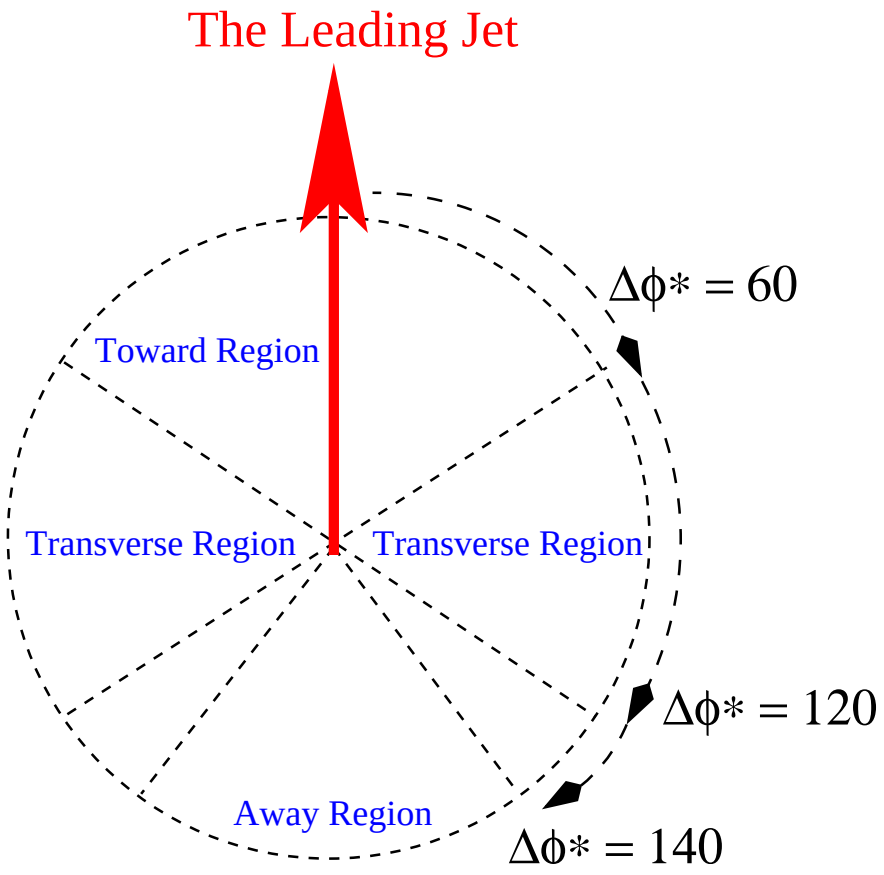
Strategy

- Select the jet with highest P_T^* in HCM rest frame, the Leading Jet.

- Define four regions in azimuthal:
  - Toward region: $|\Delta\phi^*| < 60°$.
  - Two Transverse regions: $60° < |\Delta\phi^*| < 120°$.
  - Away region: $|\Delta\phi^*| > 140°$.

