The first look on jet inclusive p_T spectrum in RunII data

Alexander Kupčo, Marek Zielinski

21^{th} Sep 2001

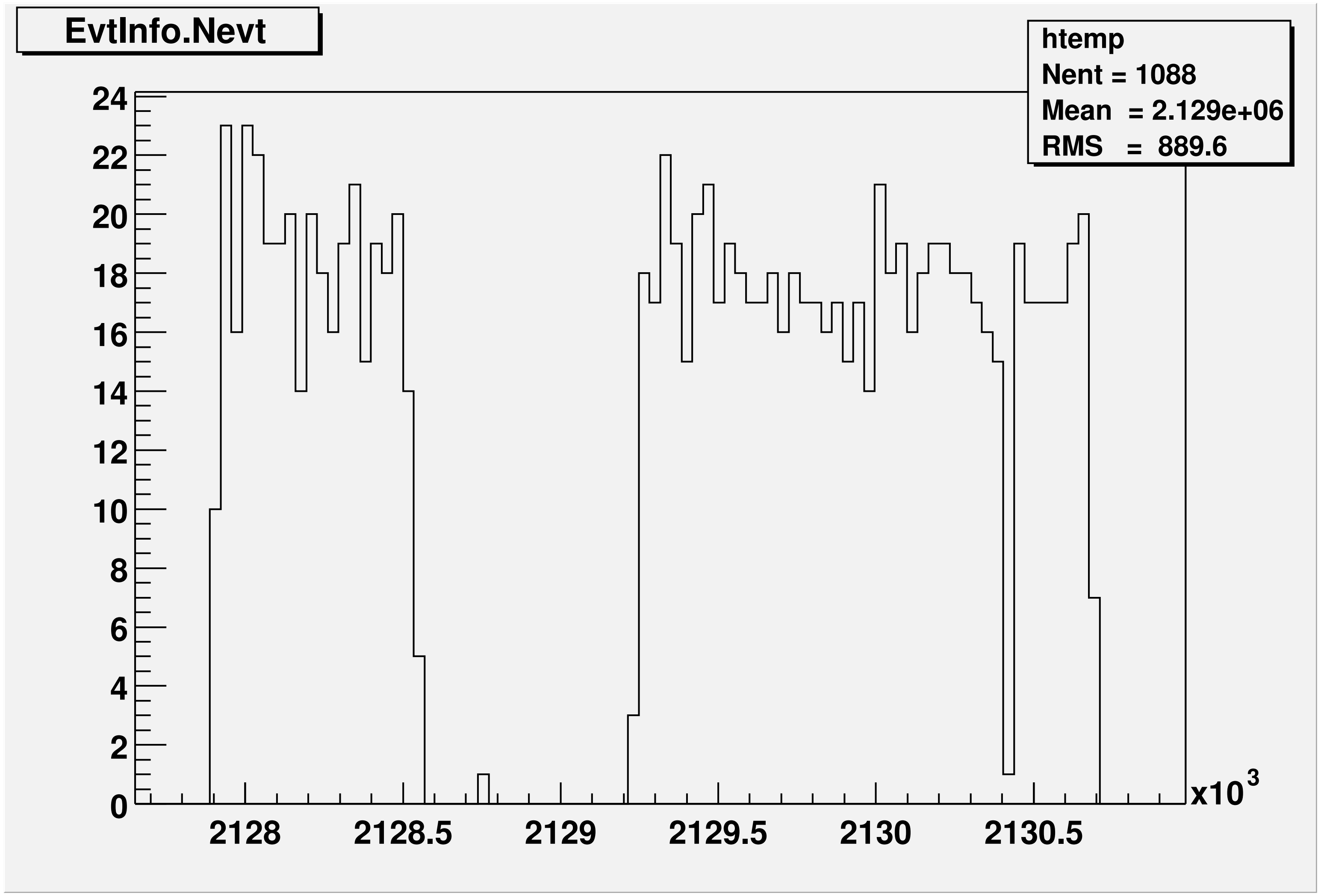
Data sample

- ▷ Run# 130672, 130674, 130678, 130681

Run#	L_{int}	N_{reco}	N_{stored}	N_{events}	L_{int}^{eff}
130672	$13.6\,nb^{-1}$	3492	21806	29356	$2.18\ (1.62)\,nb^{-1}$
130674	$18.7\,nb^{-1}$	6654	35357	42333	$3.52\ (2.94)\,nb^{-1}$
130678	$17.8\,nb^{-1}$	7384	37489	64061	$3.51\ (2.05)\,nb^{-1}$
	$50.1\,nb^{-1}$	17530	94652	135750	$9.2\ (6.6)\,nb^{-1}$
130681	$37\,nb^{-1}$	33557	120180	242880	$10.4\ (5.2)\,nb^{-1}$
All	$87\,nb^{-1}$	51087	214832	378630	$19.6\ (11.8)\,nb^{-1}$

