High mass analysis: update
+
muons stuff

Regular meeting
Dominik Wrana
2nd of August 2011

Dataset

All GXG events we have:

Runs # 292319, 294607, 294773, 294775, 294777, 294630, 304275, 306571, 306757, 306761, 306762

Trigger: TWO_CJET0.5

After:

- Forward rapidity cleanup
- Neural network cleanup

Event shape variables

- Energy tensor: $$S^{\alpha\beta} = \frac{\sum_i E_i^\alpha E_i^\beta}{\sum_i E_i^2}$$
-
- Eigenvalues $\lambda_1, \lambda_2, \lambda_3$: $$\lambda_1 \geq \lambda_2 \geq \lambda_3$$

Sphericity:

$$S = \frac{3}{2}(\lambda_2 + \lambda_3)$$

$$0 \leq S \leq 1$$

Aplanarity:

$$A = \frac{3}{2}\lambda_3$$

$$0 \leq A \leq \frac{1}{2}$$

Circularity:

$$C = \frac{2\lambda_2}{\lambda_1 + \lambda_2}$$

$$0 \leq C \leq 1$$

Conditions – event shape variables

GXG cleaning

All data with forward rapidity gaps

Trigger TWOCJET0.5 only

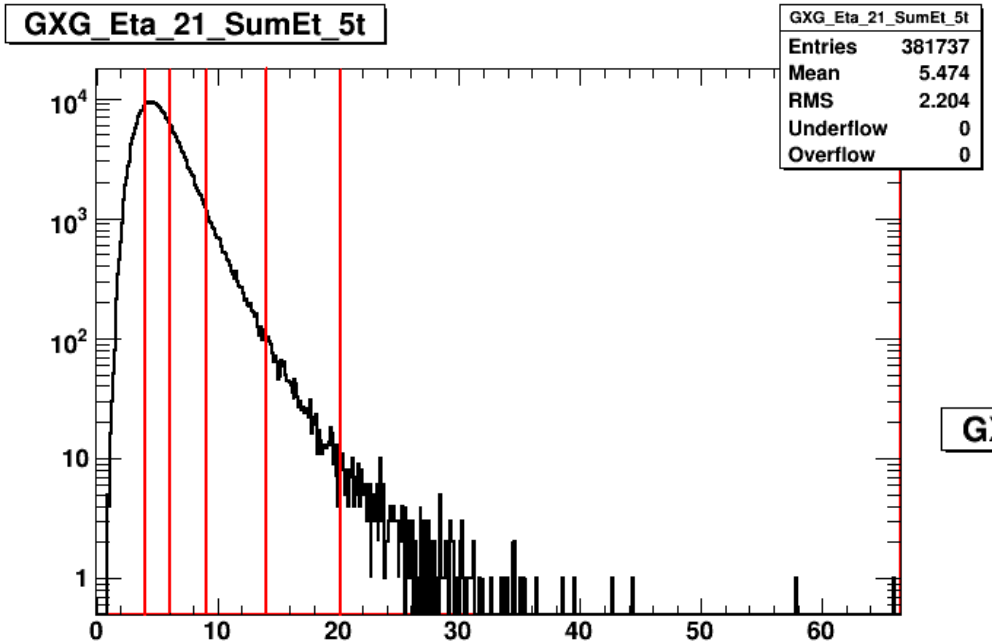
!! Ntracks > 4

!! Sum Et (in |eta| < 2.1) > 0.5

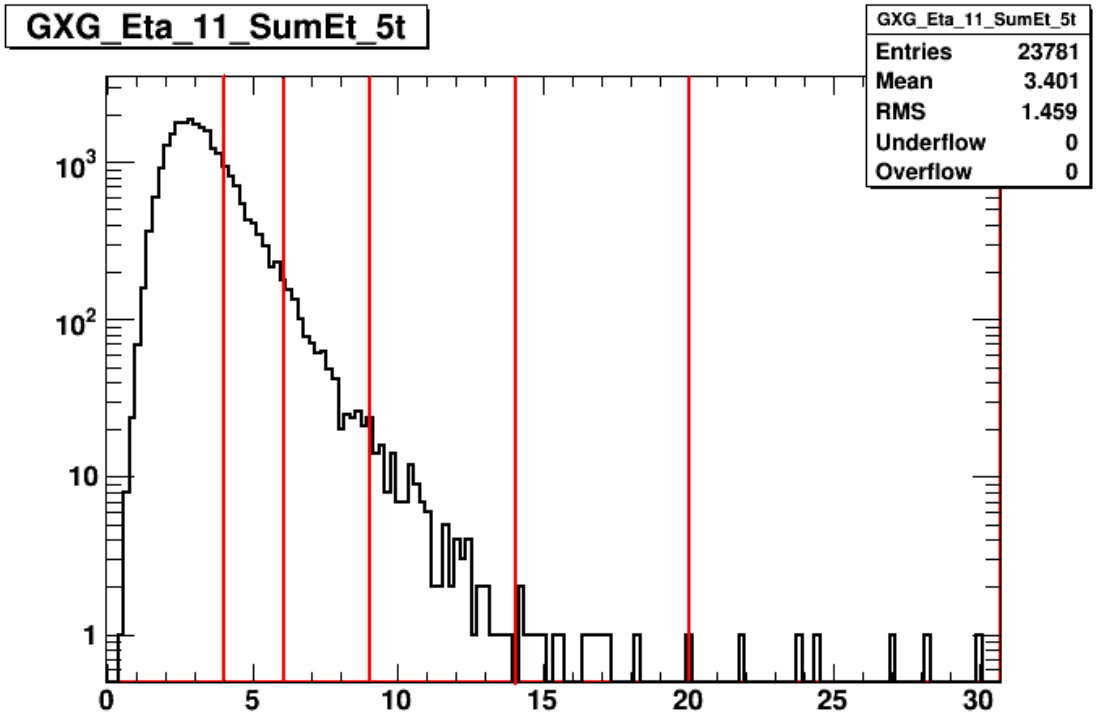
+

!! Sum Et (in |eta| < 1.1) > 0.5 (for tighter region)

