Dijet  
radius**

E (GeV)

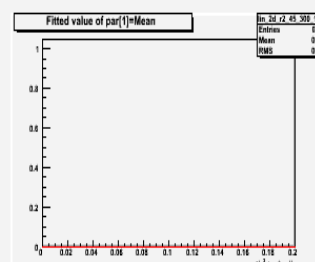
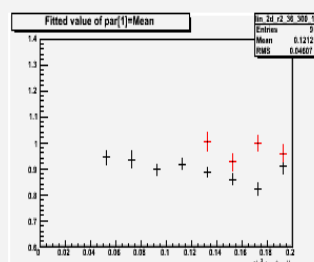
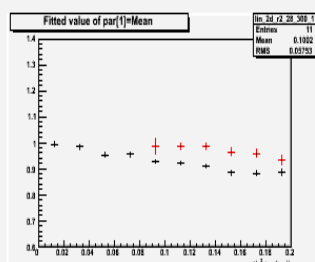
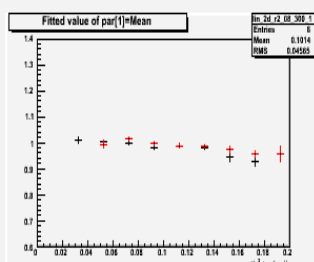
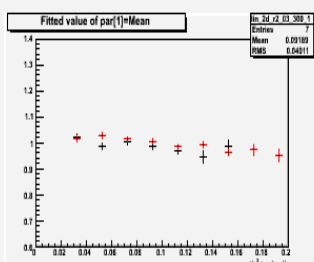
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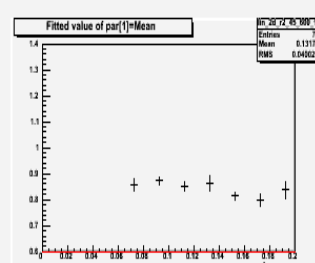
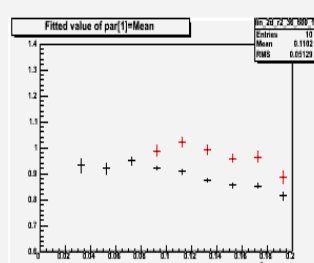
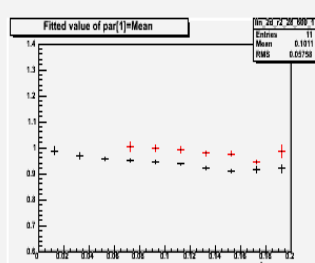
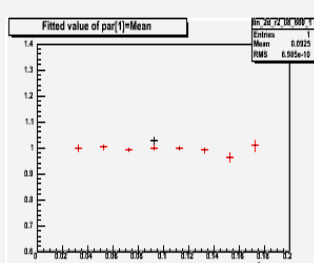
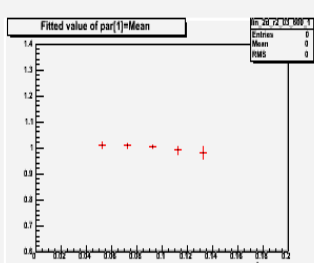
60-100



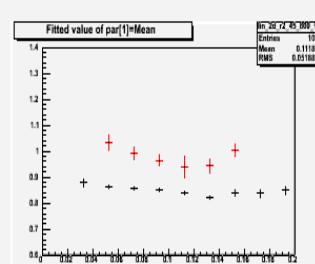
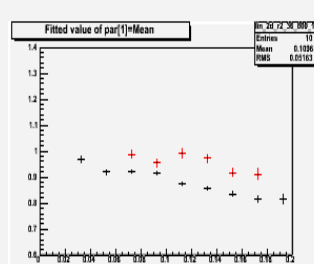
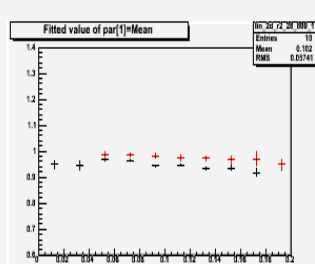
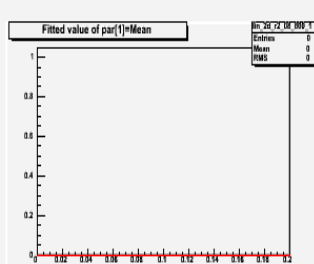
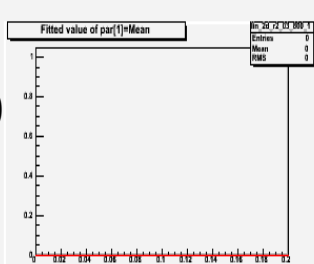
100-300



300-600



>600



eta-> <0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

E (GeV)

