B-tagging plots for Moriond

Dataset

- All p10.14.00 data between runs 142028 and 143769
- E/F Muon runs removed, bad calorimeter runs removed
- Selected on tight muon + loose jet and *mu1ptxxctxx_CJT3* trigger
- 8337 events, 183 nb^{-1}

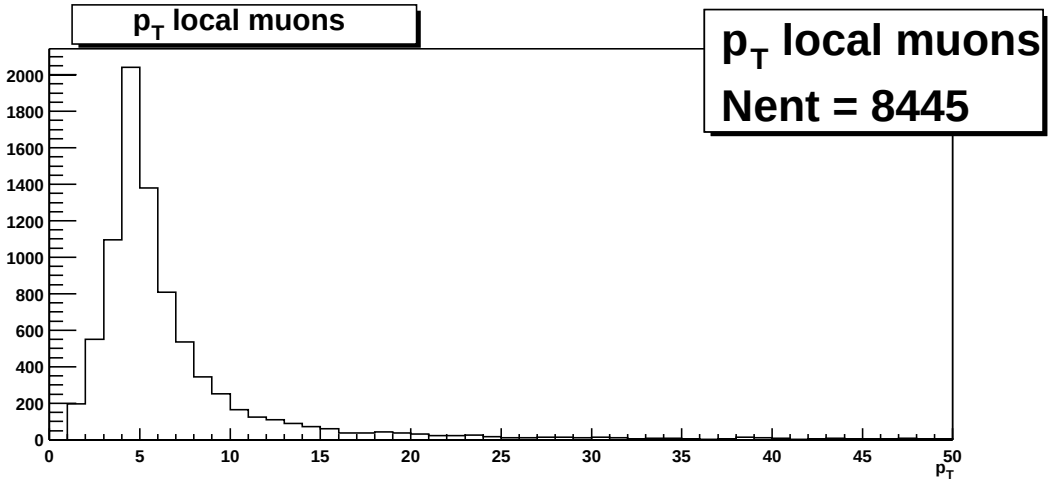
Muon + jet cross section

