Dijets and JetID Variables Efficiency @ 900 GeV Data

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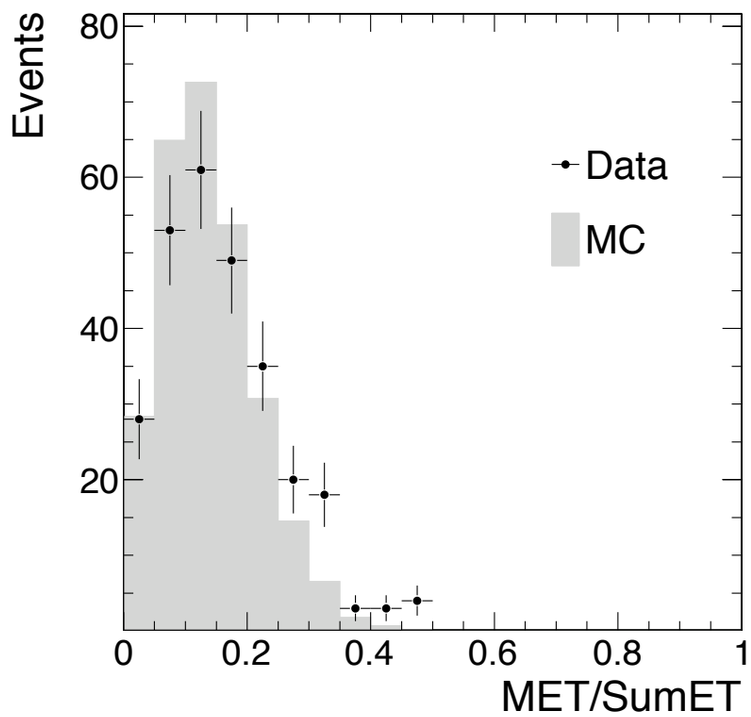
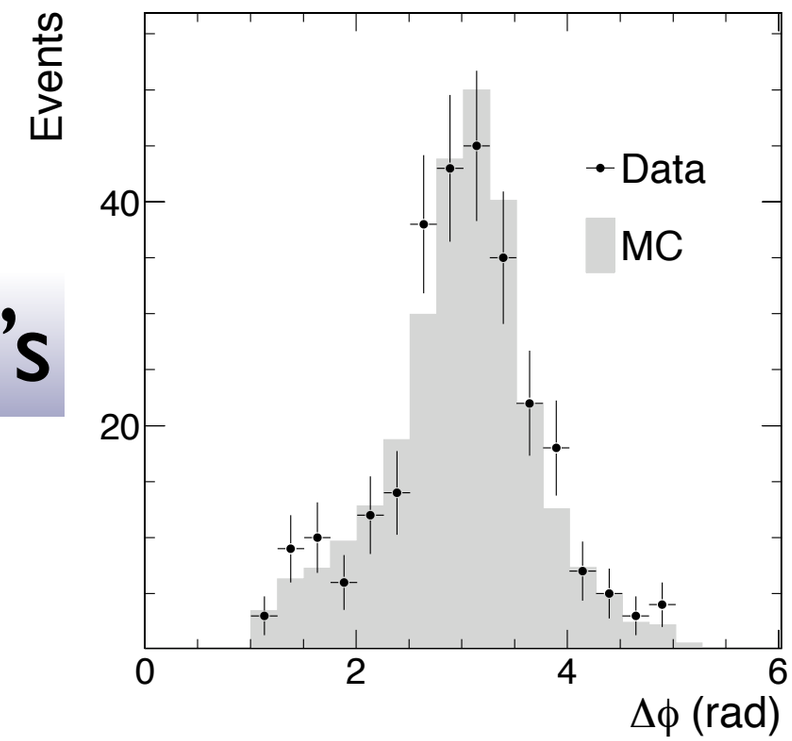
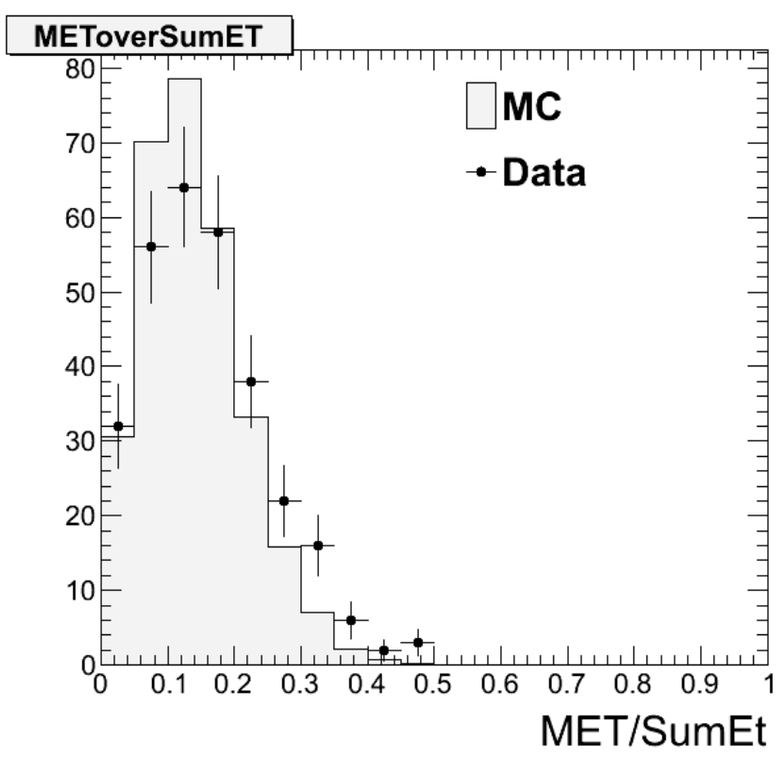
Data Analysis and Event Selections

- Promt Reconstruction
- CMSSW_3_3_4
- /MinBias/Summer09-Startup3X_V8I_900GeV-v2/GEN-SIM-RECO
- Anti-kt R=0.5 Calo Jets
- 900GeV_L2L3_AK5Calo Jet Correction
- HLT_MinBiasBSC
- |PVz|<20
- MET/SumEt<0.5
- NJets>1
- Both Jets Corrected Pt>10 GeV
- Both Jets |eta|<2.6
- Both Jets EMF>0.01
- Both Jets fRBX<0.98 & fHPD<0.98
- |Delta Phi - 3.1416|<2.
- Total : 294 Dijet events