- ▷ *why* N_{stored} and N_{events} differs ?
  - *event number is assigned by L2 trigger*
  - *some events are simply rejected by L3 trigger*
  - *more then one run is taken at the same time or L3 dead time ?*
- ▷ Triggers
  - JCT10 (*prescale factor* 14)
  - JCT40 (*prescale factor* 1)

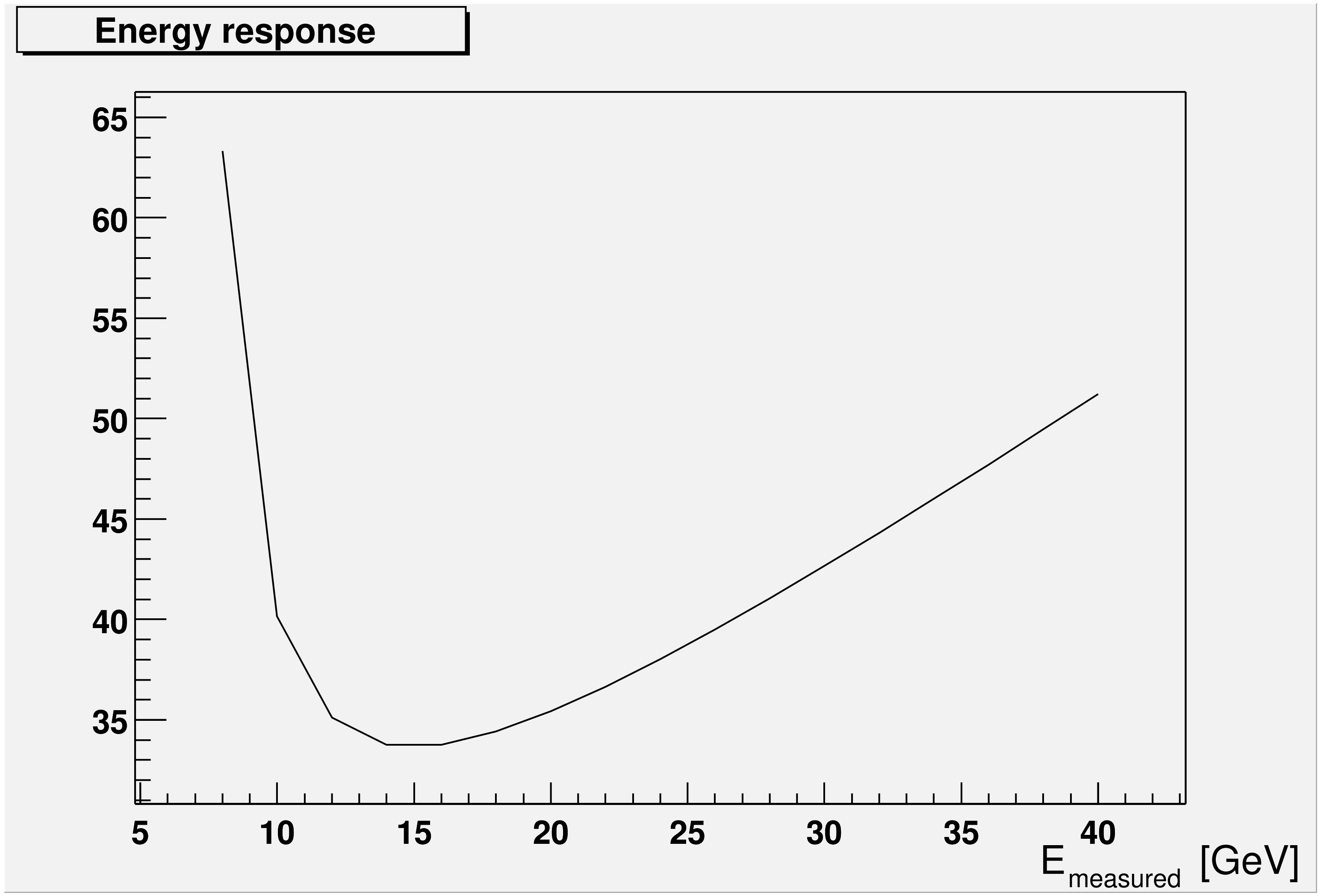
recoA_130681_013.root



Quality cuts

- Jet quality cuts
  - $HotF < 10$
  - $0.2 < EMF < 0.8$
  - $CHF < 0.3$
  - $n90 > 2$
- from MC the rejection factor of these cuts is about 5%