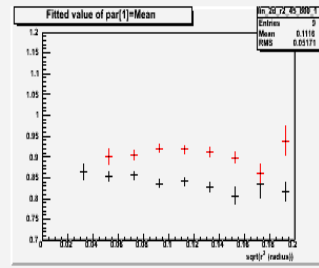
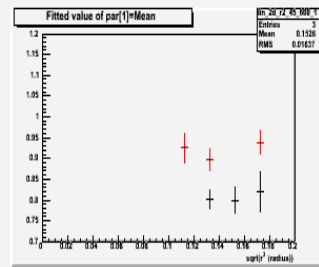
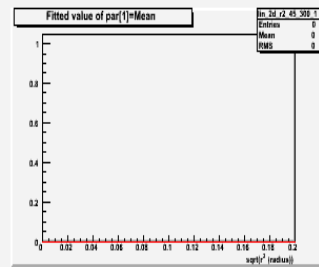
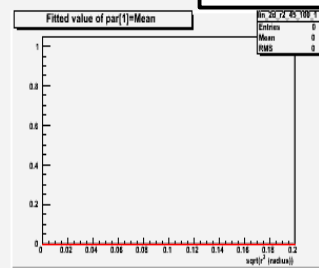
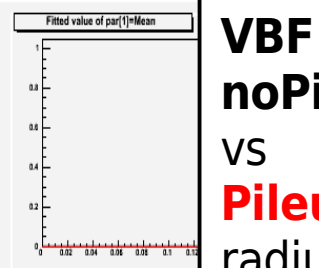
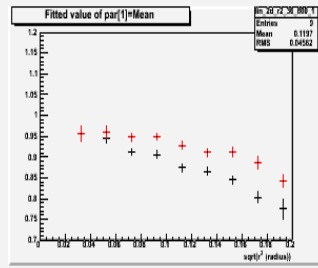
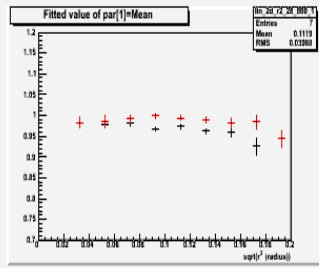
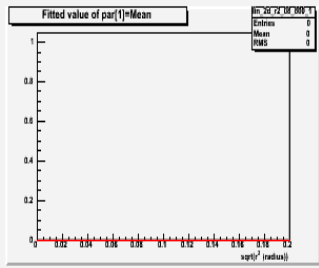
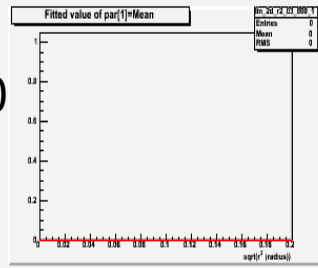
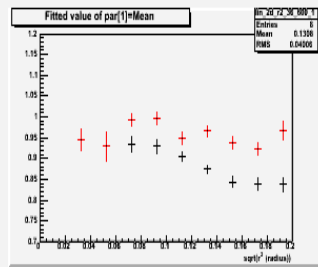
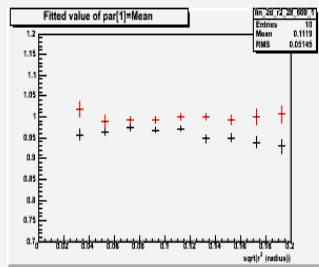
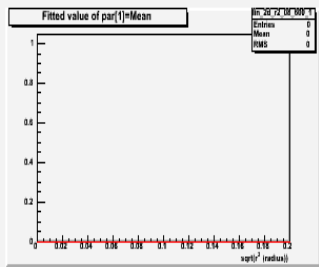
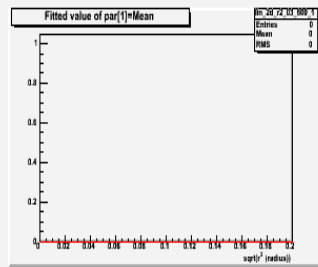
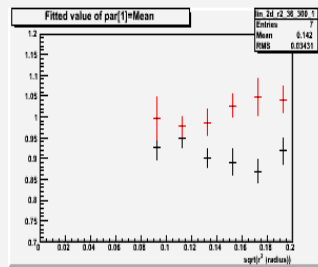
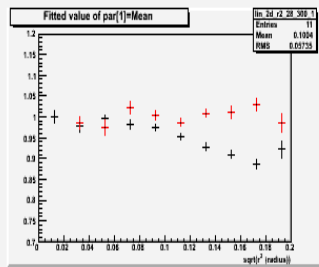
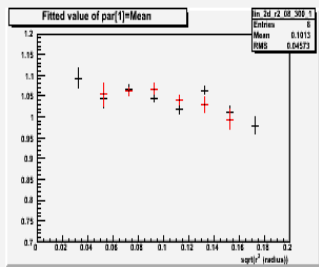
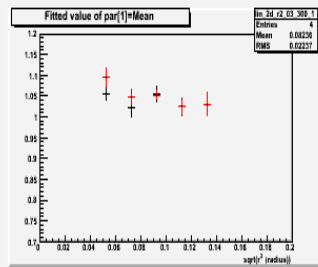
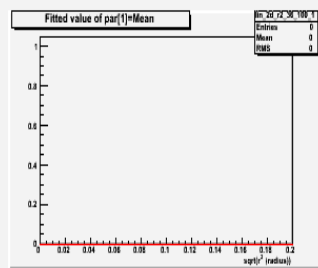
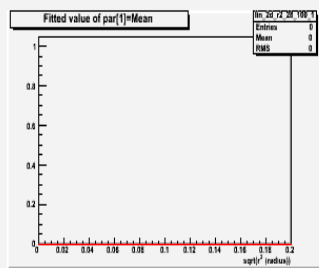
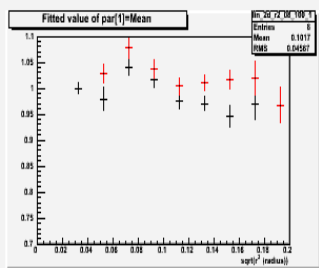
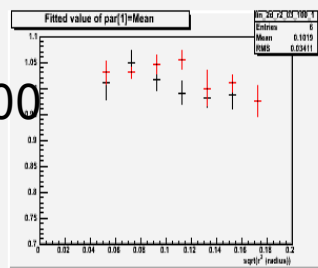
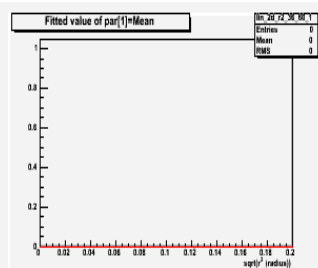
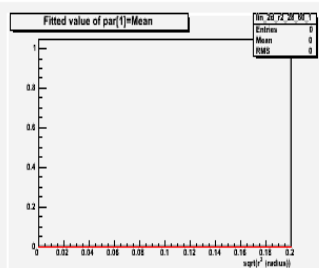
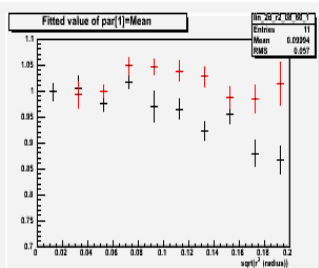
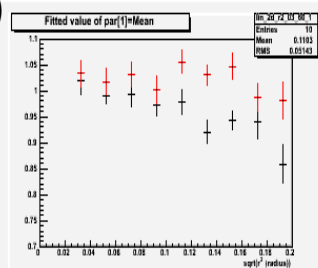
<60

