What we monitor for jets

```
⊟ Overall Status:  Undefined
   ⊟ Jets:  Undefined
      ⊟ Cone4H1TowerJets:  Undefined
         ⊟ Expert:  Undefined
            · EtaPhi:  Undefined
            · JetShapes:  Undefined
            · Kinematics:  Undefined
            · LeadingJet:  Undefined
      · Shift:  Undefined
```

Plots are separated by themes and one or two plots of each theme are duplicated in the shift directory. 9 shift plots.

For more info about offline jet monitoring plots, look up:
https://twiki.cern.ch/twiki/bin/view/AtlasProtected/JetOfflineMonitoringPlots

- **EtaPhi:**
  - E, Et, P, Pt, mass and # jets vs EtaPhi
- **JetShape:**
  - Constituents E, Pt and #
  - Fraction EM energy
  - Distributions of constituents (# and E) vs distance from center of the jet.
- **Kinematic**
  - E, Et, P, Pt, mass and # jets
- **LeadingJet**
  - EtaPhi plots for the leading jet.
  - Distance between 2 leading jets.
- **Energy by layer (coming soon)**
  - Fraction jet energy in EMPre, EM1, EM2, EM3, EMEC, Tile0, Tile1, …
- **Calibration (coming soon)**
  - Ratio of jet energy for final/EM/CS.
  - Split/Merge fraction.

What we monitor for EtMiss

MissingEt: **Red**
  Expert: Undefined
    Calos: Undefined
    Jets: Undefined
    Regions: Undefined
    Sources: Undefined
  Shift: **Red**
    Summary: **Red**

- Same idea than for Jet structure. 15 shift plots.

For more info about offline EtMiss monitoring plots, look up:
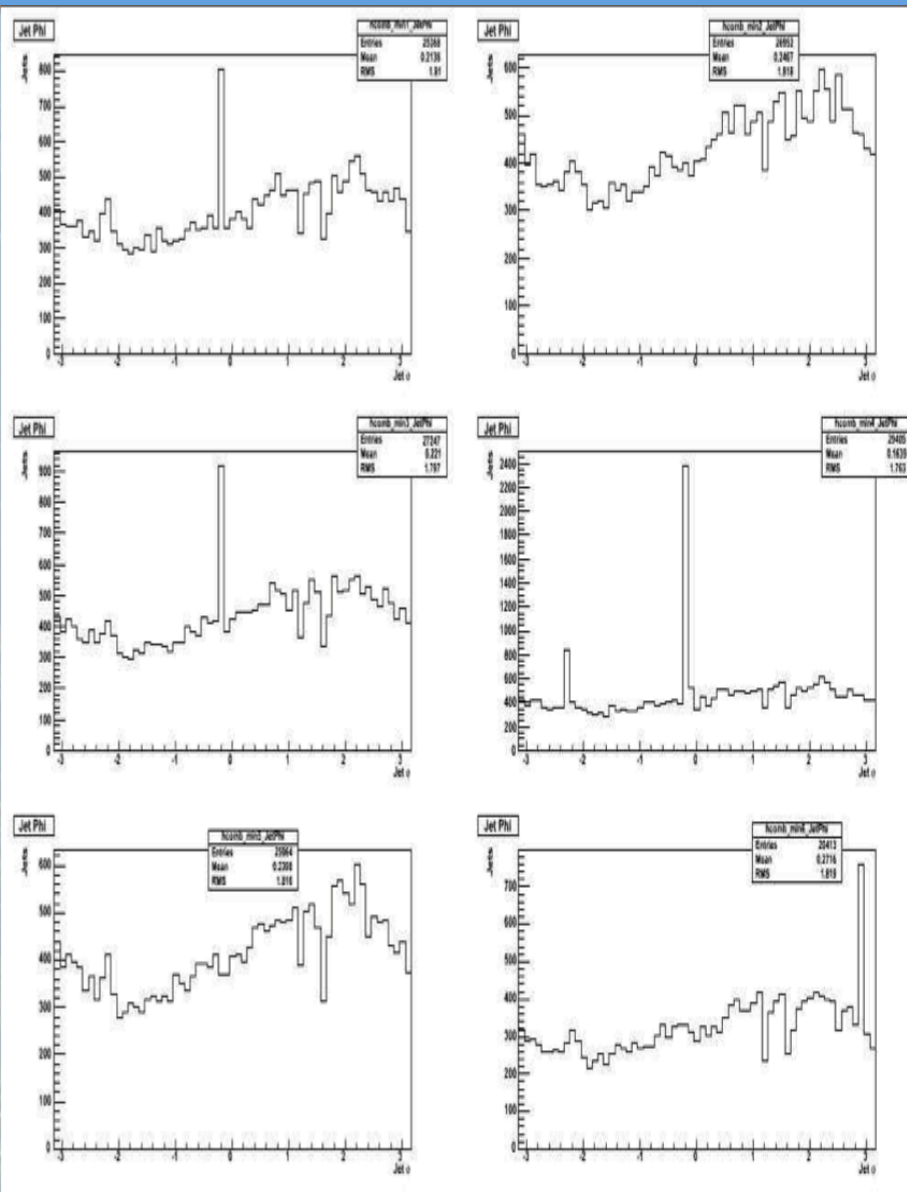https://twiki.cern.ch/twiki/bin/view/AtlasProtected/EtMissOfflineMonitoringPlots