Energy response



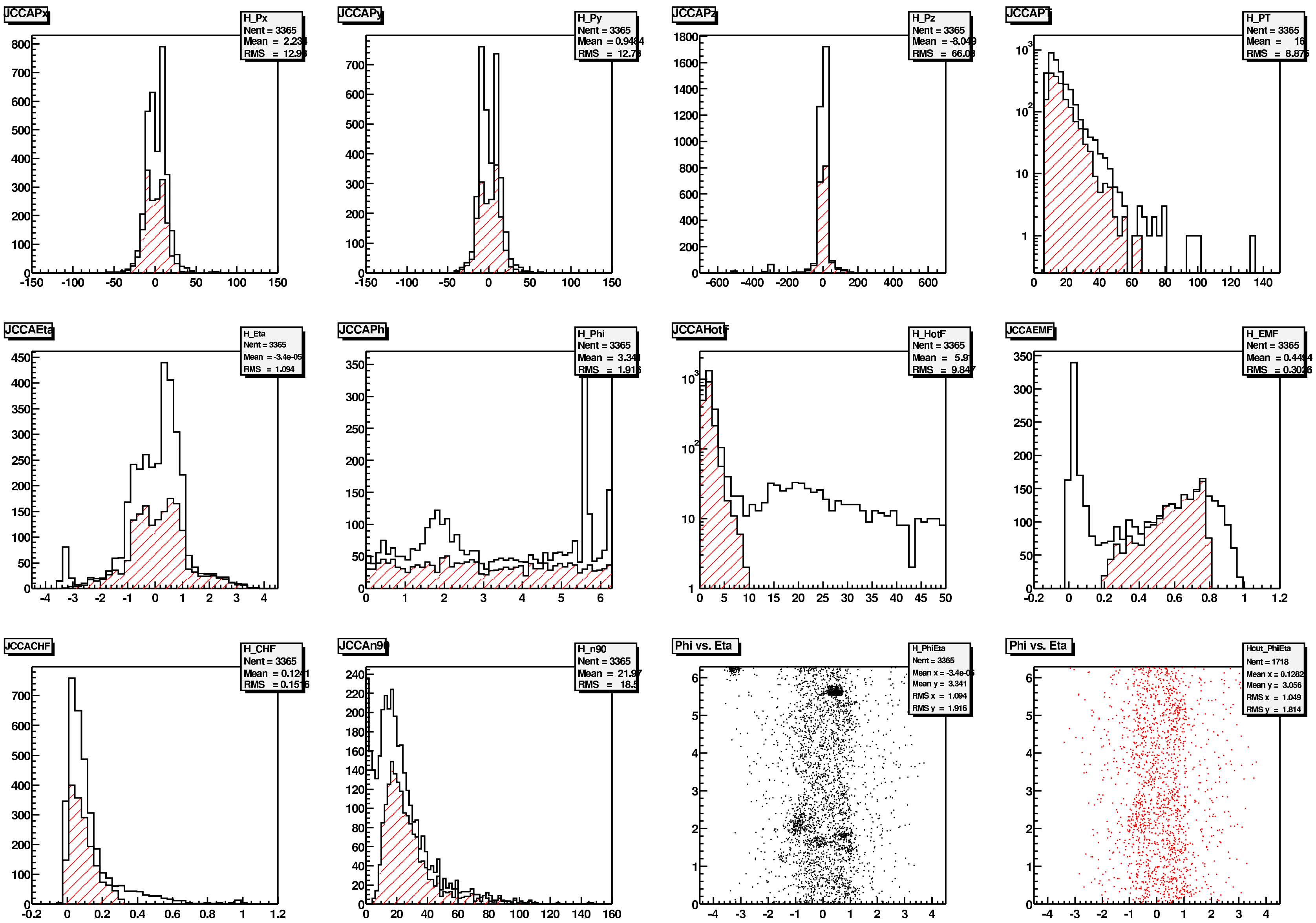
- cut on jet energy $E_{jet} > 15GeV$

Sources of uncertainties

- ▷ normalization + life time
- ▷ energy response
- ▷ EM trigger bias
- ▷ trigger efficiencies
- ▷ too cute cuts
- ▷ energy smearing ?