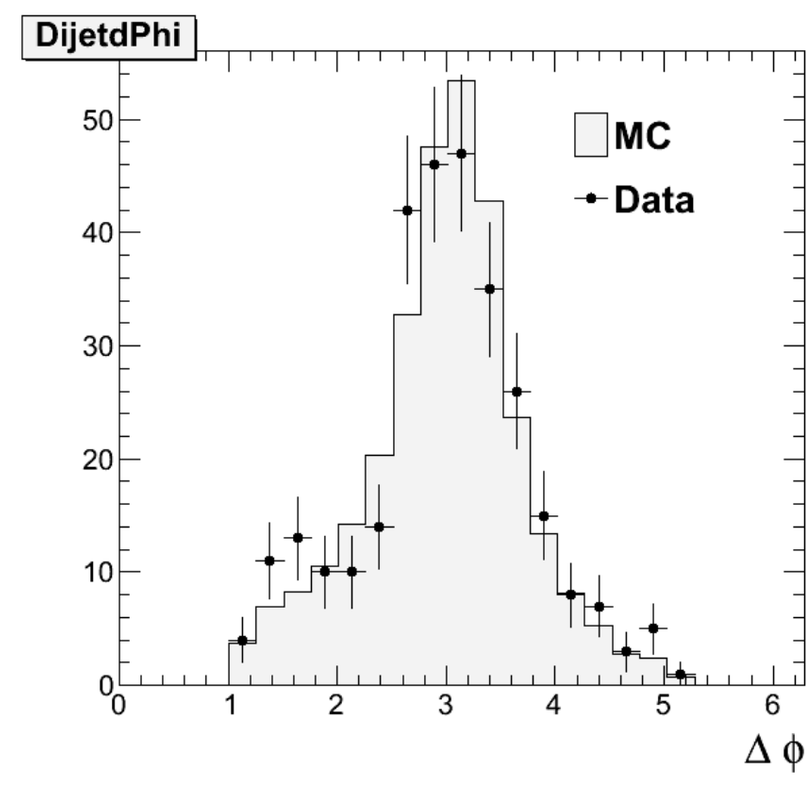

Events
Data
MC
MET/SumET

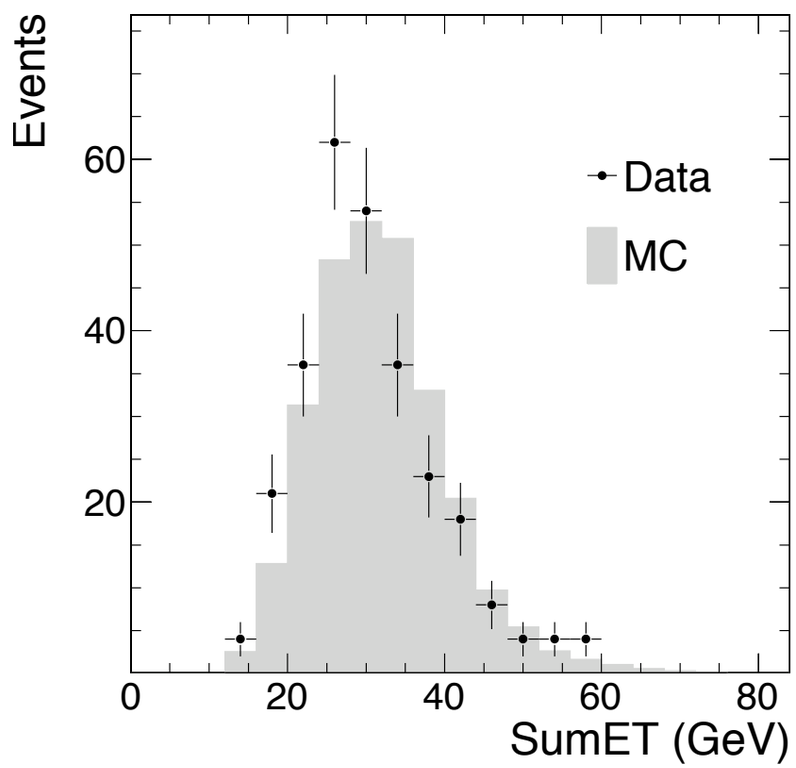
Kostas's

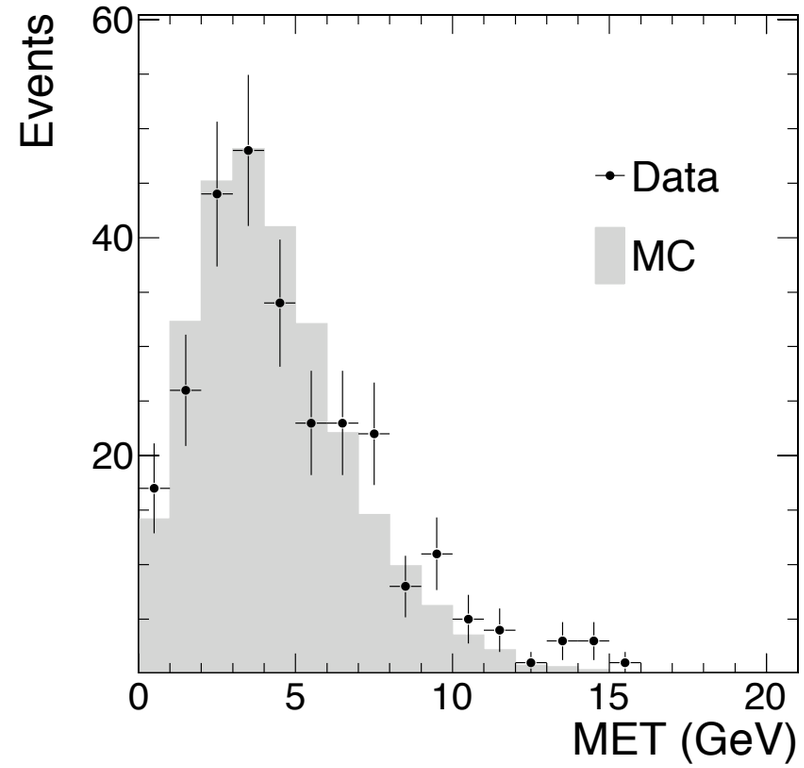

Events
Data
MC
Δϕ (rad)


METoverSumET
MC
Data
MET/SumEt

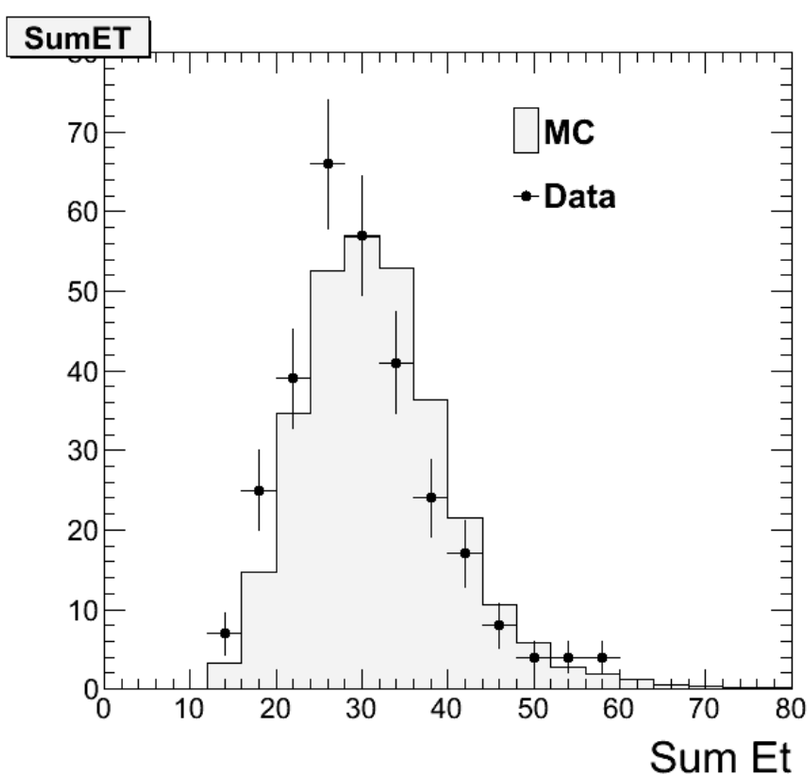
Our

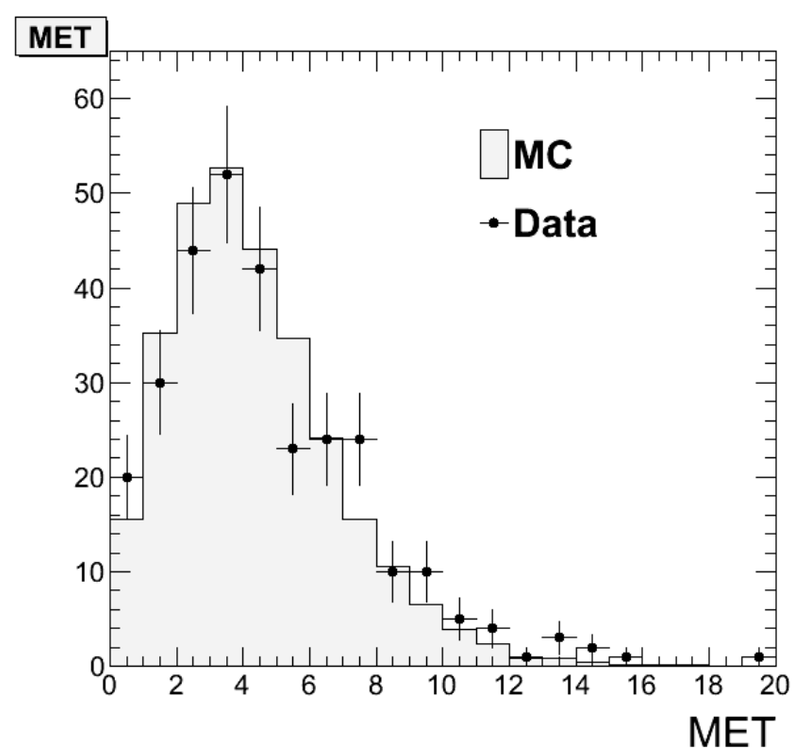

DijetdPhi
MC
Data
Δ ϕ


Events
Data
MC
SumET (GeV)

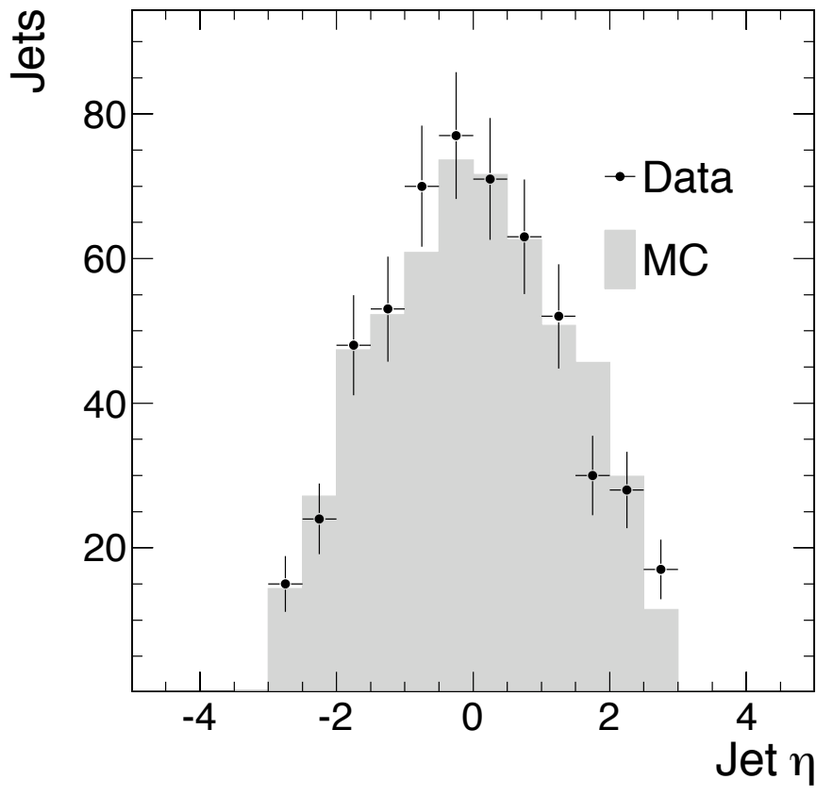

Events
Data
MC
MET (GeV)