60-100

100-300

300-600

>600



**VBF**  
**noPileup**  
 VS  
**Pileup**  
 radius



eta-> <0.3

0.3-0.8

2.1-2.8

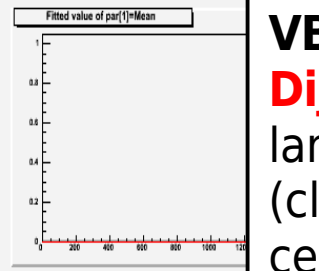
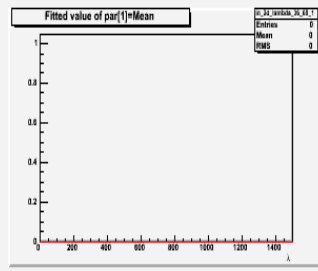
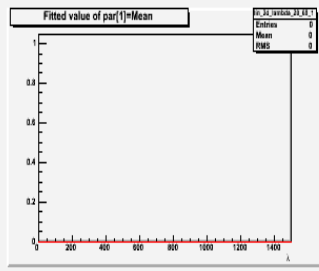
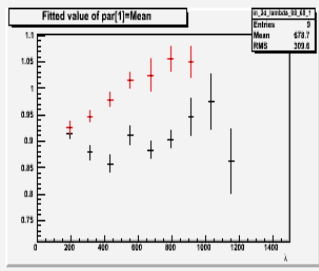
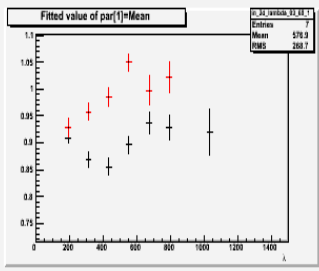
2.8-3.6

3.6-4.5

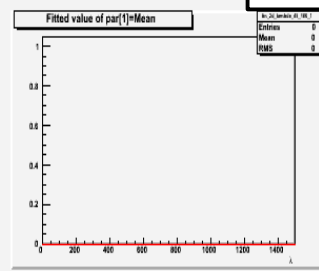
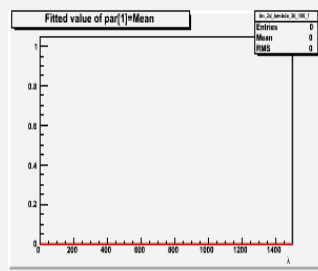
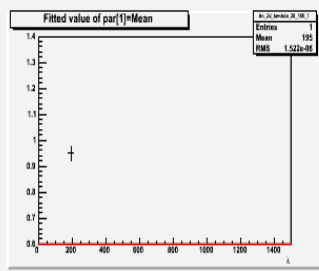
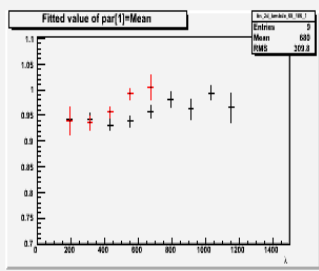
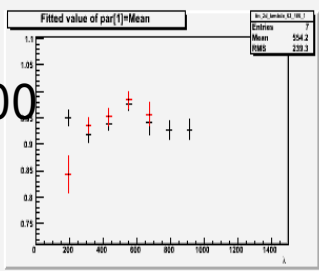
**VBF vs**  
**Dijet**  
lambda  
(cluster  
center)

E (GeV)

