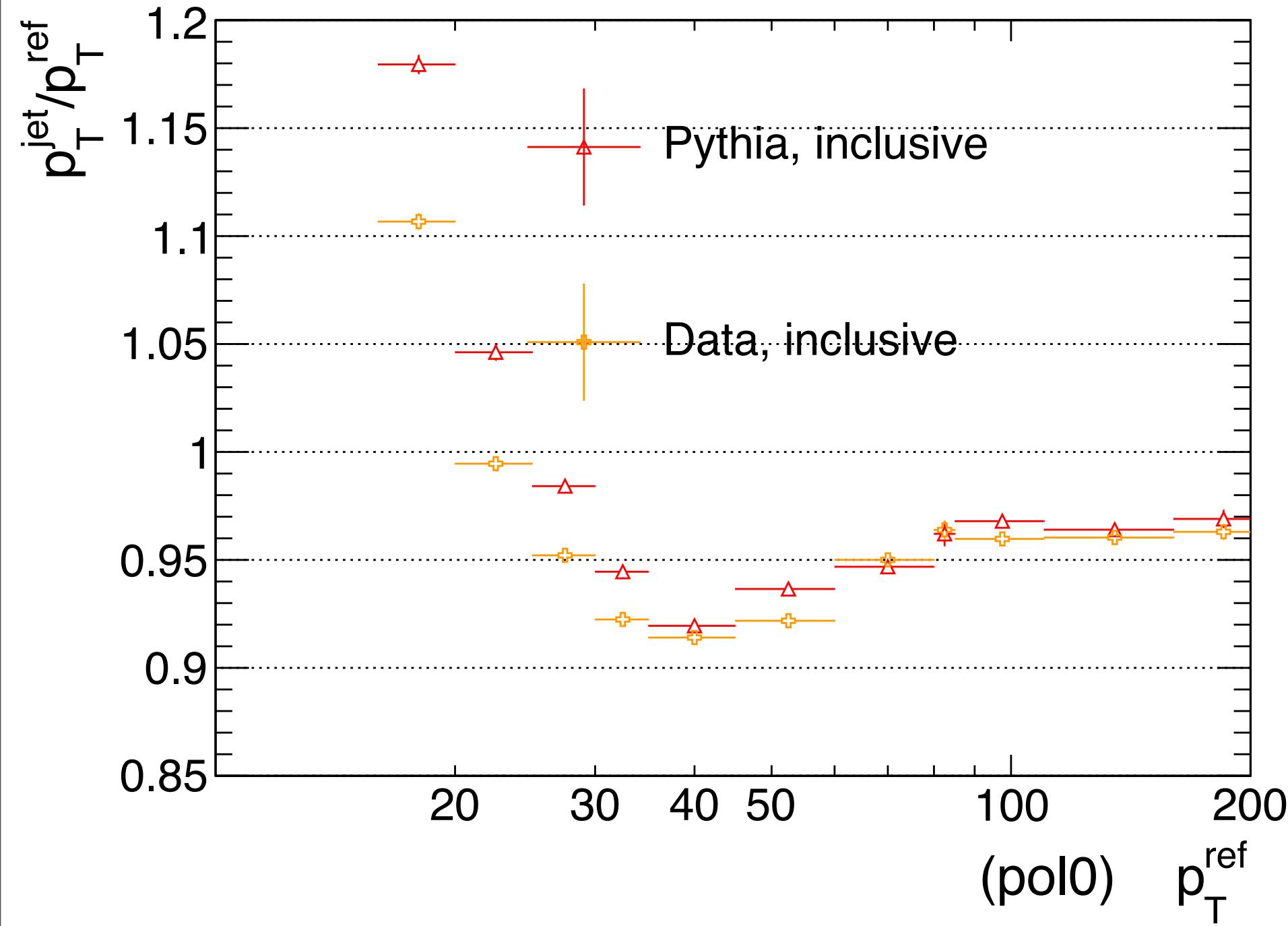


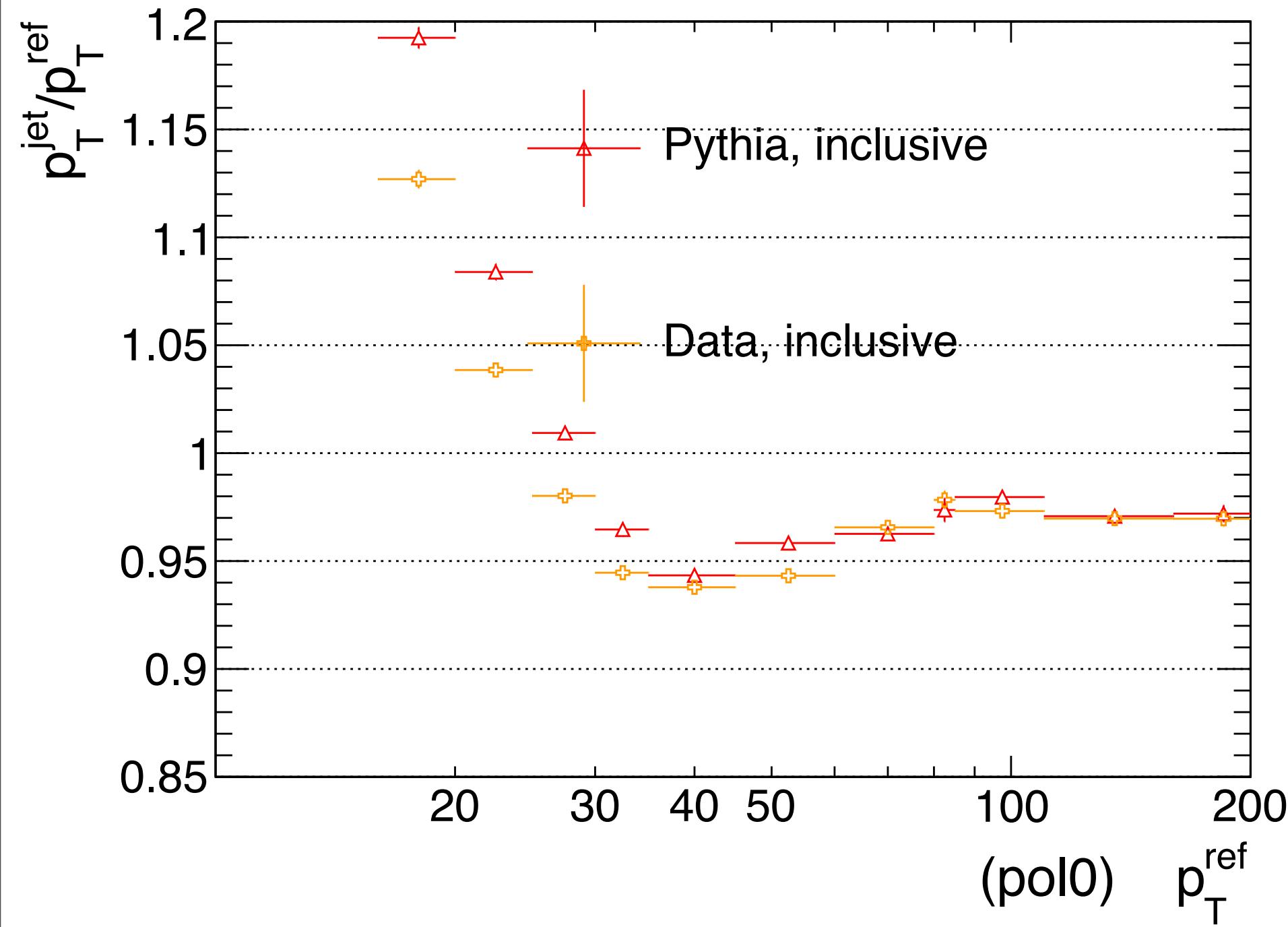
8, Dec, Naoyuki Kamo

- CONF-NOTEの結果とのconsistencyの確認
- $pT$  binの区切り方は一緒にした（一部間違えていますが、ほぼ同じ）
- $\pi - \Delta\Phi(jet1, Z)$  binの切り方も同じ
- cut条件も同じにした（と思う）
- b-jetは関係ないので結果には載せていない
- CONF-NOTEではgaussianかpoissonでfitしているはずなので、両方を試している
- fit範囲は1.4sigmaで行ったものをのせているが、実際はいろいろ試している（それほど影響はない）

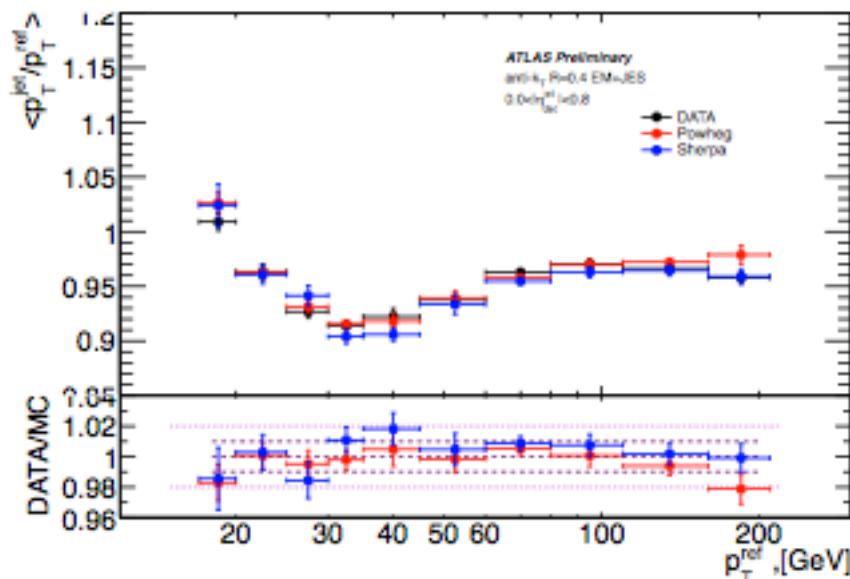
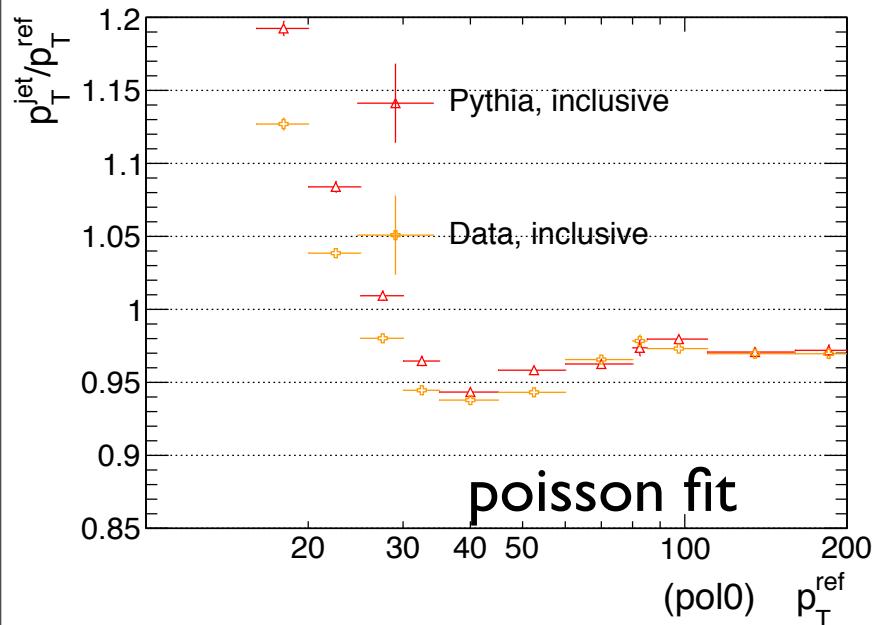
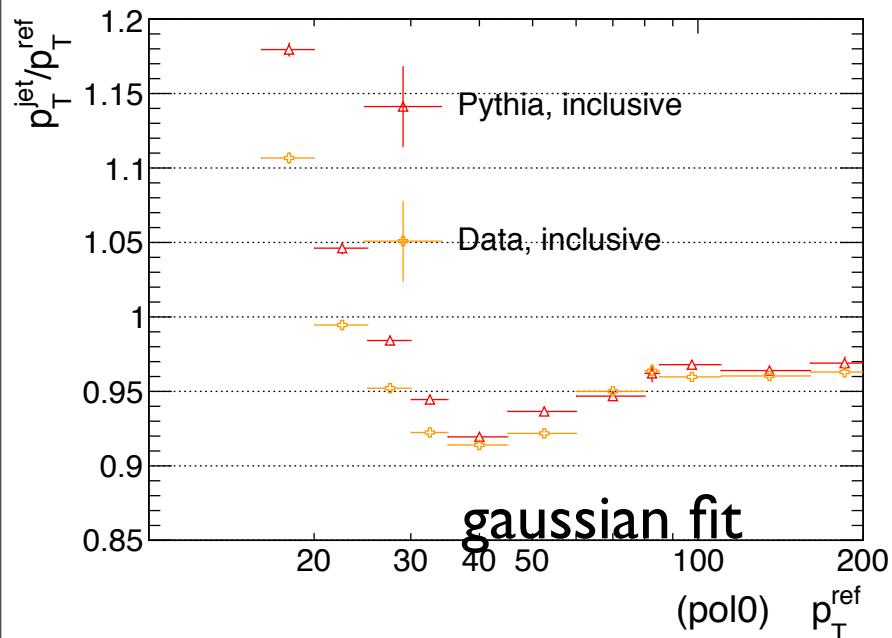
gaussian fit



poisson fit



# 比較



- low  $p_T$ ではgaussianもpoissonも、あまりfitがうまくいかないので、中心値がおかしいのは、ある程度しょうがない
- 実際、 $>60\text{GeV}$ のgaussianはCONF-NOTEに近い分布になっている（全く同じであるはずなのだが）
- が、ところどころmcとdataの値に差がありすぎる。特に30~50GeVあたり
- これはasymmetric gaussianにしても、fit範囲を変えて同じように差がでてしまう

back up

# Z + jet

- el\_medium++ , mu\_medium
- $\Delta R(\text{jet}, \text{el\_medium}++) < 0.1$  のjetはelectronとする
- Trigger(zee): EF\_el2Tvh\_looseI (multi-electron , unpreceded)
- Trigger(zmumu): EF\_mu24i\_tight || EF\_mu36\_tight
- B-tag :  $MVI > 0.8 \parallel 9$  (nominal efficiency 70%)

Variable	Selection	description
$e_1, e_2$	$E_T^{e_{1,2}} > 20 \text{ GeV}$ $80 \text{ GeV} < M_{e^+ e^-} < 116 \text{ GeV}$ $ \eta^{e_{1,2}}  < 2.47$ excluding $1.37 <  \eta^e  < 1.52$	electron pre-selection
leading jet $\Delta R_{j,e} = \sqrt{(\Delta\eta)^2 + (\Delta\varphi)^2}$	$ \eta^{\text{jet}}  < 0.8,  JVF  > 0.25$ if $p_T < 50 \text{ GeV}$ $> 0.35$ anti- $k_t$ $R = 0.4$ jets $> 0.5$ anti- $k_t$ $R = 0.6$ jets	jet pre-selection isolation/topology
$p_T^{\text{jet}2}$ $\text{JVF}(\text{jet}2)$	$< \max(0.2 \times p_T^Z, 10 \text{ GeV})$ $> 0.25, \quad \text{if }  \eta^{\text{jet}2}  < 2.4 \text{ and } p_T < 50 \text{ GeV}$	radiation/topology JVF restriction for sub-leading jets

