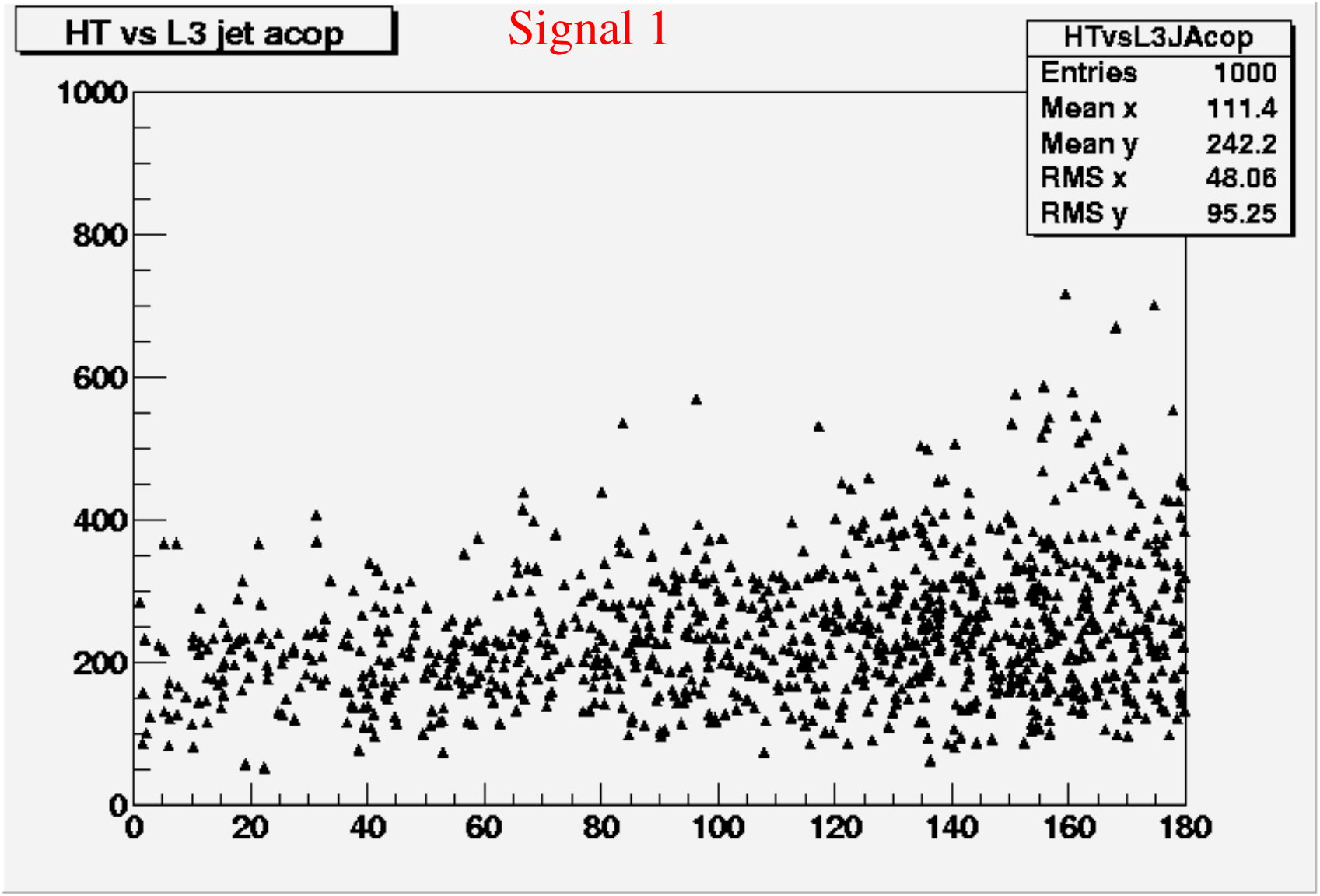