Sum Et bands

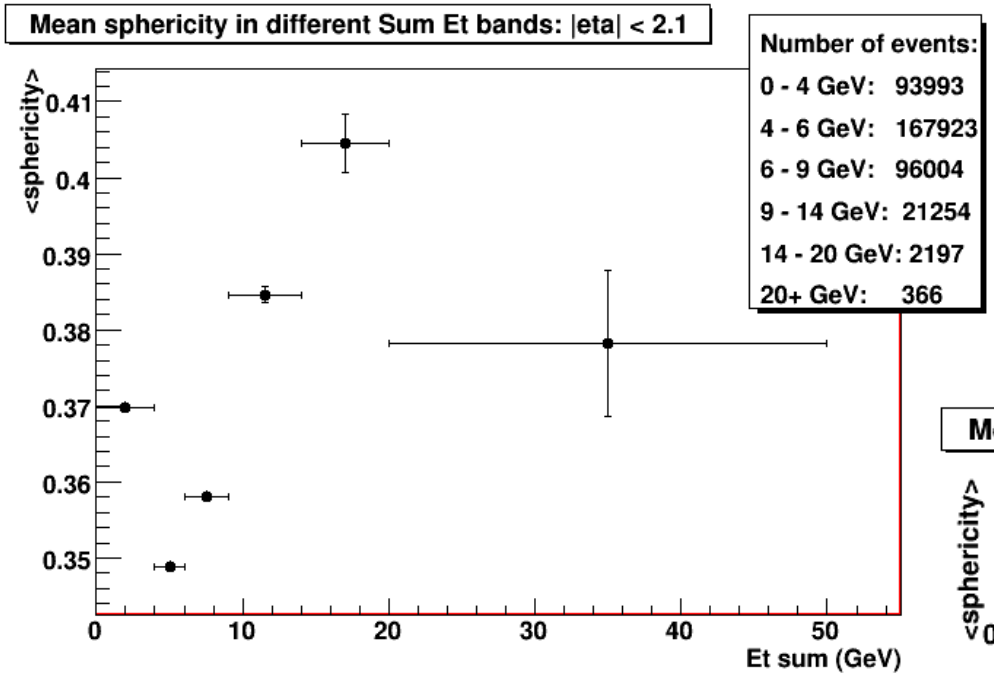


|eta| < 1.1



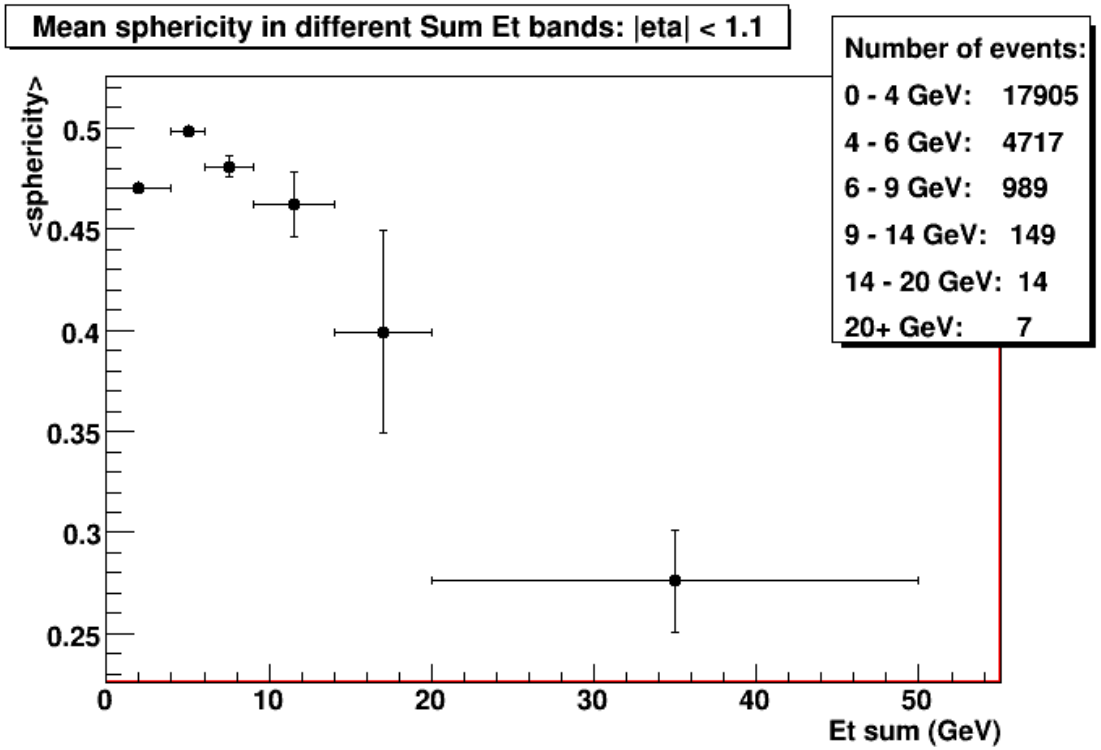
|eta| < 2.1

Sphericity

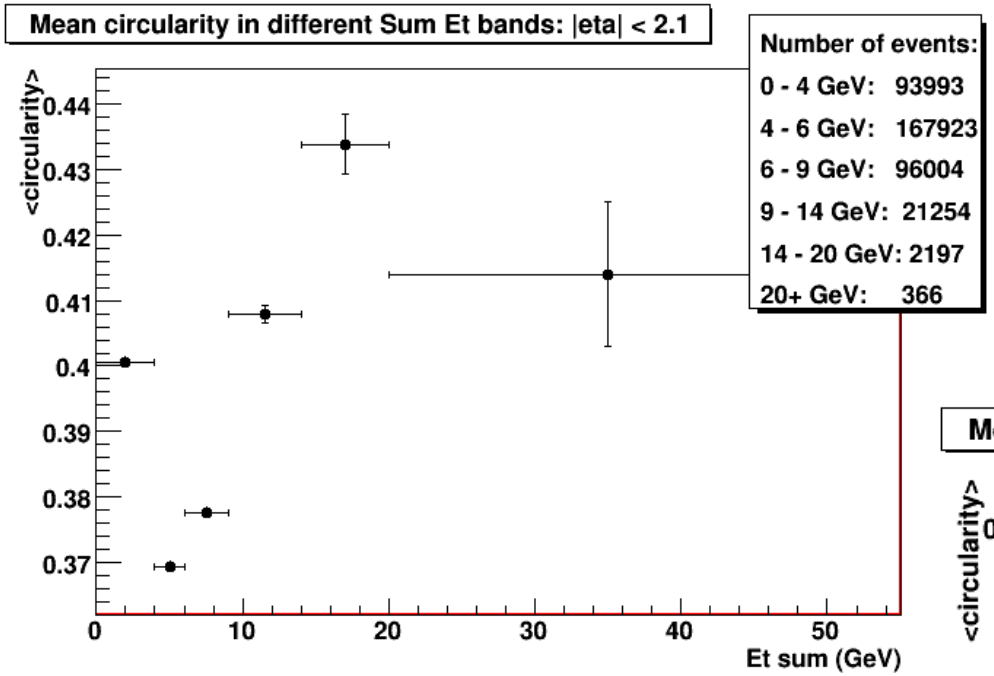


|eta| < 2.1

|eta| < 1.1

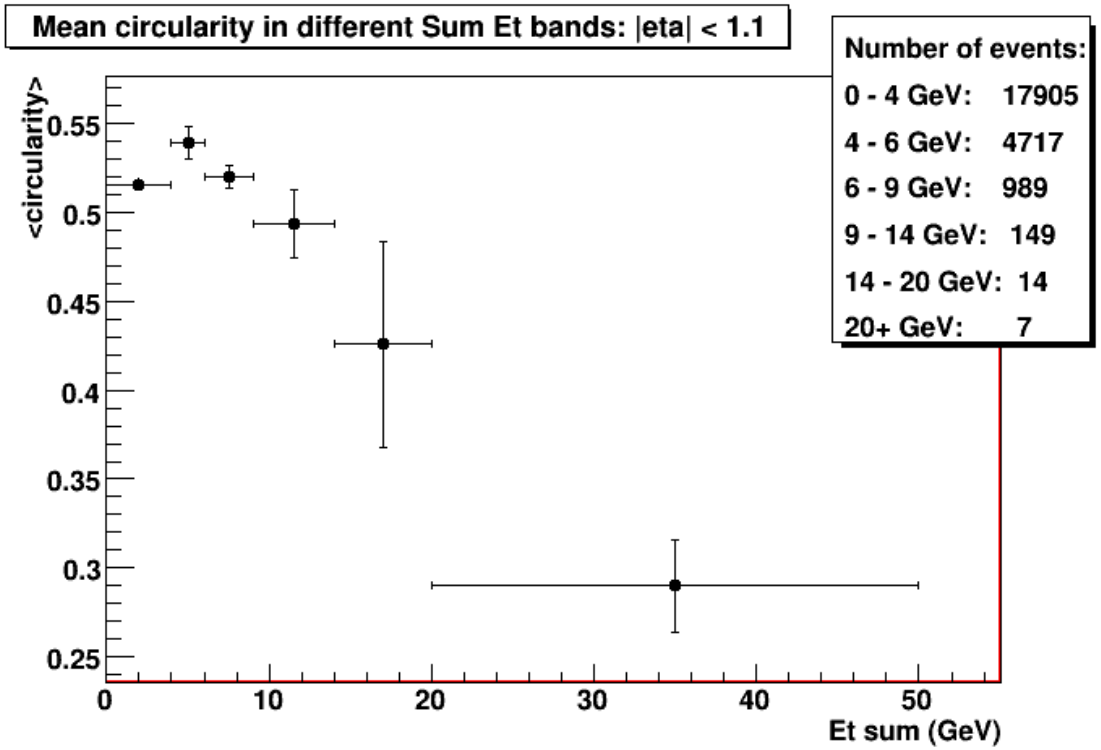


Circularity