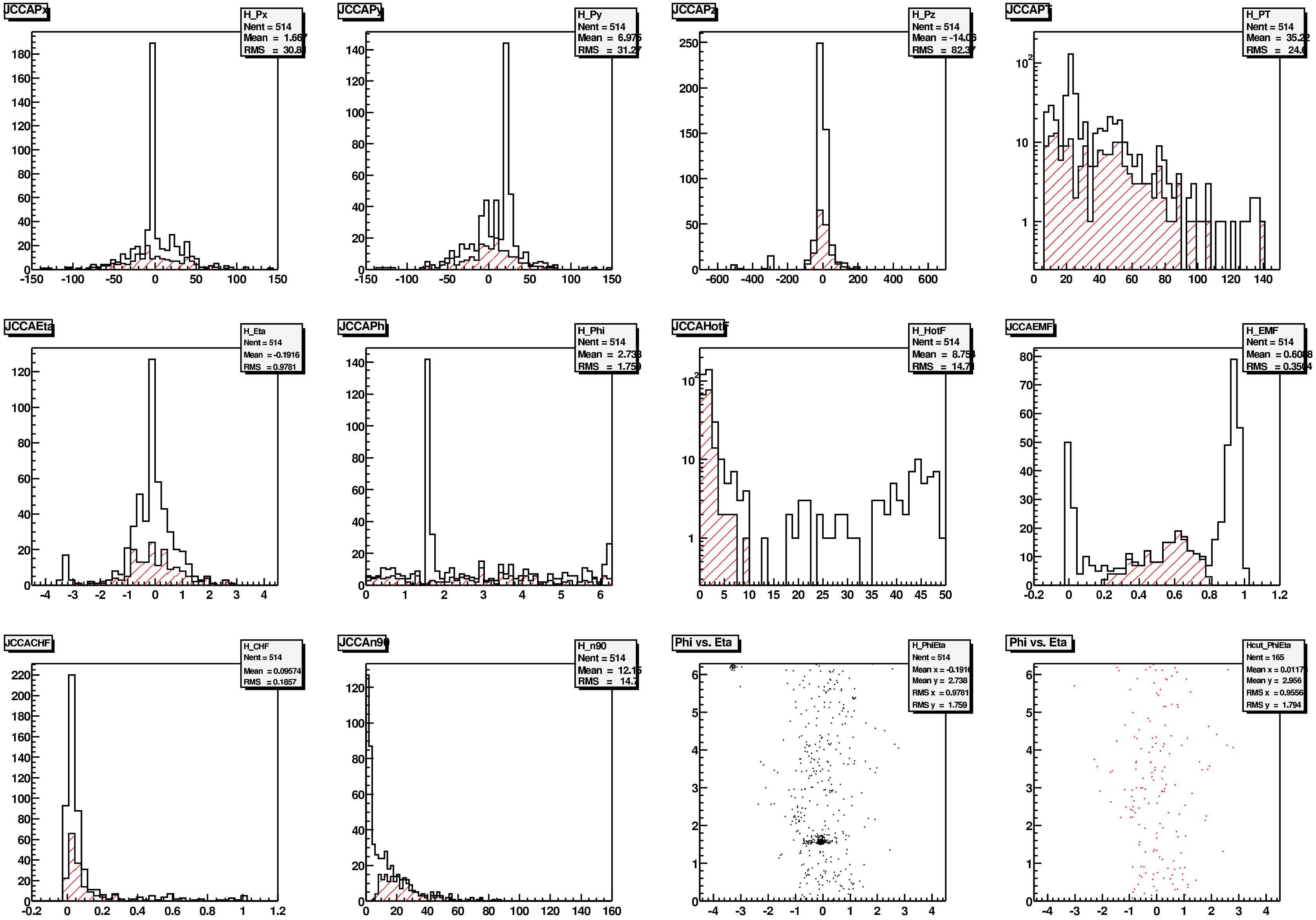
Run# 130672,4,8 JCT10

Data Check



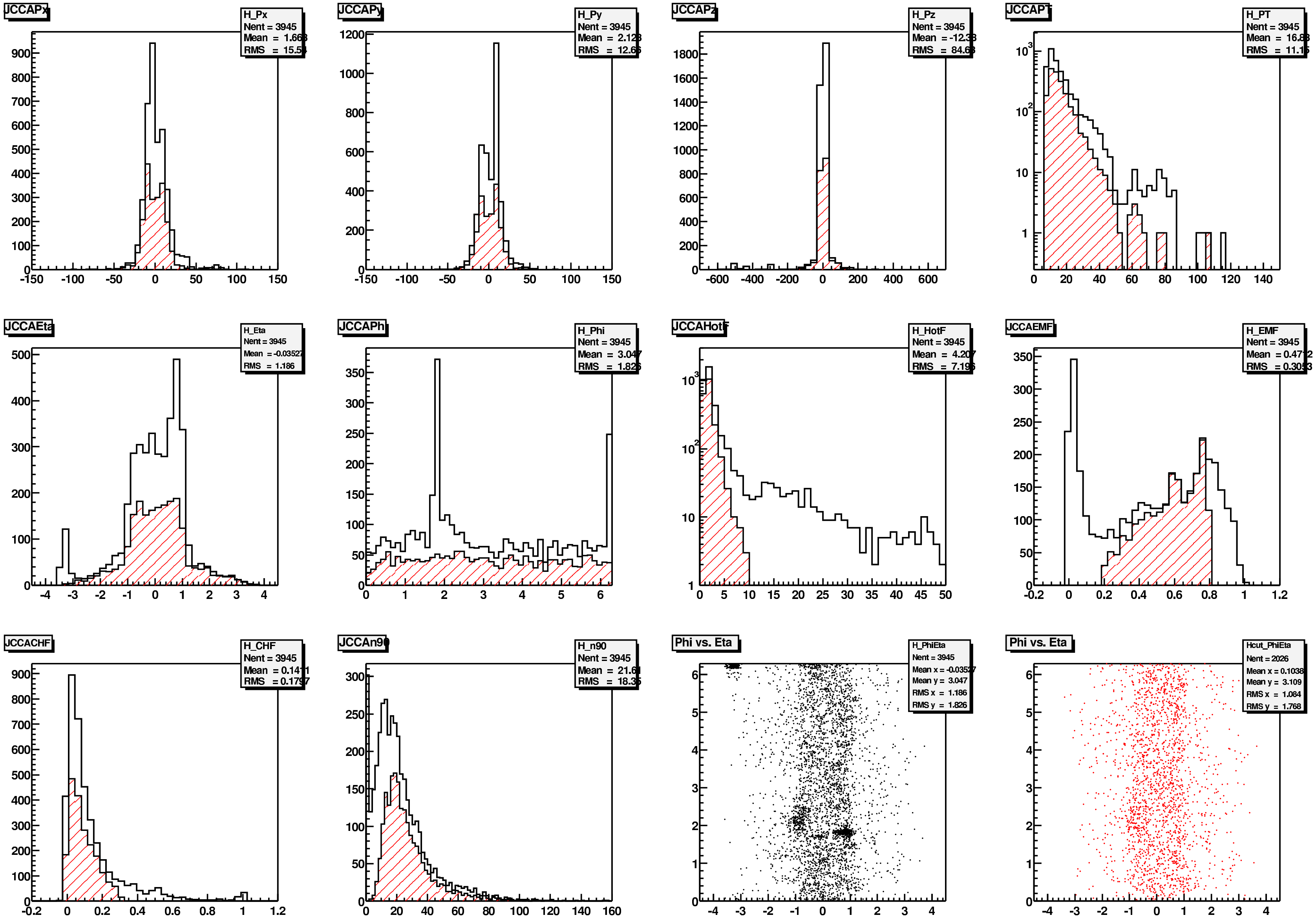
Run# 130672,4,8 JCT40

Data Check