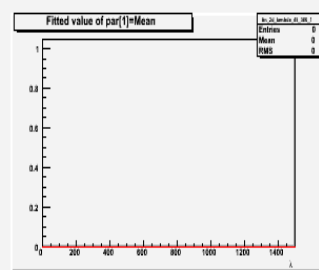
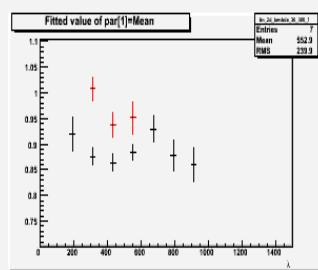
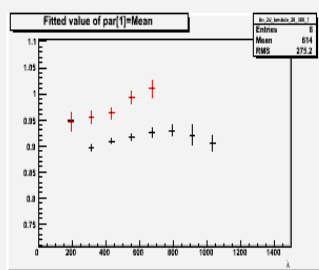
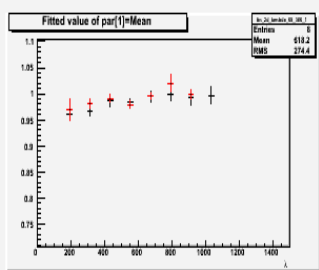
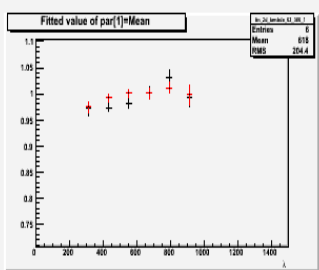
<60



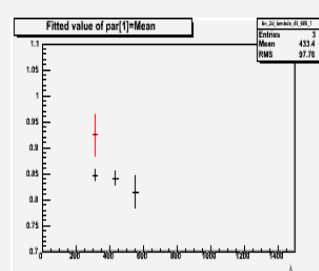
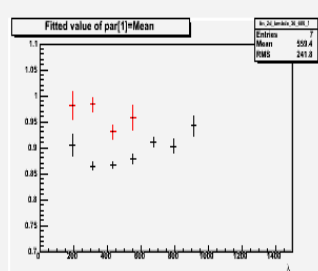
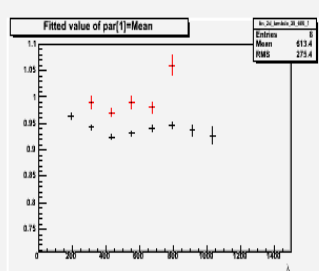
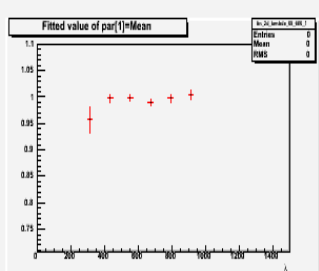
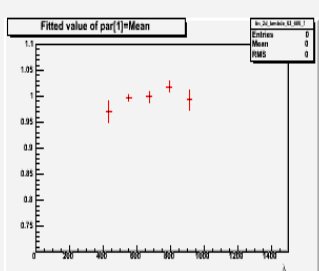
60-100



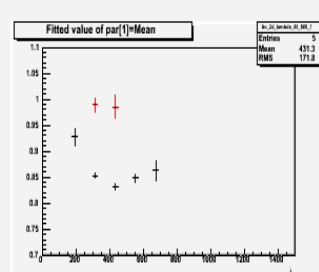
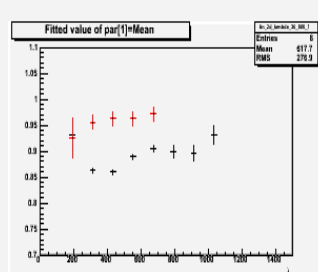
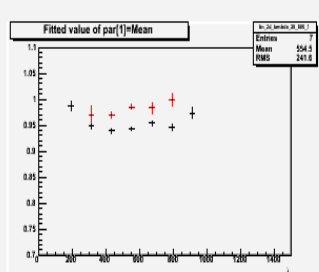
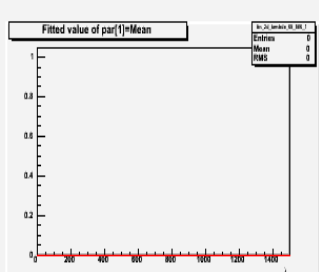
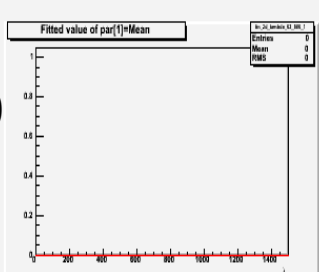
100-300



300-600



>600



eta-> <0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

E (GeV)