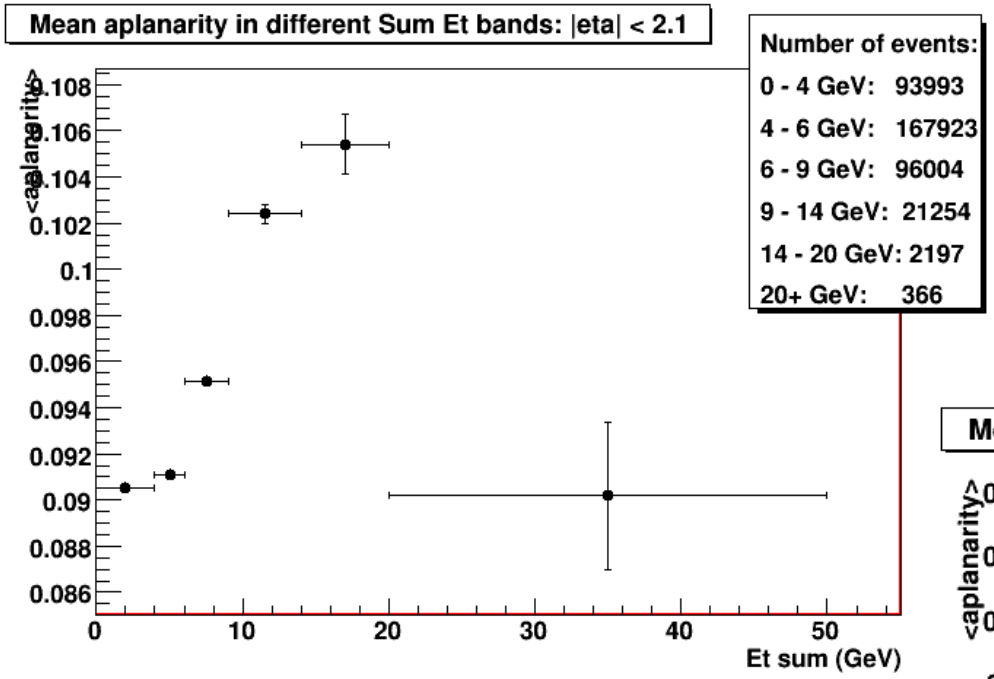


|eta| < 2.1

|eta| < 1.1

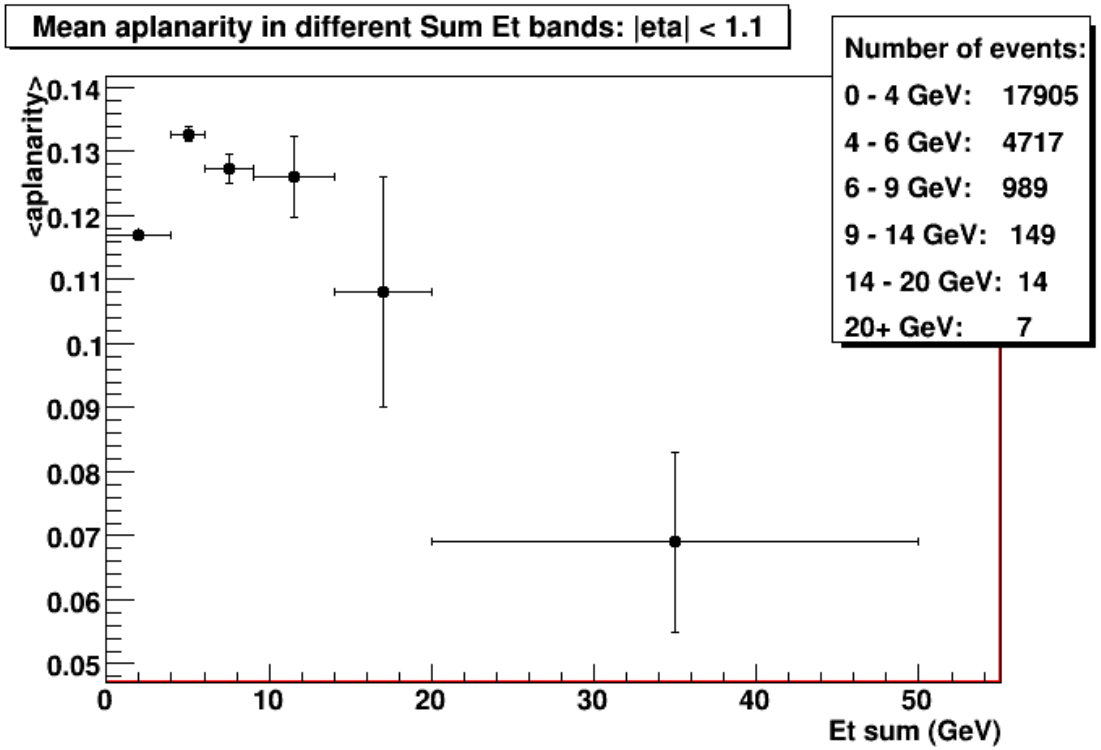


Aplanarity

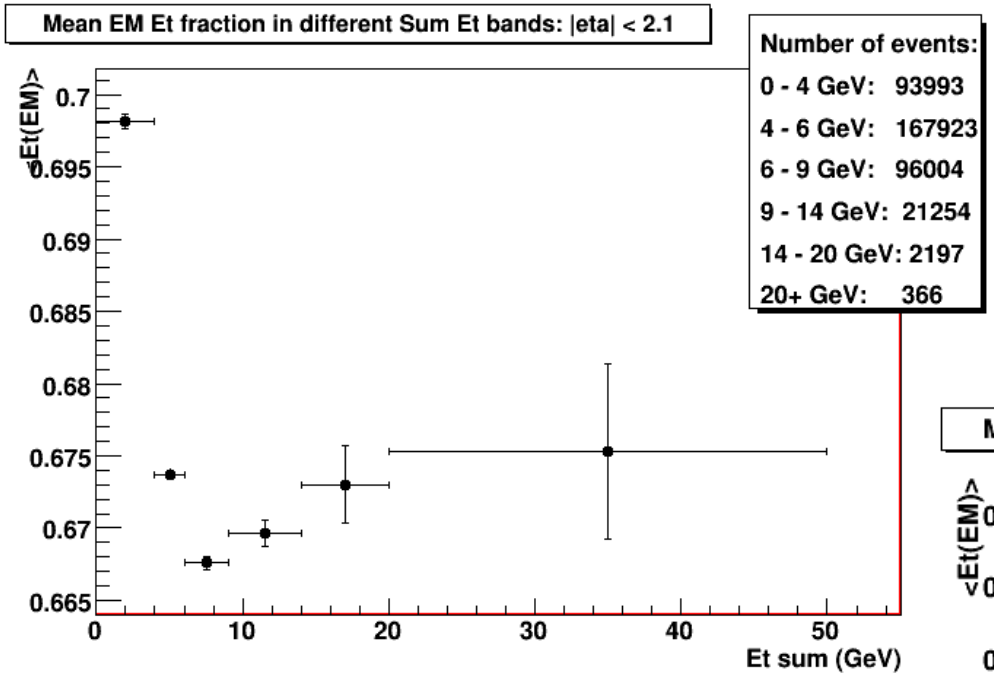


|eta| < 2.1

|eta| < 1.1

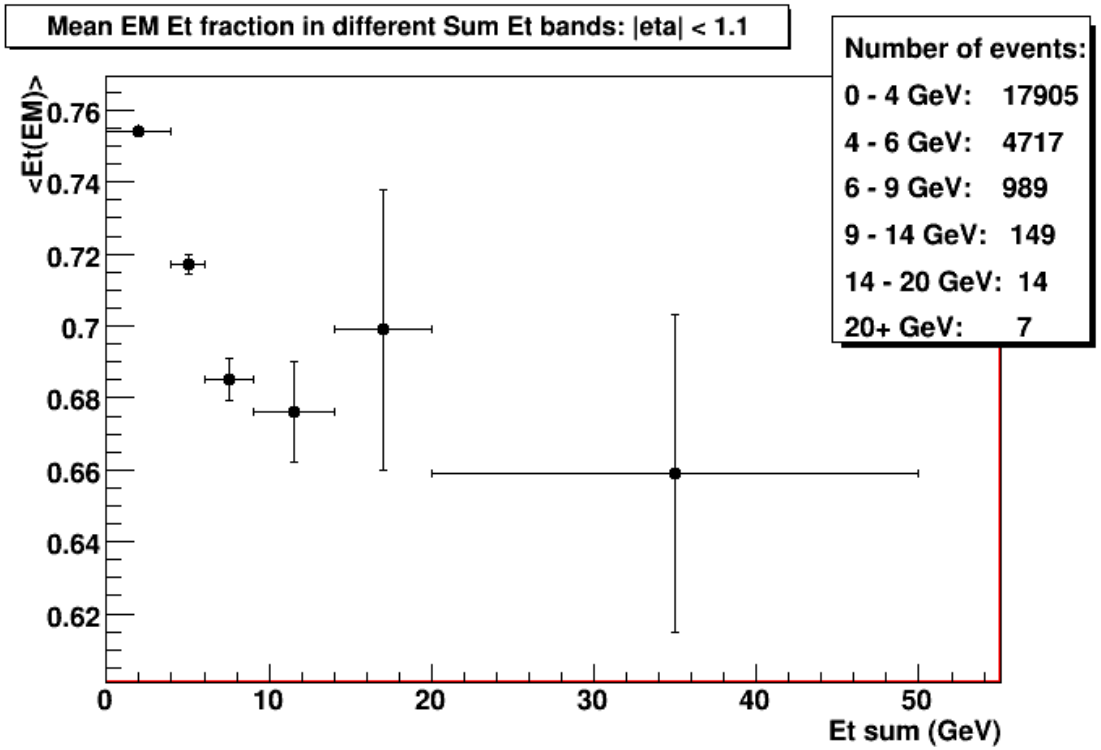


EM fraction (the same conditions)