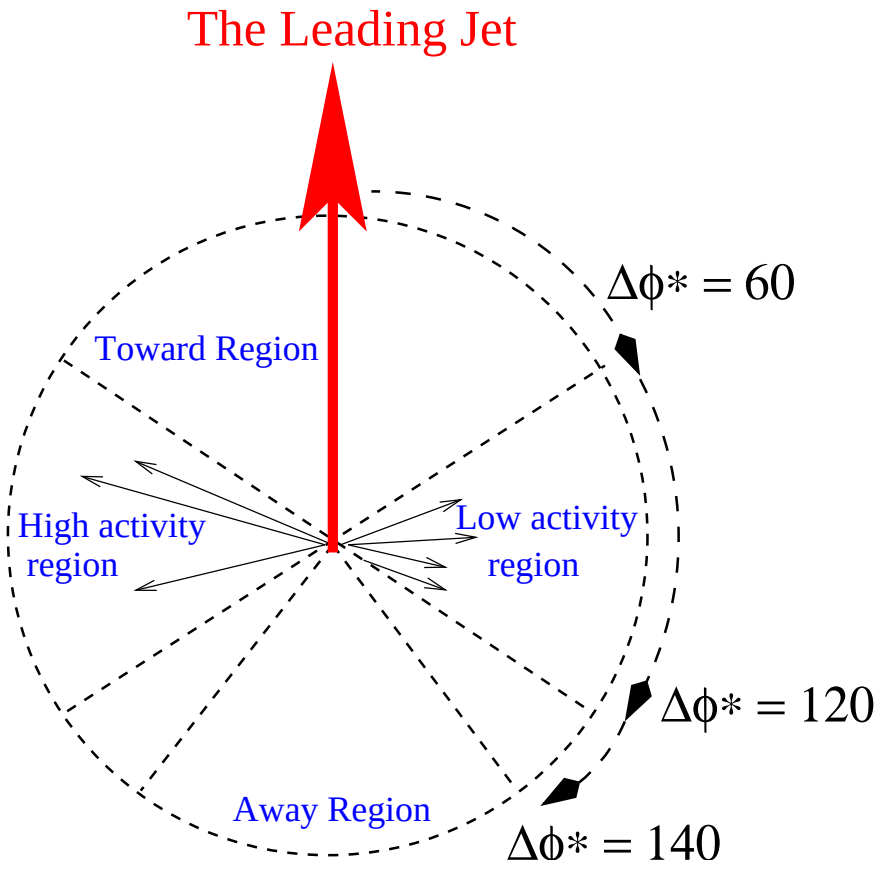


The Toward and Away regions are sensitive to the hard part of the event.

Strategy

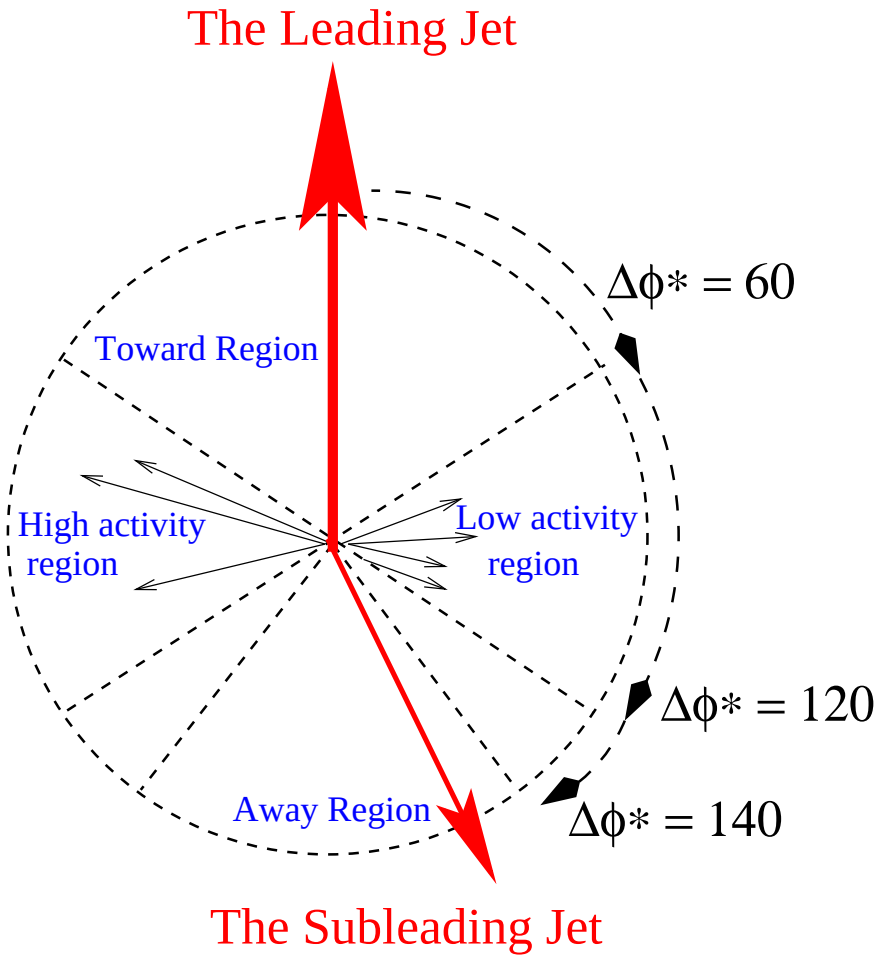
- The scalar E_T^* Sum of the particles, E_{TSum}^*, in the transverse regions is calculated for each event.

- For each event, split the two Transverse regions into a low activity region and a high activity region acording to E_{TSum}^*.



Strategy

- In addition, select a subsample, Dijet sample, where the second hardest jet, Subleading Jet, is restricted to be in the Away region.



