

Jet and Heavy Flavor Update

Miguel, Brian, Ping, & Wangmei

Convener Meeting

December 16th, 2022

(Draft) Collaboration Meeting Agenda

1. Introduction (5-10 min, Ping):

- Overview of efforts
- Reminder of 'benchmarks'
- Simulation needs / missing features

2. HF Status and Plans (13+2 min,, Wenqing):

- Overview of measurements
- Discuss needs from future simulation runs

3. Forward Calorimetry Update (13+2 min, Miguel/Student):

- Design / Simulation updates
- Physics simulations

4. Jet Simulation Update (13+2 min, Brian):

- Preliminary jet resolutions
- Geometry comparisons
- Needs from future simulation runs

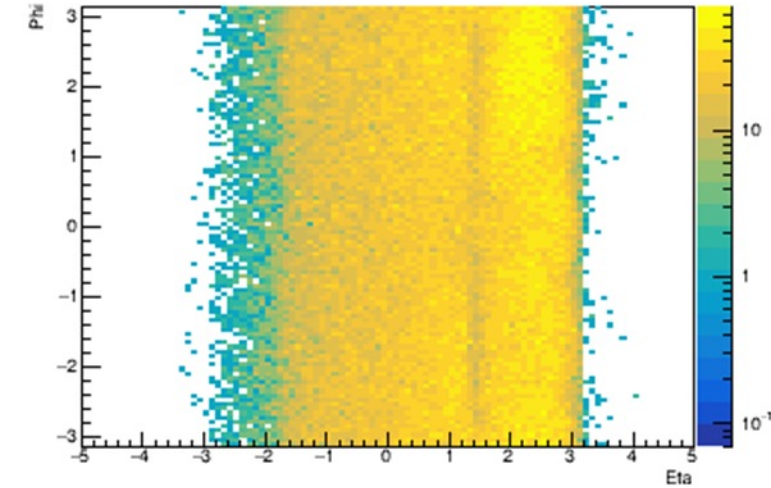
5. Conclusions (5 min, TBD):

- New groups
- Collaboration with other PWGs (electron finder, energy flow, SIDIS framework, etc)
- Benchmarks
- AOB

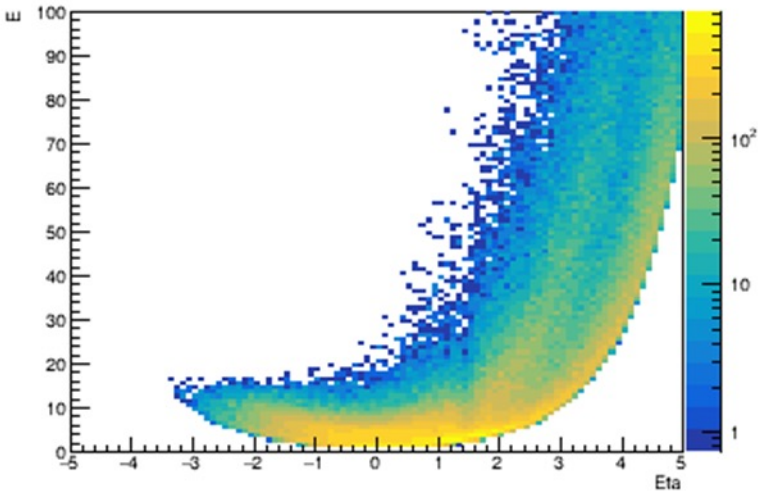
Simulation Campaign: First Look at 'Jets'

- ❑ Sample: 22.11.2 – Arches; Pythia-8 18x275 $Q^2 > 10 \text{ GeV}^2$
- ❑ Look at Monte Carlo Jets (all and charged only), reconstructed particles, and reconstructed particles + ECal clusters
- ❑ Calculate eta/phi w.r.t. hadron beamline in forward direction ($\eta > 1.4$)
- ❑ No HCal clusters, no track/cluster matching yet