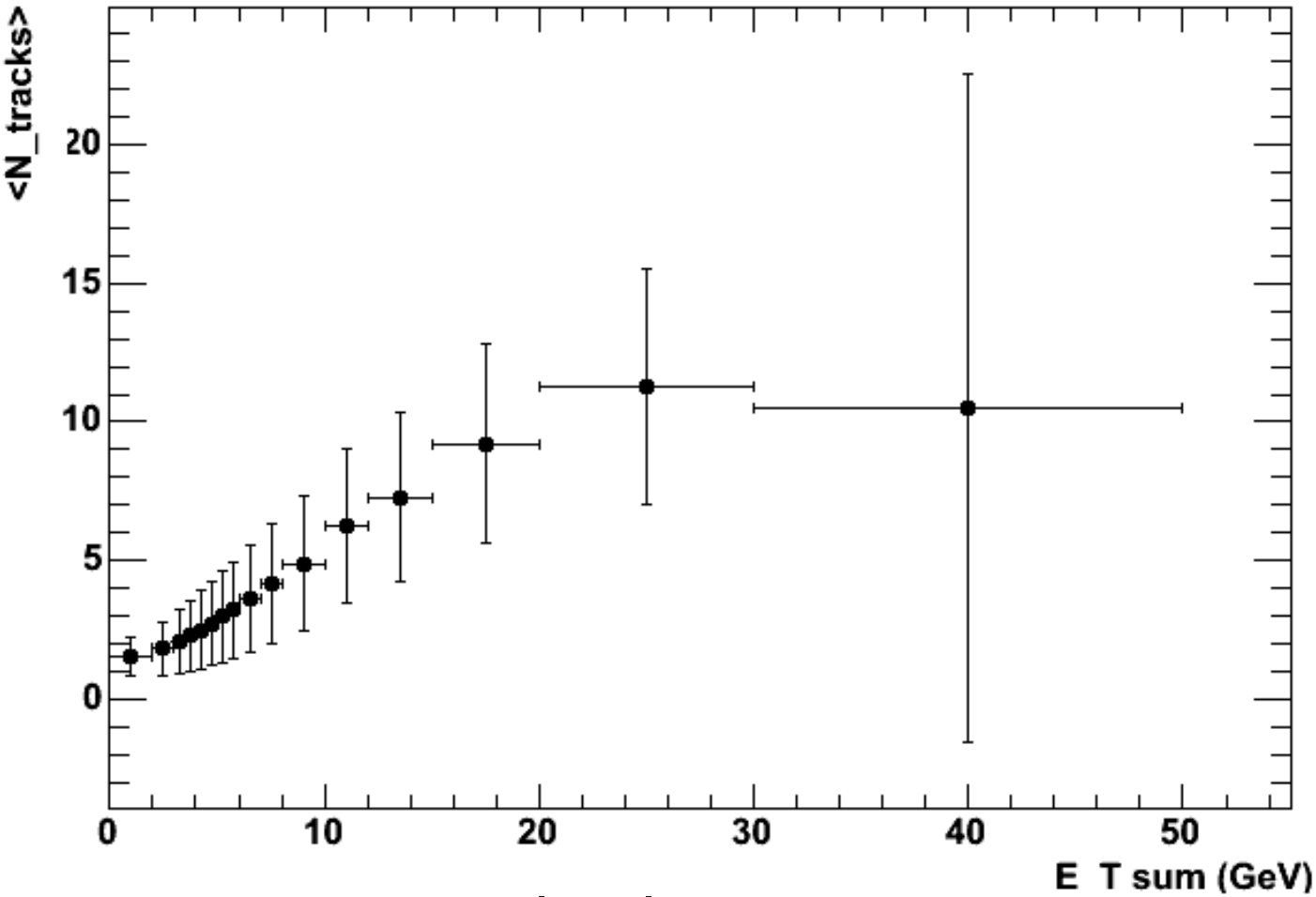
|eta| < 2.1

|eta| < 1.1



Mean track multiplicity

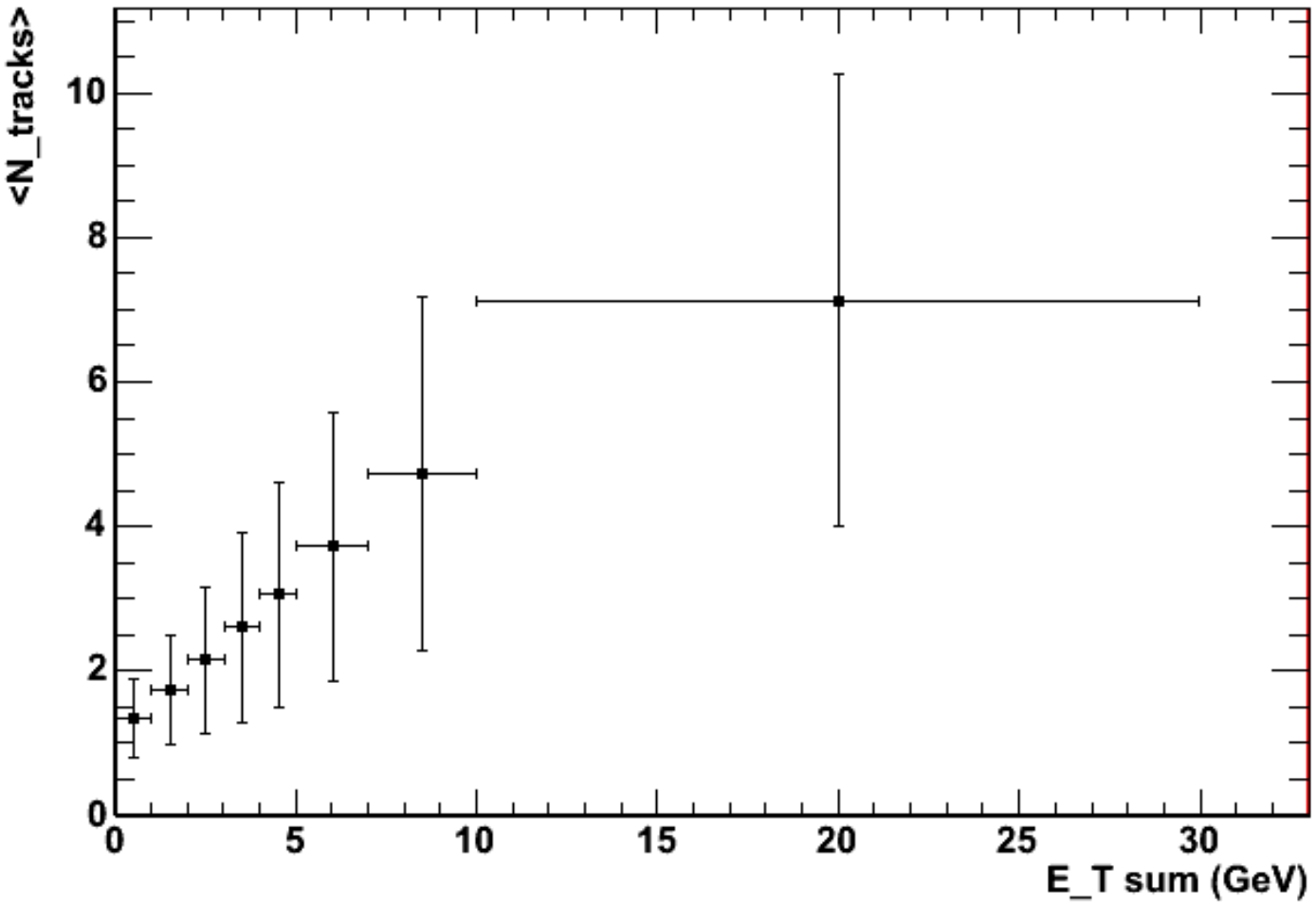
(for events with at least 1 track)