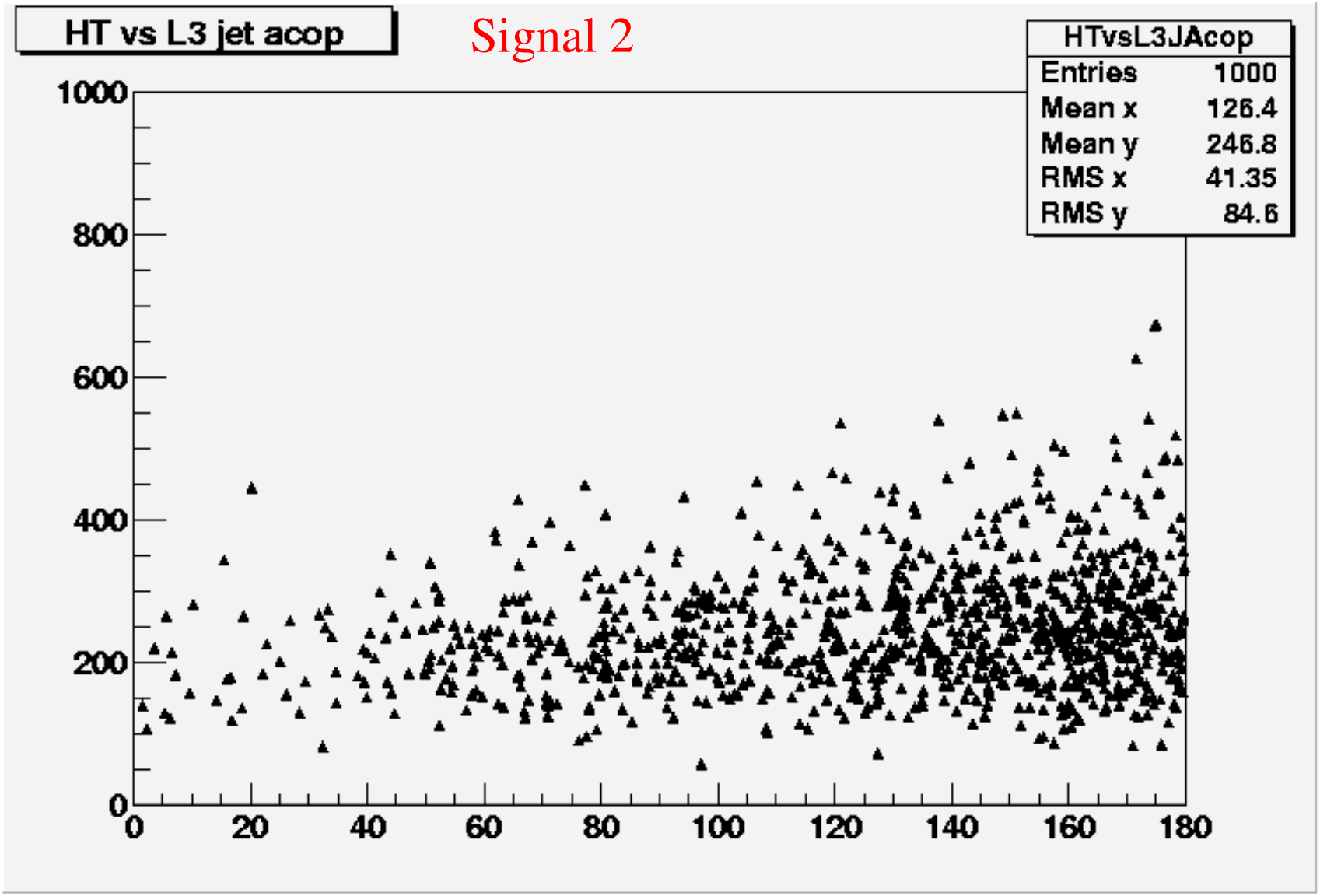
Missing HT filter