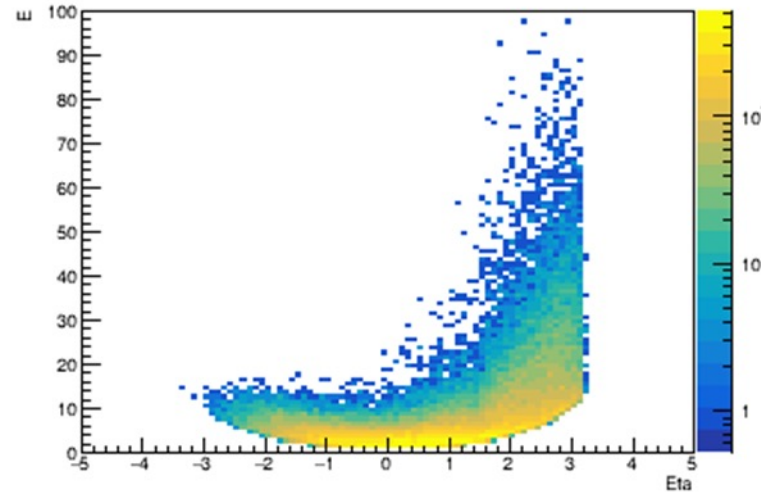
Jet Phi Vs Eta: Reco Charged + ECal



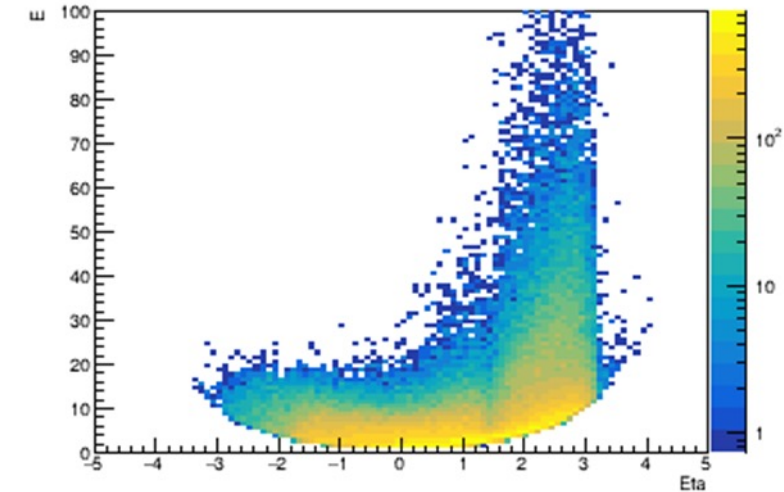
Jet E Vs Eta: All MC



Jet E Vs Eta: Reco Charged

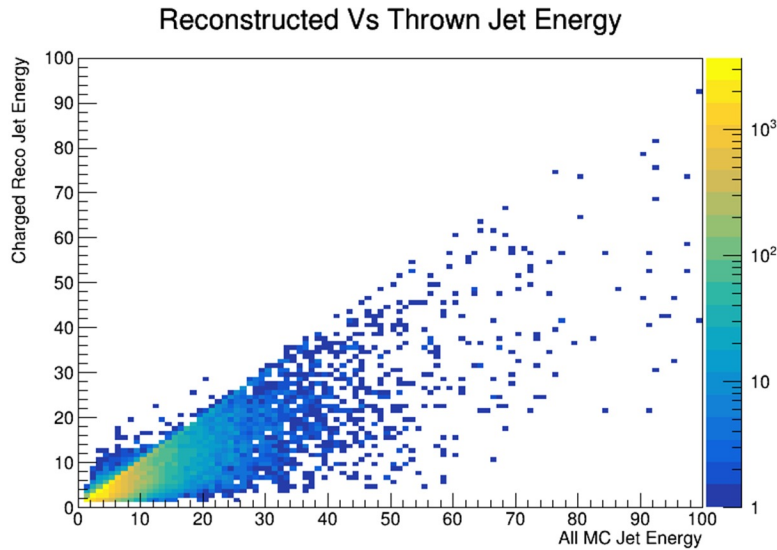


Jet E Vs Eta: Reco Charged + ECal

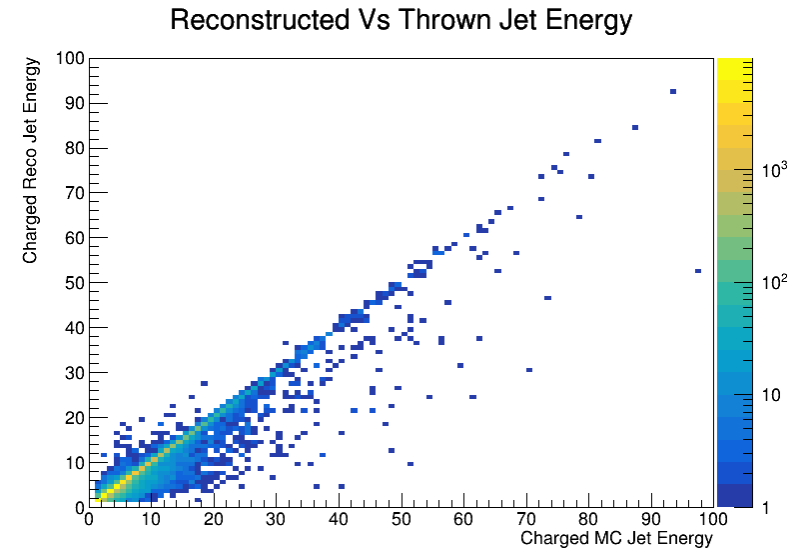


Simulation Campaign: First Look at 'Jets'

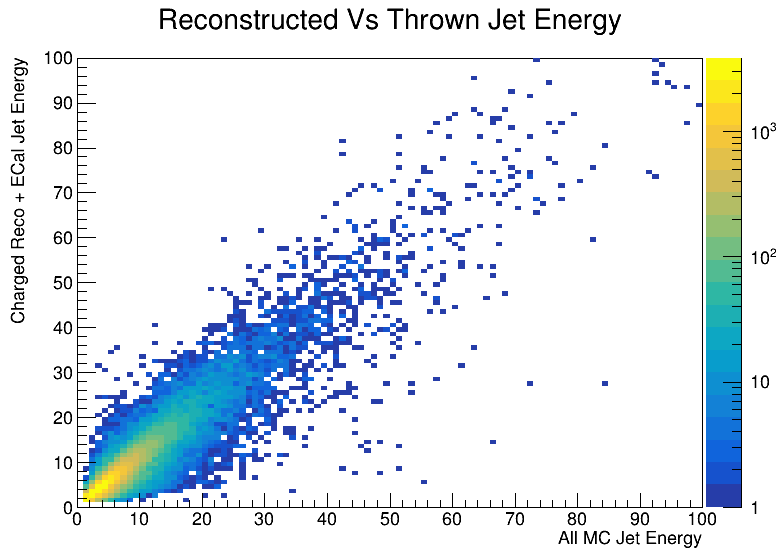
Reco Vs
All MC



Reco Vs
Charged MC



Reco + ECal
Vs All MC



- Compare track only jets to full MC jets, track only jets to charged particle only MC jets, and track+ECal to full MC jets
- No track/cluster matching, so track+ECal jets will have some double counting
- Track only vs charged particle MC shows tracker working well