Strategy

- Measure the average jet multiplicity in the different $\Delta\phi^*$ regions as function of P_T^* of the Leading Jet.

$$< N_{MiniJet} >= \frac{\sum_{i=1}^{N_{ev}} N_{MiniJet,i}}{N_{ev}}$$

- Inclusive sample:
  - In bins of Q^2.
  - In bins of η^{lab} of the leading jet:
    - Forward region (close to the proton direction) enhanced contributions from the resolved photon process
    - Central region less contributions from the resolved photon process

- Dijet sample:
  - In bins of $x_\gamma = \frac{\sum_{i=1}^{2} P_{T,i}^* \; e^{\eta_i^*}}{2E_\gamma^*}$, where i=1 is the leading jet
    i=2 is the subleading jet

Selections

DIS

$$5 < Q^2 < 100 \text{ GeV}^2$$

$$0.1 < y < 0.7$$

$$W > 200 \text{ GeV}$$

Jet

Inclusive sample: jet 1 (Hardest jet)

Dijet sample: jet 1,2 (Two hardest jets)

$$-1.7 < \eta^{lab}_{1,2} < 2.79$$

$$P_{T1,2} > 5 \text{ GeV}$$

$$|\phi^*_1 - \phi^*_2| > 140^\circ$$

Mini jets, jets with:

$$-1.7 < \eta^{lab} < 2.79$$

$$P_T > 3 \text{ GeV}$$

The P_T cuts are applied both in HCM and Lab frame.

Jets are defined as inclusive k_t-algorithm jets (HCM).

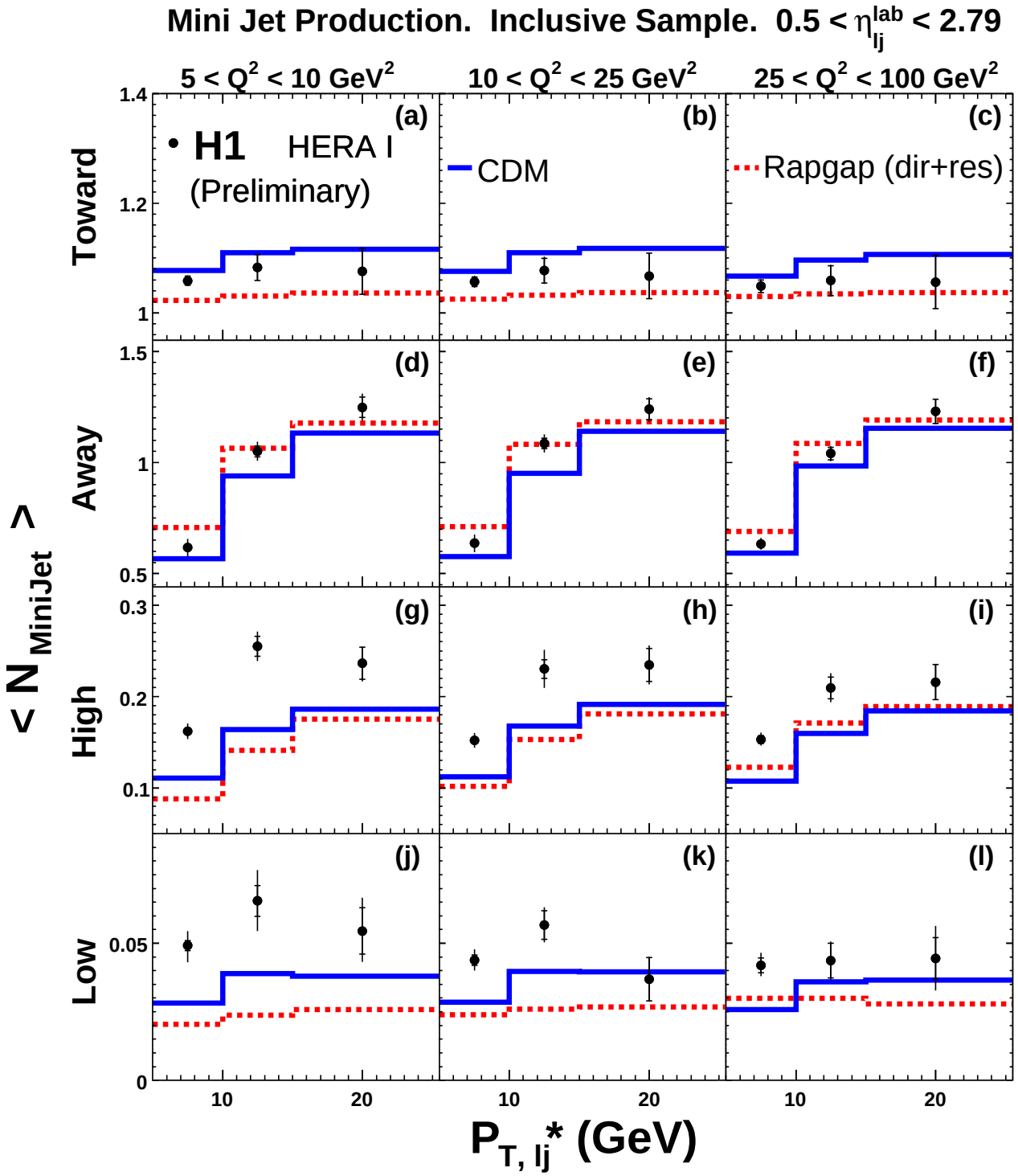
Mini Jet Production

Inclusive Sample

Forward Region:

$0.5 < \eta_{lj} < 2.79$

- √ Ok in toward and away regions
- √ MC's undershoot data in the low and high activity regions



Mini Jet Production

Inclusive Sample

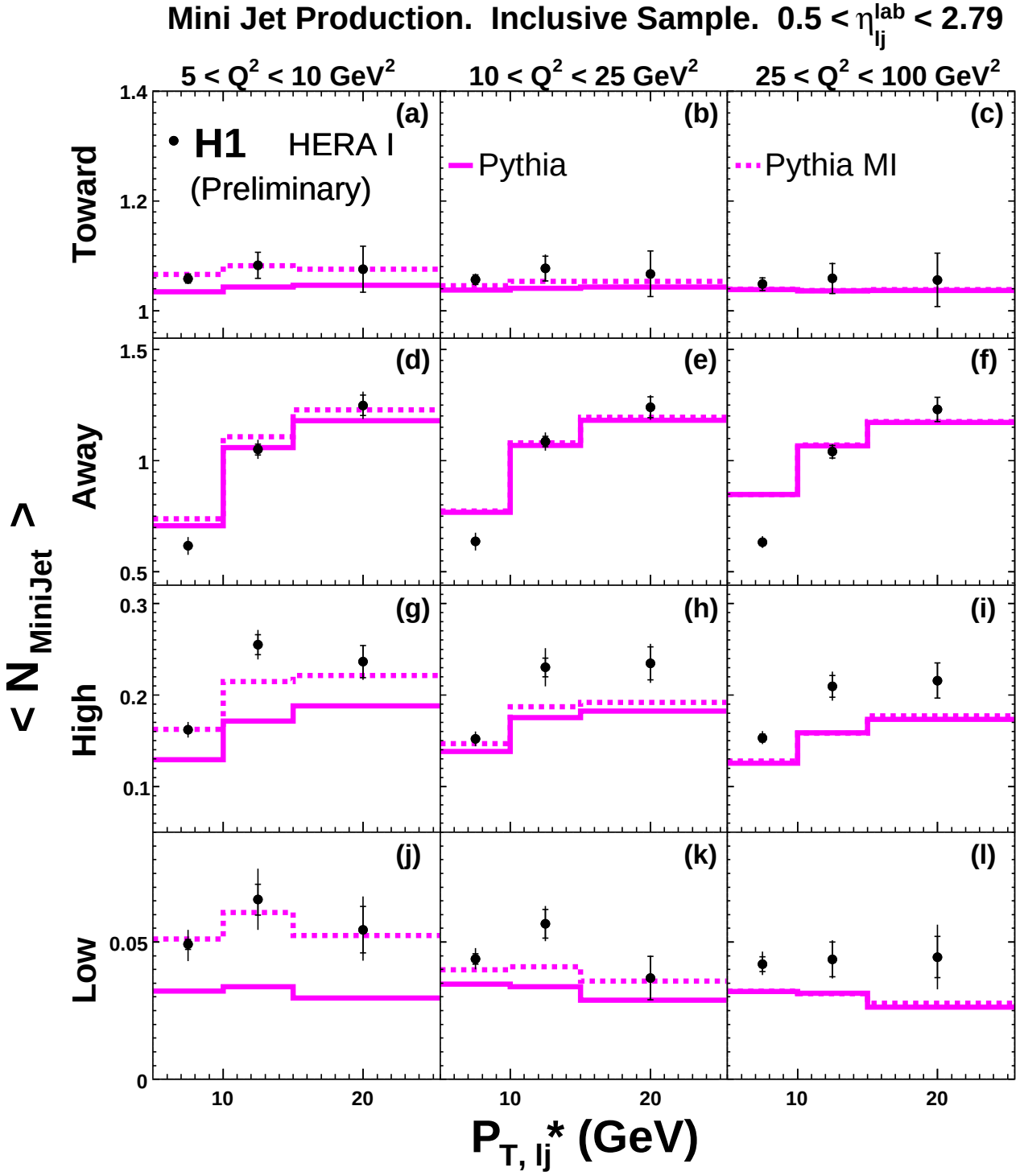
Forward Region:

$0.5 < \eta_{lj} < 2.79$

√ Ok in toward and away regions

√ Pythia MI improves the agreement with data at low Q^2

Similar results are obtained with Herwig

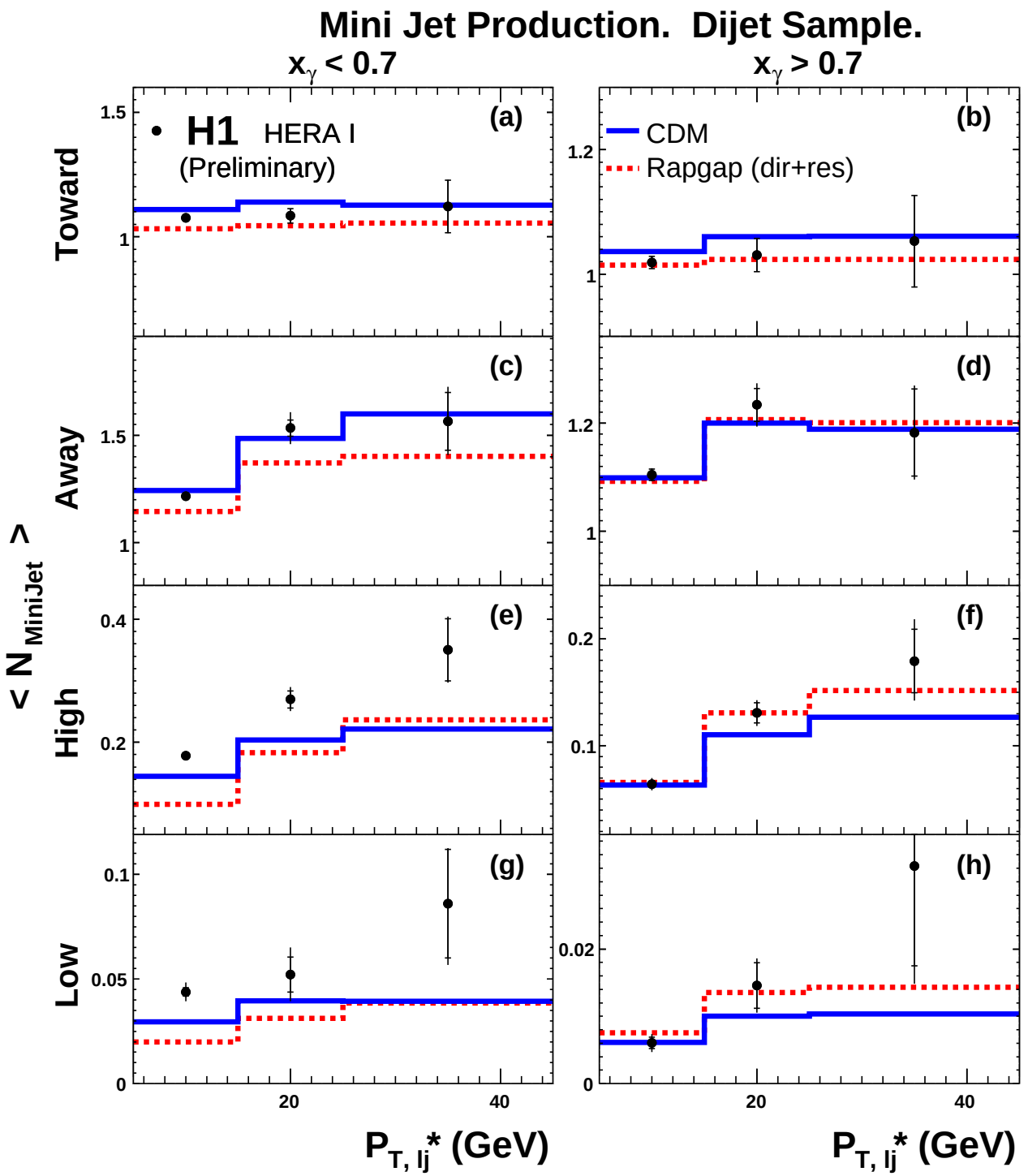


Mini Jet Production

Dijet Sample

$5 < Q^2 < 100$ GeV^2

- √ higher activity at low x_γ
- √ Ok in toward and away regions
- √ MC's undershoot data in the low and high activity regions



Mini Jet Production

Dijet Sample

$5 < Q^2 < 100$ GeV^2

√ Ok in toward and away regions

√ Pythia MI improves the agreement with data at low x_γ

Similar results are obtained with Herwig