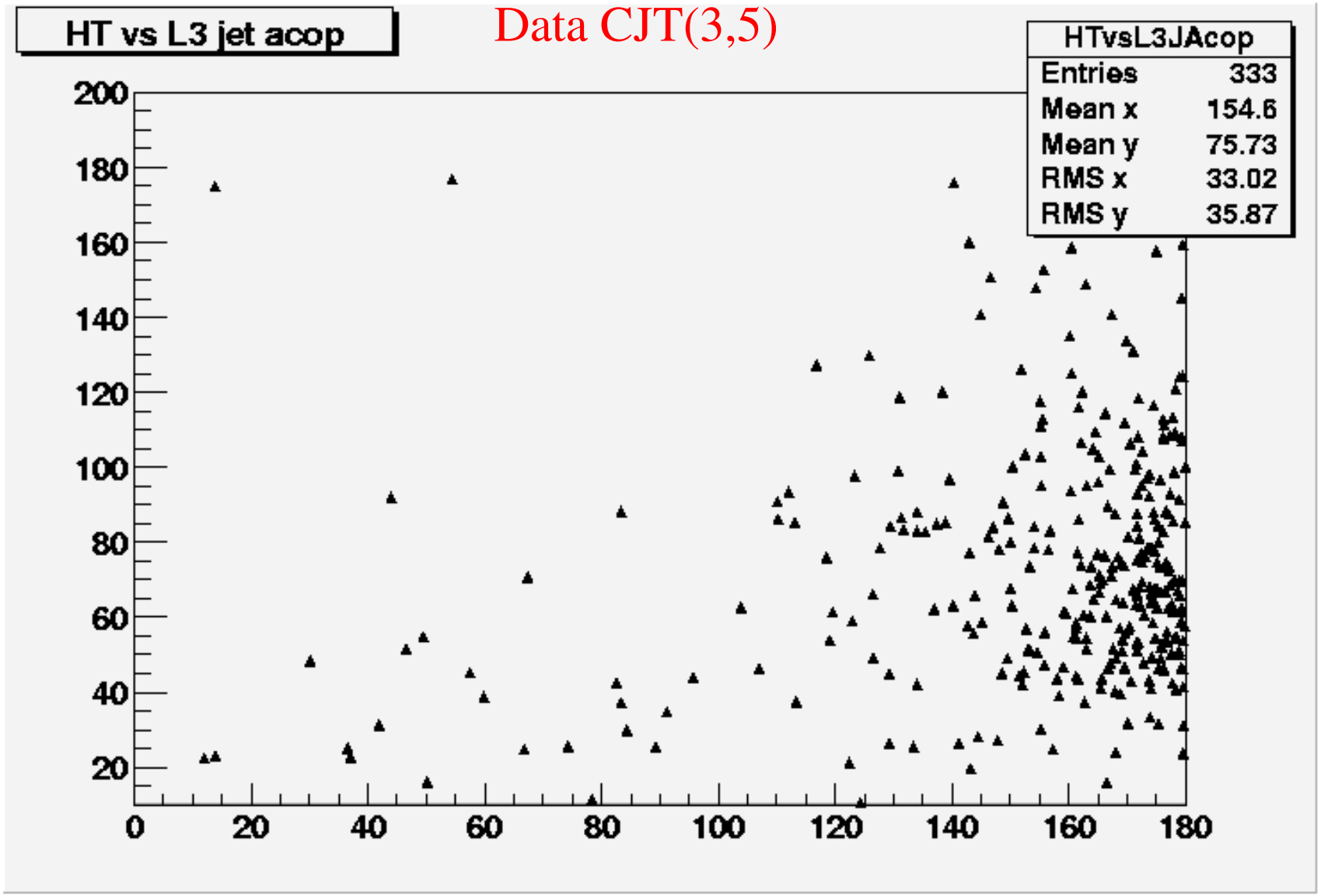
- Missing HT is calculated from the vecto sum of all jets. Why Missing HT rather than missing ET ?
  - Jets have been used for a lot time at L3, they are stable and can be relied upon
  - Missing ET might be hurt at some time by hot cells
  - Missing ET might not behave very well when luminosity increase (an inclusive variable)
  - On the other hand the resolution of missing HT is probably worse
- I will briefly describe what I went through for certification