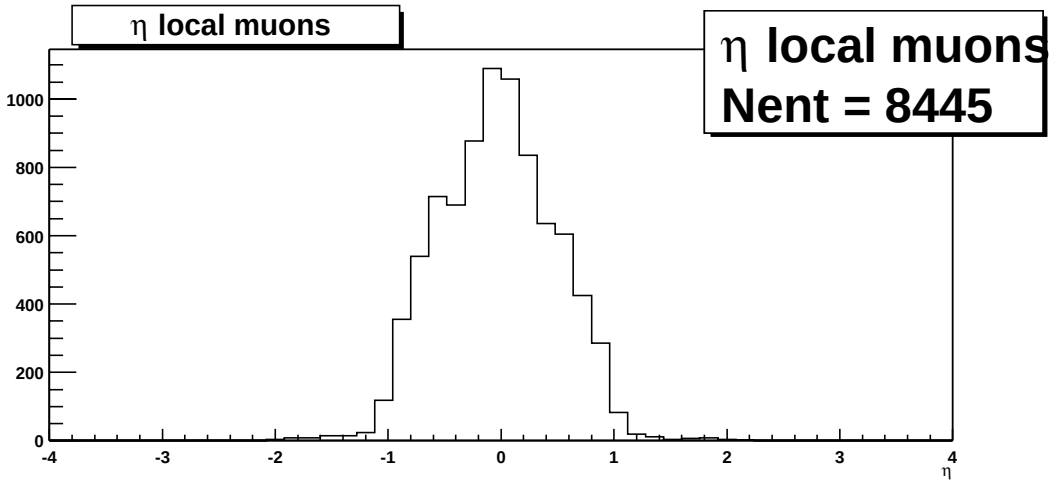
Efficiencies

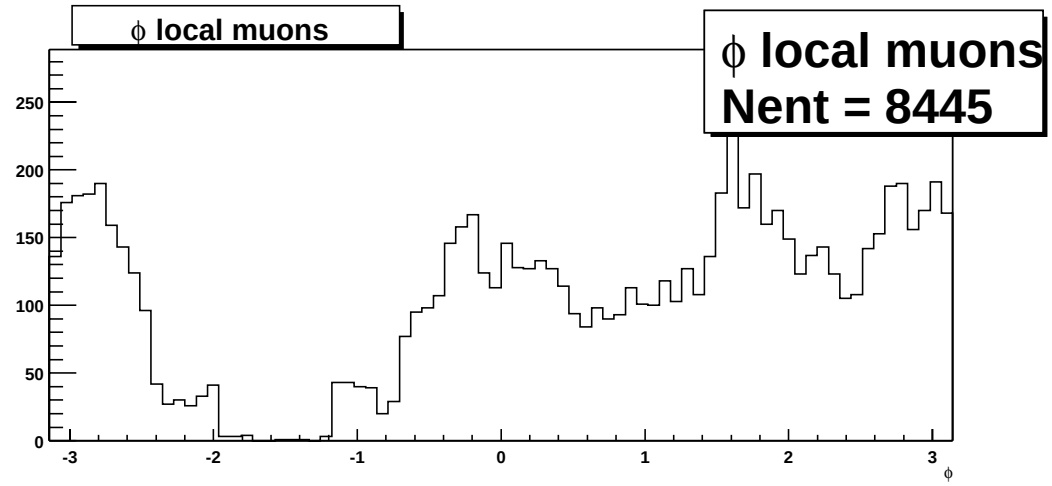
- Muon Acceptance: 0.89
- Muon L1 trigger efficiency: 0.4
- Muon offline reconstruction & ID: 0.33

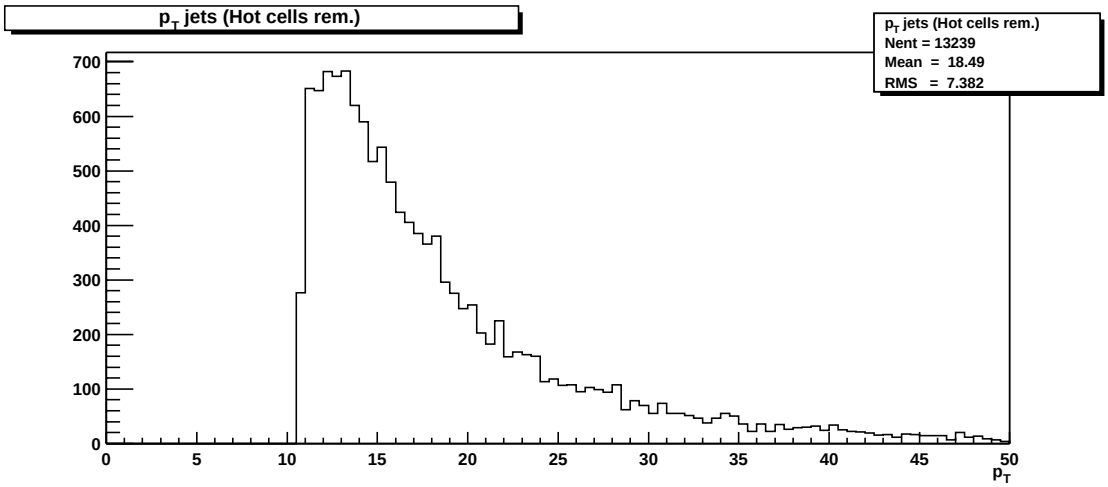
- Jet L1 trigger efficiency: 0.98
- Jet offline reconstruction & ID: 0.98