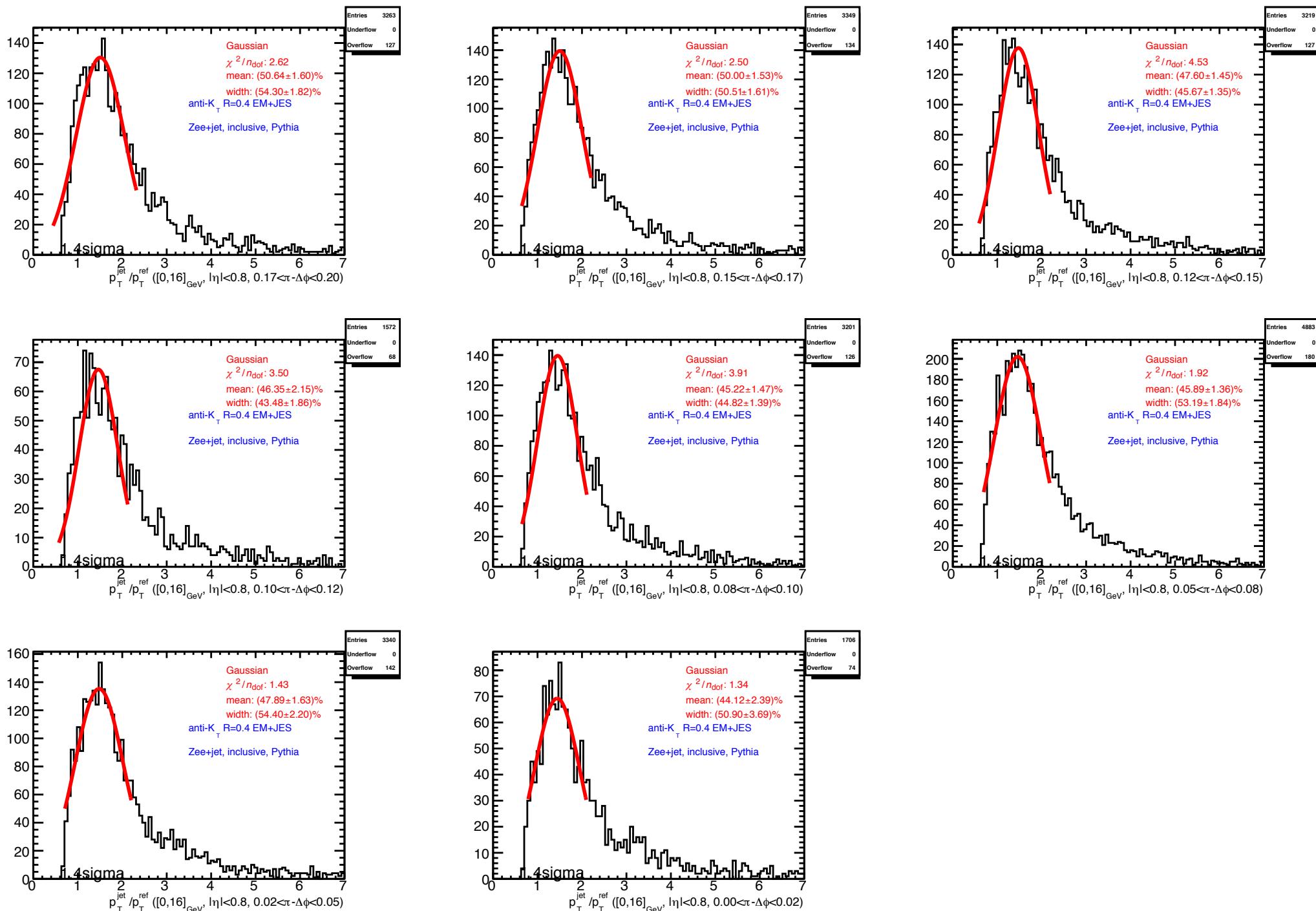
# gamma+ jet

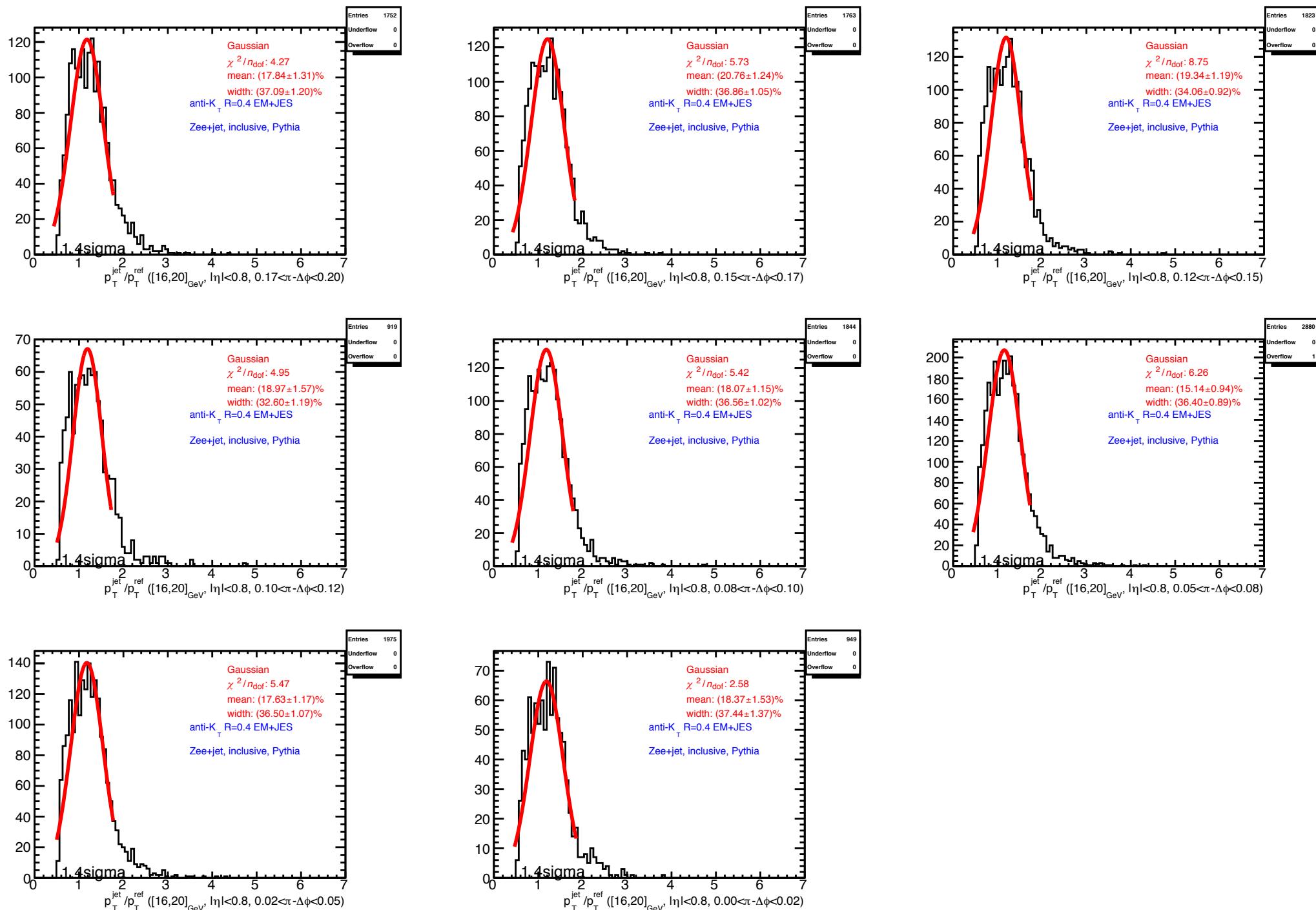
- $\Delta R(\text{jet},\text{gamma}) < 0.1$  のjetはgammaとする（ただしgammaは下表の条件を満たす）。
- Trigger: EF\_g20\_loose || EF\_g40\_loose || EF\_g60\_loose || EF\_g80\_loose || EF\_g100\_loose || EF\_g120\_loose
- B-tag : MVI > 0.8119 (nominal efficiency 70%)
- selectionについては<https://twiki.cern.ch/twiki/bin/viewauth/AtlasProtected/GammaJetCalib2012>に詳しく書いてある

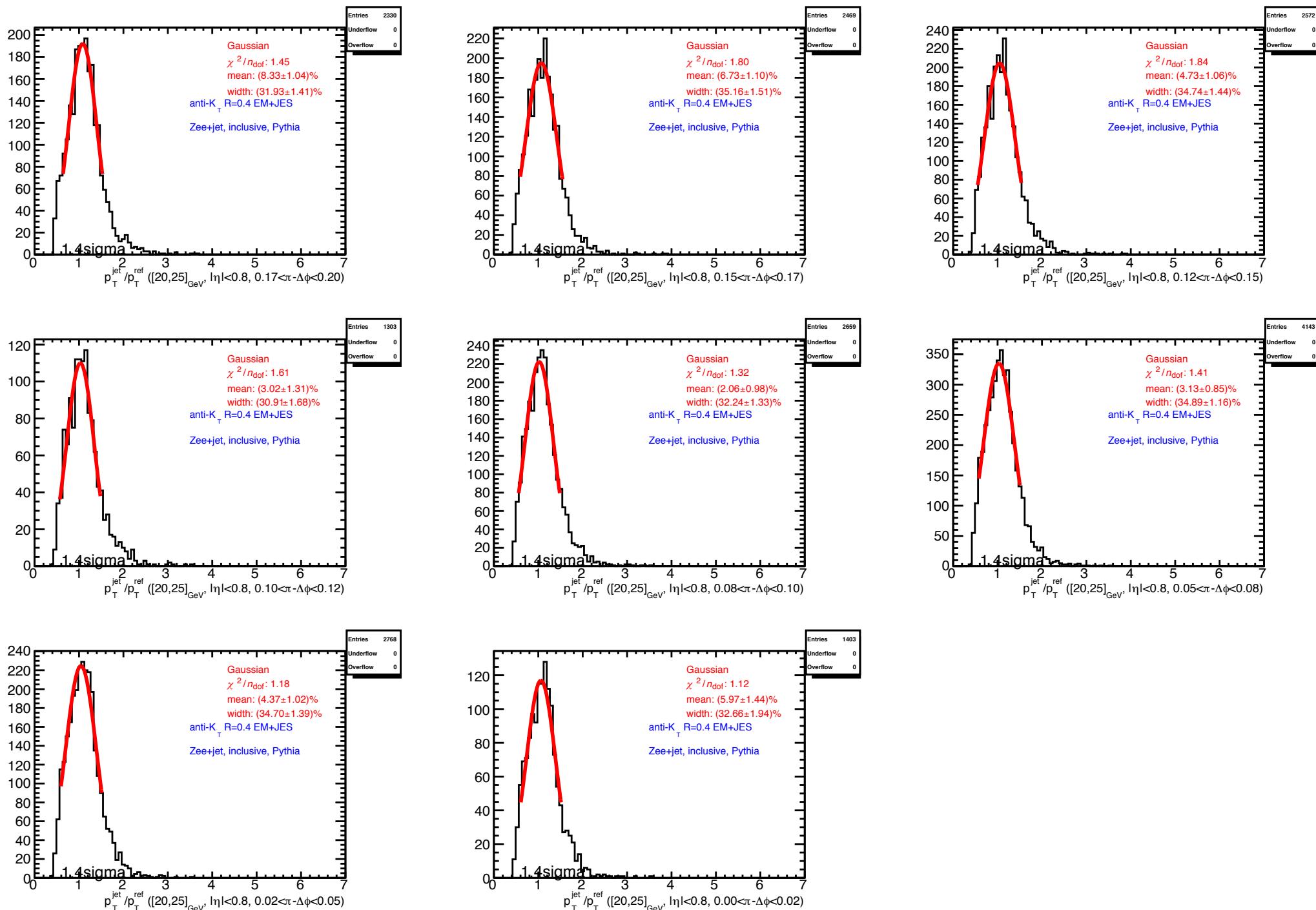
Variable	Selection	description
leading $\gamma$ $E_T^\gamma$ Iso $E_T^\gamma$ cluster / ( $\sum p_T^{\text{tracks}}$ )	$p_T^\gamma > 85 \text{ GeV}$ and $ \eta^\gamma  < 1.37$ $< 3 \text{ GeV}$ $\in [0,2]$ (single-track conversions) $\in [0.5,1.5]$ (double-track conversions)	photon pre-selection $\gamma$ isolation jets faking photons
leading jet $\Delta\phi_{\text{jet}-\gamma}$ $p_T^{\text{jet}2}$ JVF(jet2)	$p_T^{\text{jet}} > 12 \text{ GeV}$ and $ \eta^{\text{jet}1}  < 0.8$ $> 2.9 \text{ radians}$ $< 0.2 \times p_T^\gamma$ $> 0.25, \quad \text{if }  \eta^{\text{jet}2}  < 2.4$	jet pre-selection radiation suppression radiation suppression JVF restriction for sub-leading jets

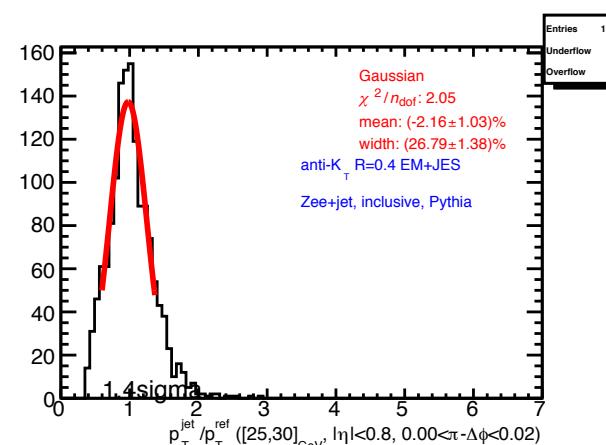
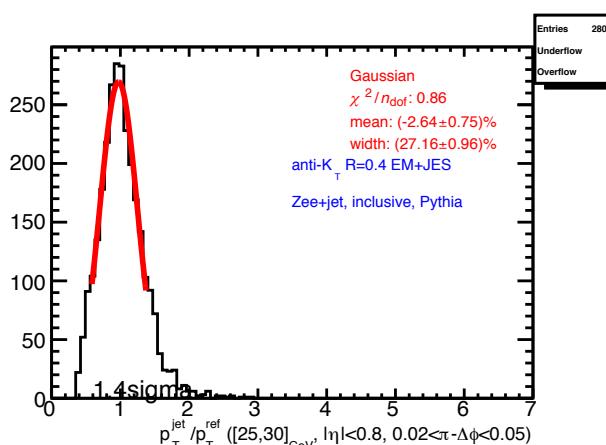
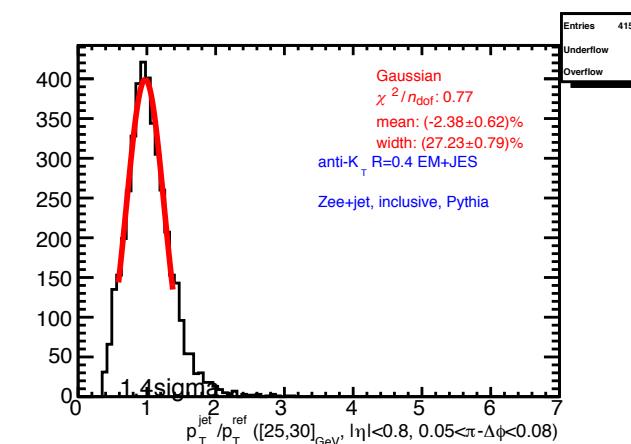
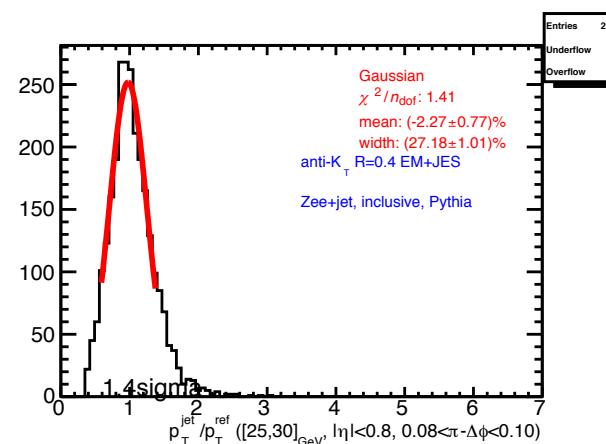
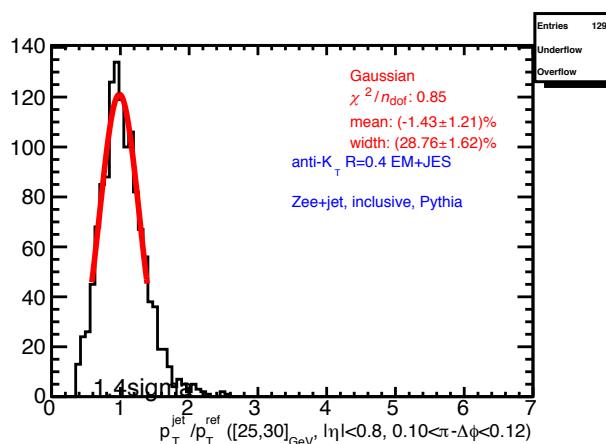
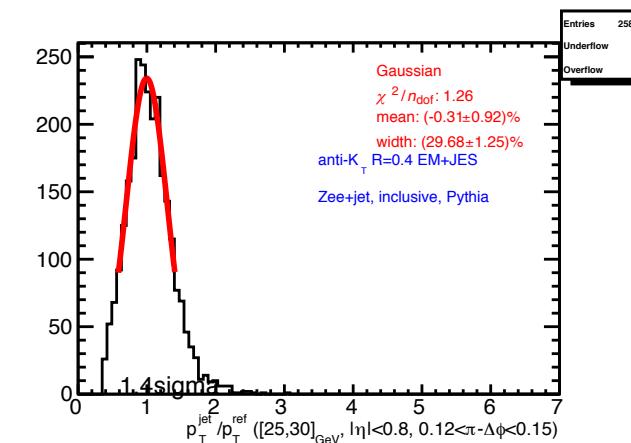
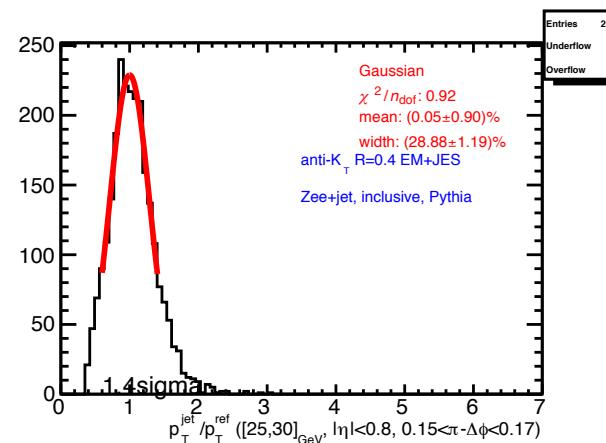
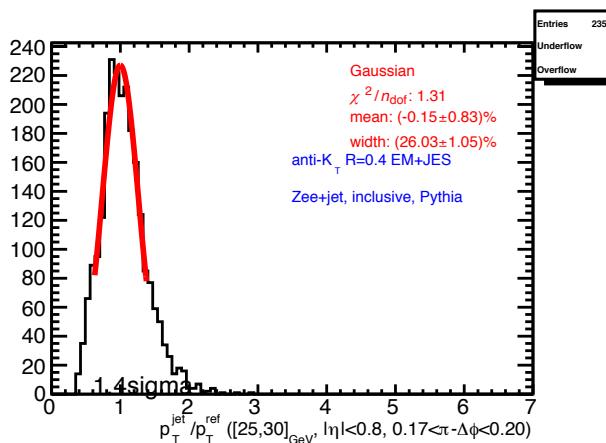
※  $pT_{\text{gamma}} > 85 \text{ GeV}$  は要求していない