|eta| < 2.1

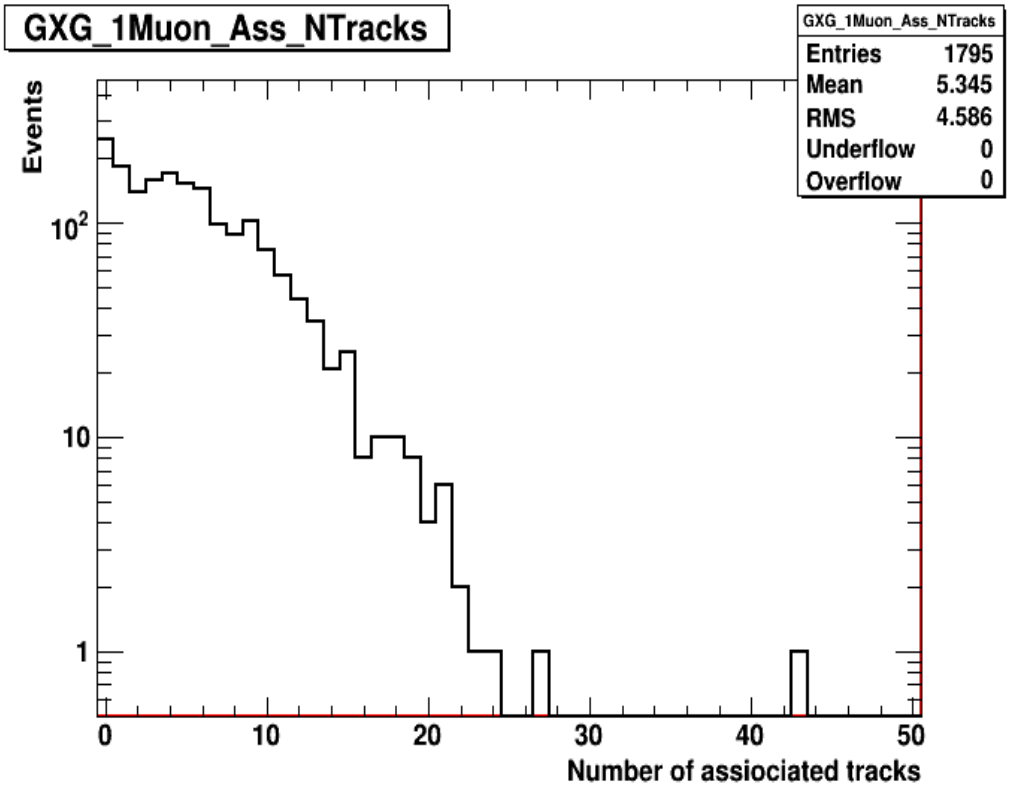
Mean track multiplicity

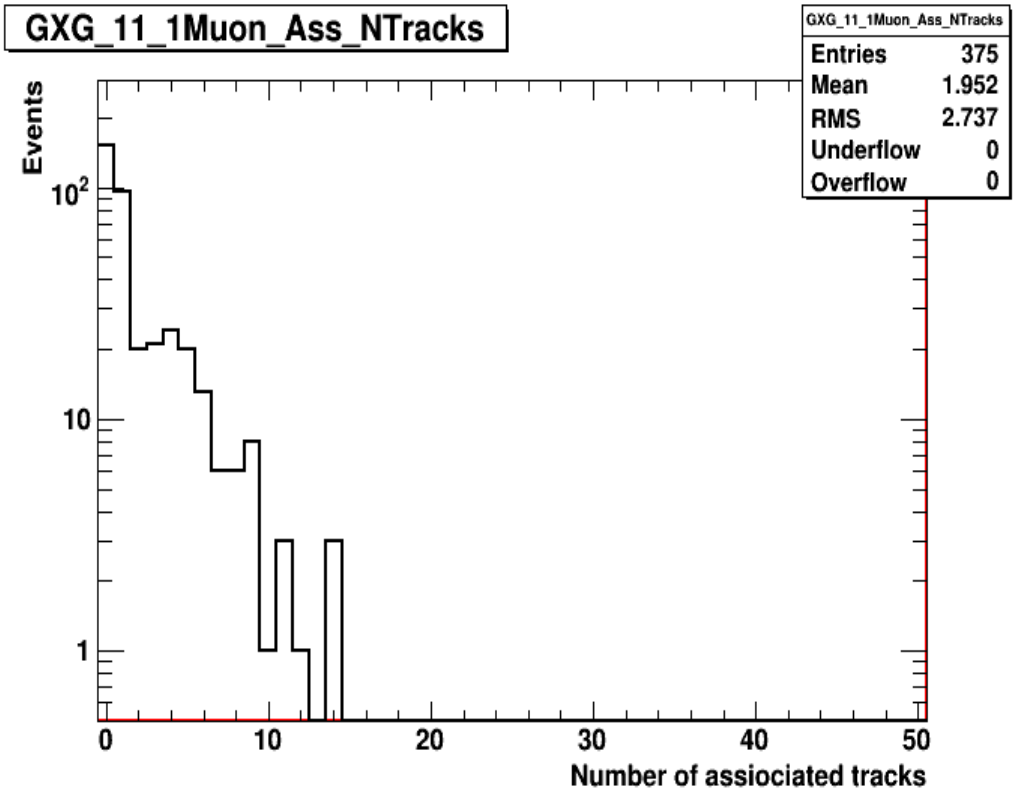
(for events with at least 1 track)



