

JetID Studies at 900 GeV

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1 Data and Event Selection

Collision events for 900 GeV data are selected.

`/MinimumBias/BeamCommissioning09-Jan23ReReco-v1/RECO`

Events reconstruction was performed using `CMSSW_3_3_6_patch3`. The data with run number; 123596, 123615, 123732, 123815, 123818, 123906, 123908, 124008, 124009, 124020, 124022, 124023, 124024, 124025, 124027 and 124030 are analyzed. The Monte Carlo dataset are

`/MinBias/Summer09-STARTUP3X_V8P_900GeV-v1/GEN-SIM-RECO`

Anti-kt with $R=0.5$ is used as jet finding algorithm. L2L3 Jet Correction for 900 GeV is applied. The cuts for event selection are listed in below.

- $PVntracks > 3$
- $|PVz| < 15$

- $N_{Jets} > 1$
- Both jets corrected $P_t > 10$ GeV
- Both jets $|\eta| < 2.6$
- $|\Delta\Phi - \pi| < 1$

1.1 N90Hits Cut Efficiency

$N_{90hits} > 1$ efficiency is shown in Fig1.

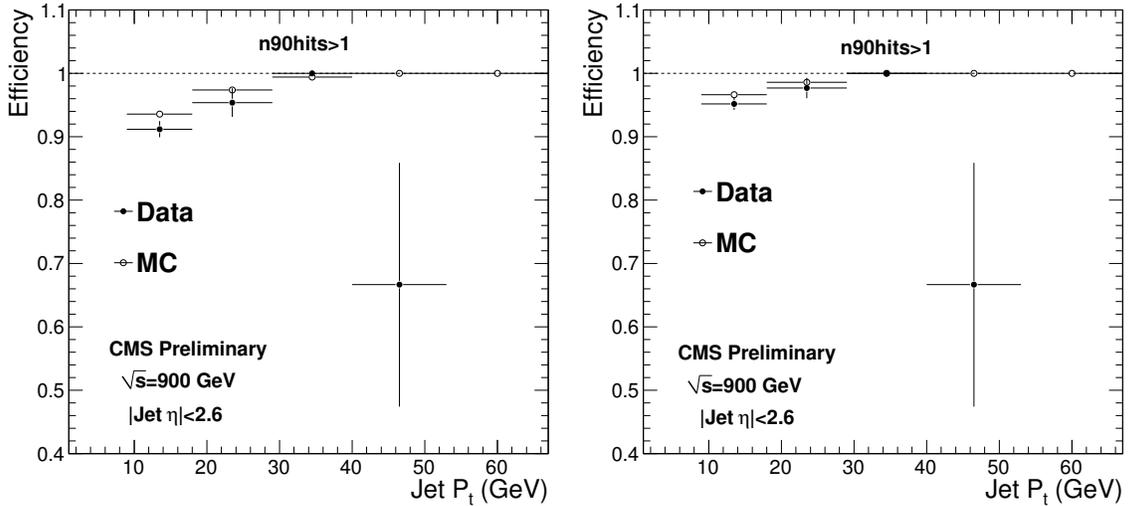


Figure 1: N90Hits cut efficiency as a function of Corrected Jet P_t . *Left* : The cut is required for both jets. *Right* : The cut is required jet by jet.

1.2 Minimal EMF Cut Efficiency

$EMF > 0.01$ efficiency is shown in Fig2.

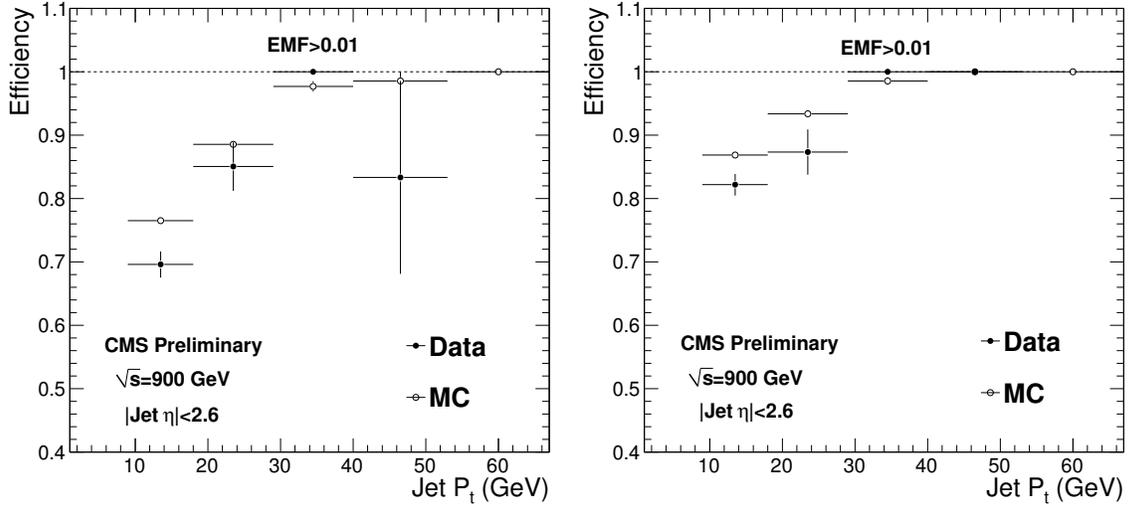


Figure 2: Minimal EMF cut efficiency as a function of Corrected Jet P_t . *Left* : The cut is required for both jets. *Right* : The cut is required jet by jet.