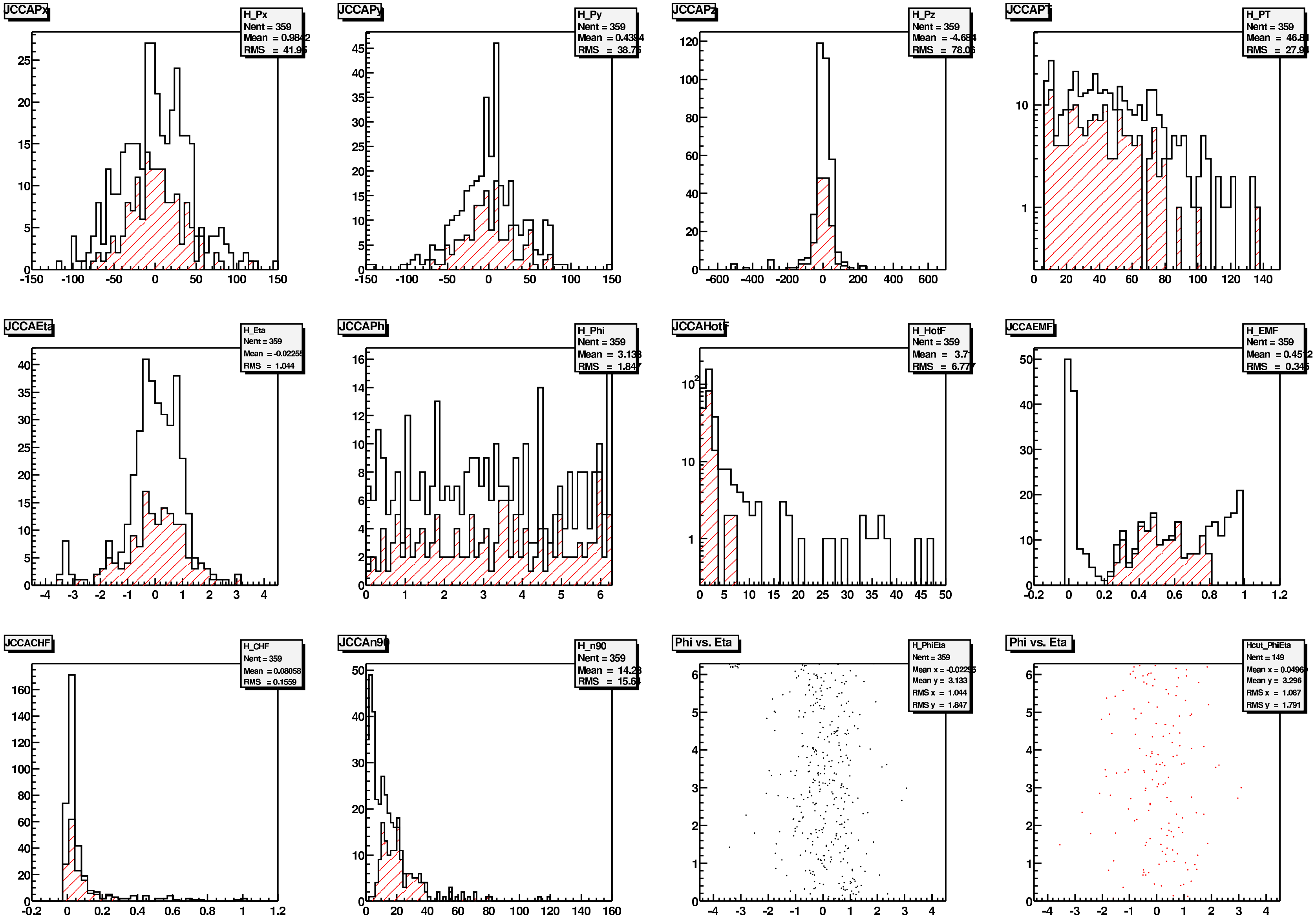
Run# 130681 JCT10

Data Check



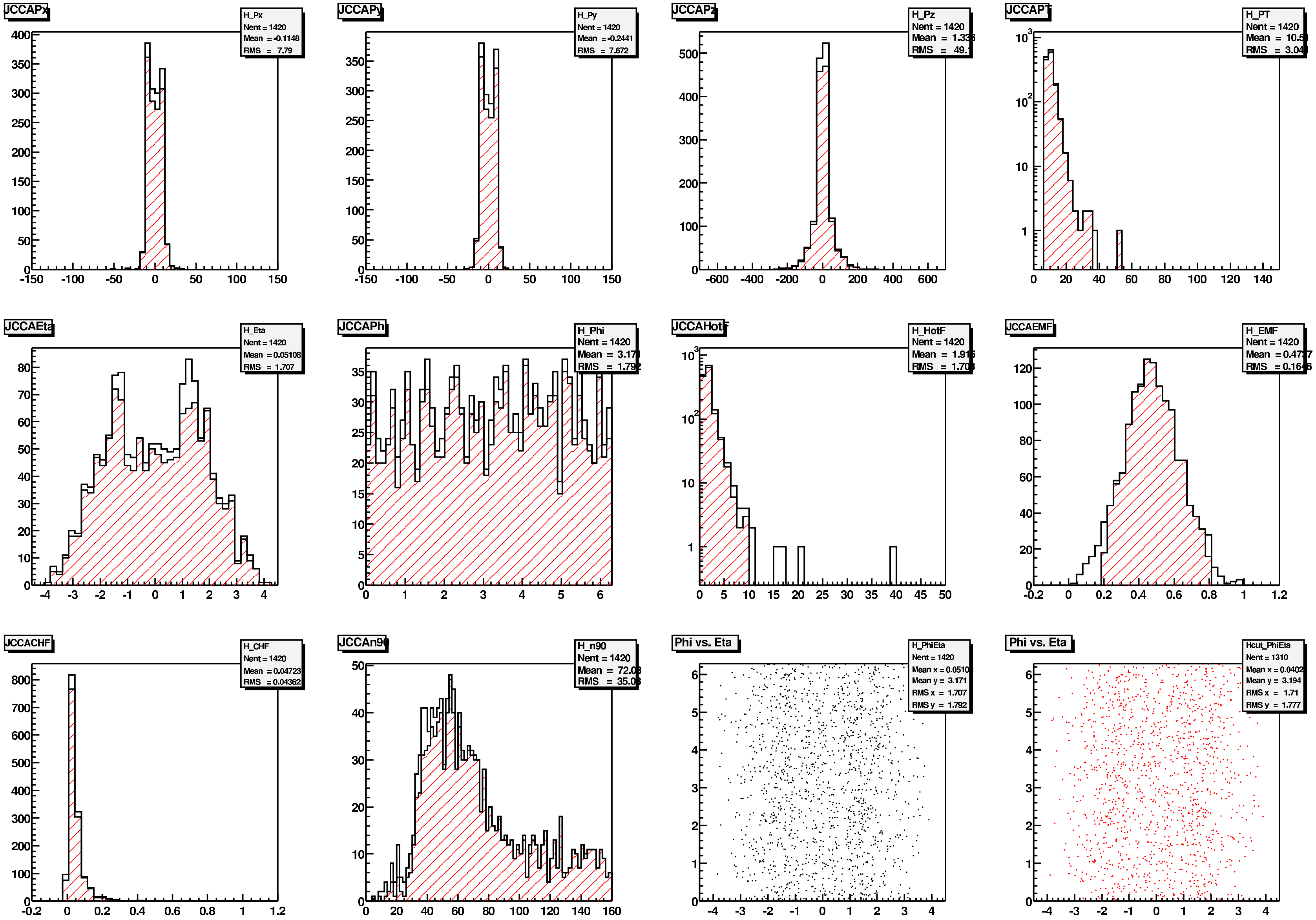
Run# 130681 JCT40

Data Check