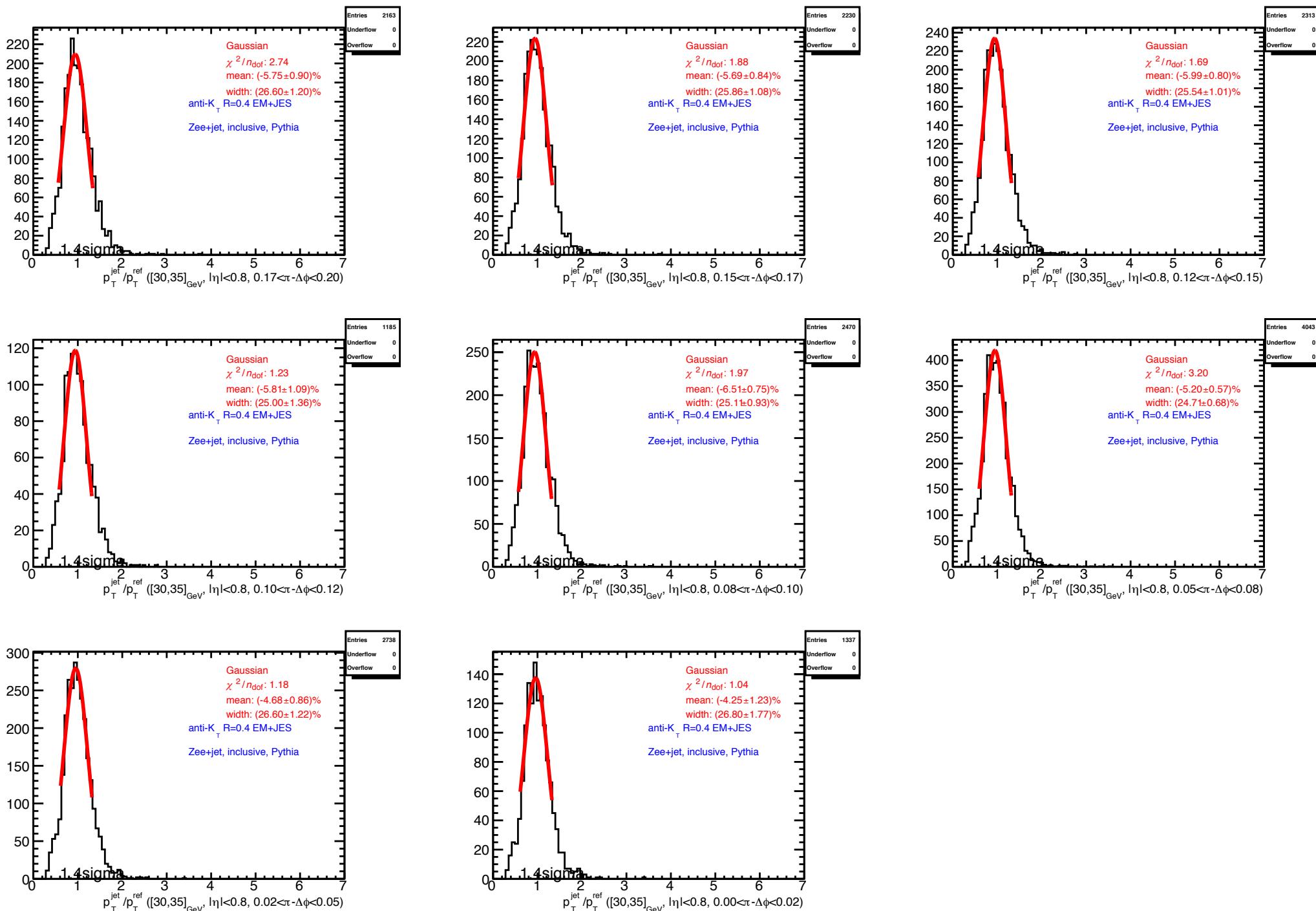
gaus 1.4sigma

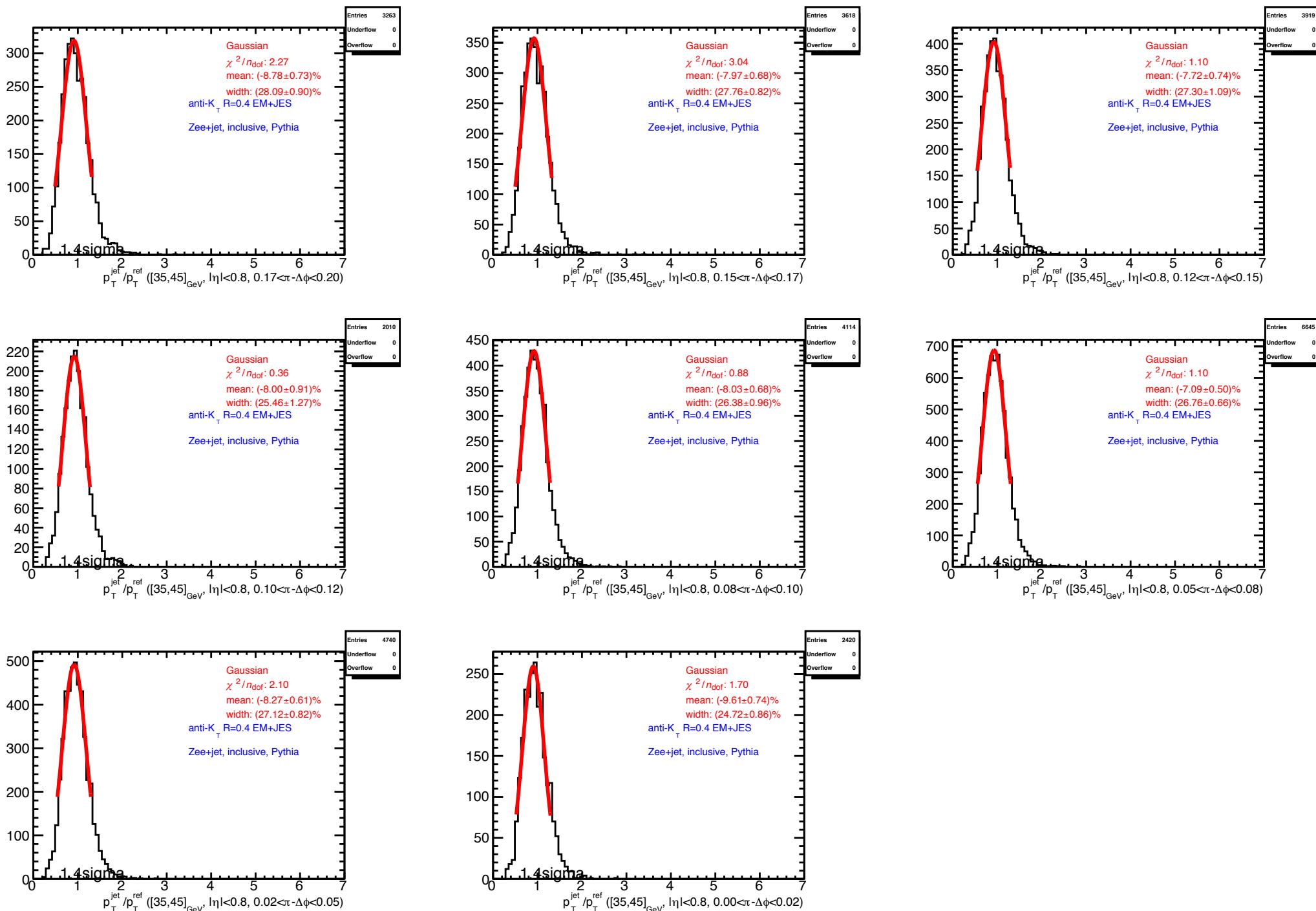


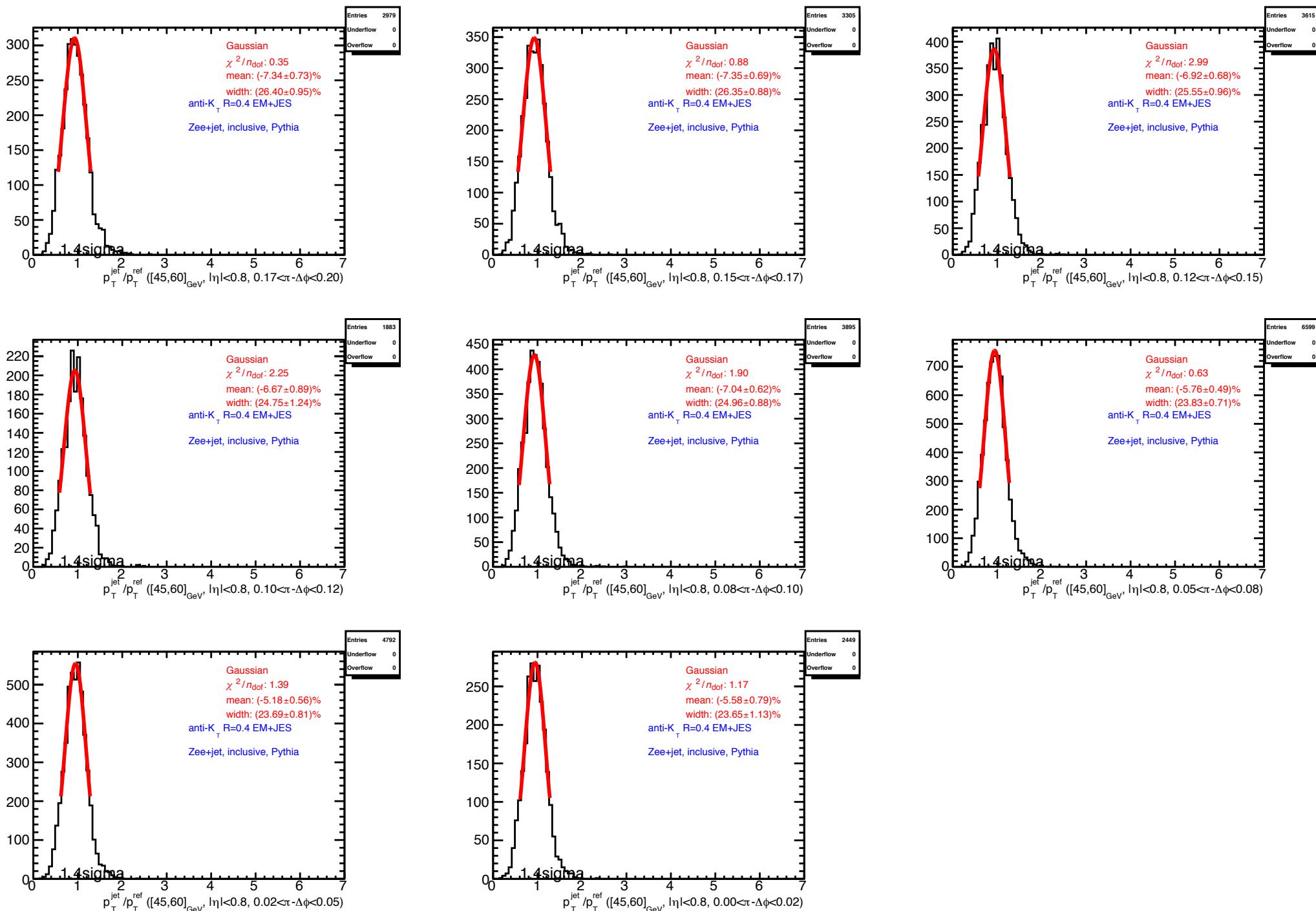


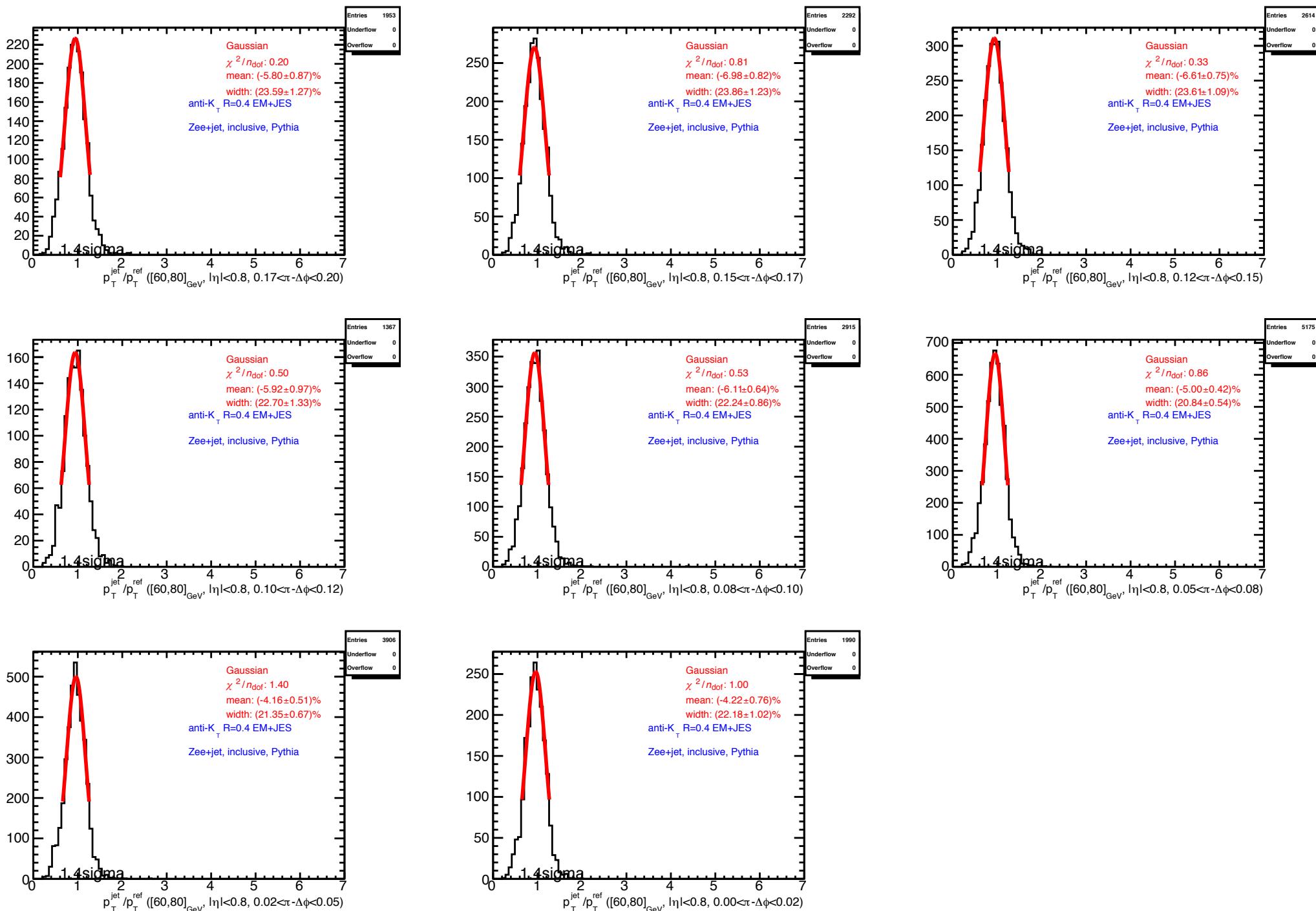


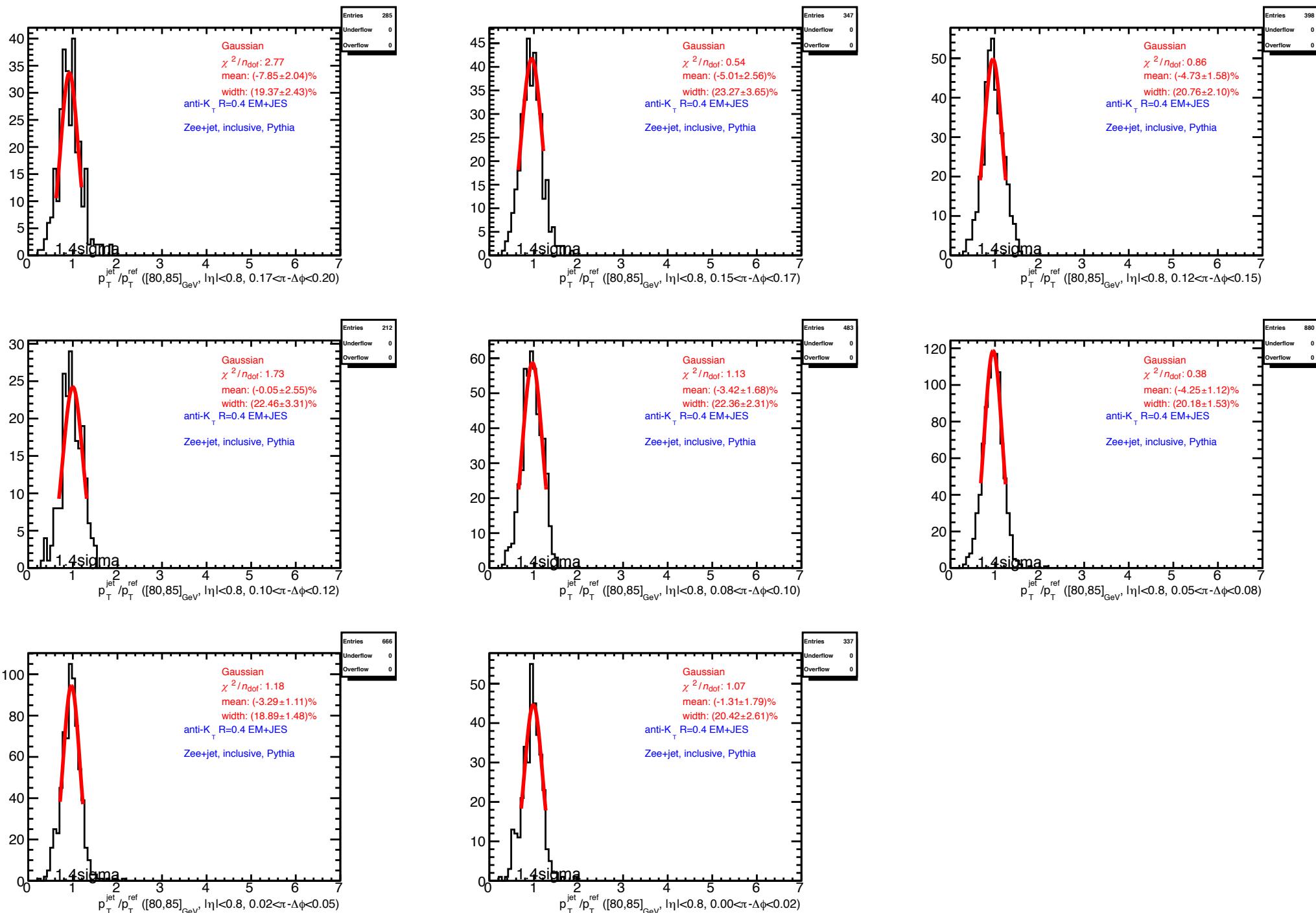


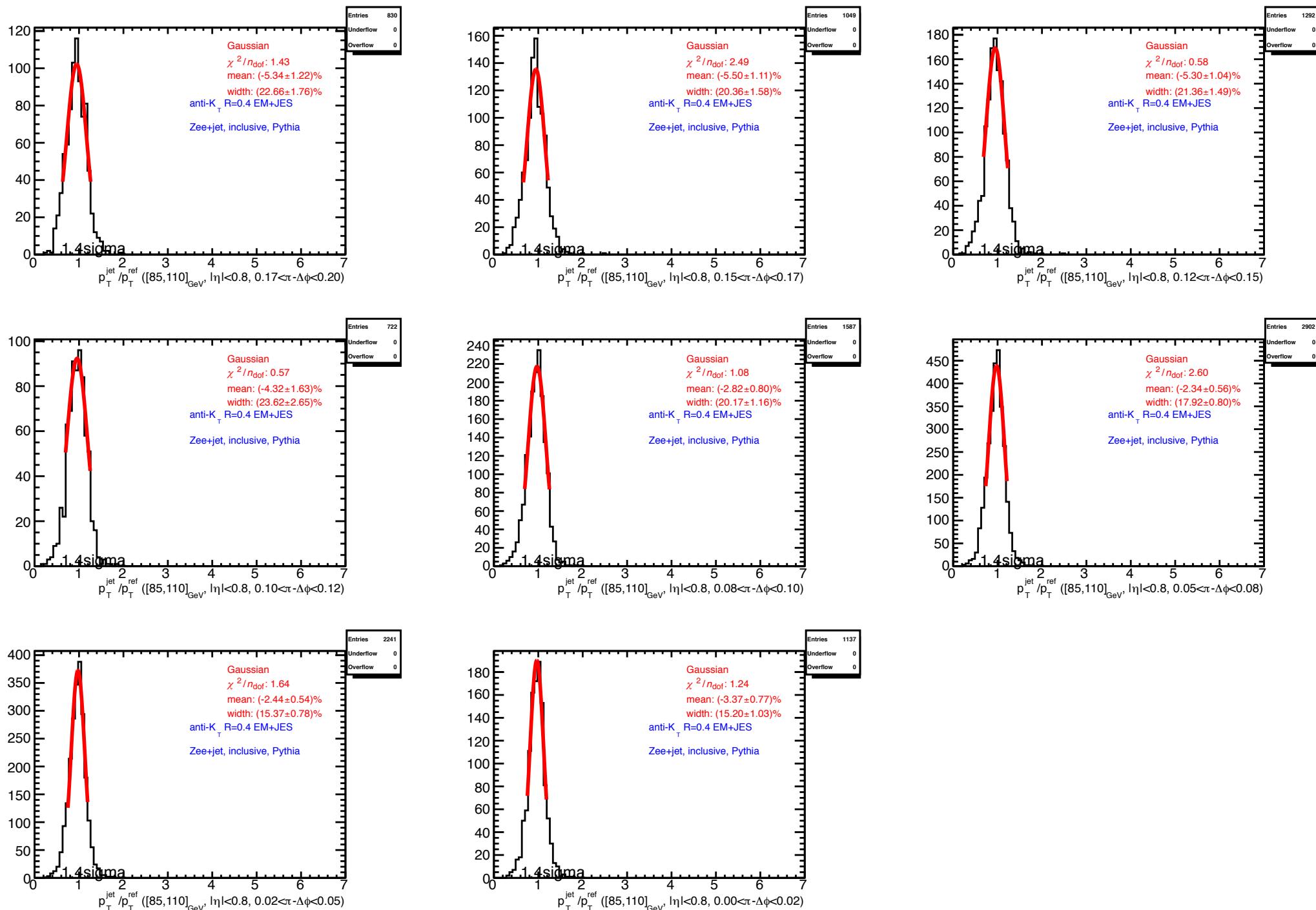


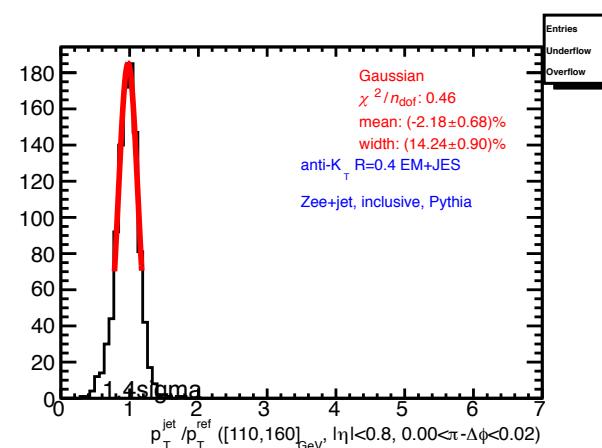