1.3 fHPD Cut Efficiency

$fHPD < 0.98$ efficiency is shown in Fig3.

1.4 The Loose Cut Efficiency

The loose cut is defined as $n90hits > 1 \ \&\& \ EMF > 0.01 \ \&\& \ fHPD < 0.98$

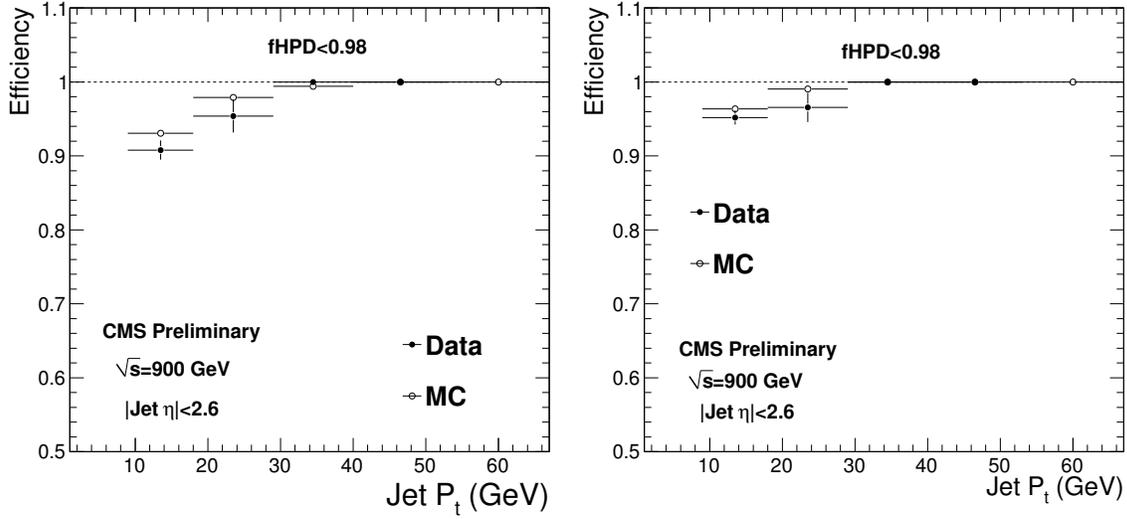


Figure 3: fHPD cut efficiency as a function of Corrected Jet P_t . *Left* : The cut is required for both jets. *Right* : The cut is required jet by jet.

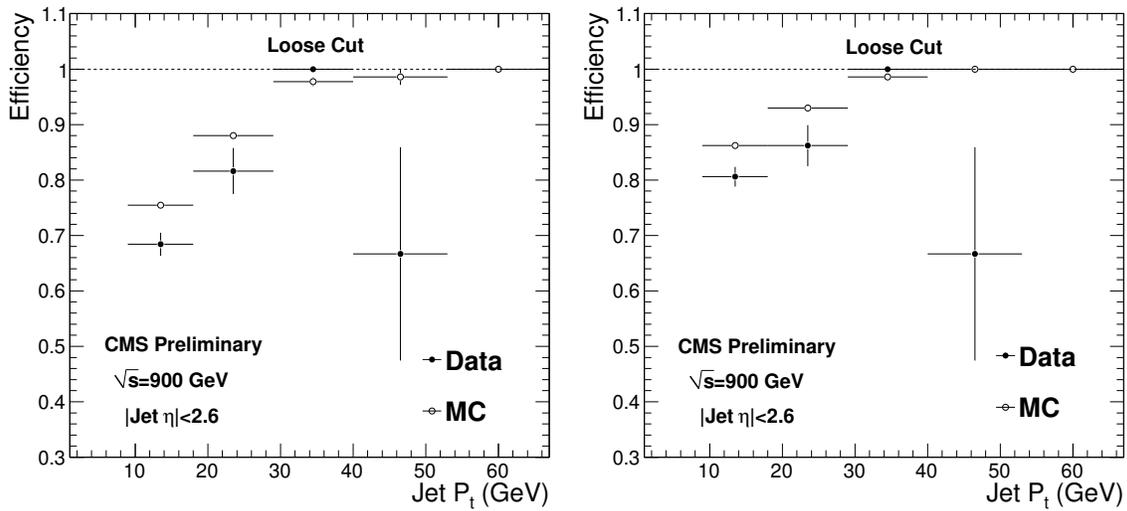


Figure 4: The loose cut efficiency as a function of Corrected Jet P_t . *Left* : The cut is required for both jets. *Right* : The cut is required jet by jet.