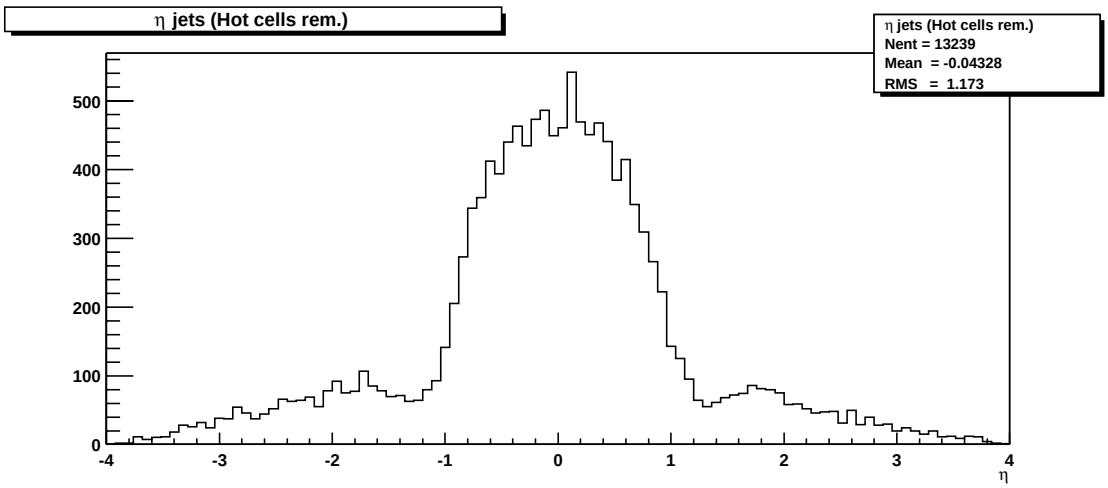
Jet Energy Scale applied to energy of jets
Muon momentum corrected for energy loss in calorimeter

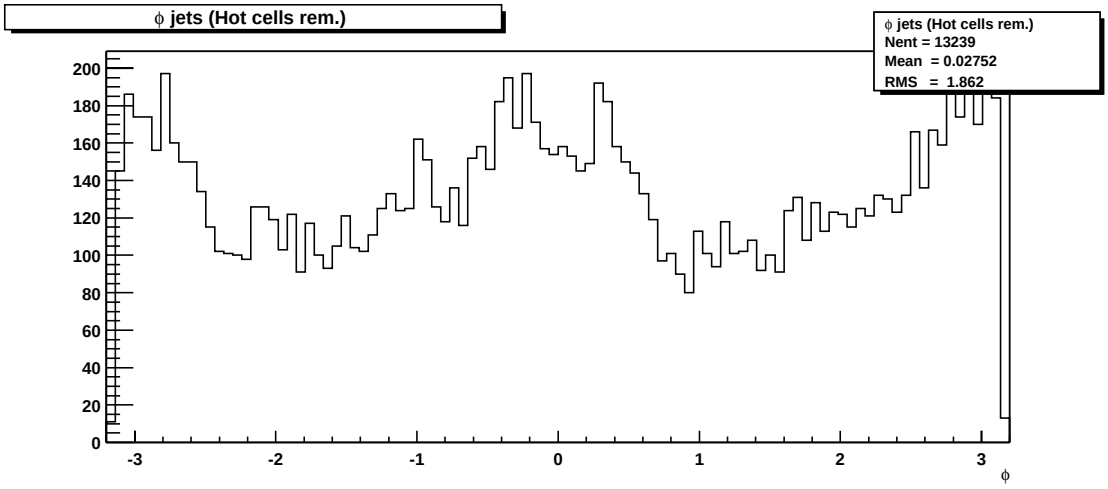

p_T local muons
p_T local muons
Nent = 8445
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
5
10
15
20
25
30
35
40
45
50
p_T