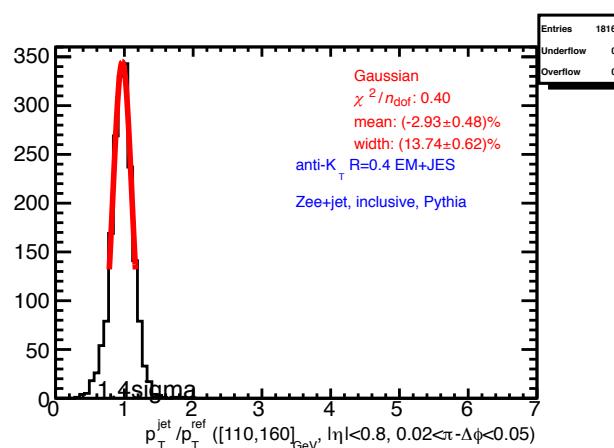
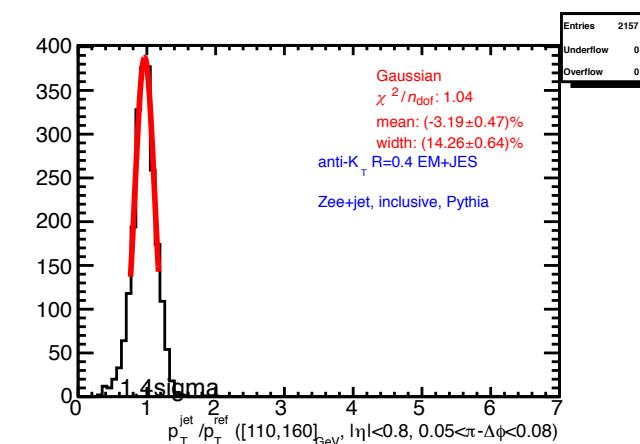
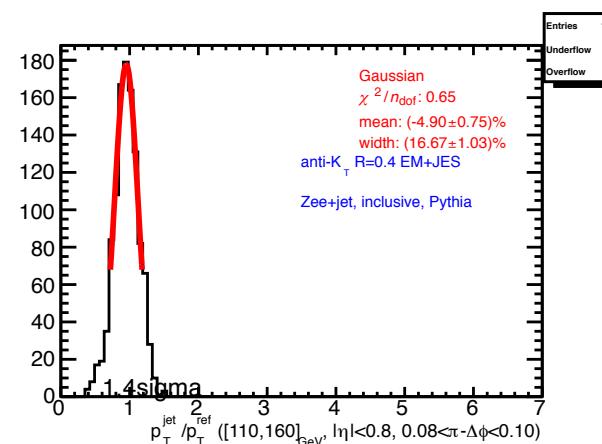
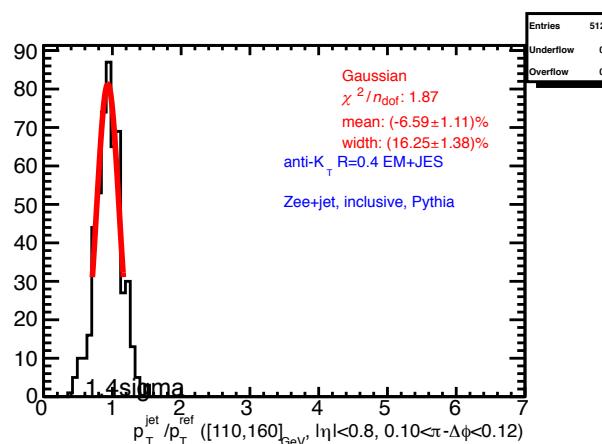
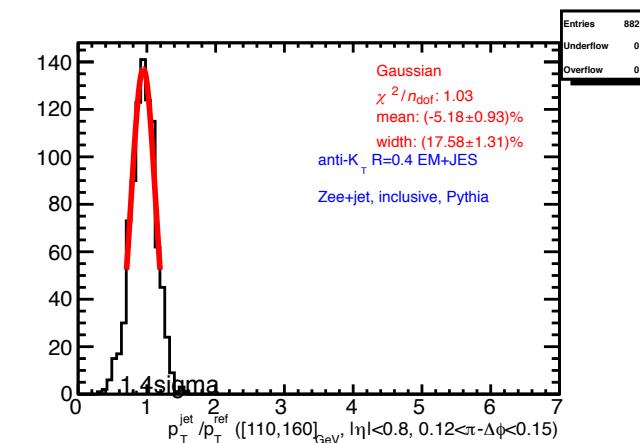
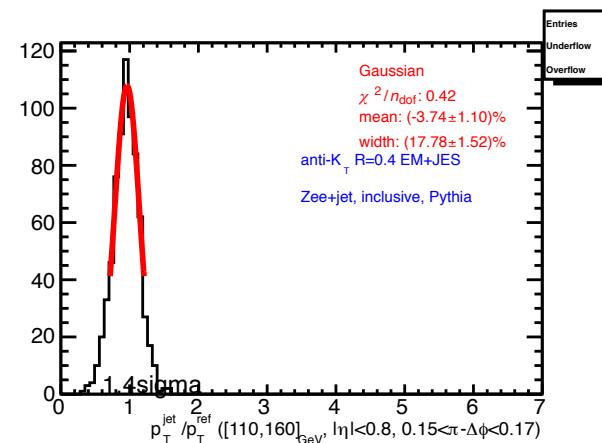
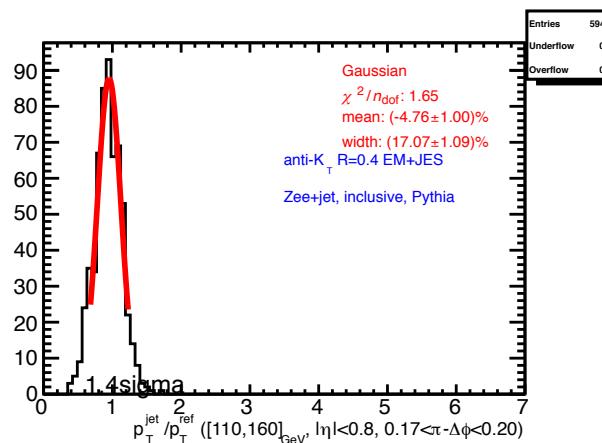