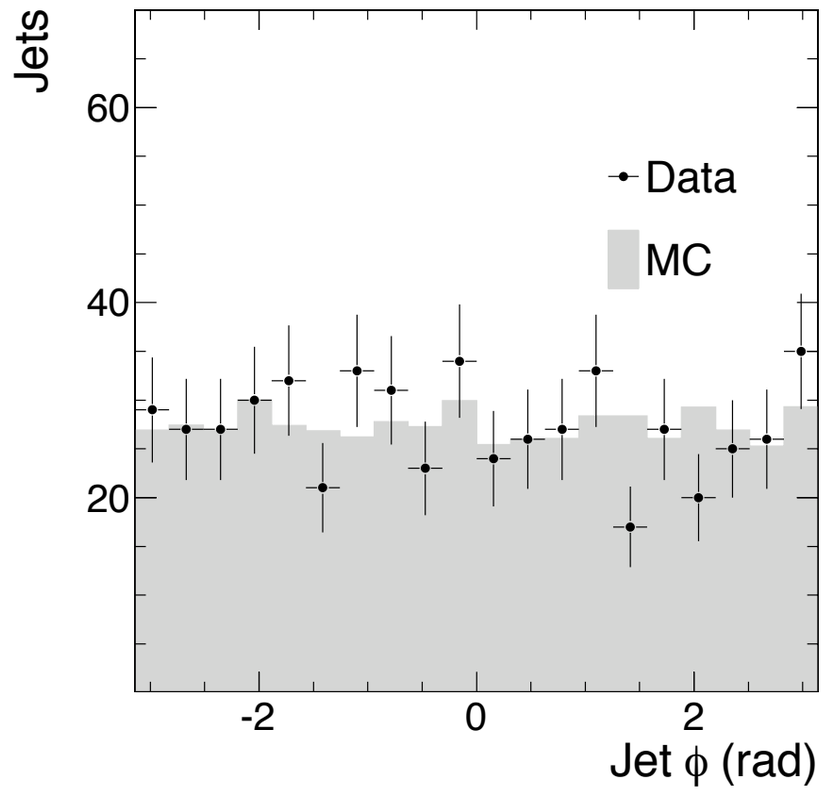
Kostas's


SumET
MC
Data
Sum Et

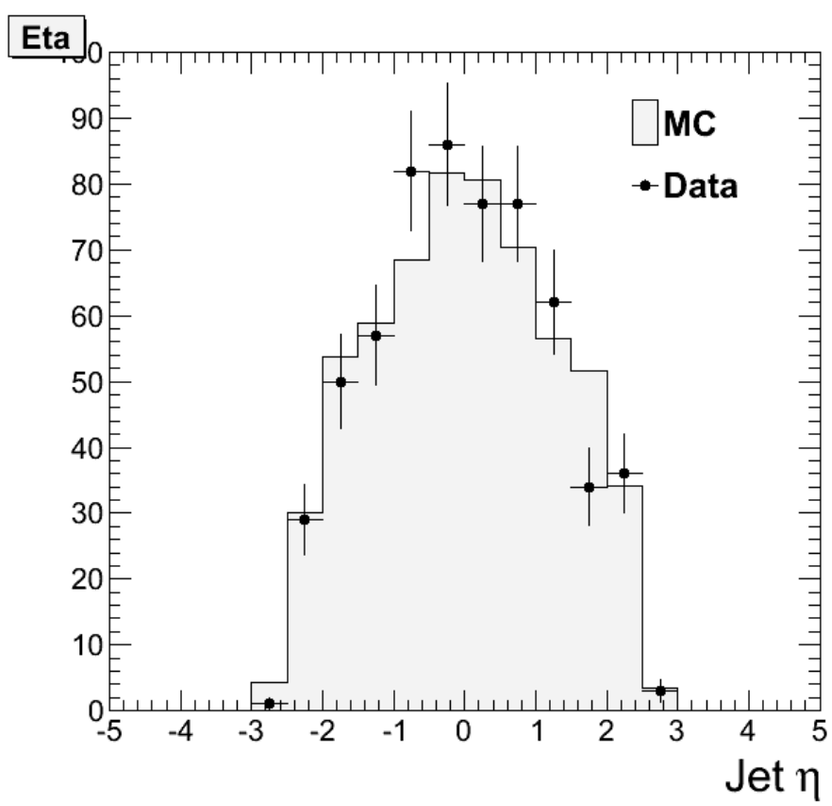

MET
MC
Data
MET

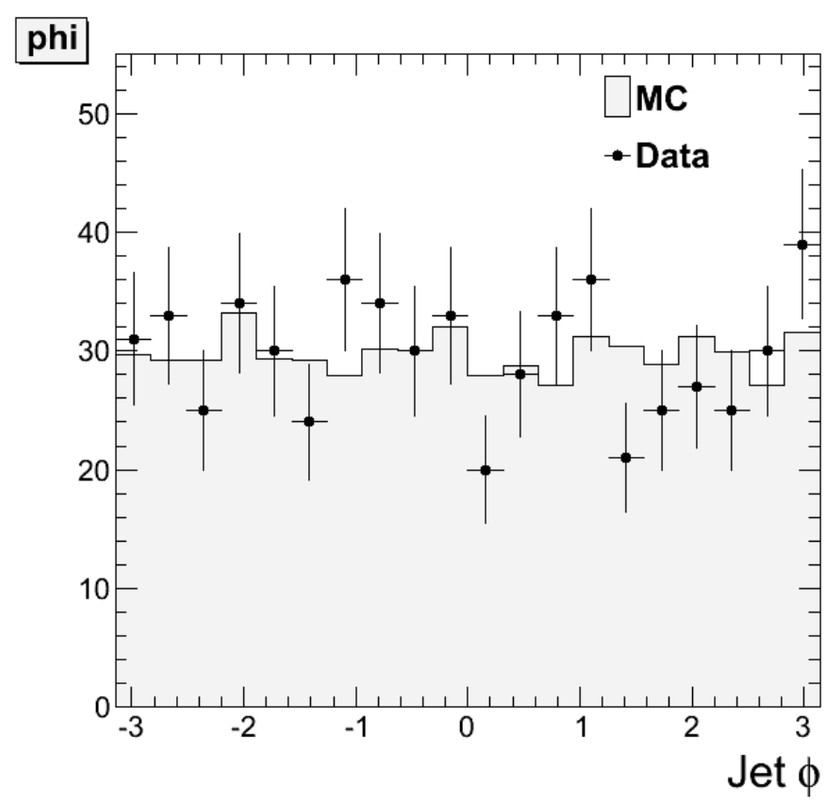
Our


Jets
Data
MC
Jet η

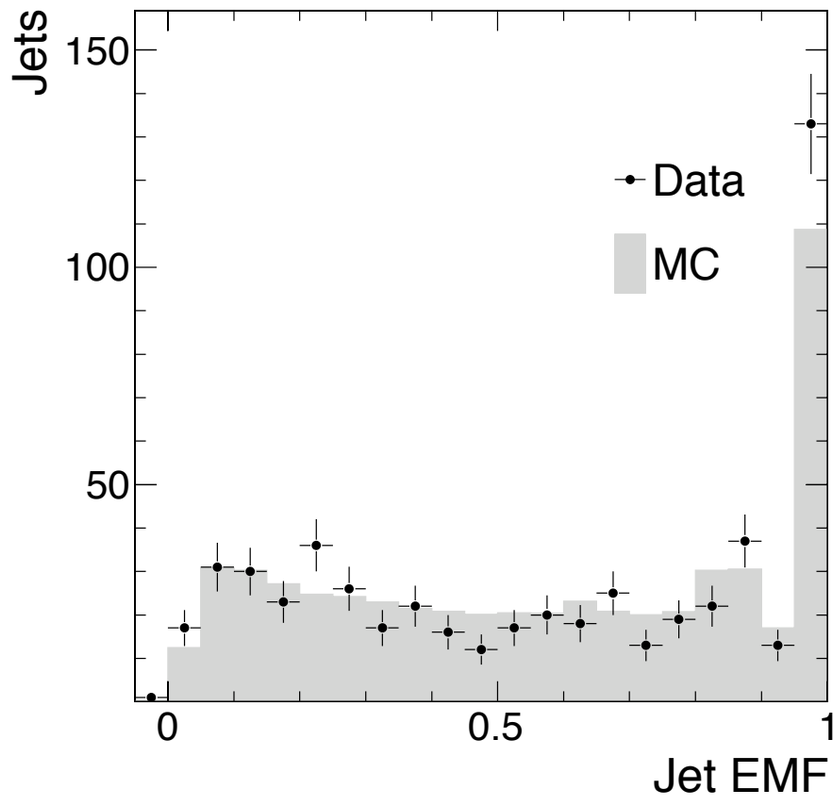

Jets
Data
MC
Jet ϕ (rad)