|eta| < 1.1

Muon



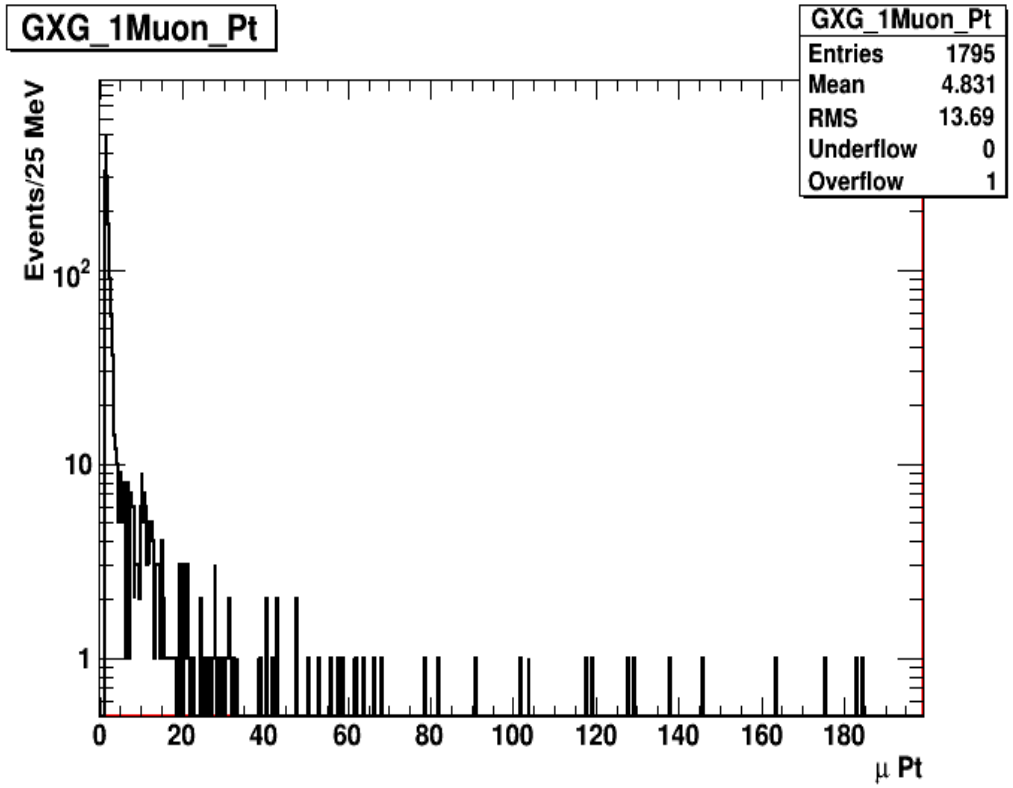


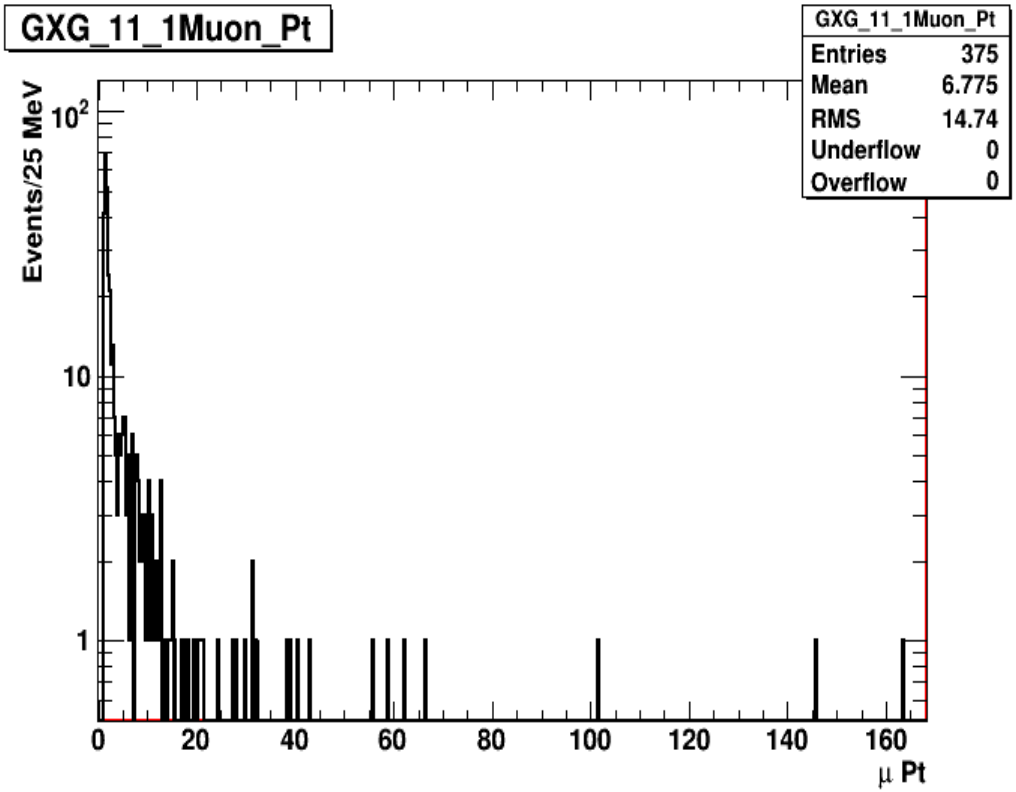
|eta| < 2.1

|eta| < 1.1

Number of accompanying tracks in one muon events

Muon



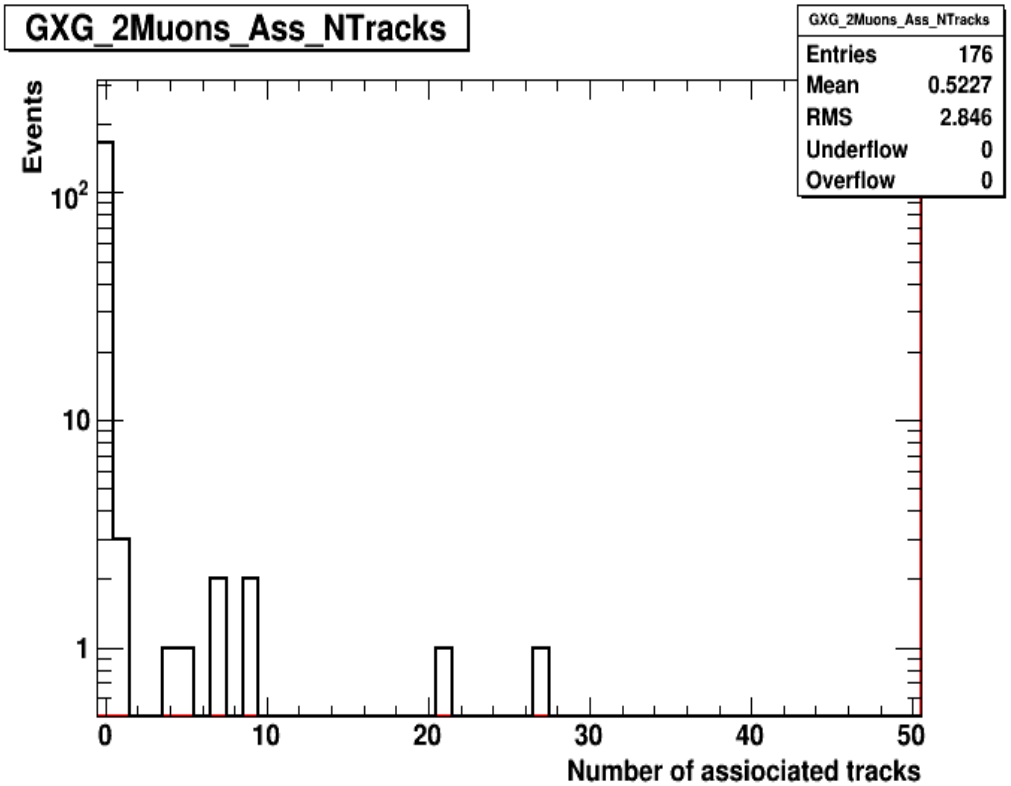


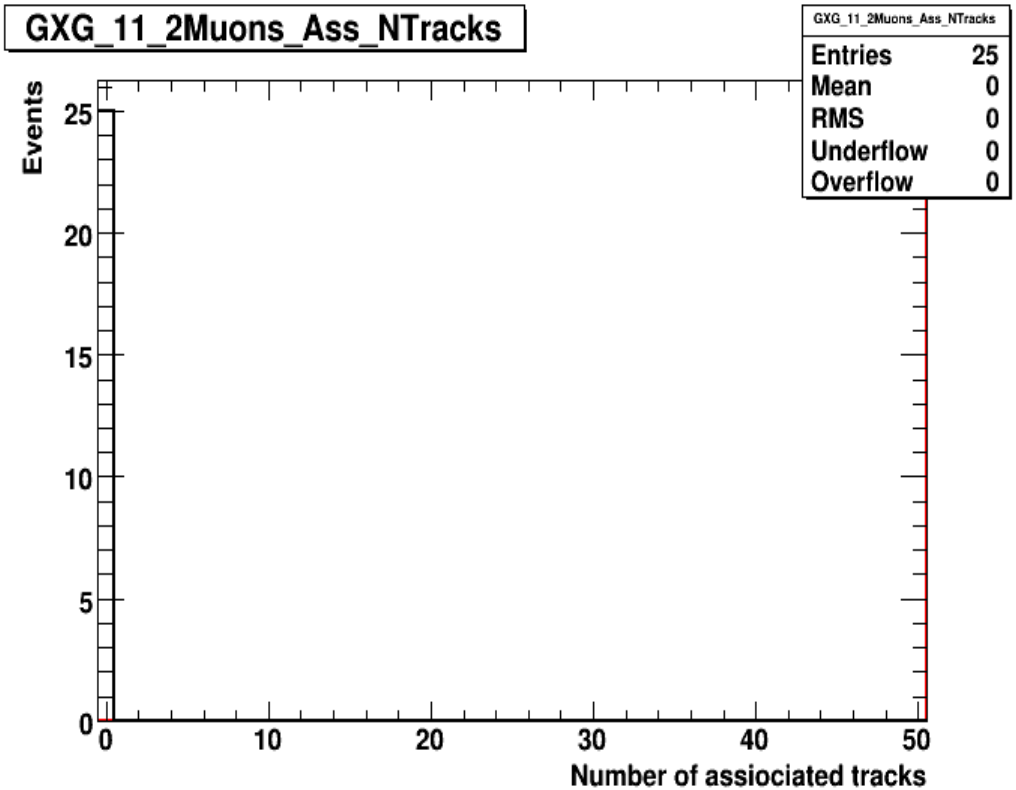
|eta| < 2.1

|eta| < 1.1

Muon Pt in one muon events

2 Muons