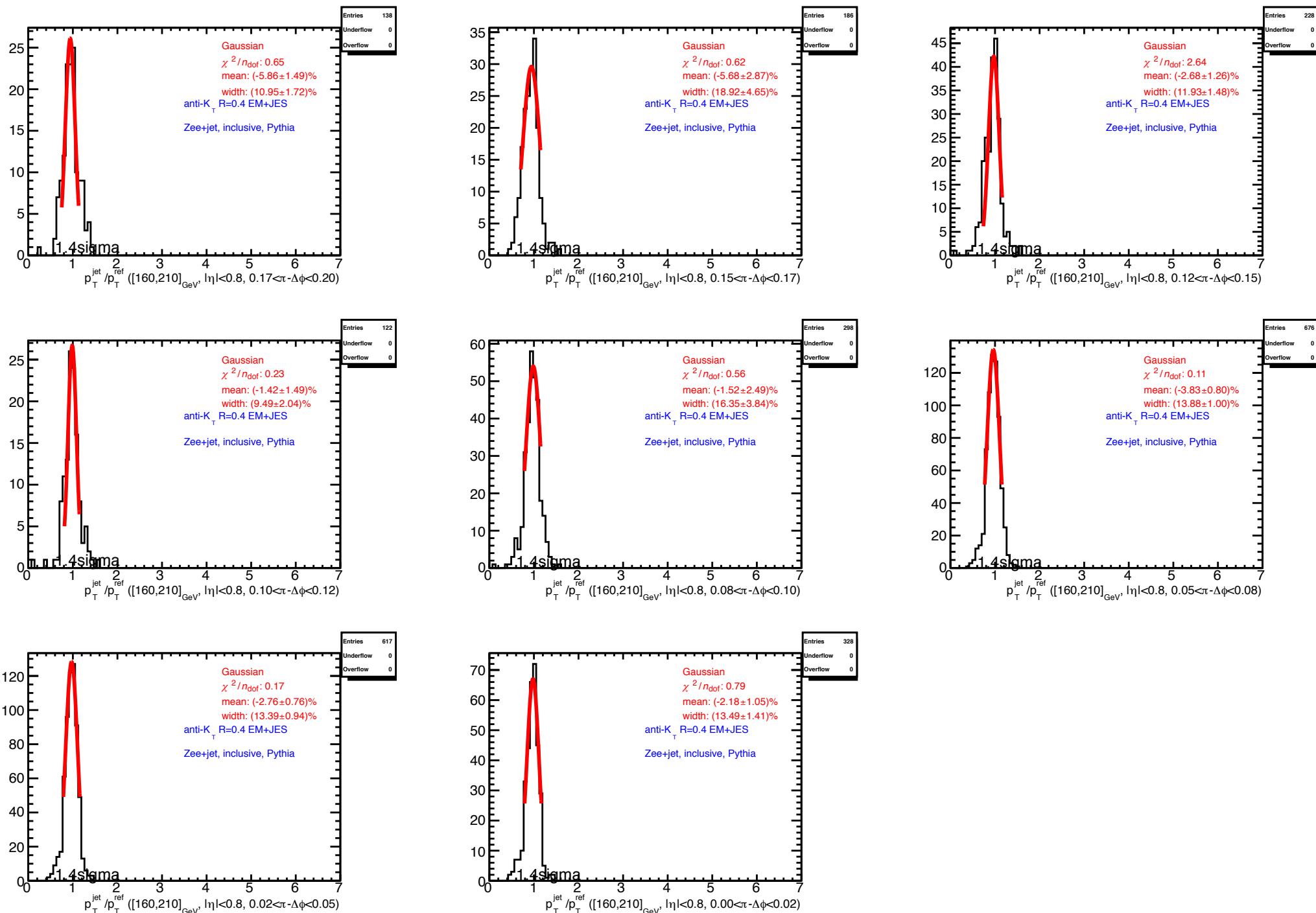


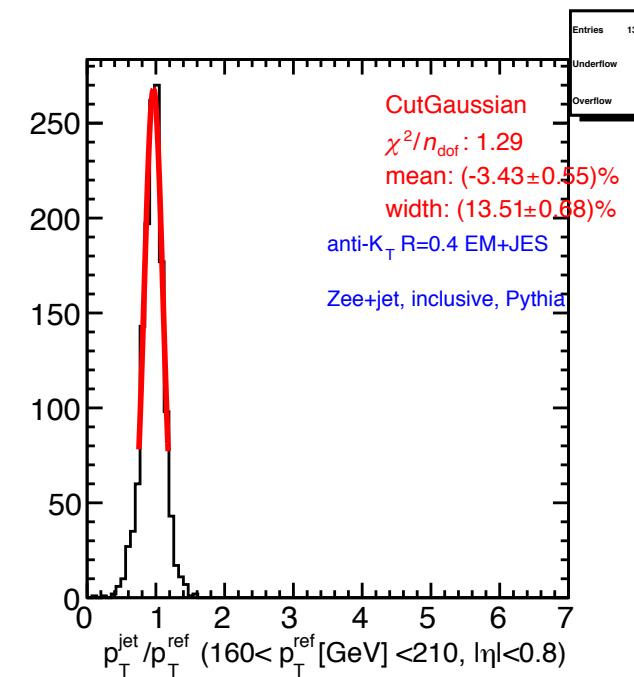
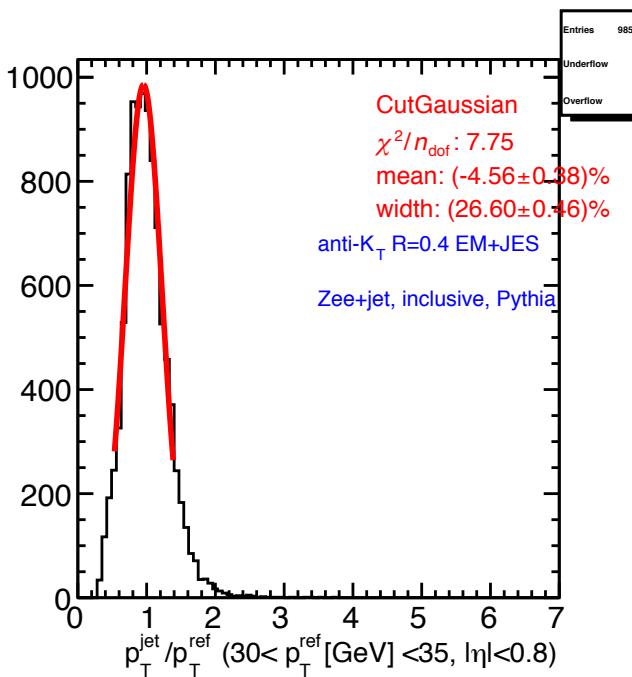
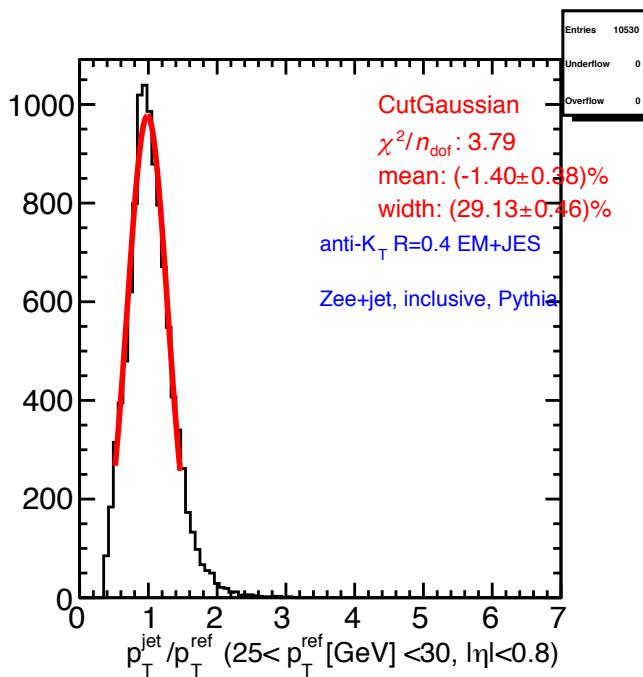
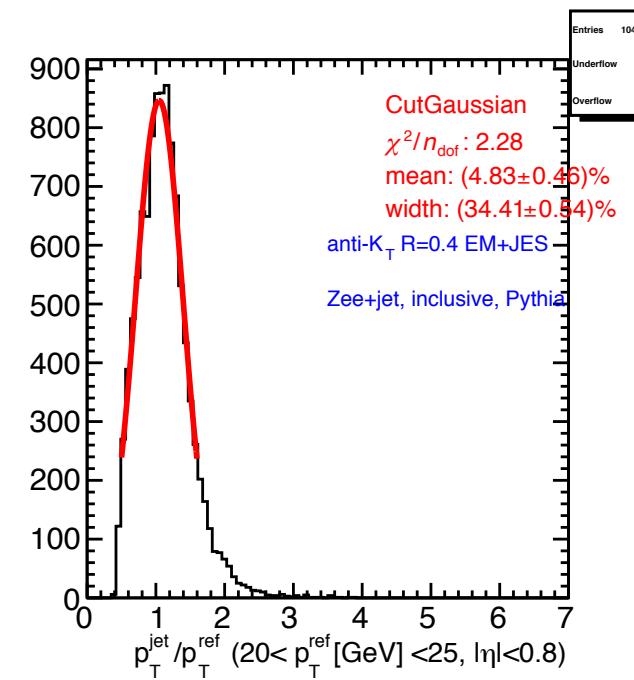
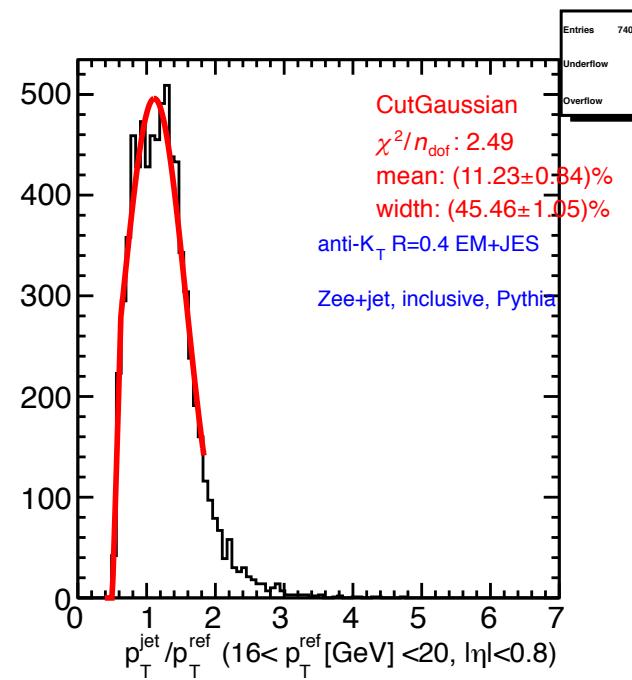
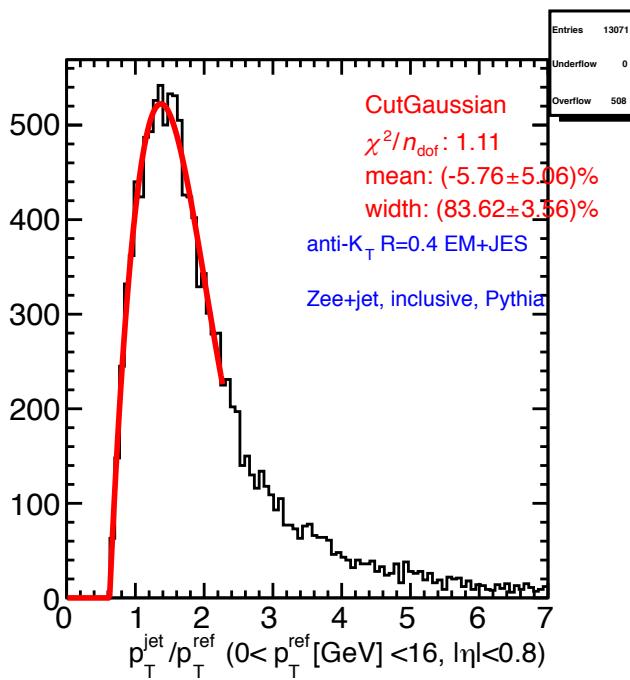