<60

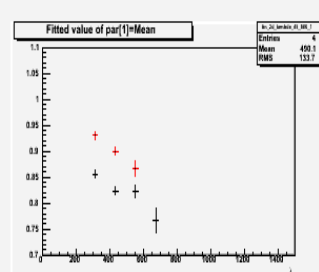
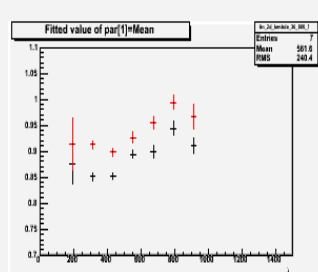
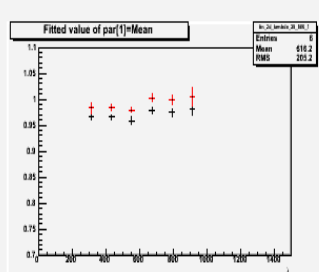
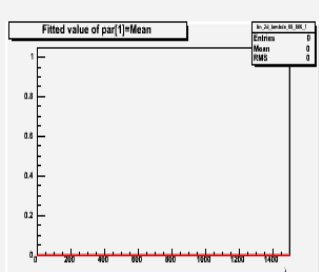
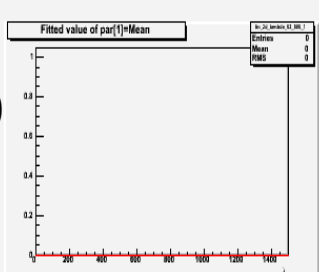
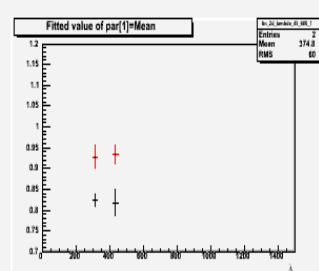
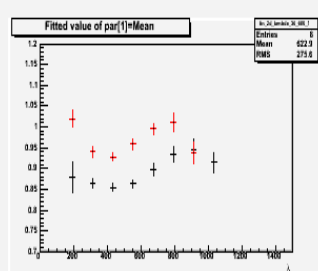
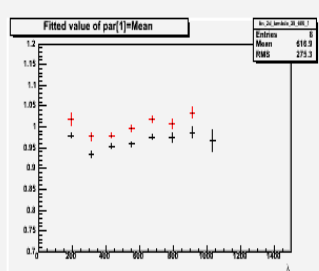
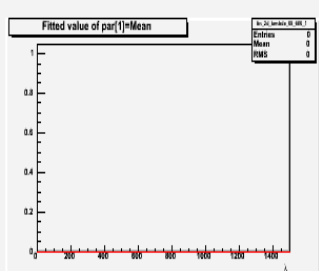
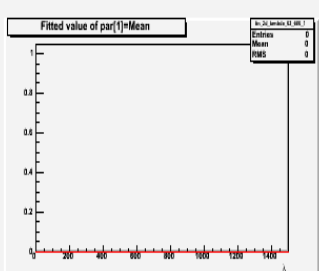
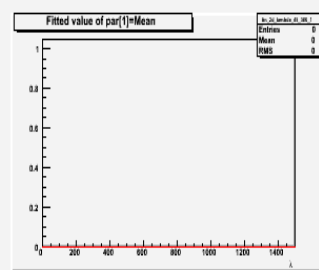
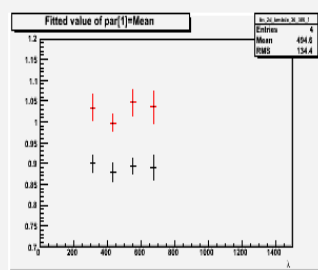
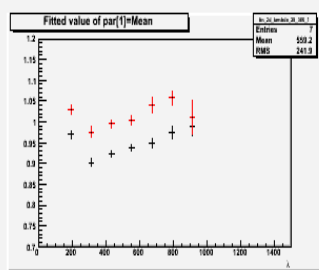
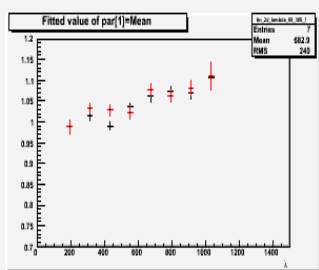
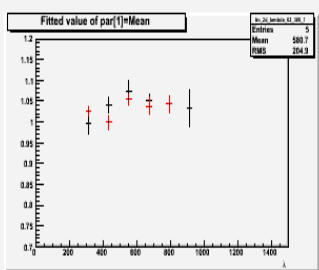
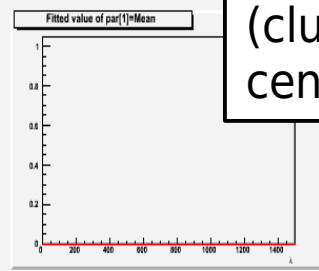
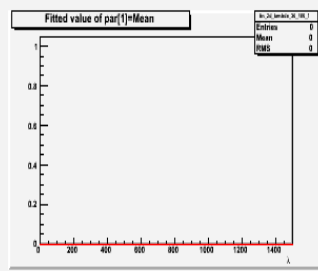
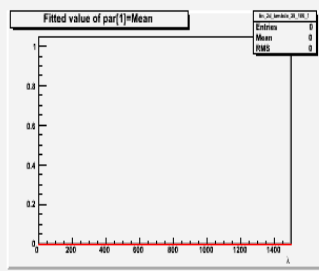
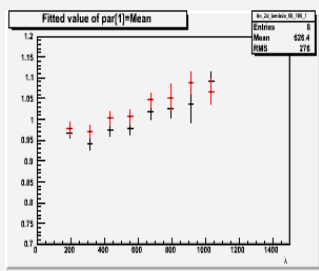
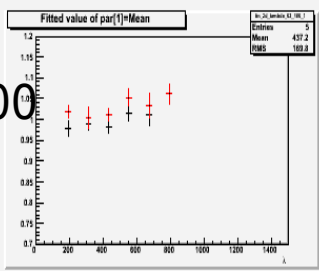
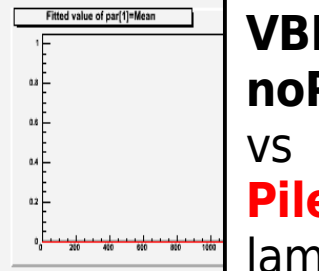
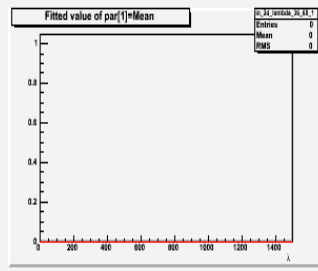
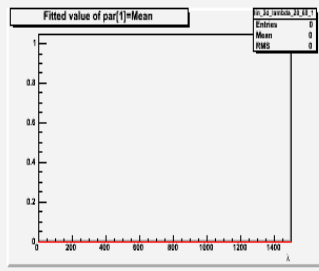
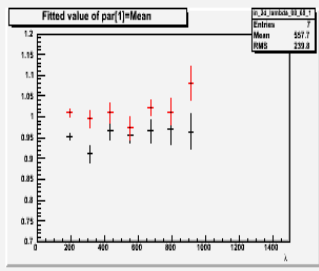
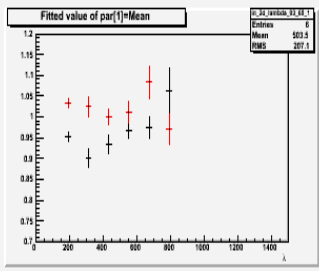
60-100