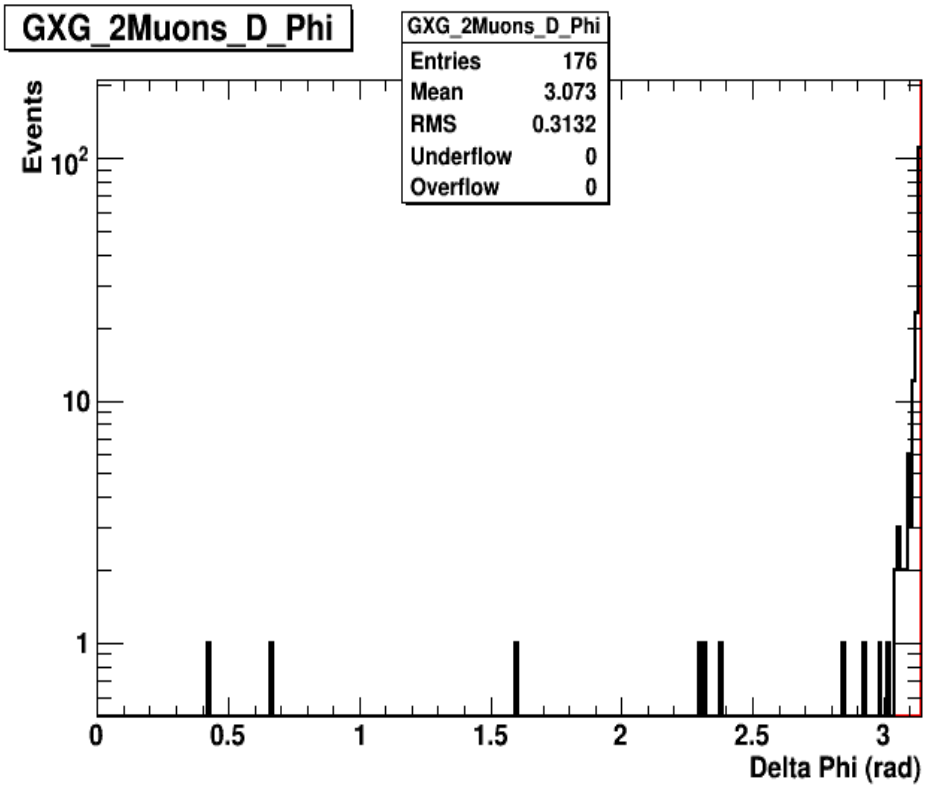


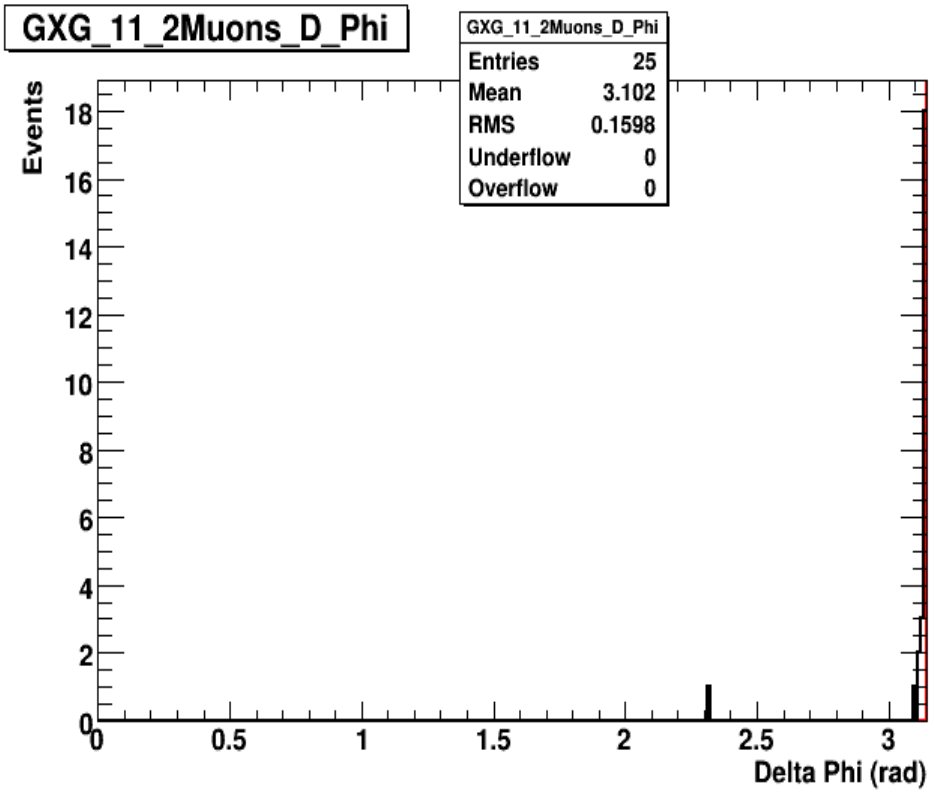
|eta| < 2.1

|eta| < 1.1

Number of accompanying tracks in two muons events

2 Muons



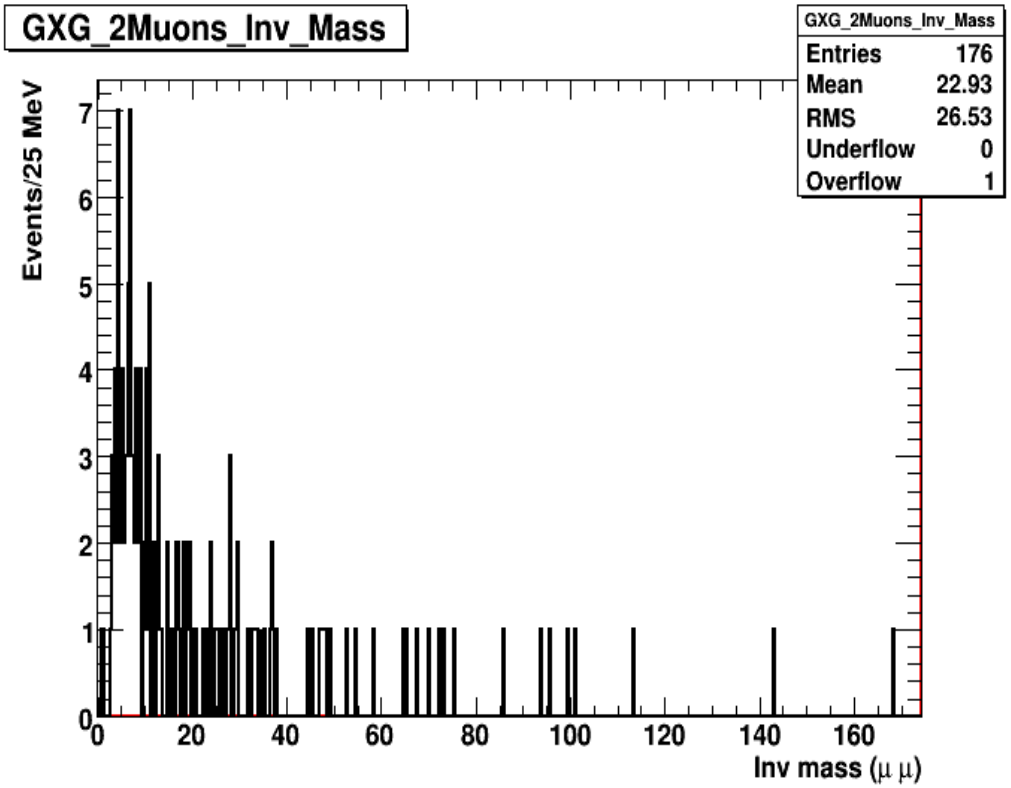


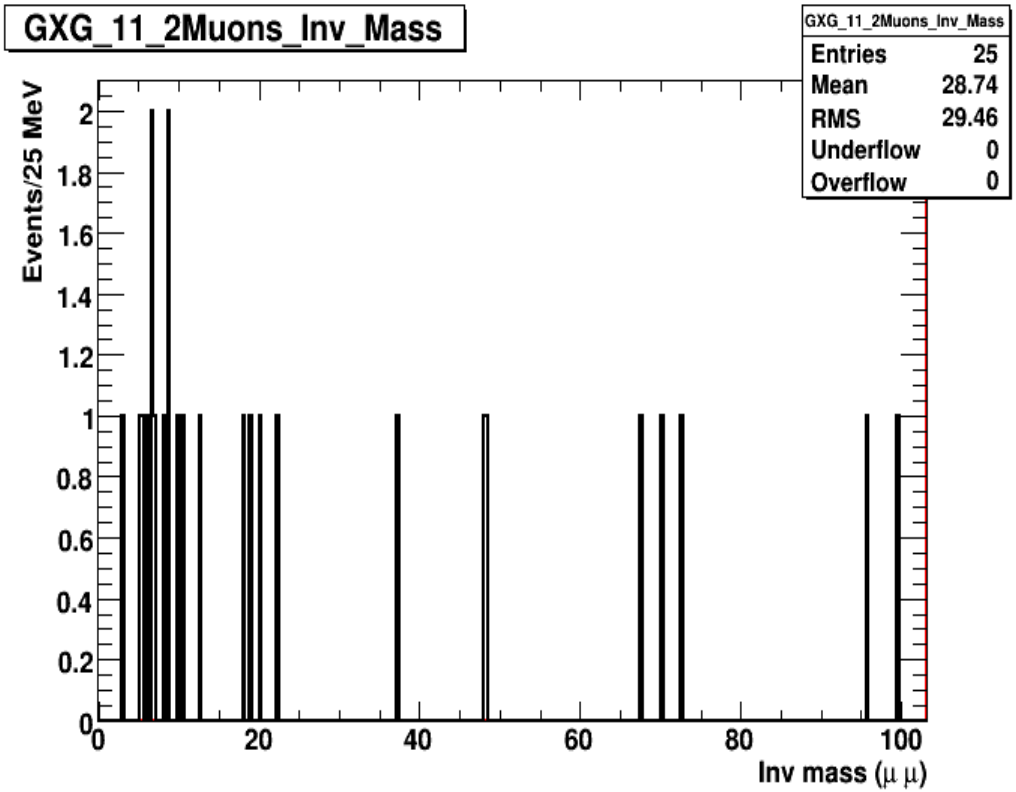
|eta| < 2.1

|eta| < 1.1

Phi difference between tracks in two muons events

2 Muons



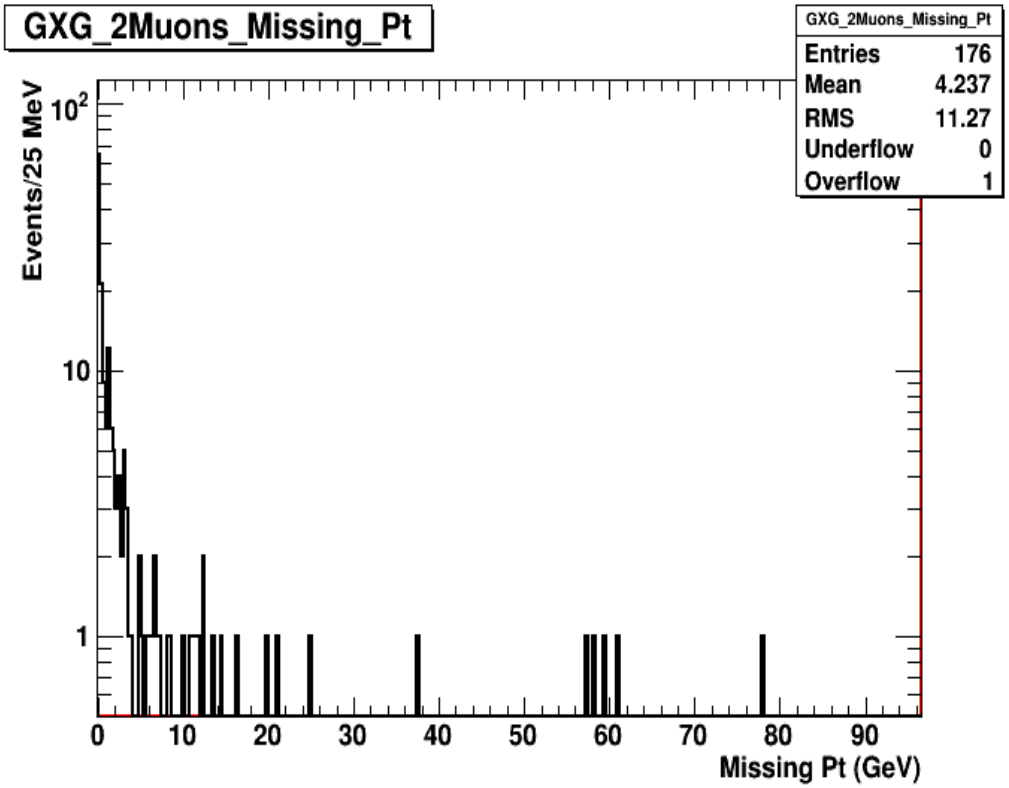