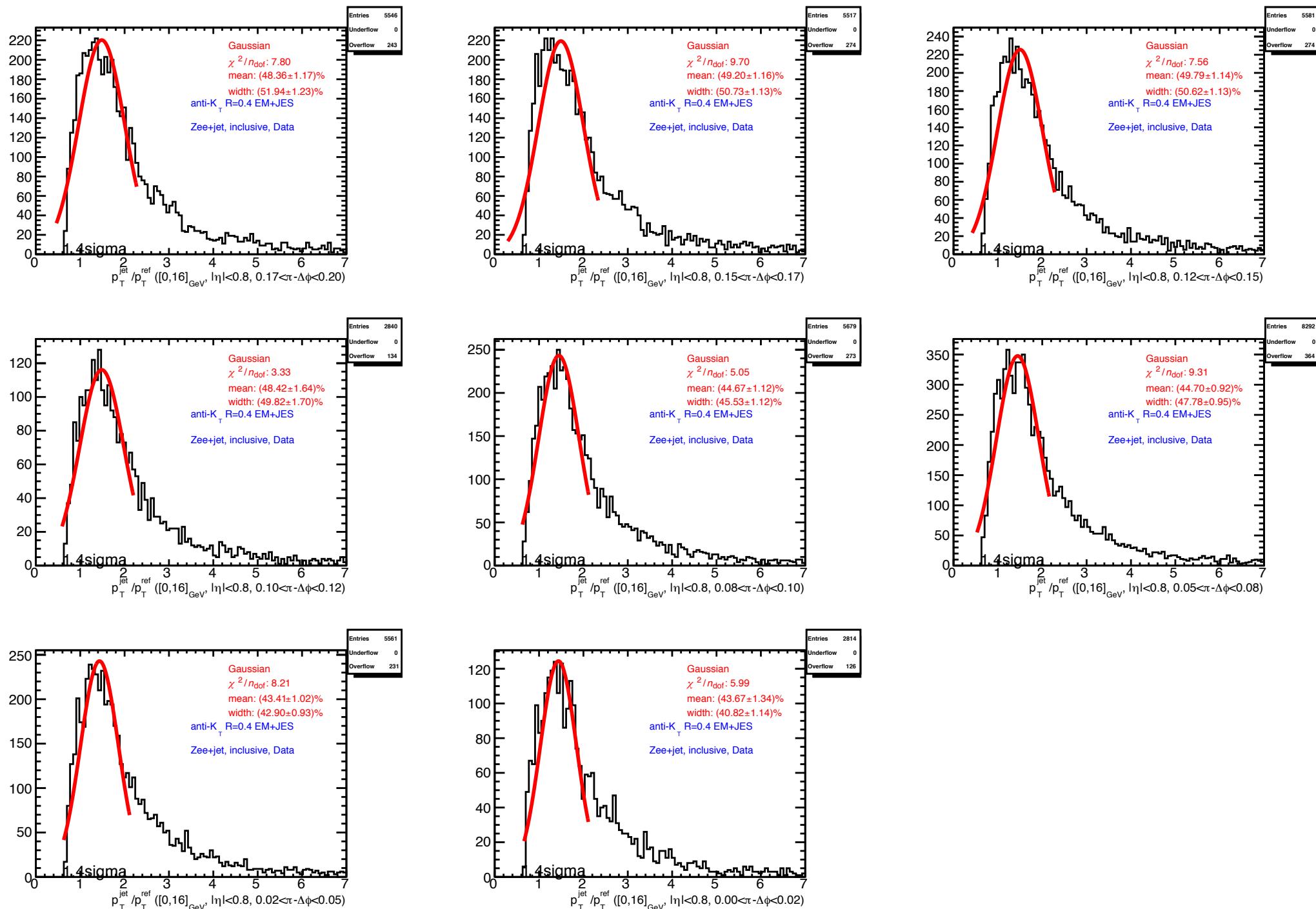


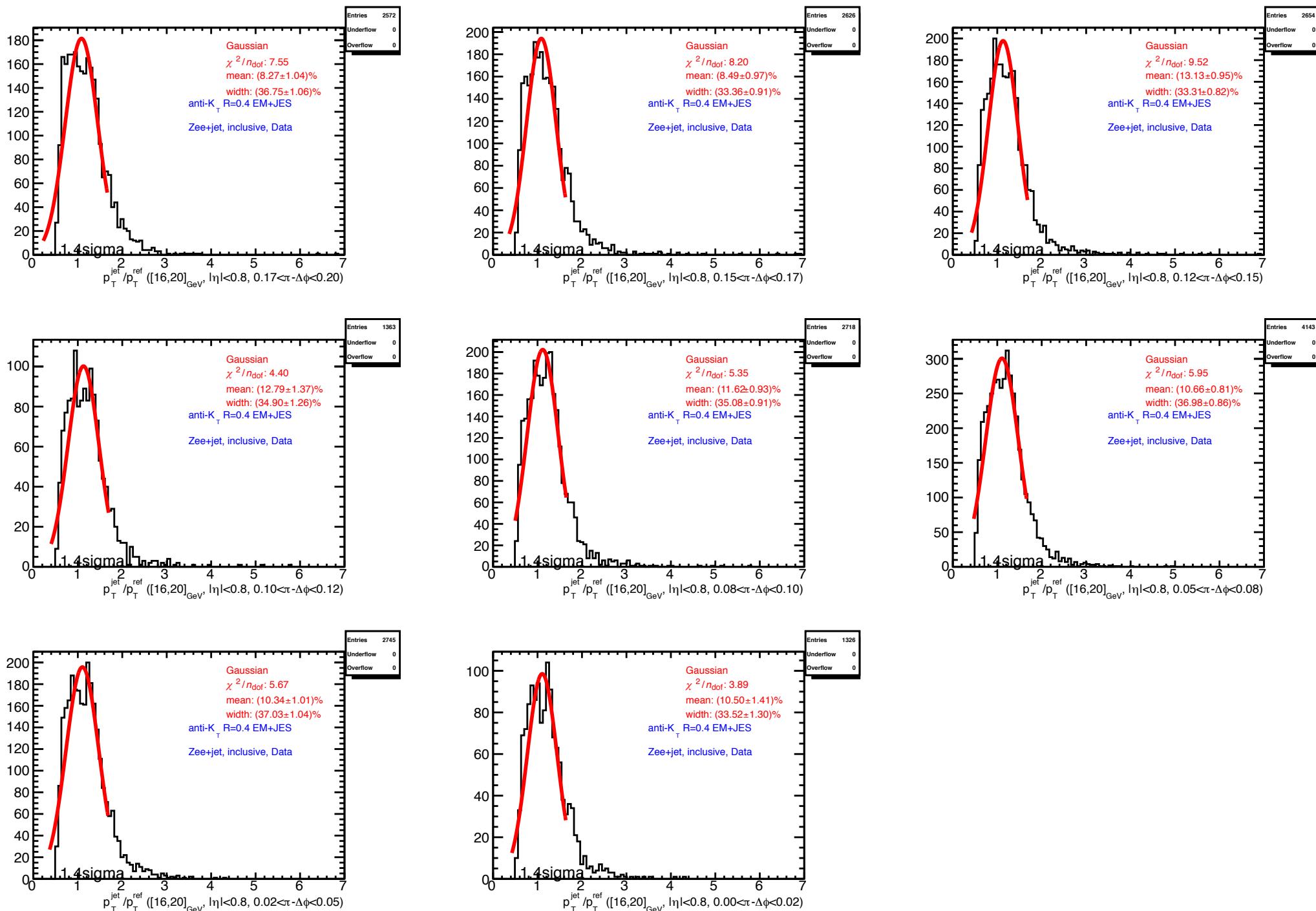


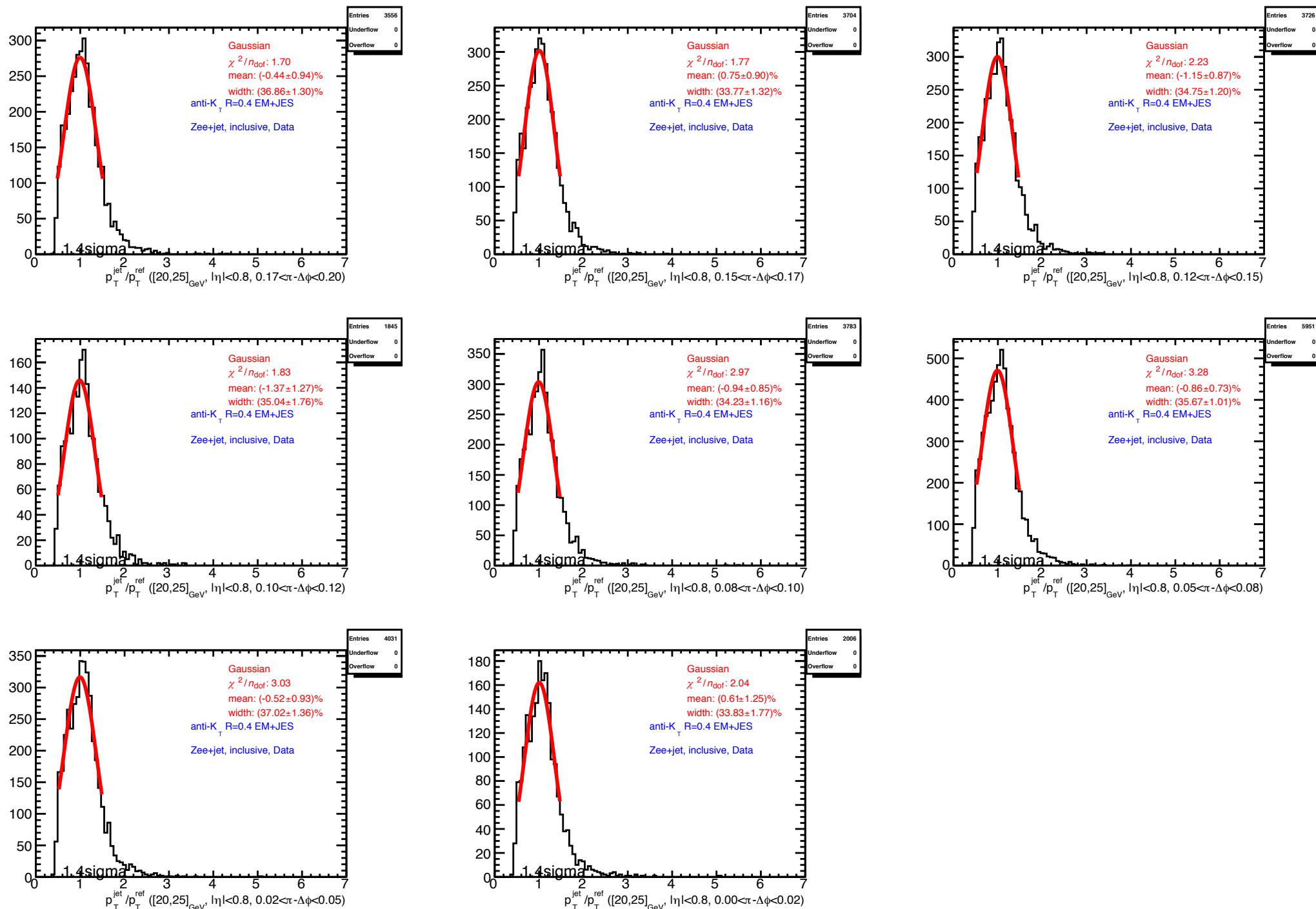


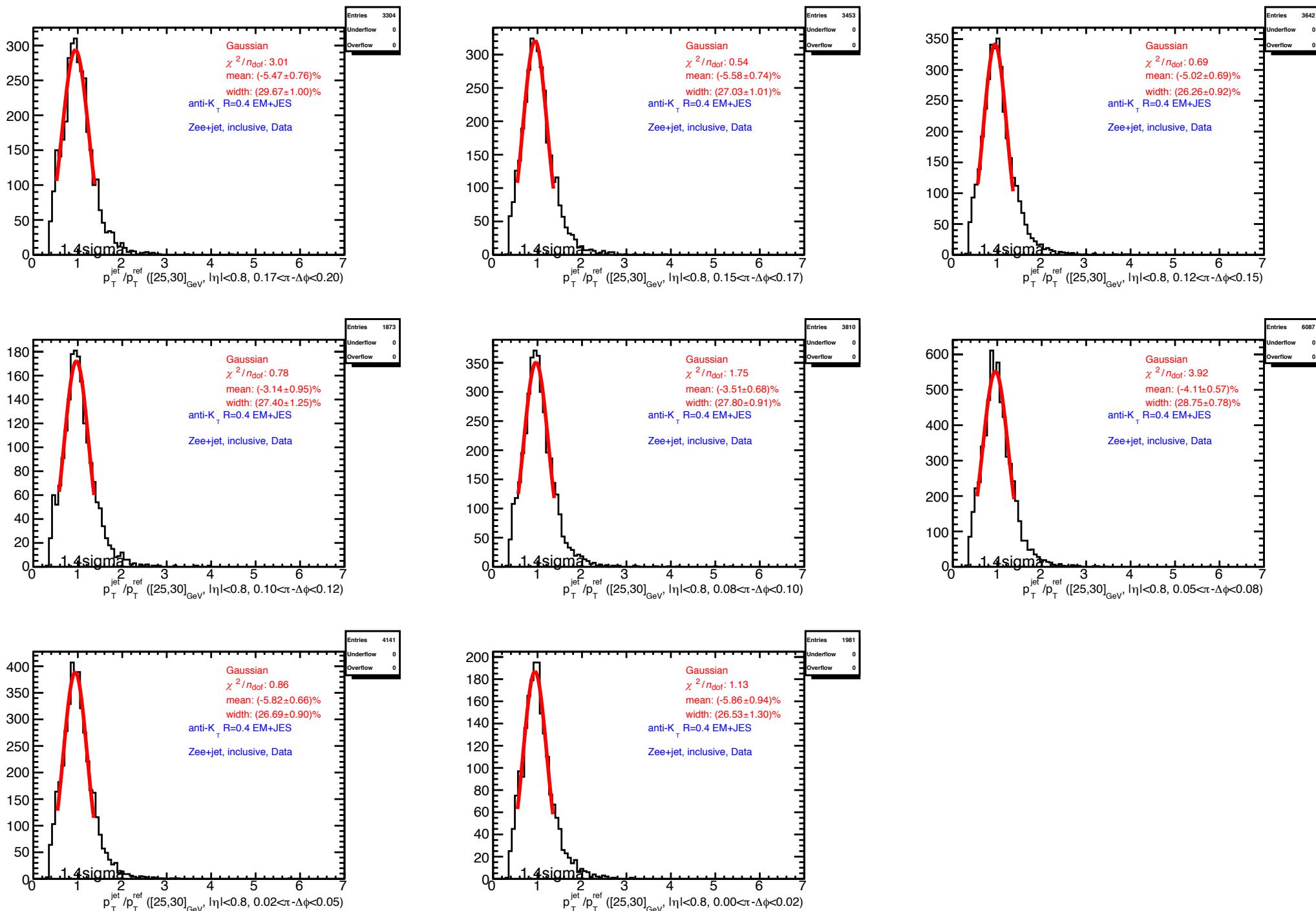


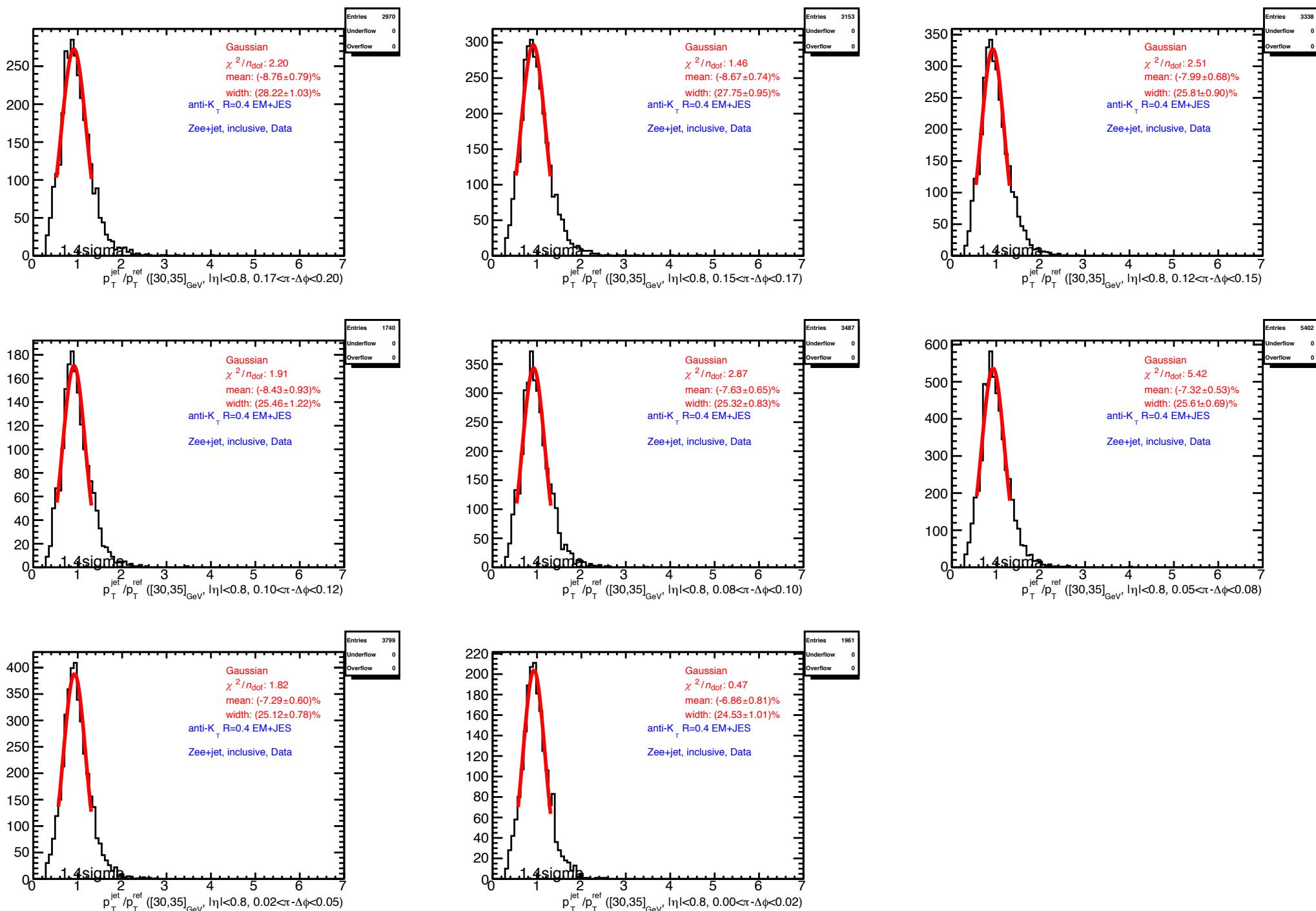


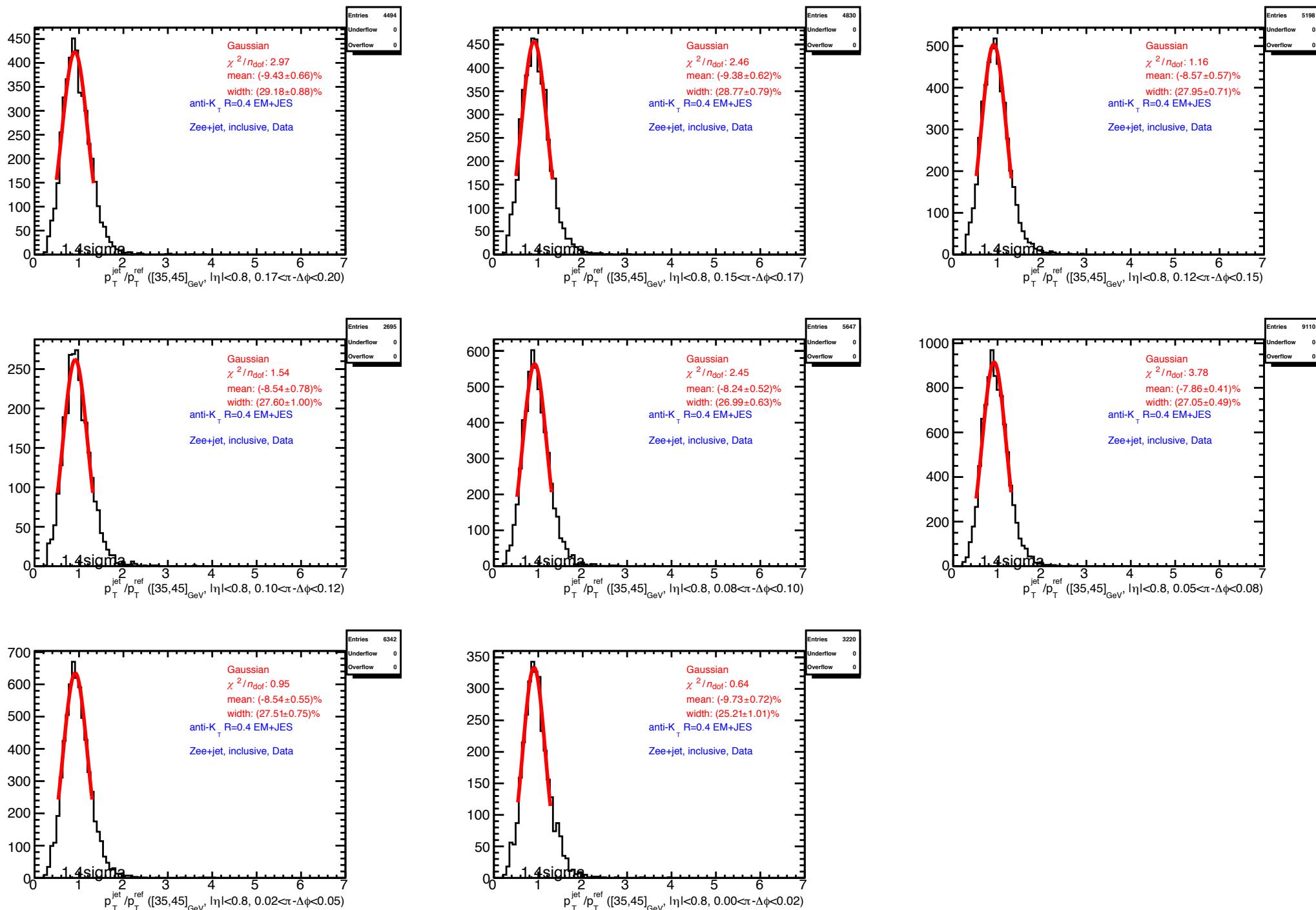


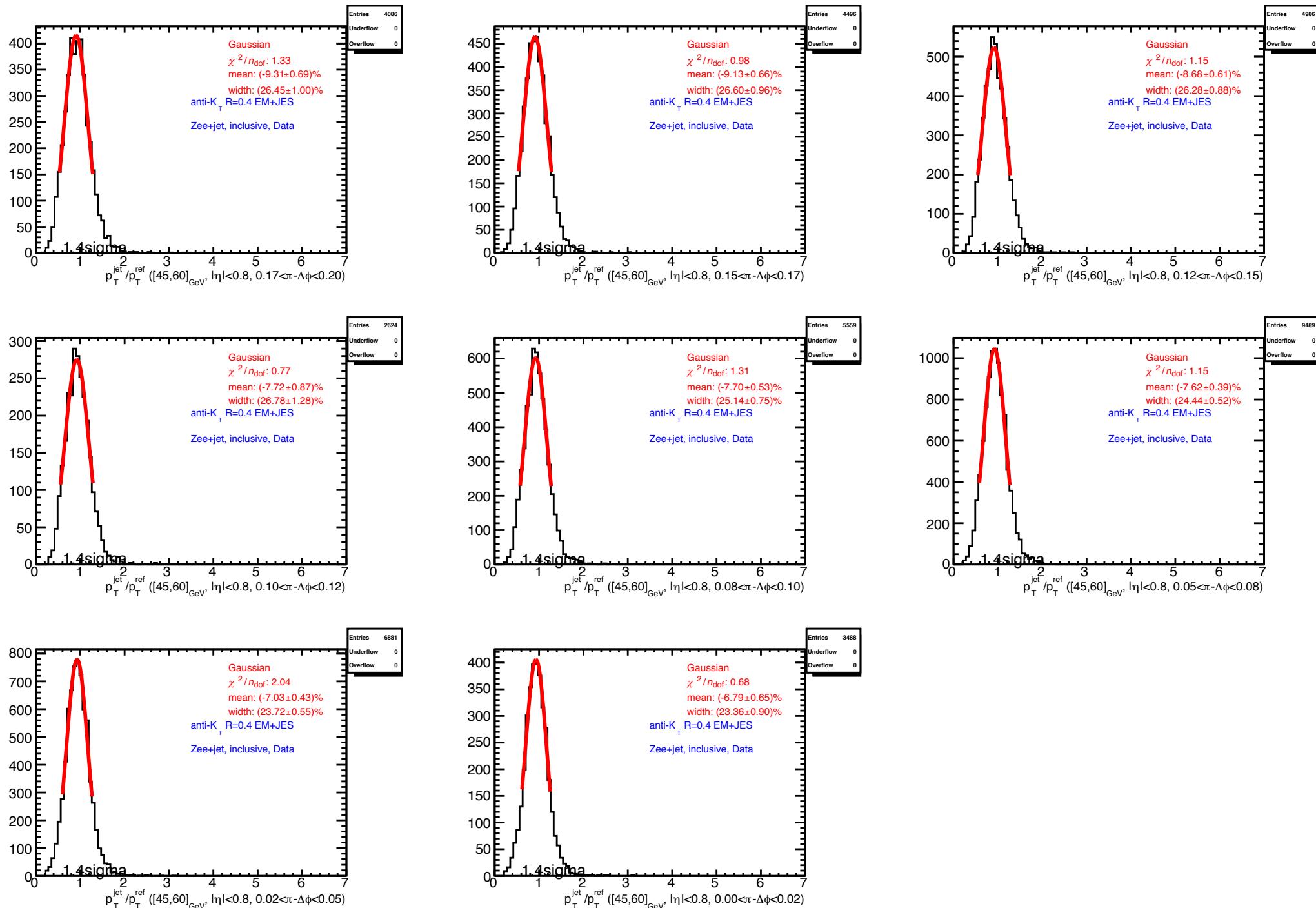


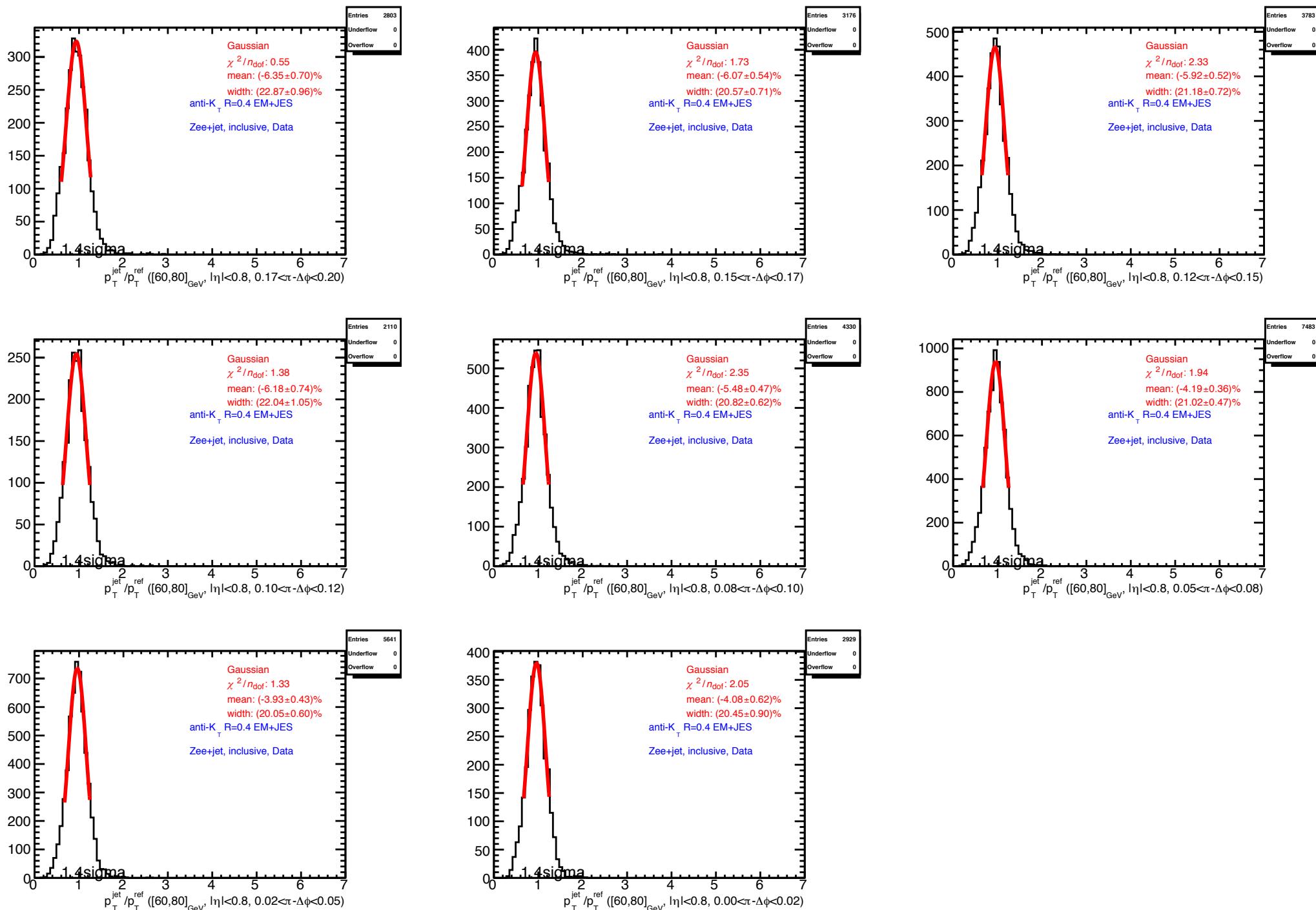