Certification

- This is a simple filter code that might eventually be replaced by a filter based on the l3fJetMEt tool results.
- It was agred that for simple filters, the certification process is “lighter”.
- I have run with a modified v8.2 triggerlist on a few thousand of MC and real data events.
- I have checked the trigger decision against results from a root macro
- I have checked that the trigger rates from other trigger were not affected

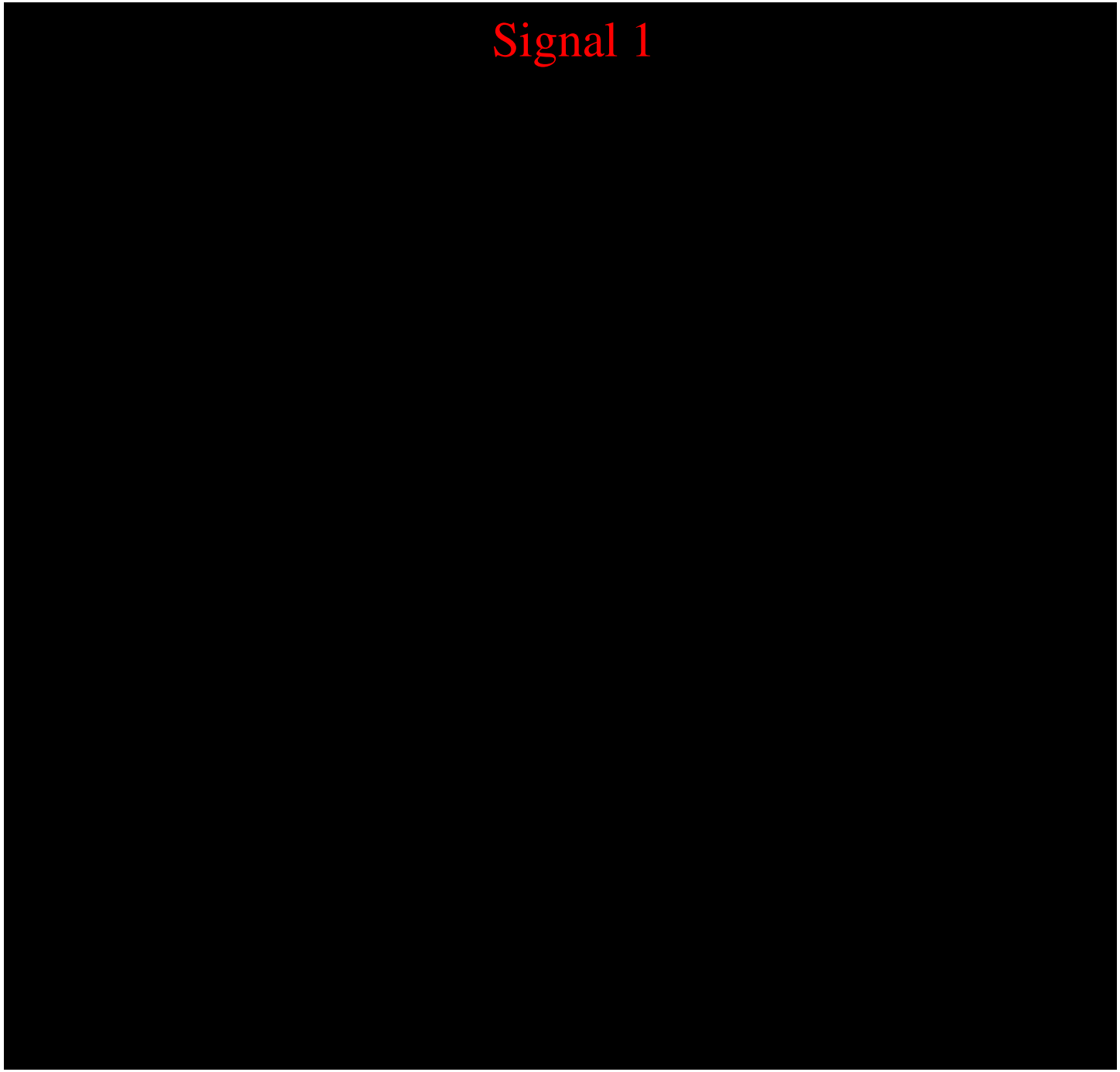

HT vs L3 jet acop
Signal 1
HTvsL3JAcop
Entries 1000
Mean x 111.4
Mean y 242.2
RMS x 48.06
RMS y 95.25
1000
800
600
400
200
0
0
20
40
60
80
100
120
140
160
180


HT vs L3 jet acop
Signal 2
HTvsL3JAcop
Entries 1000
Mean x 126.4
Mean y 246.8
RMS x 41.35
RMS y 84.6
1000
800
600
400
200
0
0
20
40
60
80
100
120
140
160
180