100-300

300-600

>600

**VBF**  
**noPileup**  
vs  
**Pileup**  
lambda  
(cluster center)



eta-> <0.3

0.3-0.8

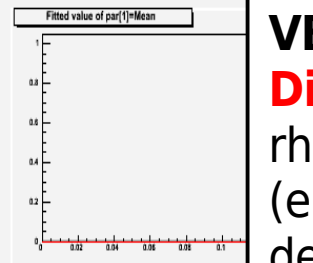
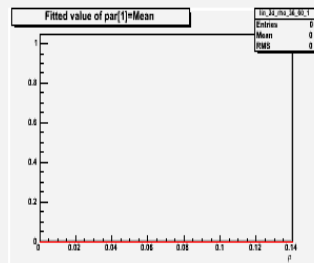
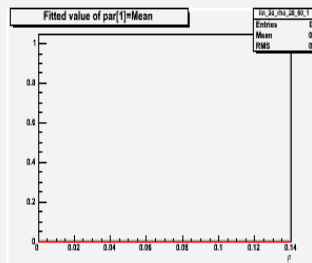
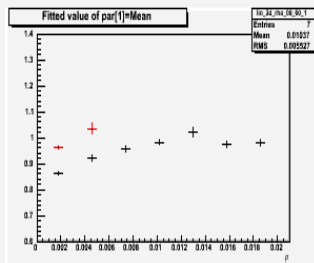
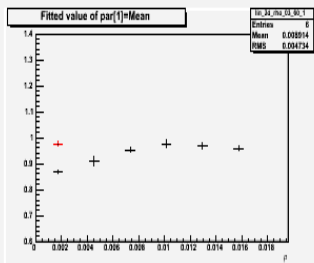
2.1-2.8

2.8-3.6

3.6-4.5

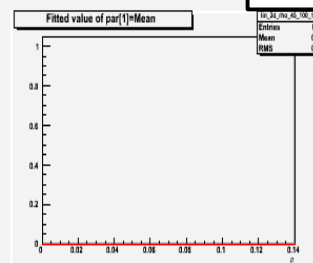
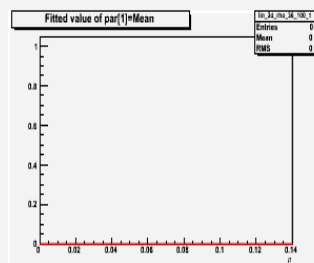
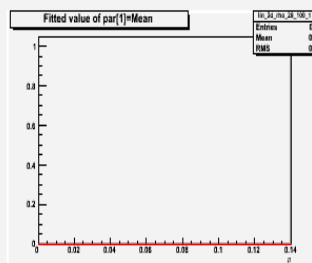
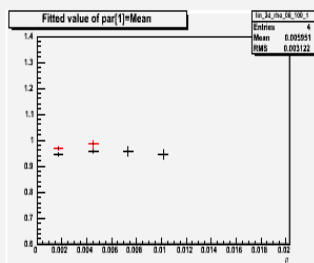
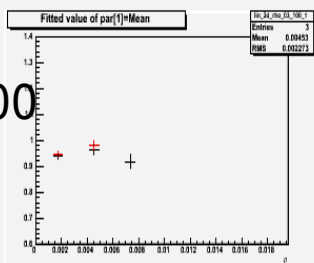
E (GeV)

<60

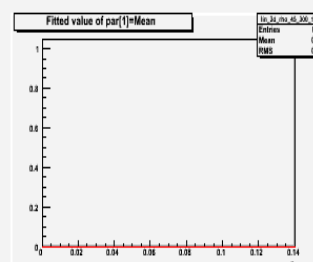
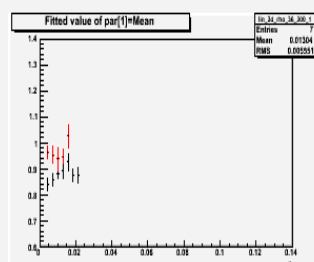
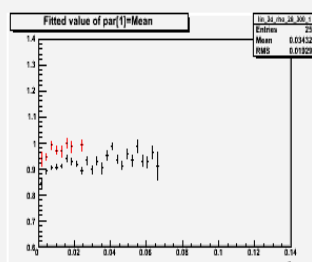
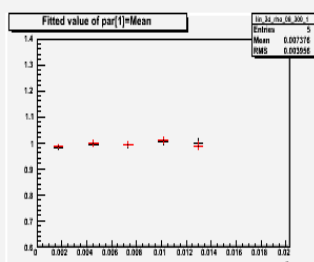
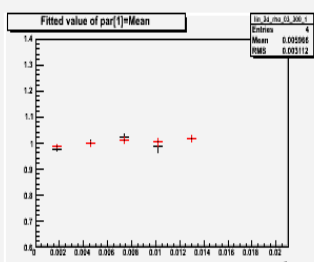