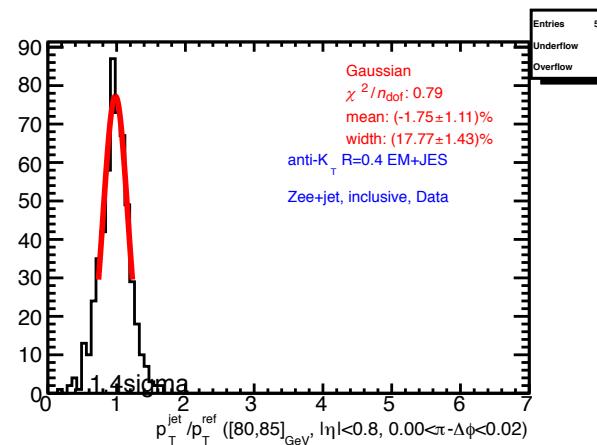
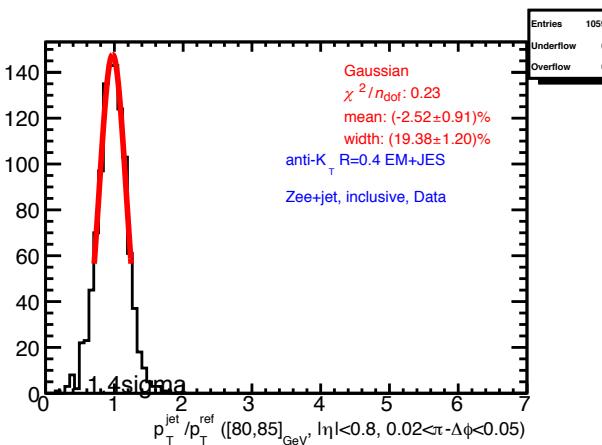
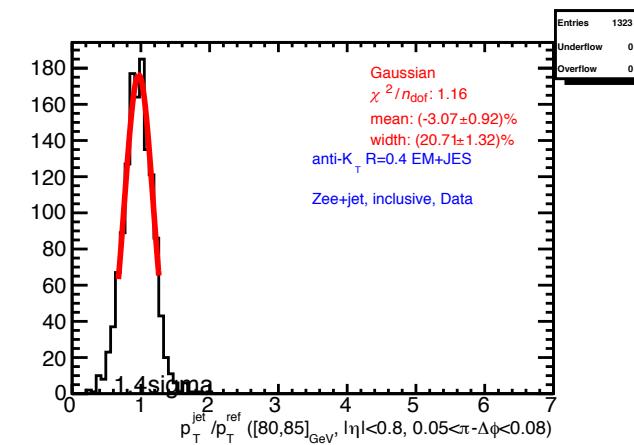
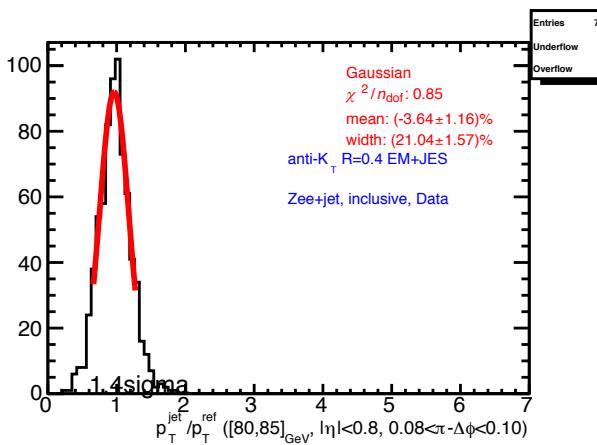
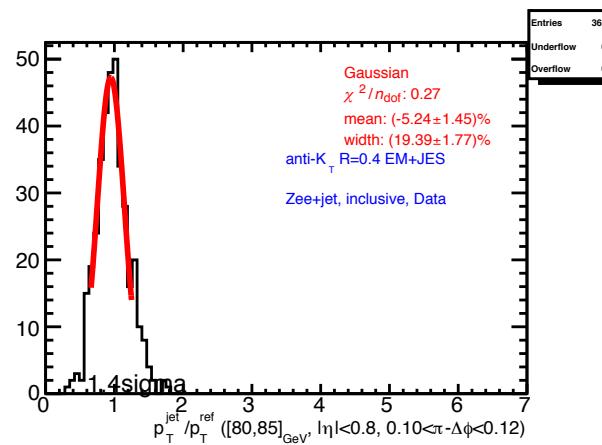
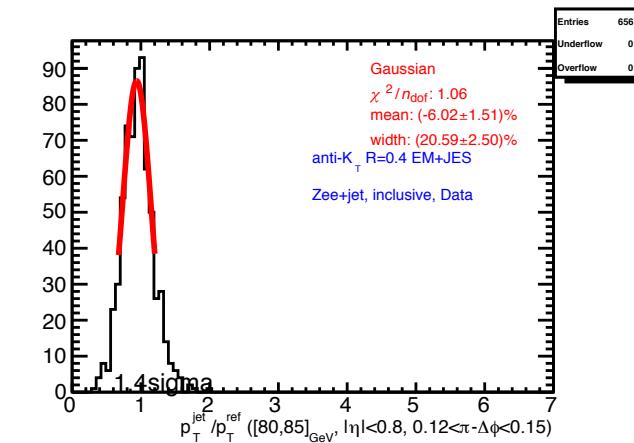
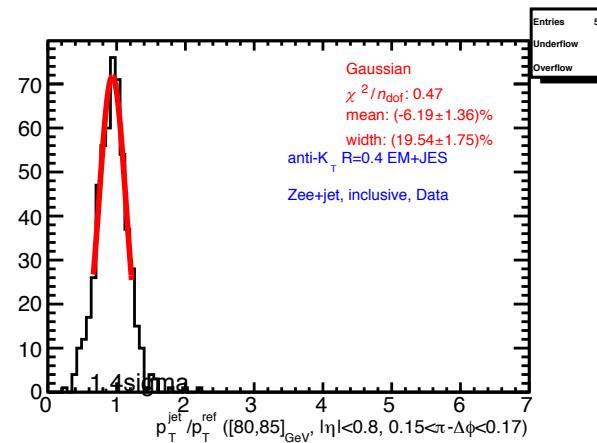
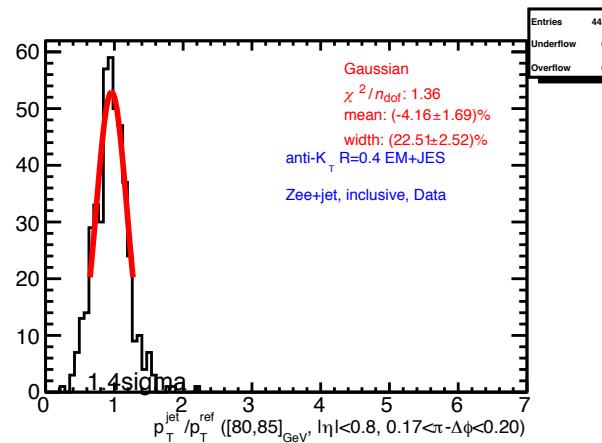