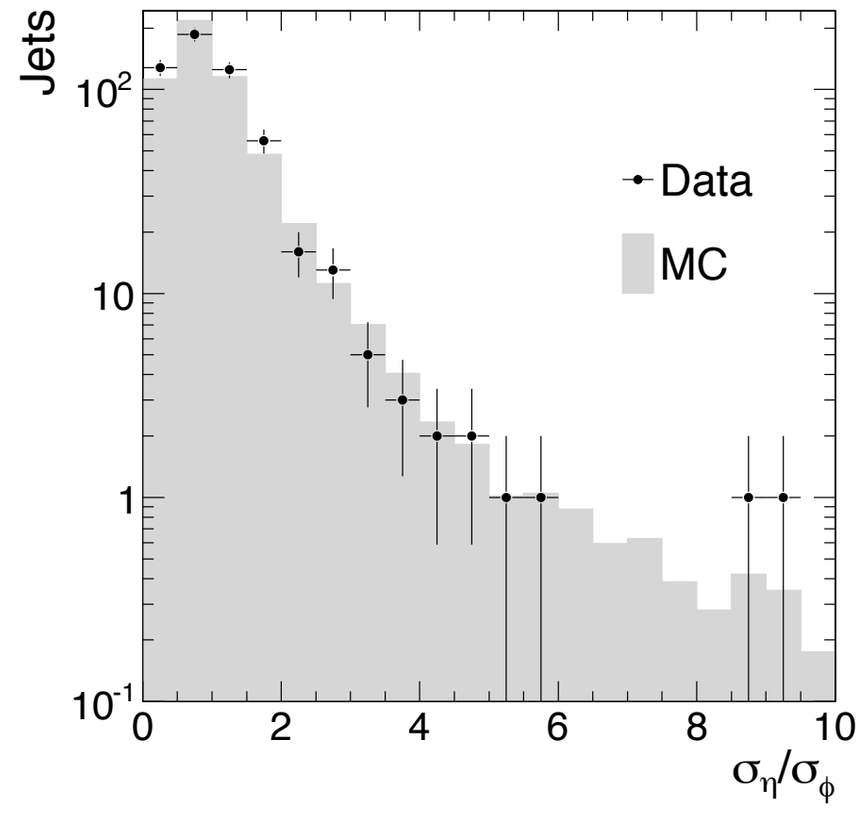
Kostas's


Eta
MC
Data
Jet η

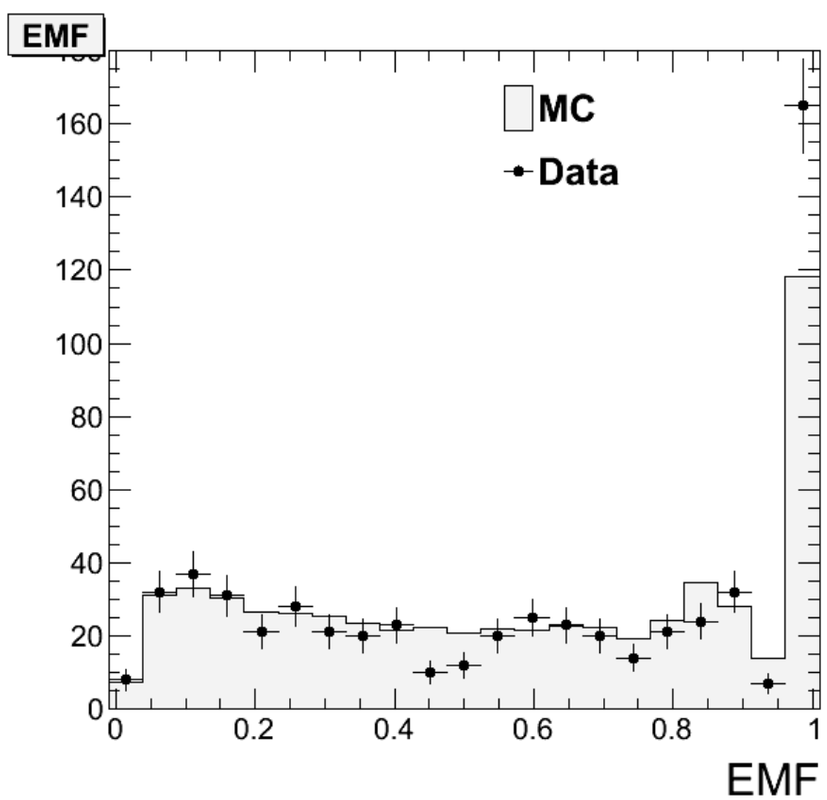

phi
MC
Data
Jet ϕ

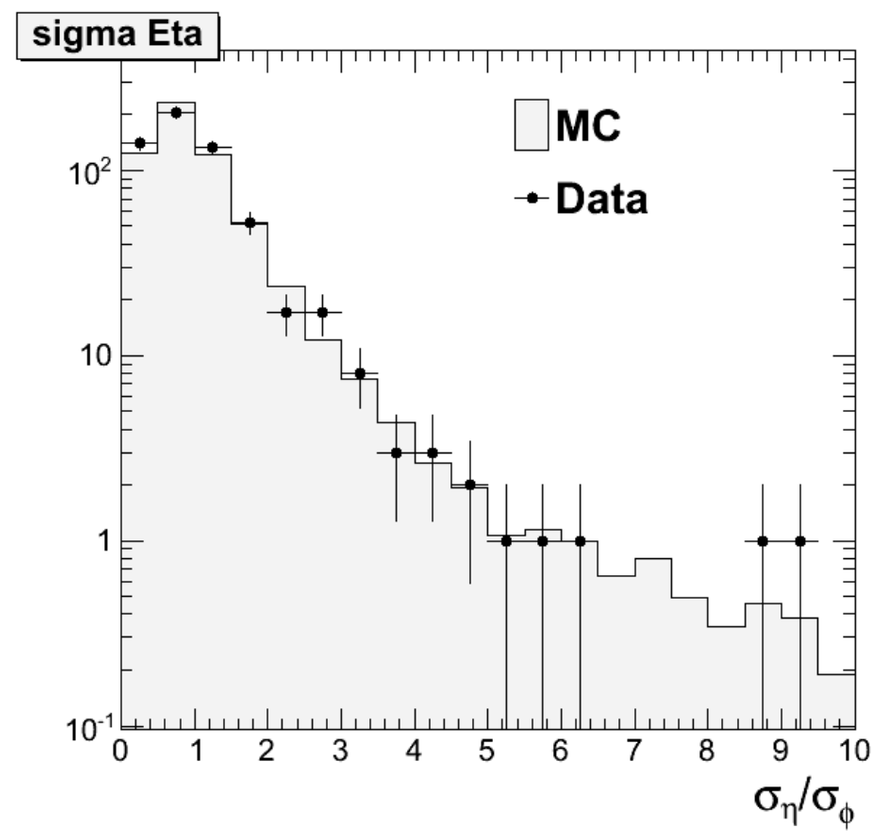
Our


Jets
150
100
50
Data
MC
0
0.5
1
Jet EMF

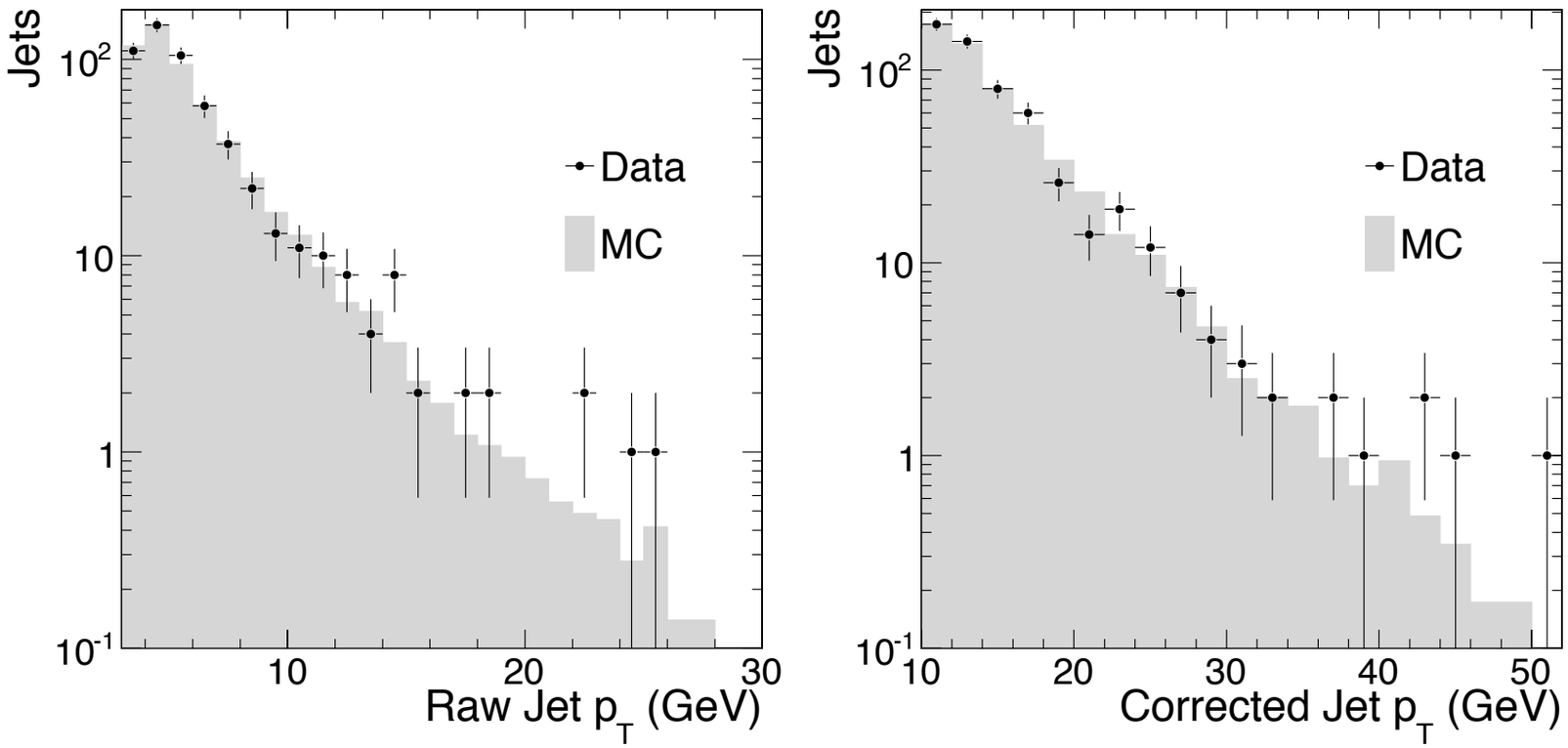

Jets
10^2
10
1
10^{-1}
Data
MC
0
2
4
6
8
10
σ_η/σ_ϕ

Kostas's

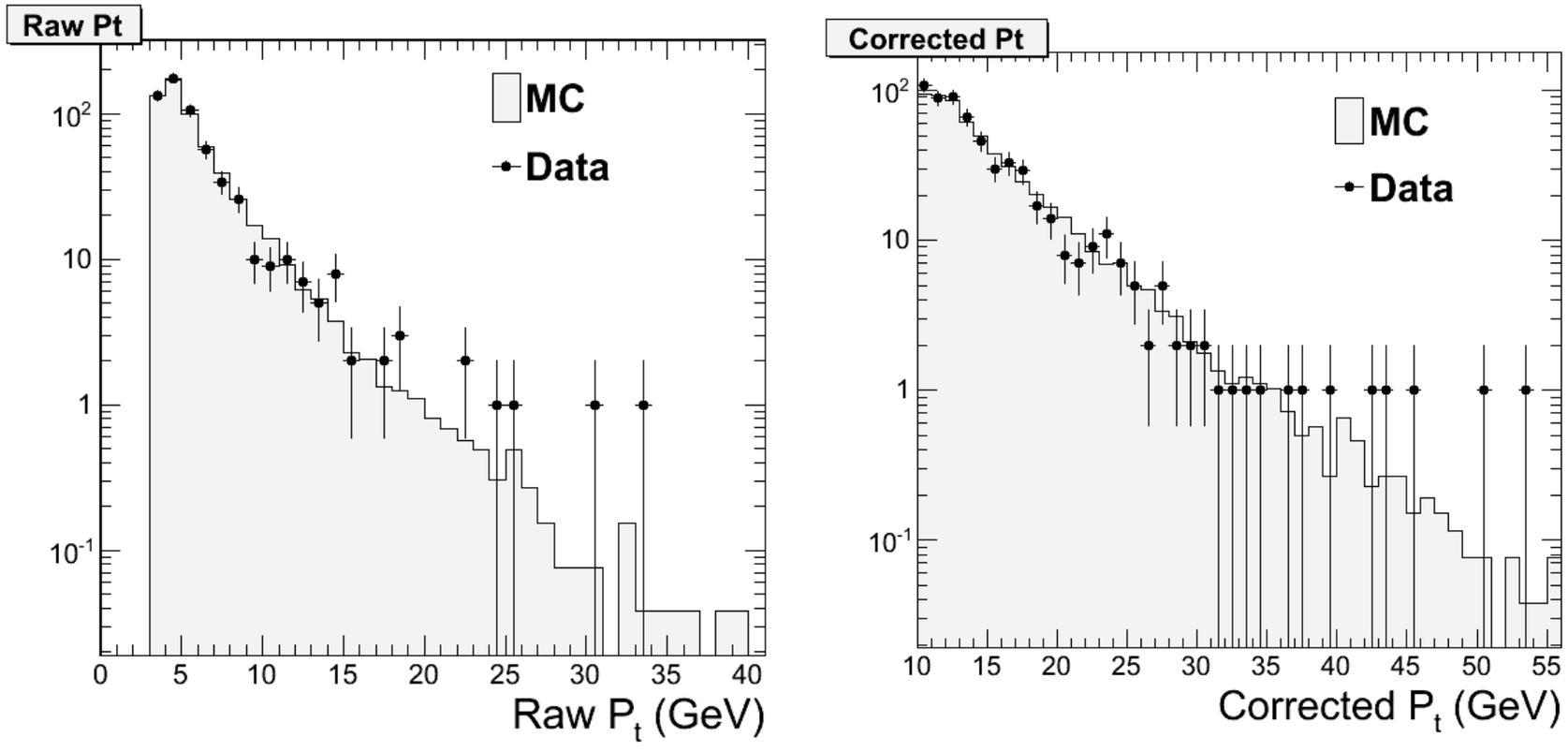

EMF
MC
Data
160
140
120
100
80
60
40
20
0
0
0.2
0.4
0.6
0.8
1
EMF


sigma Eta
MC
Data
10^2
10
1
10^{-1}
0
1
2
3
4
5
6
7
8
9
10
σ_η/σ_ϕ

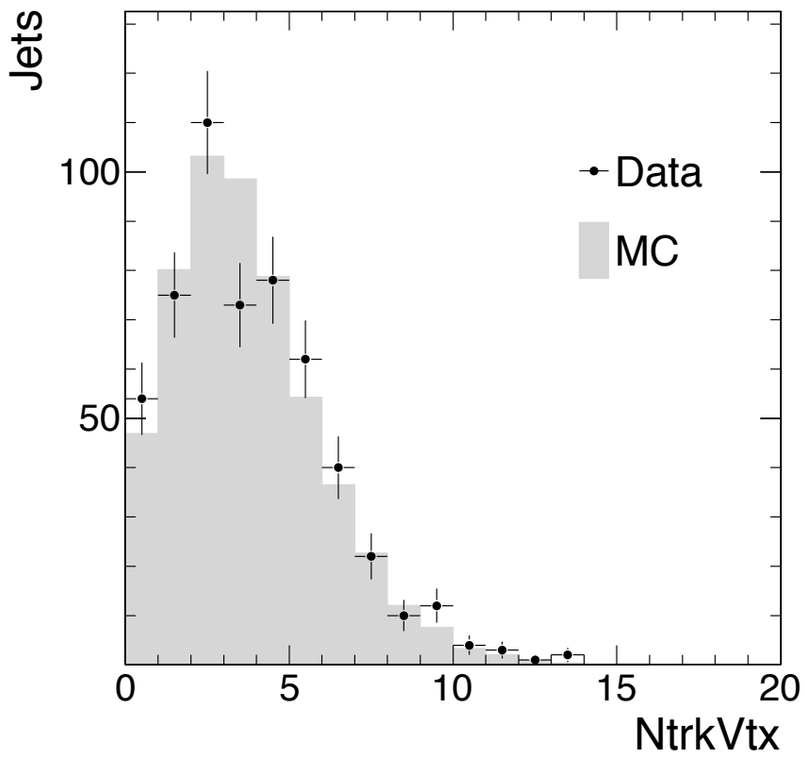
Our

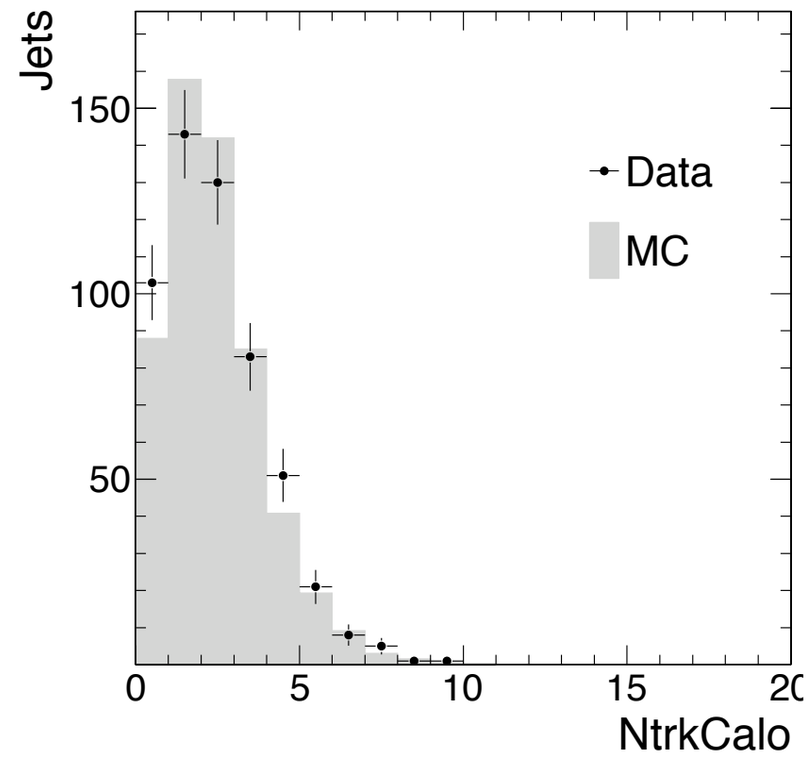