**VBF vs**  
**Dijet**  
rho  
(energy  
density)

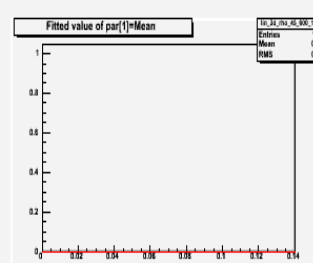
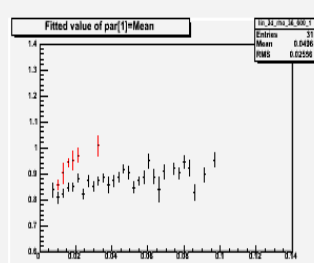
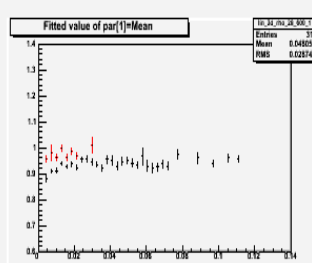
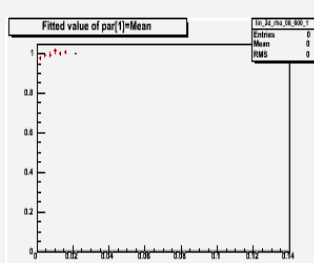
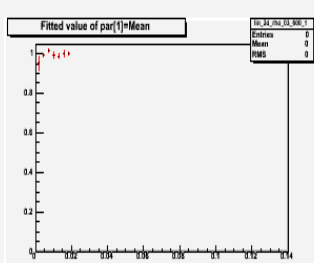
60-100



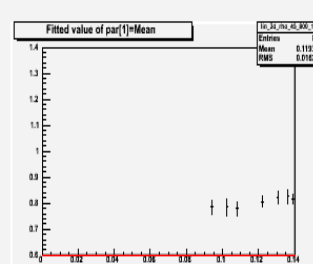
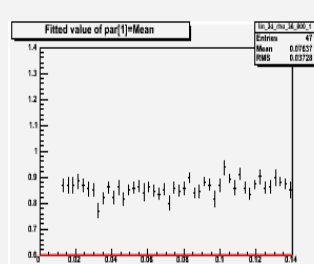
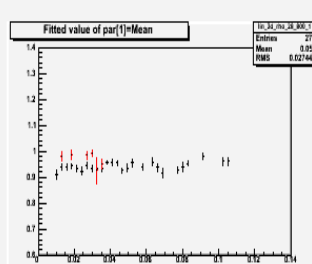
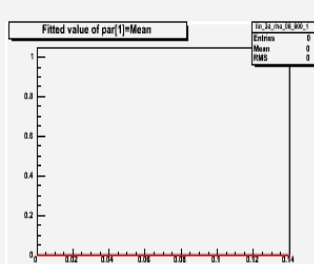
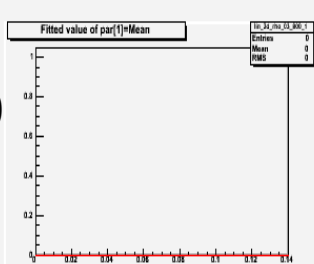
100-300



300-600



>600



eta-> <0.3

0.3-0.8

2.1-2.8

2.8-3.6

3.6-4.5

E (GeV)