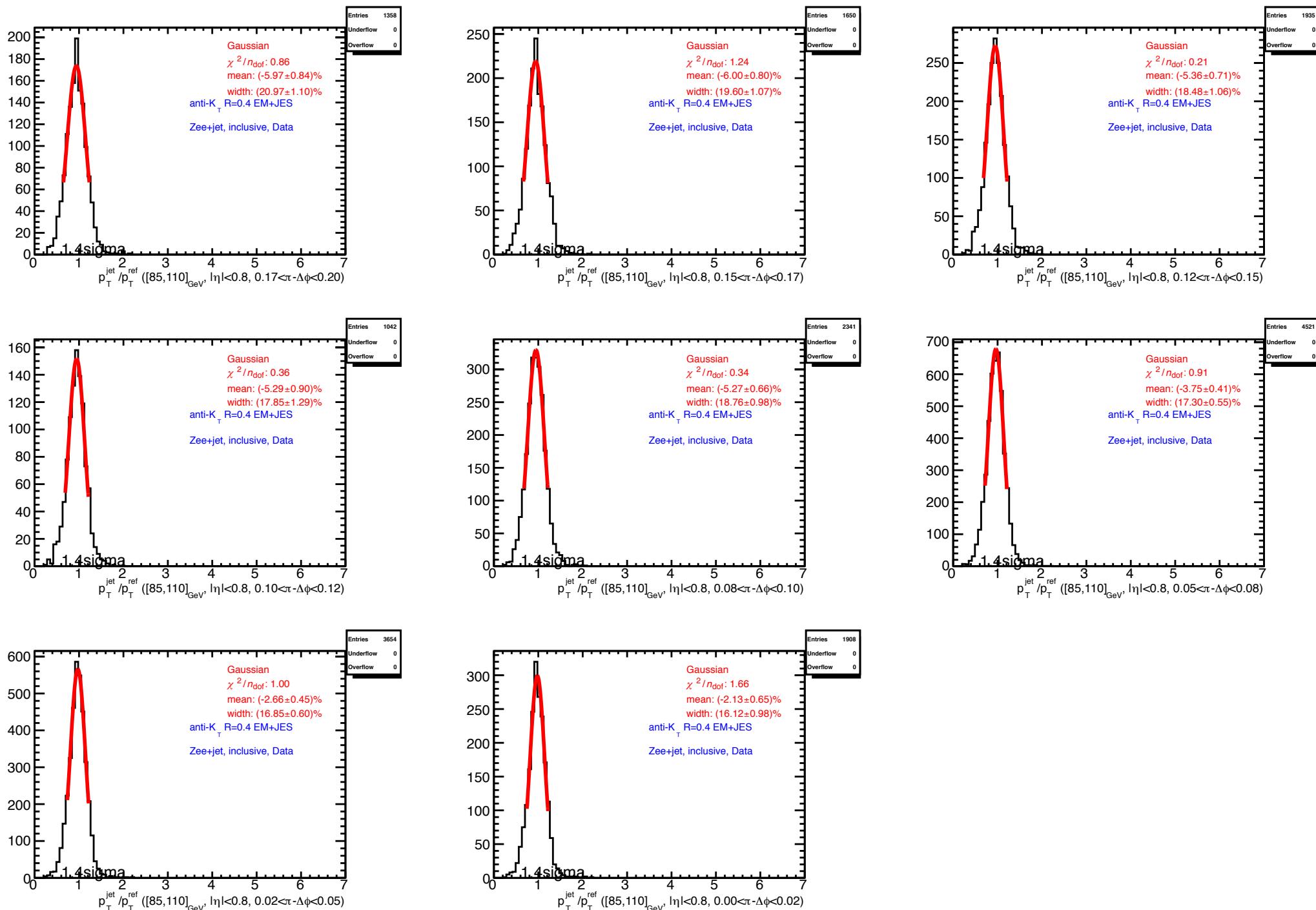


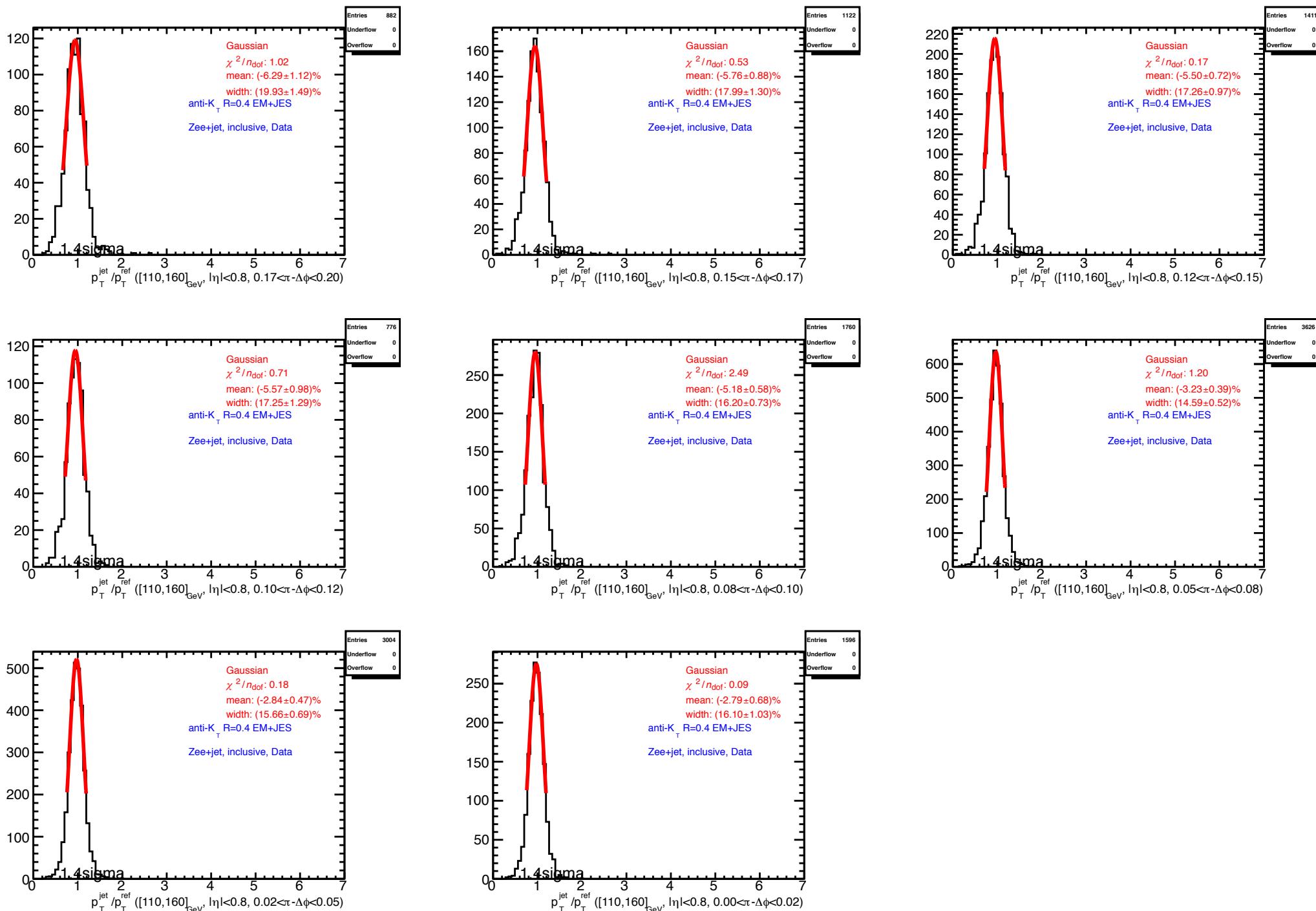


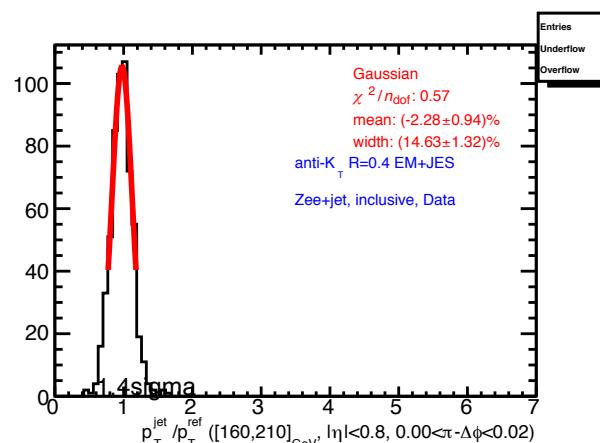
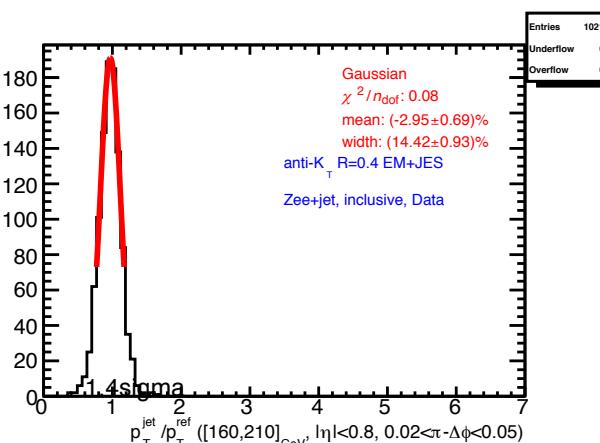
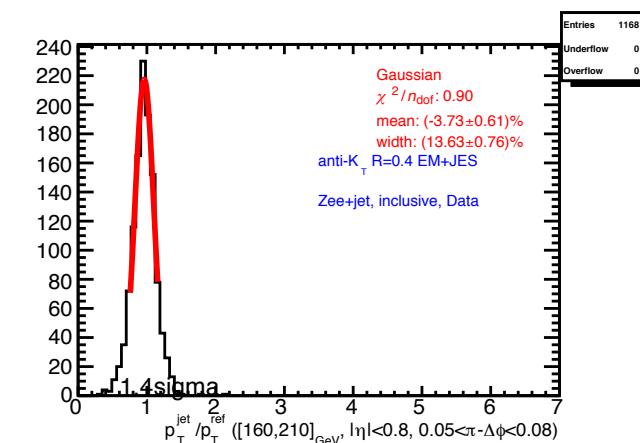
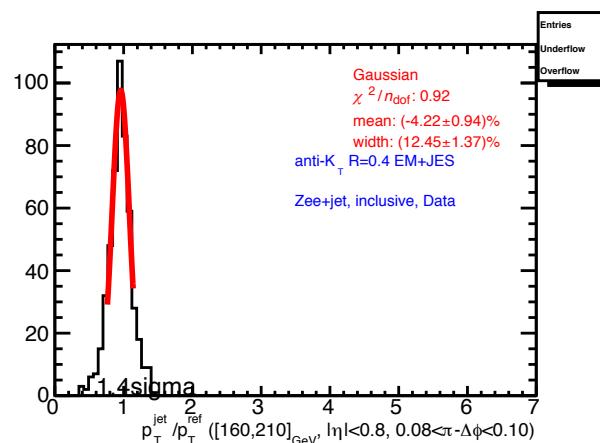
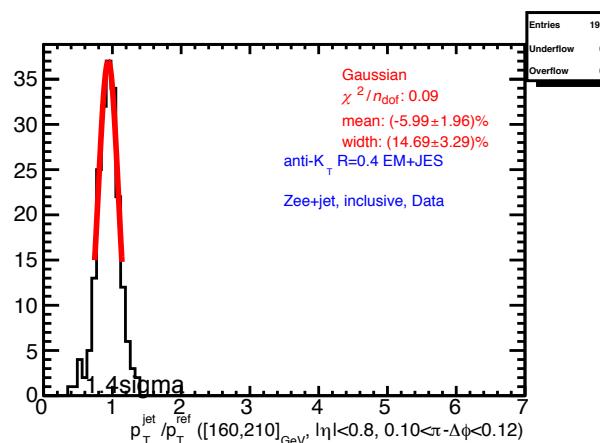
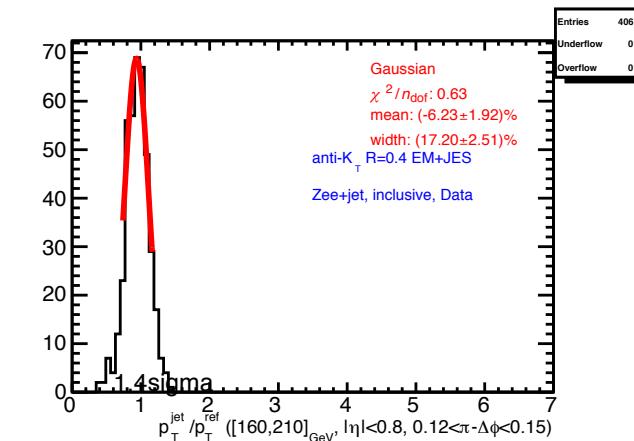
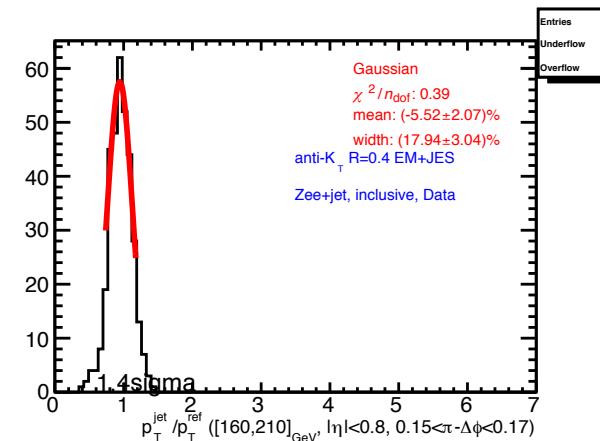
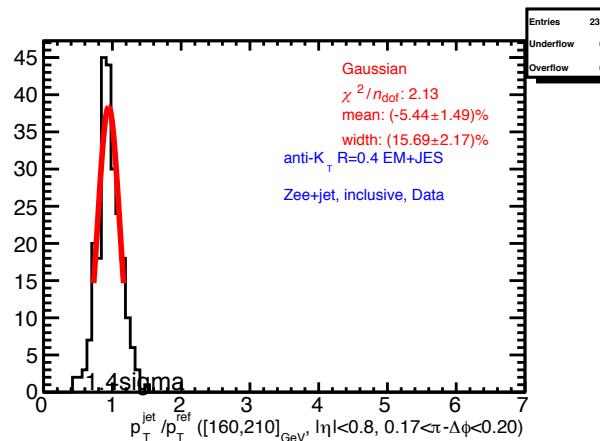


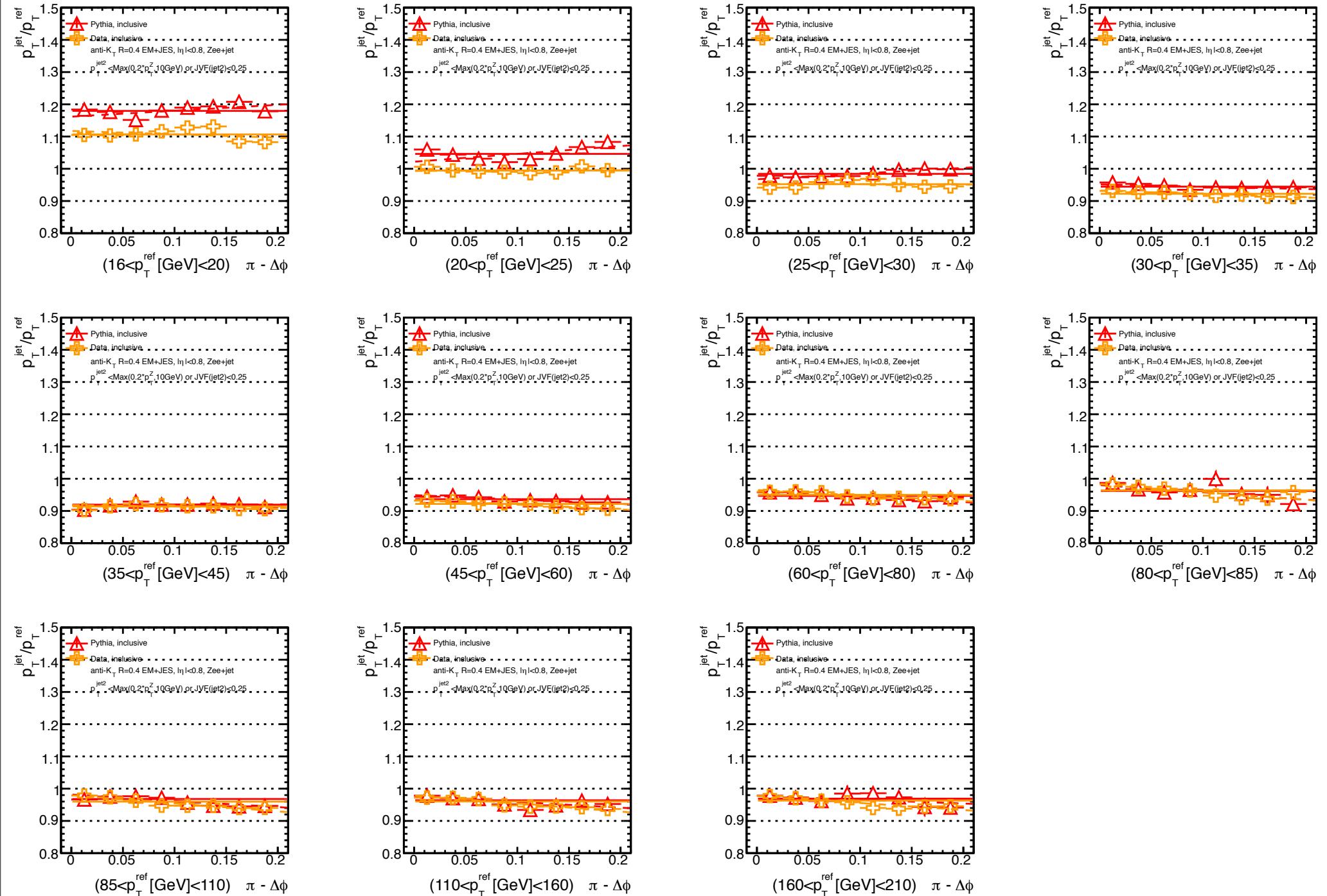












gaus 1.4sigma