Jets
Data
MC
Raw Jet p_T (GeV)
Jets
Data
MC
Corrected Jet p_T (GeV)

Kostas's

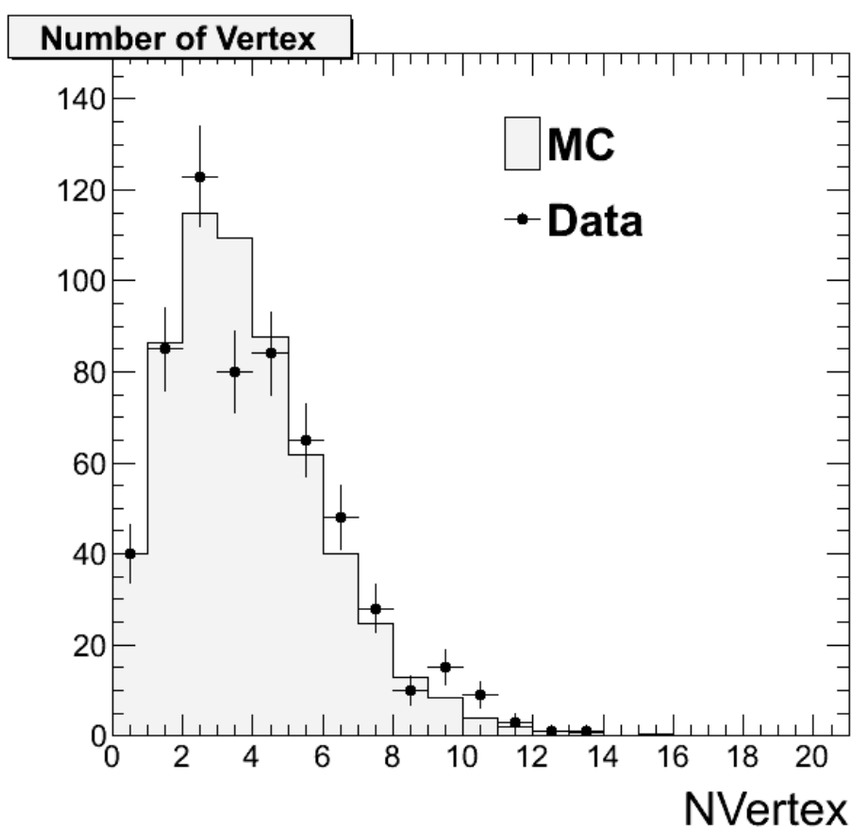

Raw Pt
MC
Data
Raw P_t (GeV)
Corrected Pt
MC
Data
Corrected P_t (GeV)

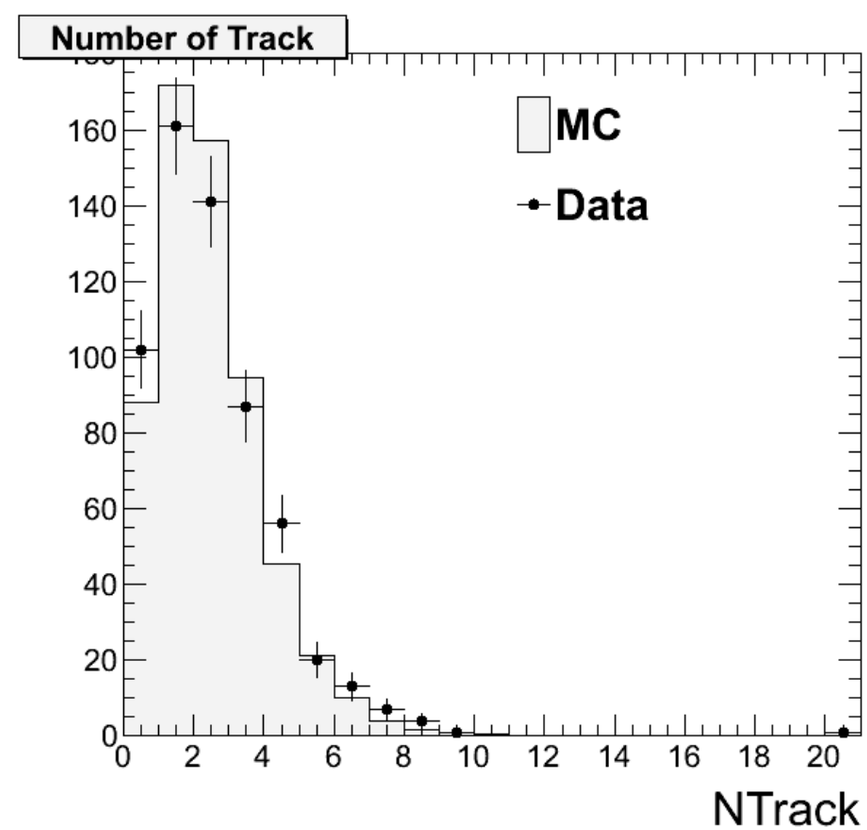
Our


Jets
100
50
Data
MC
0
5
10
15
20
NtrkVtx


Jets
150
100
50
Data
MC
0
5
10
15
20
NtrkCalo

Kostas's


Number of Vertex
140
120
100
80
60
40
20
0
MC
Data
0
2
4
6
8
10
12
14
16
18
20
NVertex

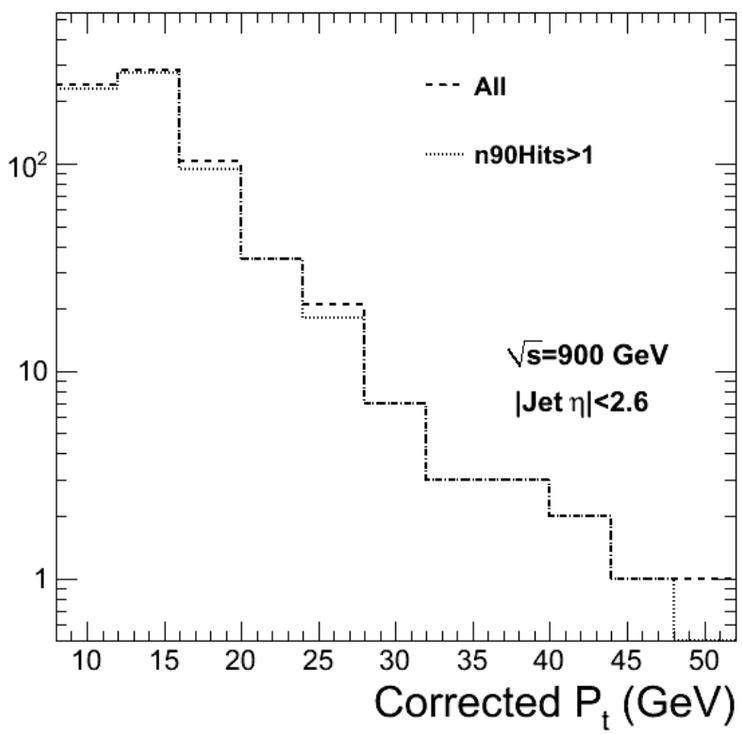

Number of Track
160
140
120
100
80
60
40
20
0
MC
Data
0
2
4
6
8
10
12
14
16
18
20
NTrack