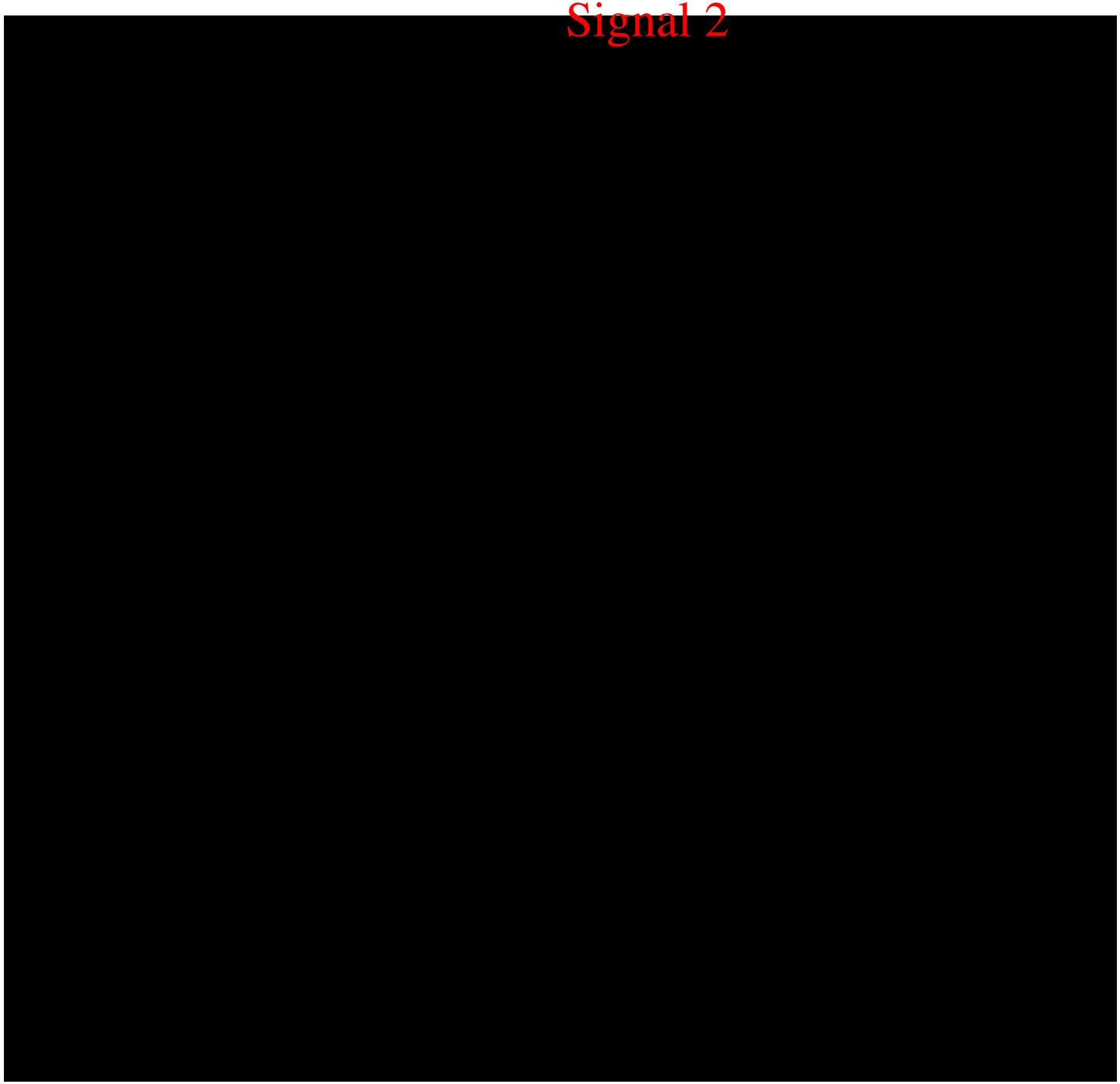

HT vs L3 jet acop
Data CJT(3,5)
HTvsL3JAcop
Entries 333
Mean x 154.6
Mean y 75.73
RMS x 33.02
RMS y 35.87
200
180
160
140
120
100
80
60
40
20
0
20
40
60
80
100
120
140
160
180

Missing HT vs Missing ET

- Still use a v8.2 trigger list but hand edit the level3.sim to add missing ET as called in recent trigger list.
- Missing ET relies on the primary vertex while jets don't, so there is some additional smearing coming from the vertex position


Signal 1

Signal 2



DATA CJT(3.5)

Conclusions

- When through all the steps for certification.
- Good correlation with missing ET at large MET. MET probably better at low MET.
- MHT hoped to be less sensitive to luminosity and noise.