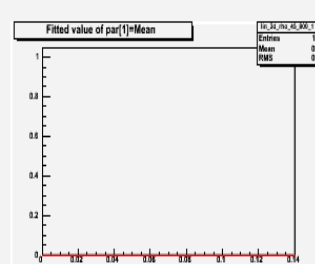
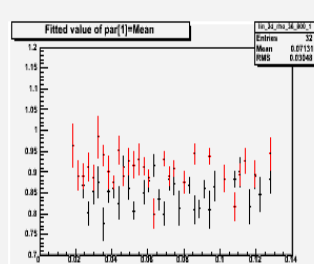
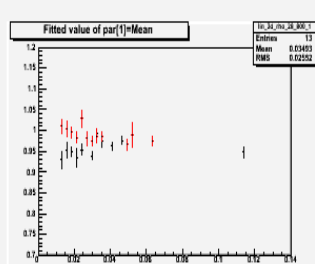
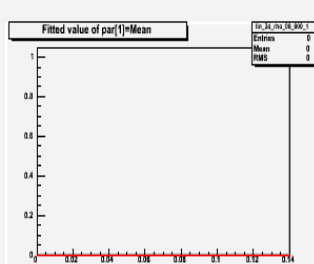
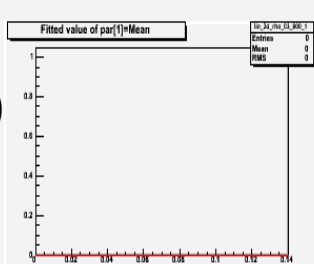
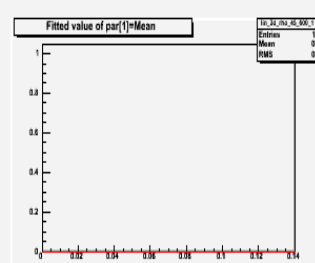
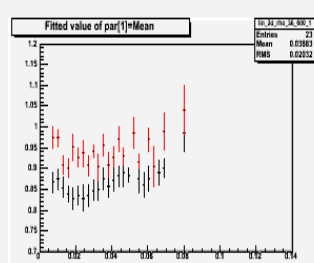
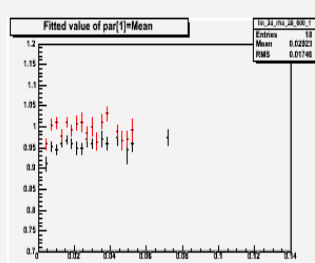
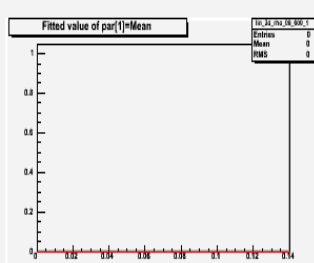
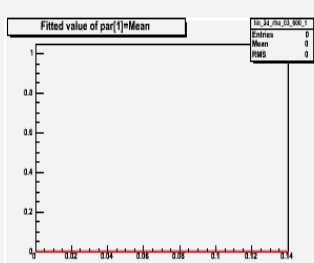
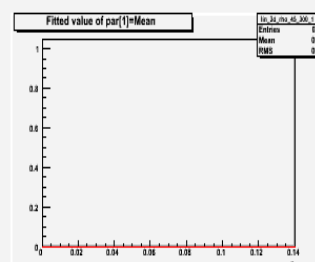
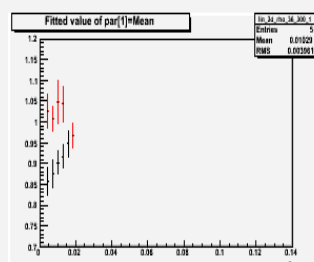
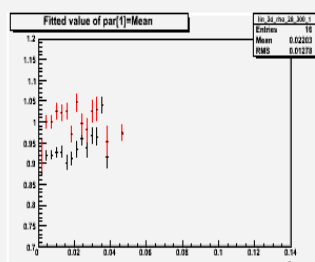
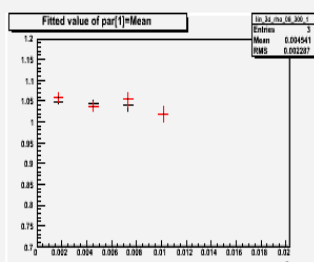
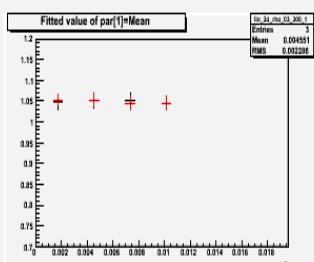
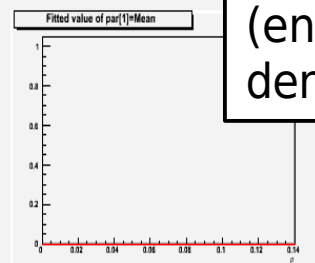
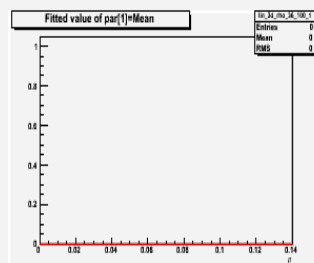
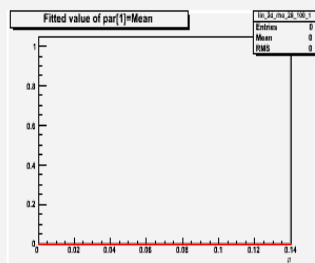
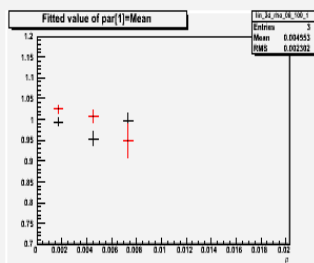
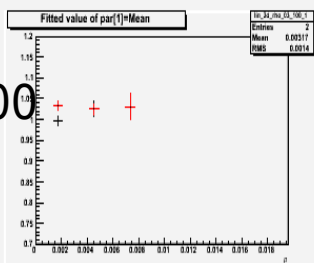
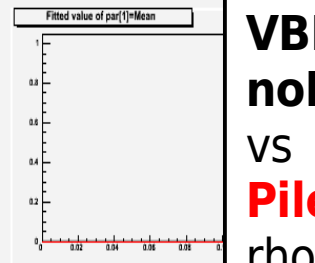
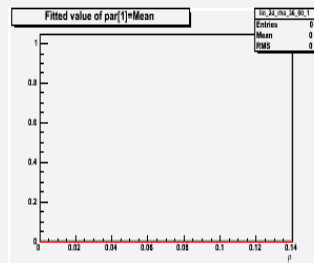
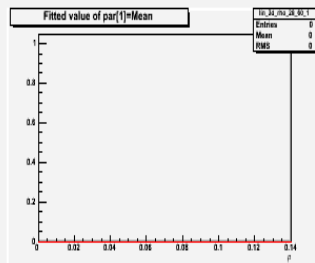
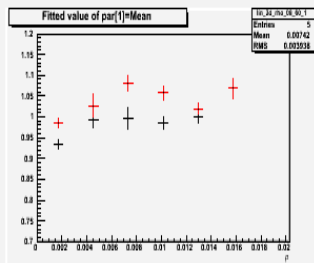
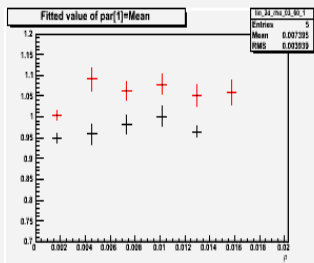
<60

60-100

100-300

300-600

>600



**VBF**  
**noPileup**  
 VS  
**Pileup**  
 rho  
 (energy  
 density)