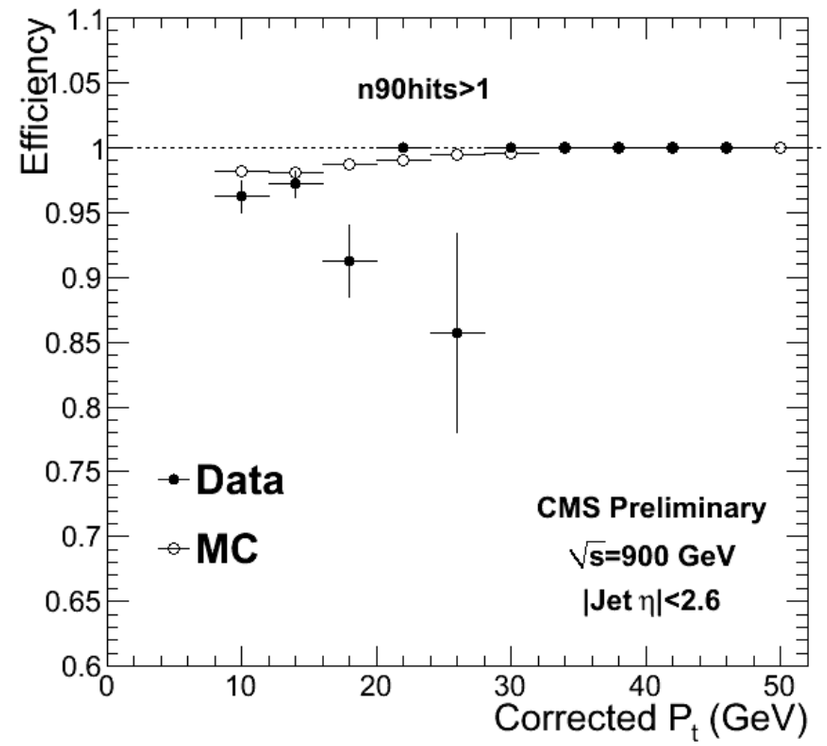
Our

N90Hits Variable Efficiency

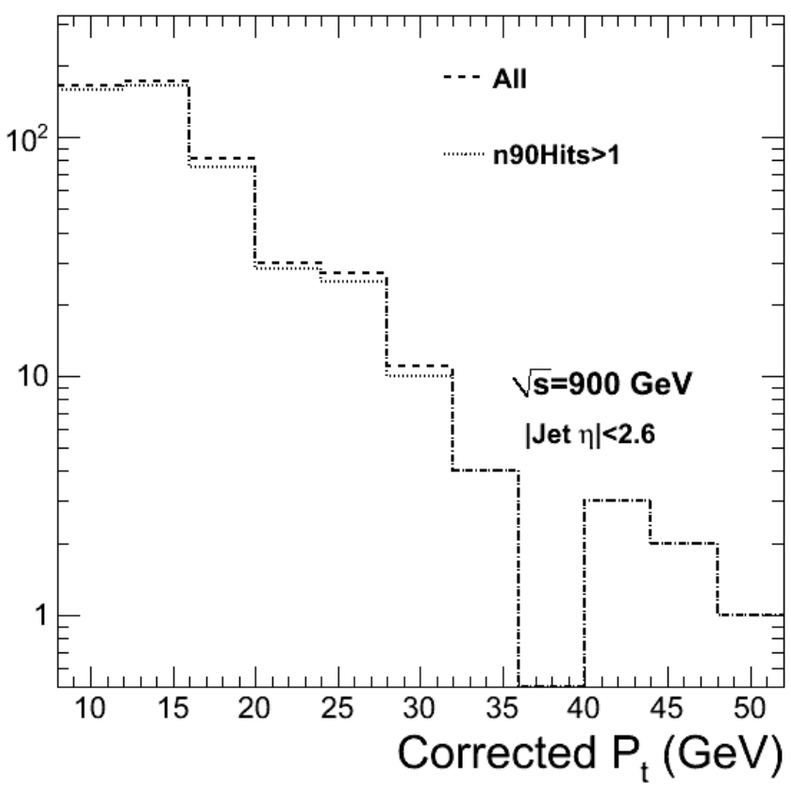
- The same event selection in slide 2.
- We used two different jet correction to compare efficiency result.
  - 900GeV_L2L3_AK5Calo
  - 7TeV_ReReco_L2L3_AK5Calo