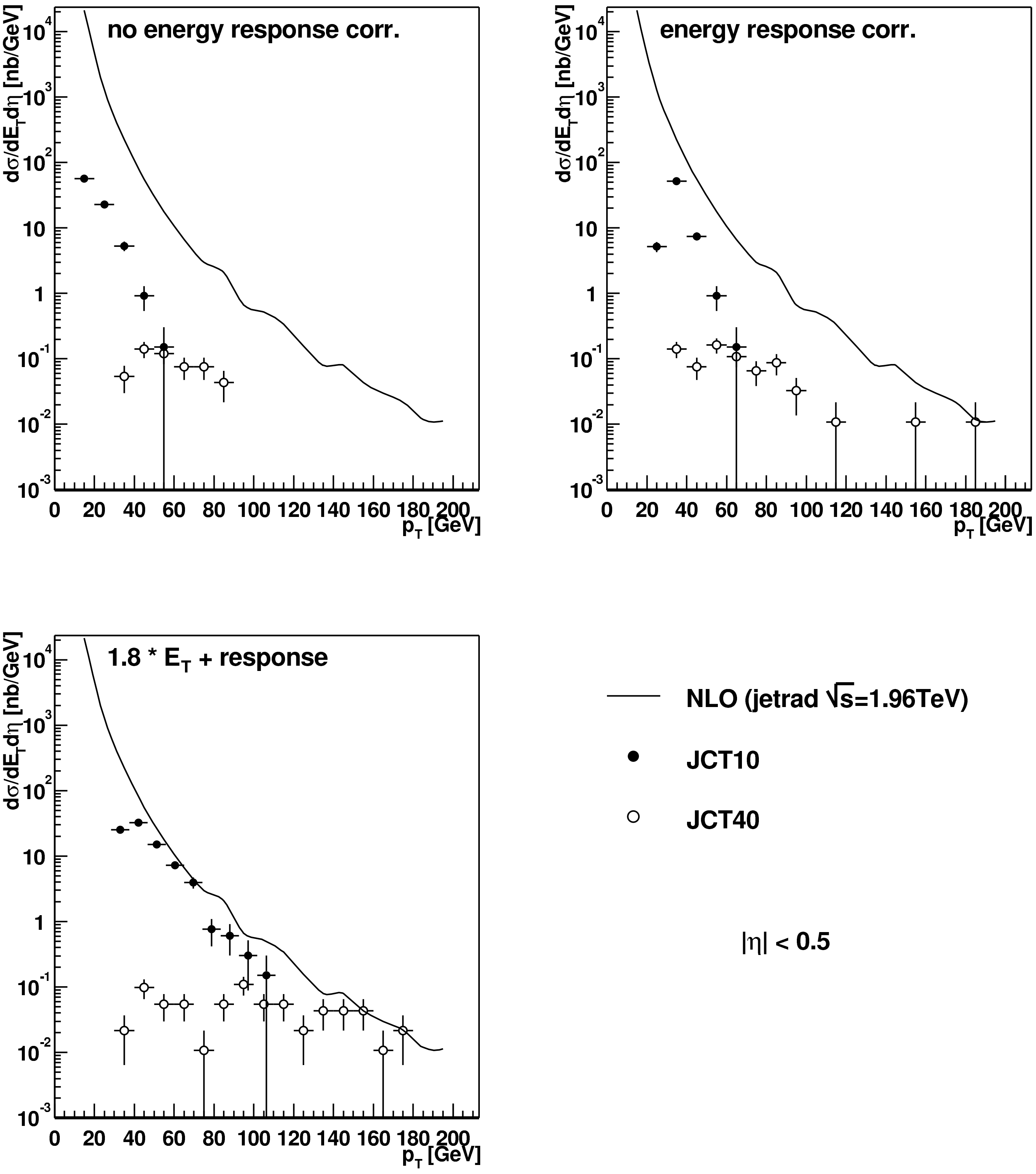


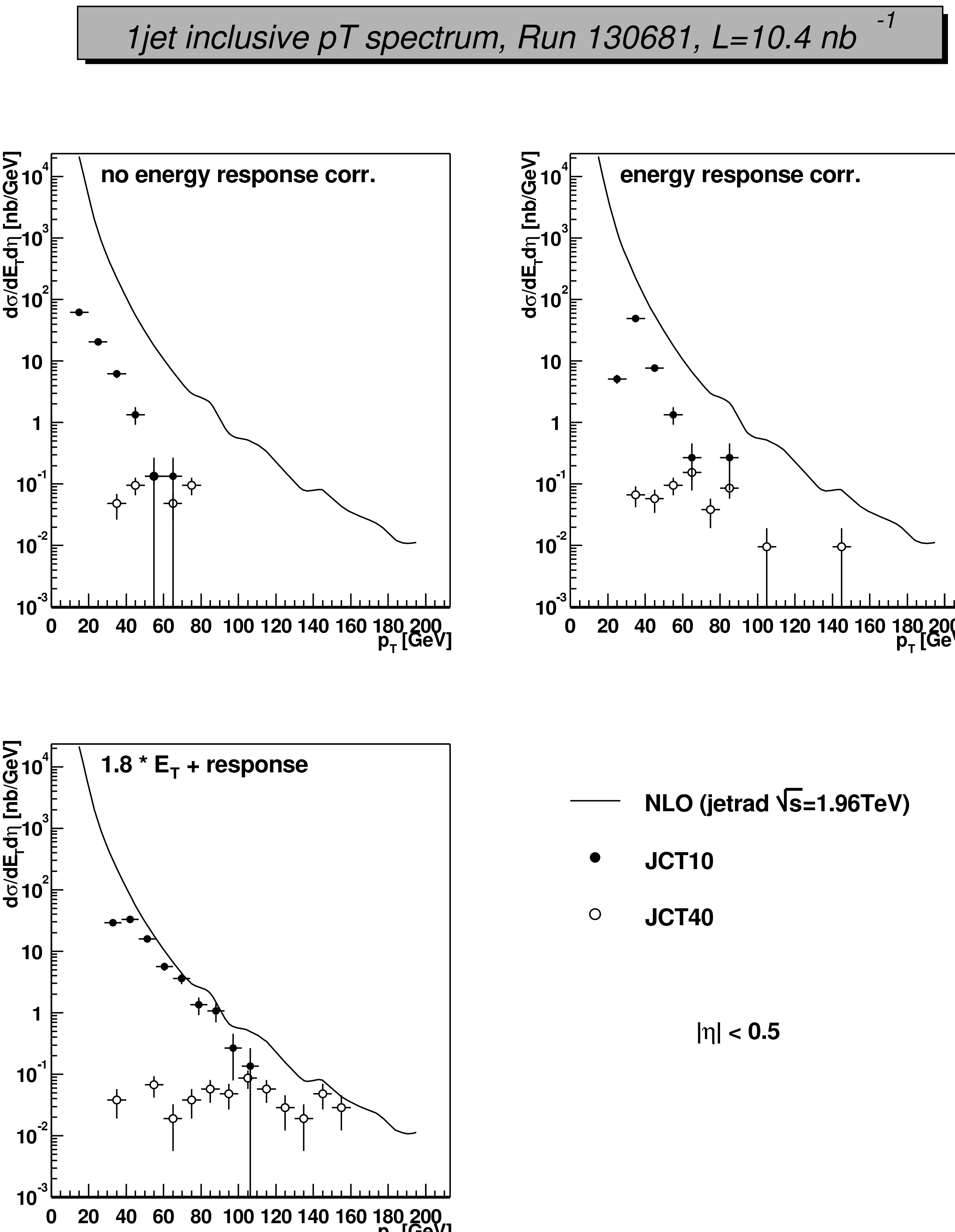
MC pythia PtGt2.0 minbi0

Data Check



1jet inclusive pT spectrum, Run 130672,4,8 , L=9.2 nb^{-1}





1jet inclusive pT spectrum, Run 130681, L=10.4 nb -1
no energy response corr.
energy response corr.
1.8 * E_T + response
dσ/dE_T dη [nb/GeV]
10^-3
10^-2
10^-1
1
10
10^2
10^3
10^4
0
20
40
60
80
100
120
140
160
180
200
p_T [GeV]
NLO (jetrad √s=1.96TeV)
JCT10
JCT40
|η| < 0.5