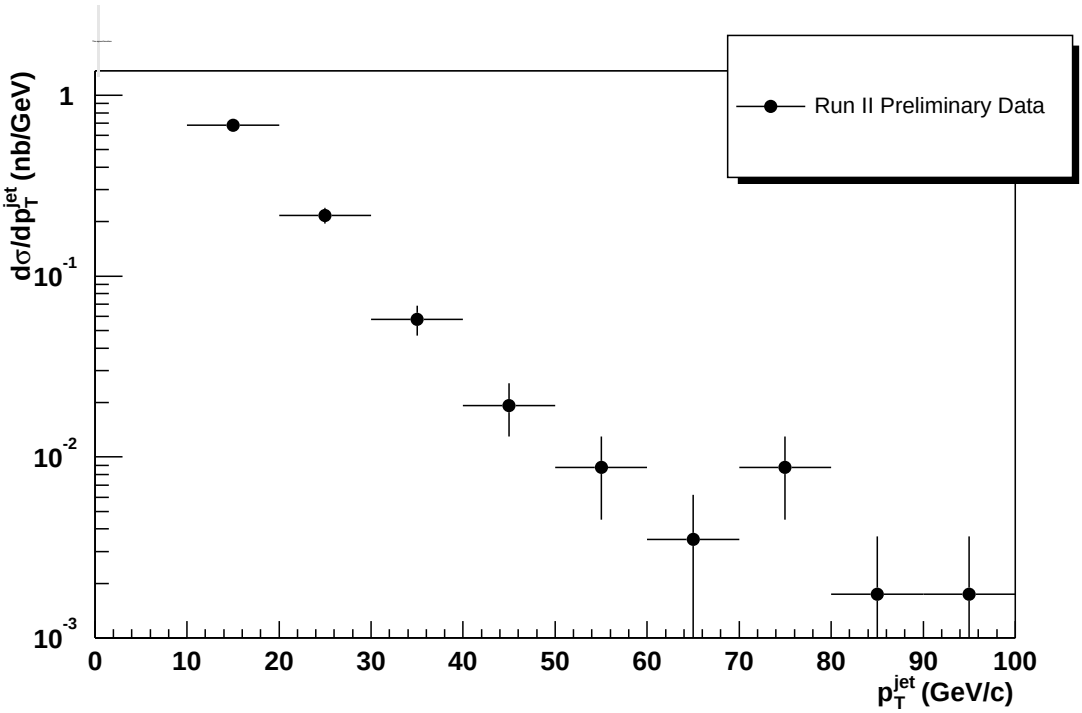

η local muons
η local muons
Nent = 8445
1000
800
600
400
200
0
-4
-3
-2
-1
0
1
2
3
4
η