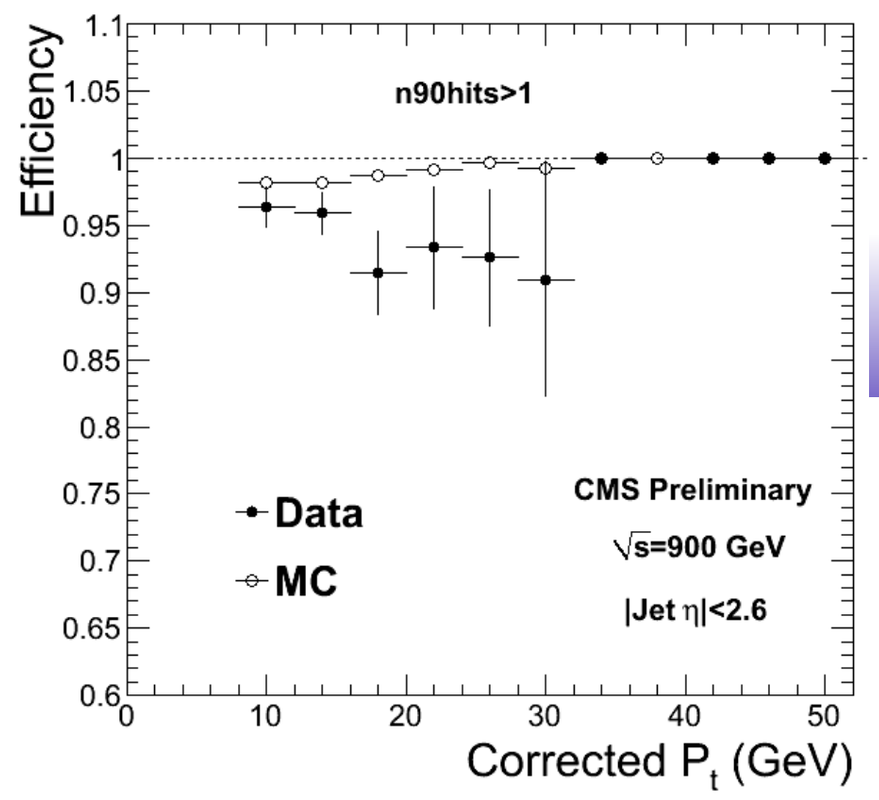
n90Hits Efficieny





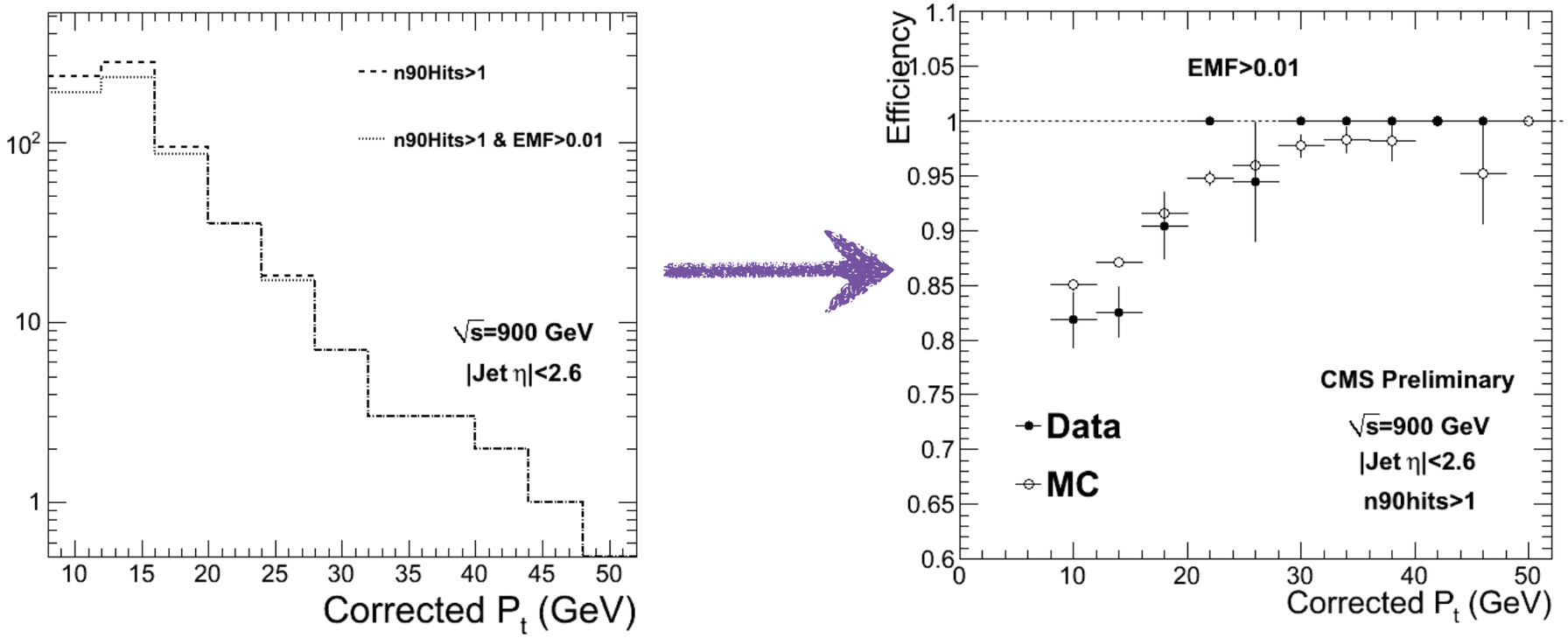
900GeV_L2L3



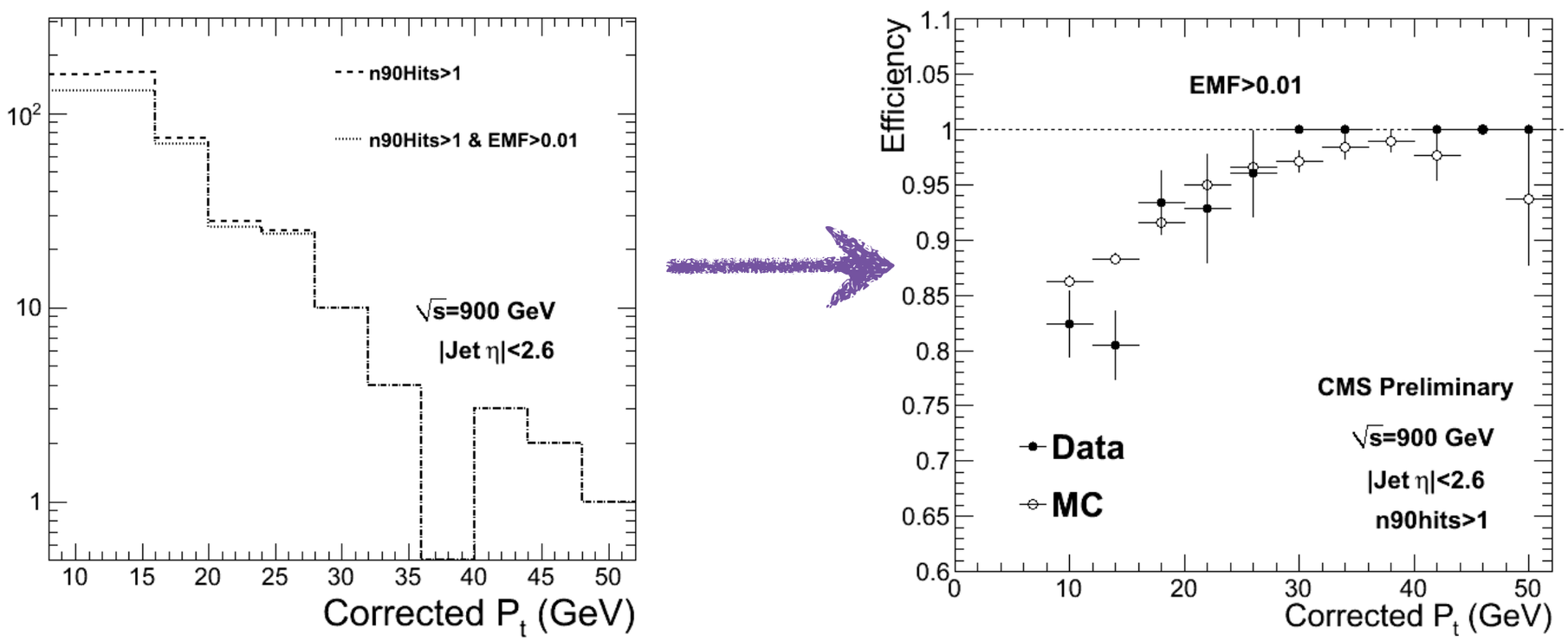


7TeV_ReReco
_L2L3

Minimal EMF Efficiency with n90Hits Cut

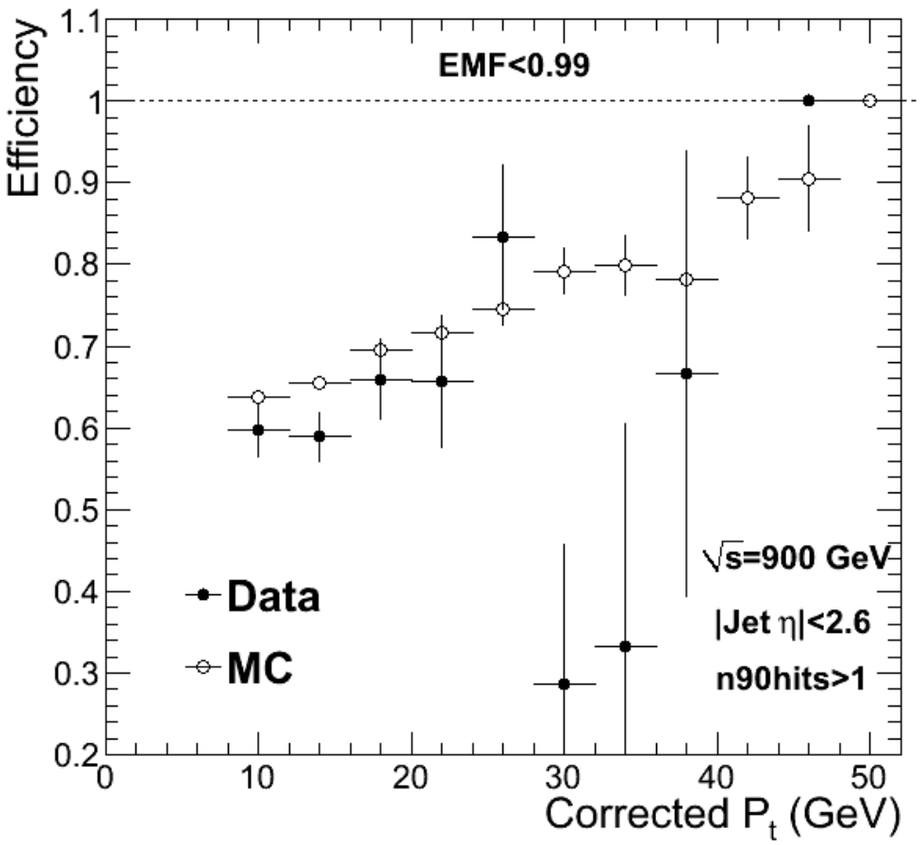


900GeV_L2L3

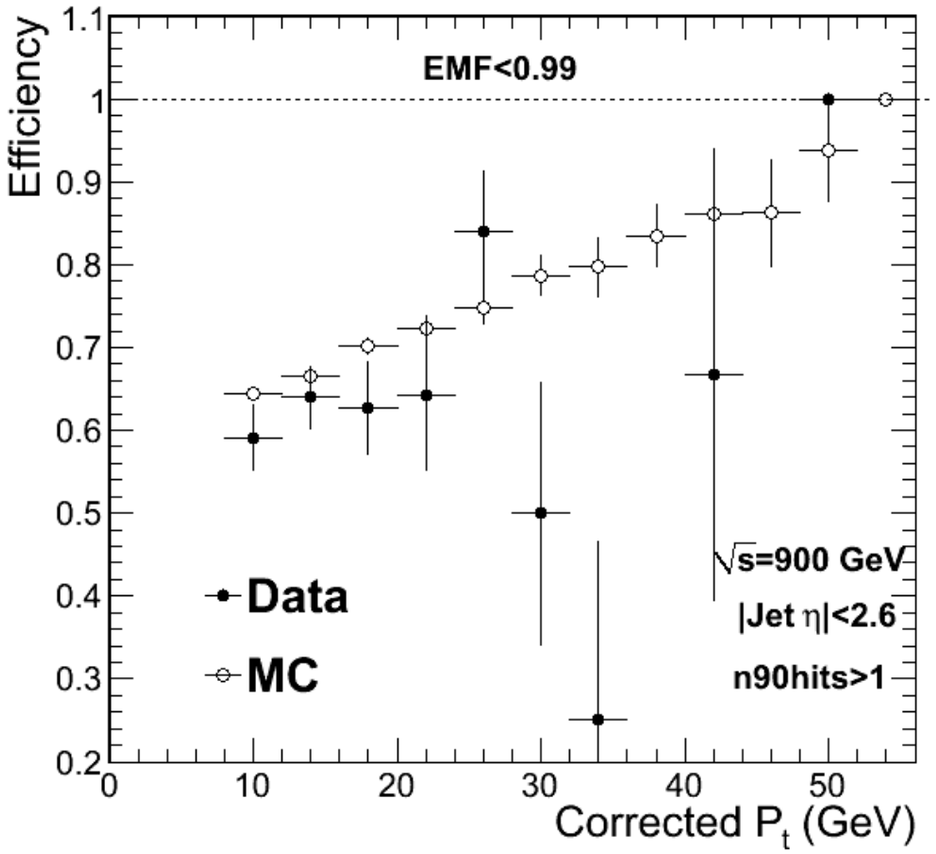


7TeV_ReReco_L2L3

Maximum EMF Efficiency with n90Hits Cut



900GeV_L2L3

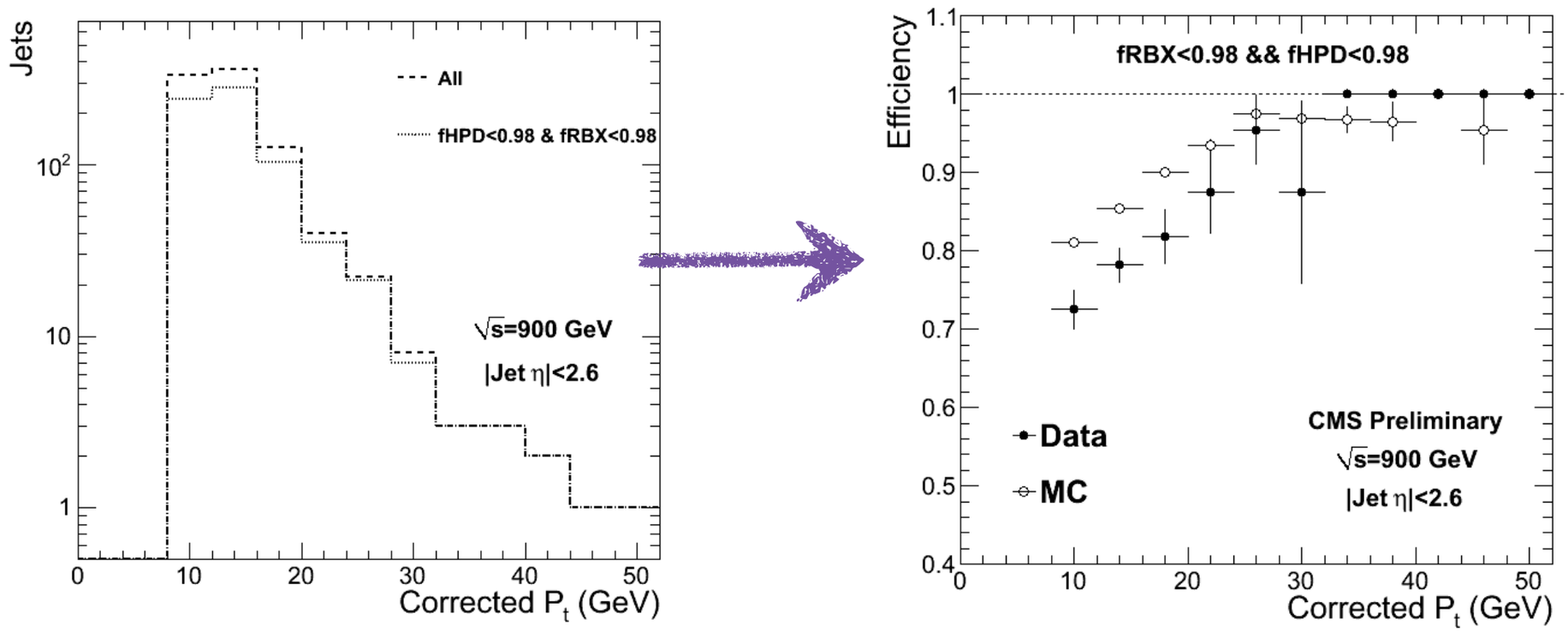


7TeV_ReReco
_L2L3

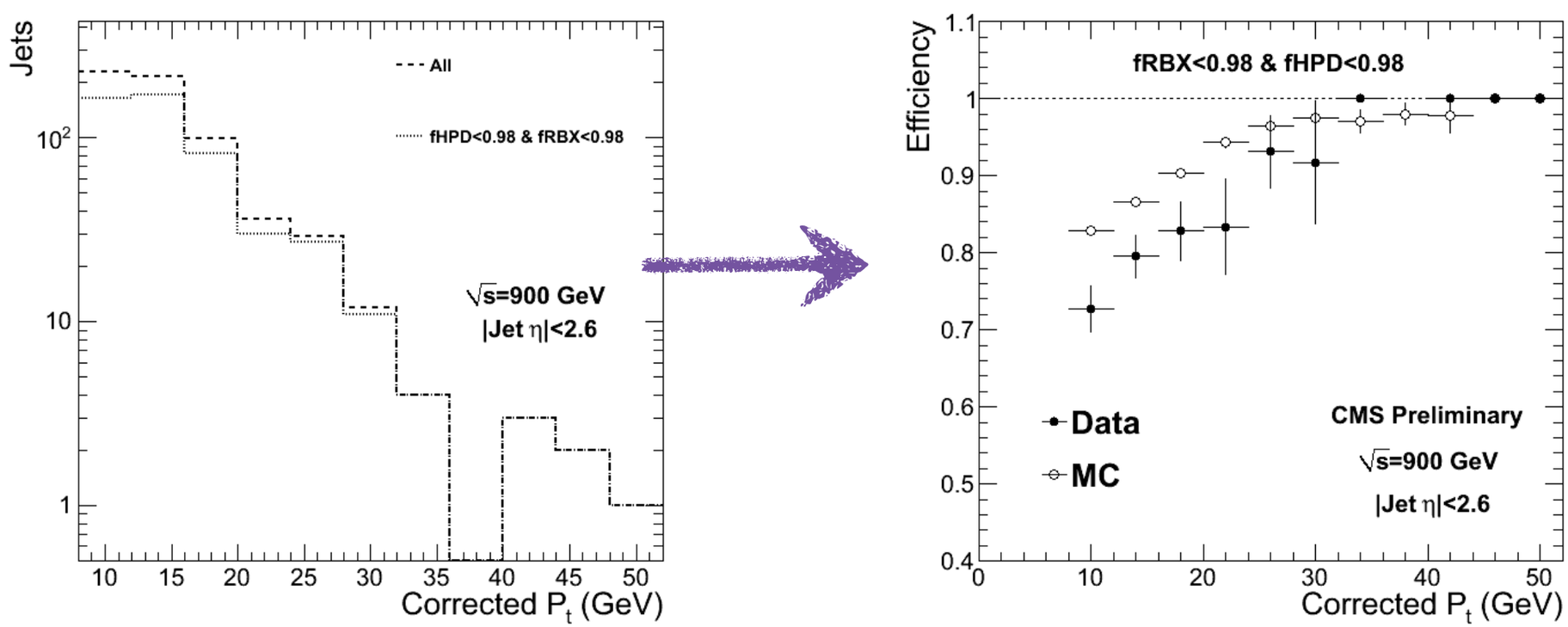
Mimimal EMF Cut Efficiency