- Calos:
  - Et, Ex, Ey, Phi and SumEt for the different region of the calorimeter: EME, EMB, FCAL, HEC, Tile, …
- Jets:
  - Missing Et as function of jet EtaPhi
  - Missing Et parallel and perpendicular components to the jet as function of jet Eta and Phi
  - Azimuthal distance (DeltaPhi) between Missing Et and the jet as function of jet Eta and Phi
- Regions
  - Et, Ex, Ey, Phi and SumEt for different region: Forward, EndCap and Central.
- Sources
  - Et, Ex, Ey, Phi and SumEt for different sources: MET_MuonBoy, MET_Topo, MET_Final,...
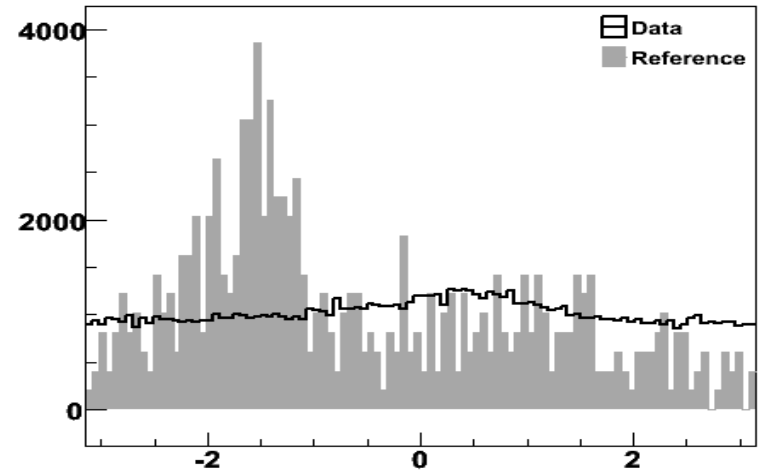
Strategy to set color from these plots

- DQMF allows us to automatically set the CP Jet/EtMiss flag from these plots using pre-defined algorithms.
- The easy solution is to compared each plot with a reference plot from a good run... but what is a good run?
  - Can't rely on that with first data. The run conditions and software will change too often to have a stable definition of a good run.
- Define algorithm that don't use reference file:
  - Check for phi symmetry for example.
  - We will need experience of real data to tune these algorithms... might take time.
- For first collisions, we plan to rely mainly on the shifters to asset the color (green or yellow) of the CP Jet/EtMiss flag.
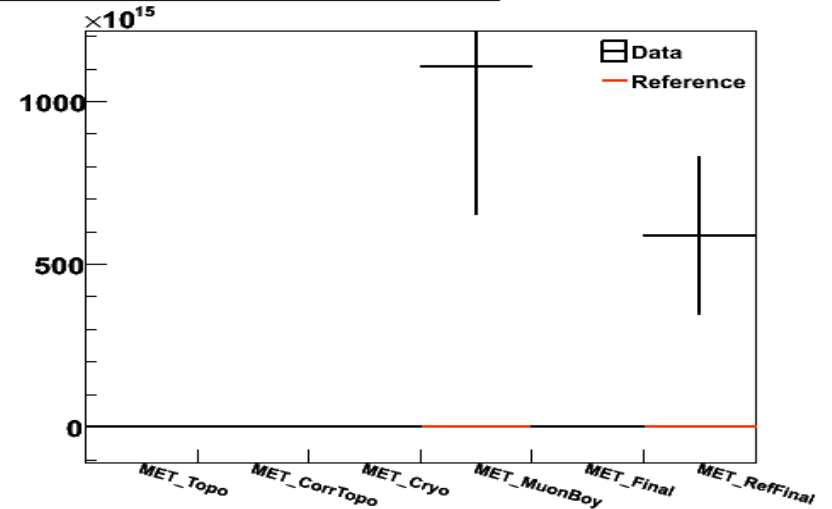
Shifter plots

Phi Distribution (MET_RefFinal)

Run 92112, 2/physics_RNDM
/MissingEt/Shift/Summary/phi_MET_RefFinal

Means of the Ex Sources

Run 92057, 2/physics_L1Calo
/MissingEt/Shift/Summary/exMean