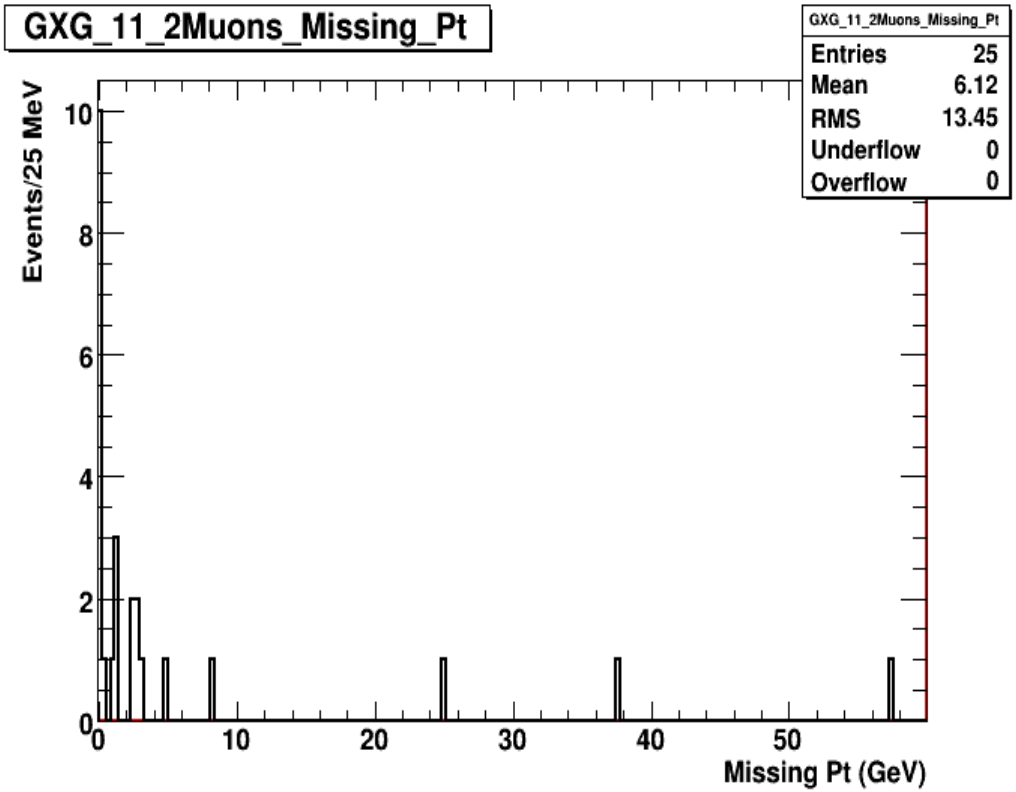
|eta| < 2.1

|eta| < 1.1

Dimuon invariant mass in two muons events

2 Muons



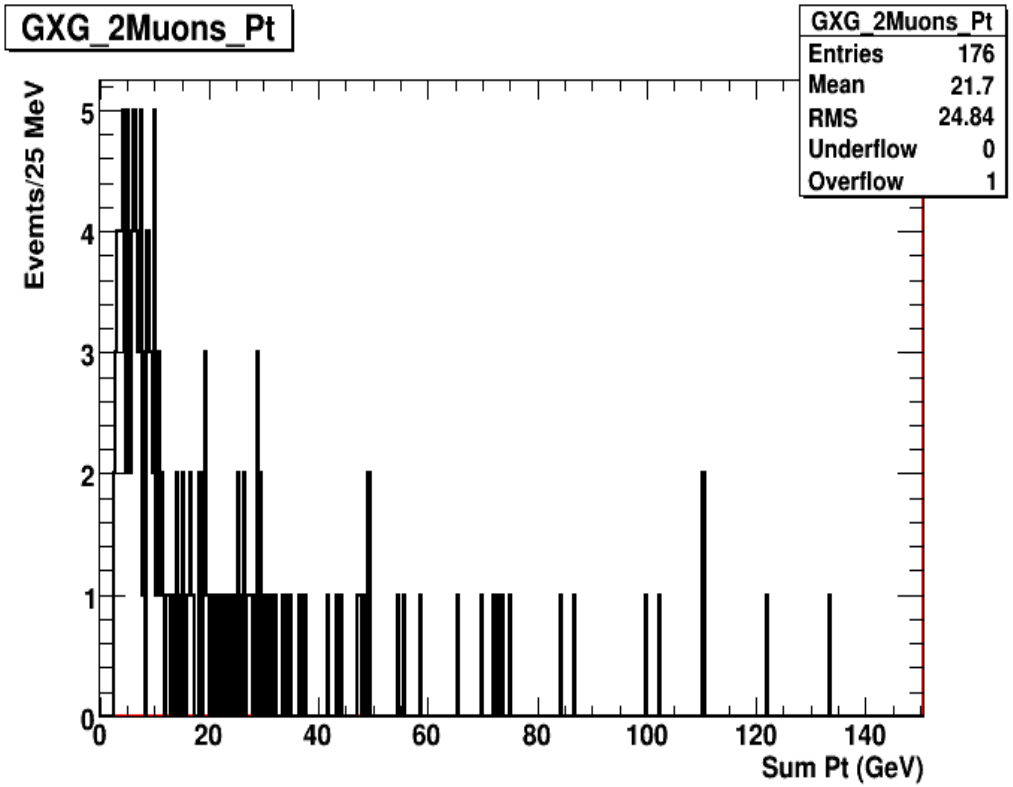


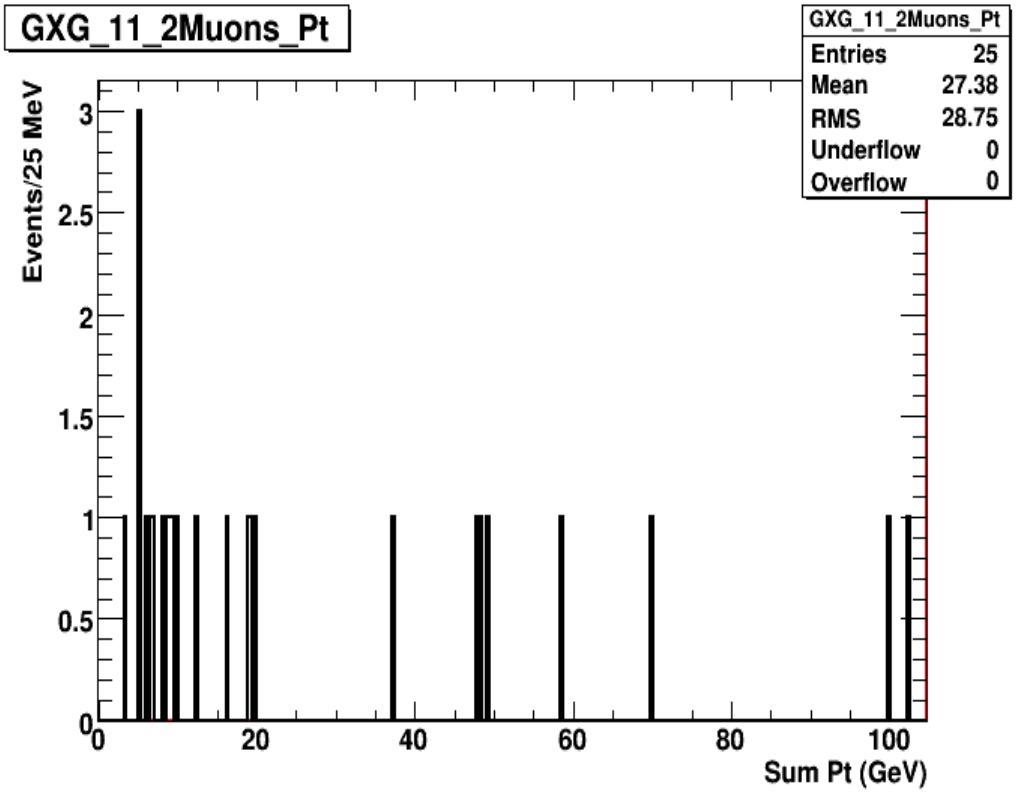
|eta| < 2.1

|eta| < 1.1

Missing Pt in two muons events

2 Muons





|eta| < 2.1

|eta| < 1.1

D imuon Pt in two muons events