ϕ local muons
ϕ local muons
Nent = 8445
250
200
150
100
50
0
-3
-2
-1
0
1
2
3
ϕ

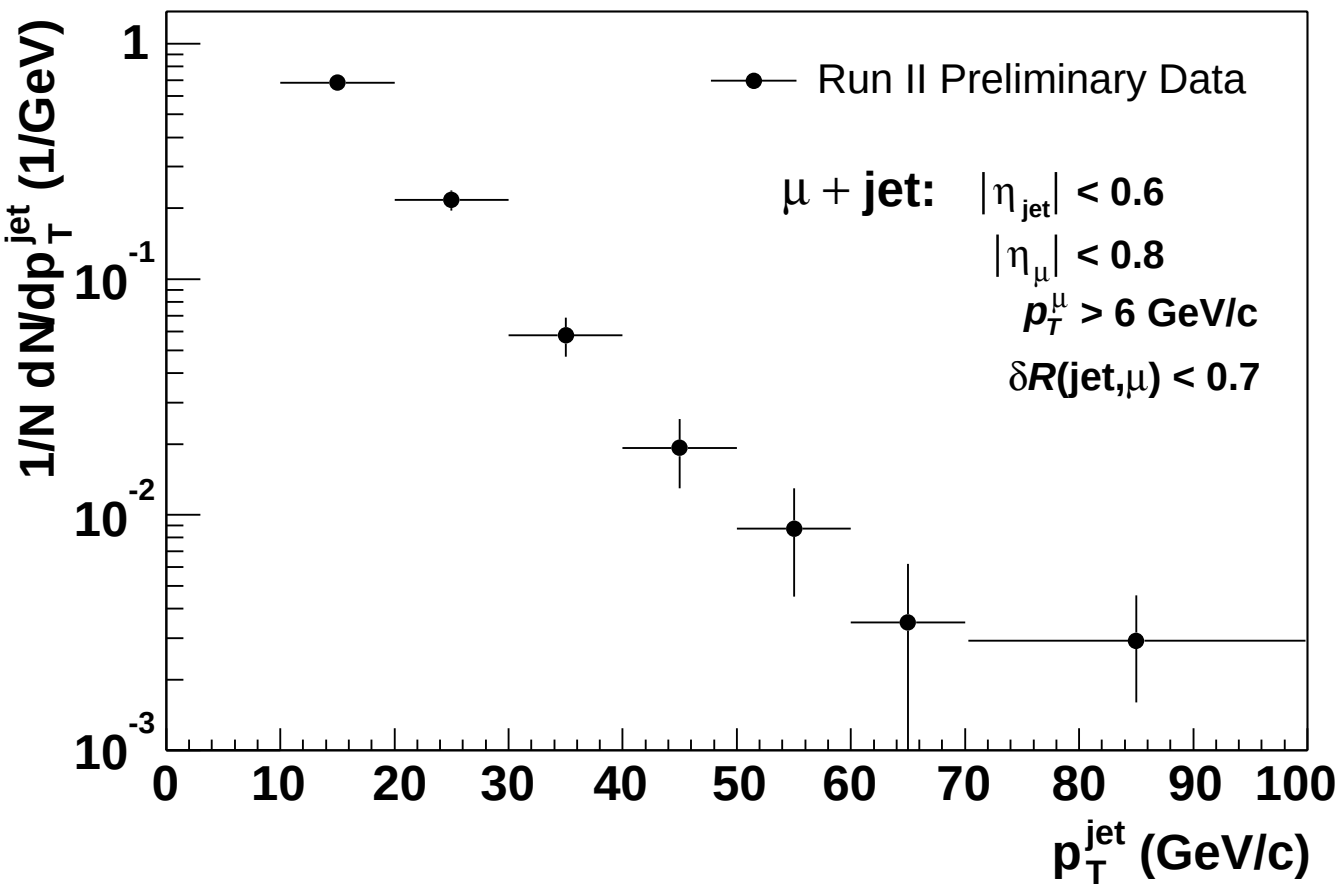

p_T jets (Hot cells rem.)
p_T jets (Hot cells rem.)
Nent = 13239
Mean = 18.49
RMS = 7.382
p_T


η jets (Hot cells rem.)
η jets (Hot cells rem.)
Nent = 13239
Mean = -0.04328
RMS = 1.173
η


φ jets (Hot cells rem.)
φ jets (Hot cells rem.)
Nent = 13239
Mean = 0.02752
RMS = 1.862
φ



DØ Run 2 Preliminary



B-jet content measurement using P_{TRel}

- Same data sample
- No p_T cut on muon, no p_T cut on jet
- No η cuts
- $\delta R(\text{jet}, \mu) < 0.7$

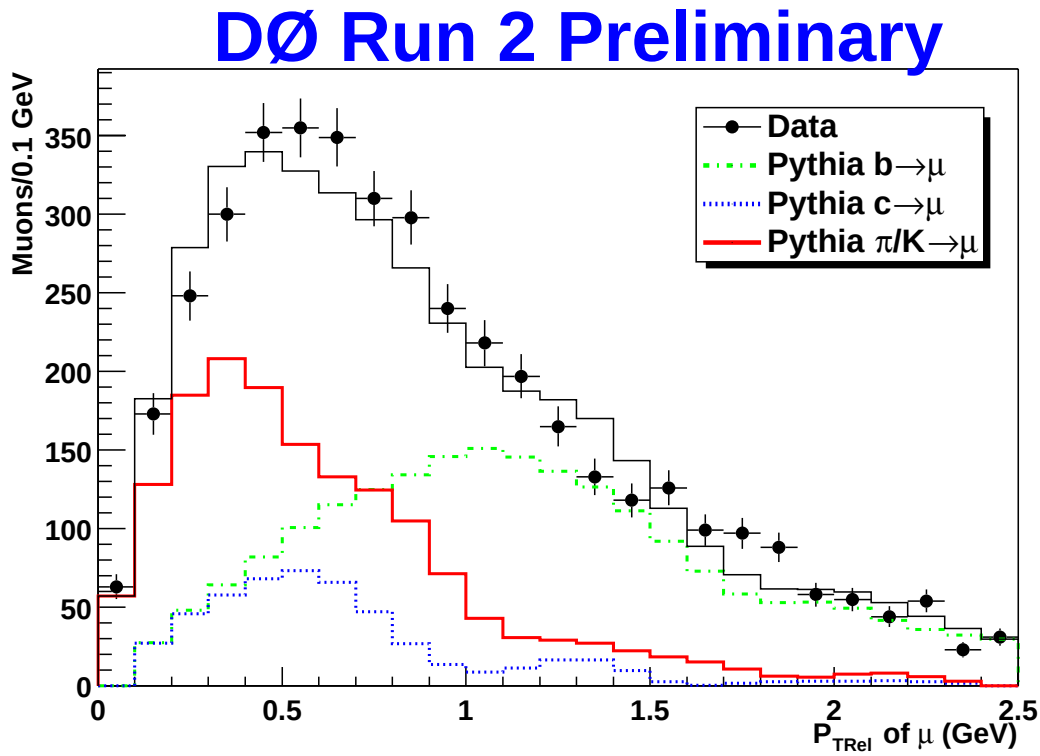
Muon direction updated with scintillator hit