- The same event selection in slide 2 except;
  - Both jets fRBX<0.98 & fHPD<0.98
  - Both jets EMF>0.01
- We used two different jet correction to compare efficiency result.
  - 900GeV_L2L3_AK5Calo
  - 7TeV_ReReco_L2L3_AK5Calo

fRBX & fHPD Efficiency

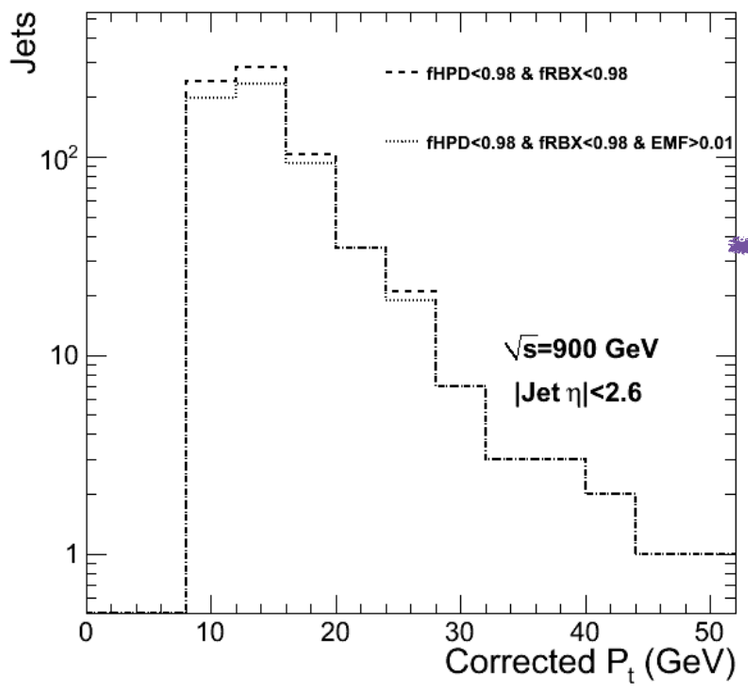


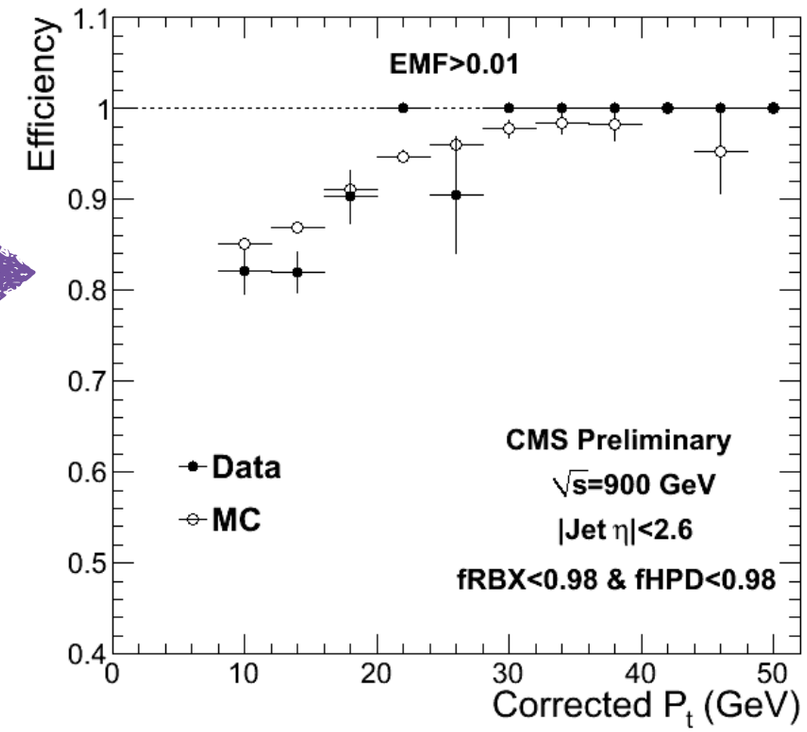
900GeV_L2L3



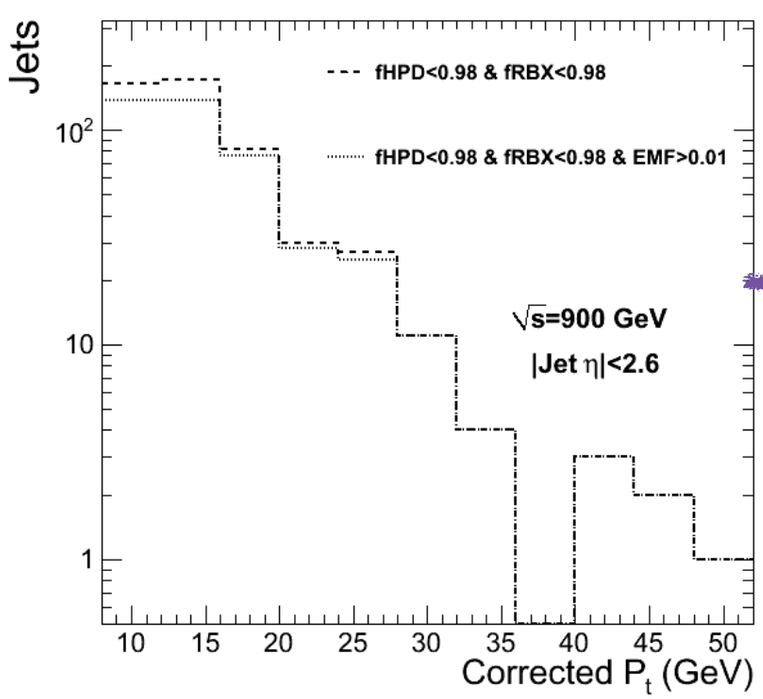
7TeV_ReReco_L2L3

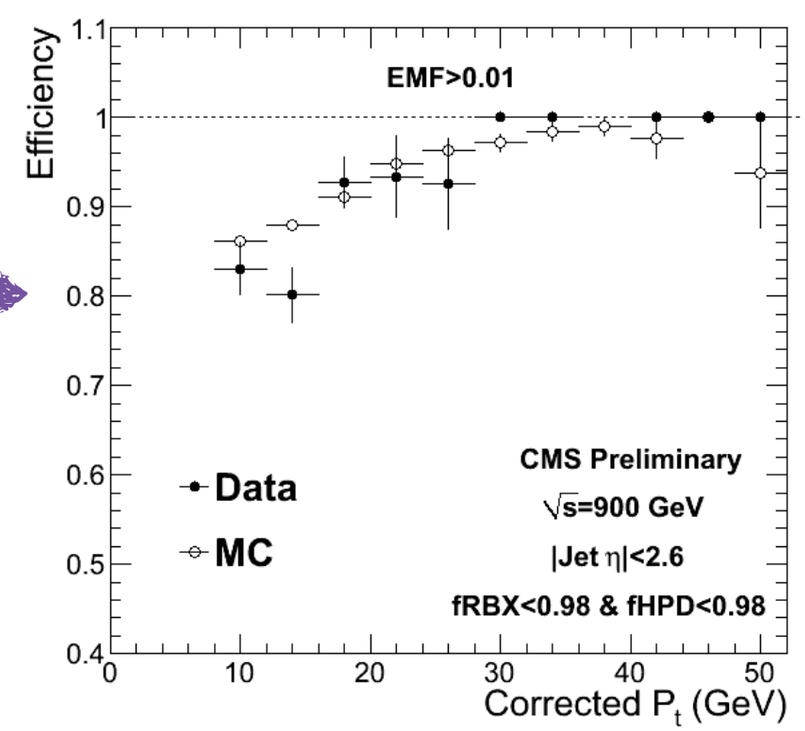
Minimal EMF Efficiency with fRBX & fHPD Cut





900GeV_L2L3





7TeV_ReReco_L2L3