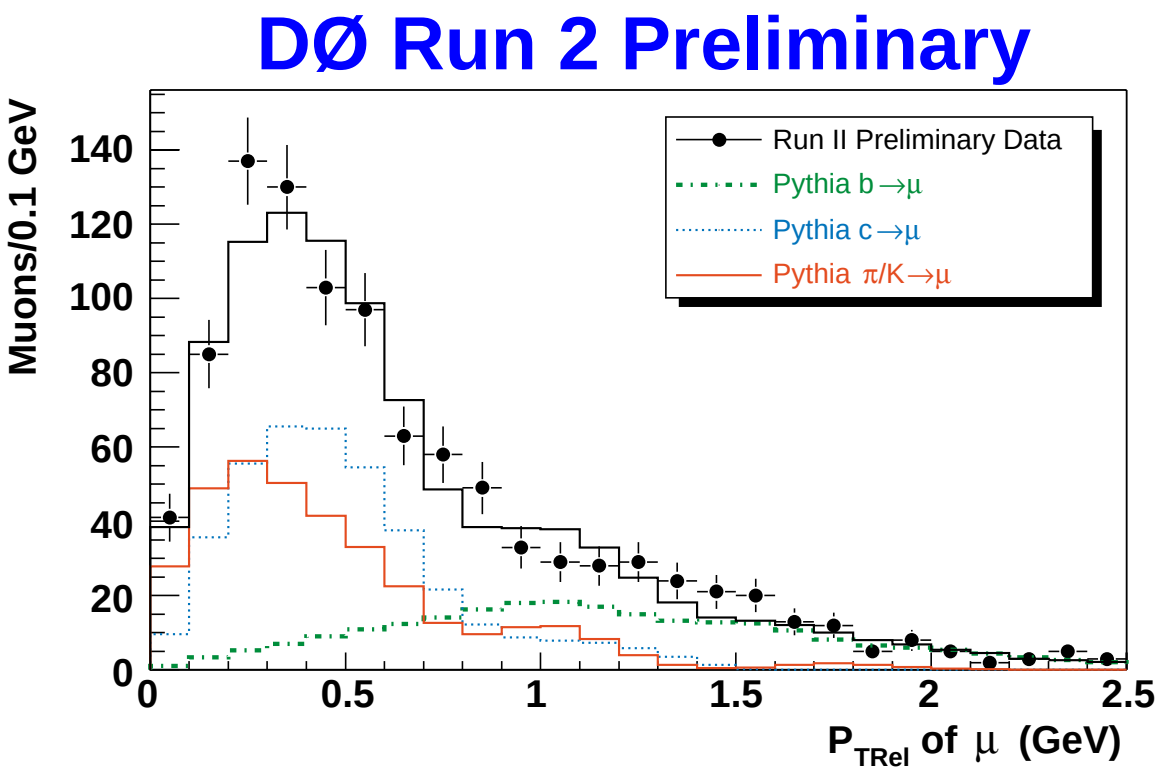
<u>MC samples:</u>
bbbar: SAM project bbbar_p100801, 117500 events
ccbar: SAM project ccbar_p100801, 50000 events
QCD: SAM projects lancs_qcd_131, nikhef_qcd_131, 1.1M events

Data muon momentum resolution worse than MC momentum resolution $\rightarrow$ MC muon momentum smeared with factor 0.09

PtRel is measured with respect to new combined muon + jet axis

Plots for both local muons and global muons available


DØ Run 2 Preliminary
Muons/0.1 GeV
Data
Pythia b→μ
Pythia c→μ
Pythia π/K→μ
P_TRel of μ (GeV)


DØ Run 2 Preliminary
Muons/0.1 GeV
Run II Preliminary Data
Pythia b→μ
Pythia c→μ
Pythia π/K→μ
P_TRel of μ (GeV)