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Tracking Reconstruction Efficiency Study

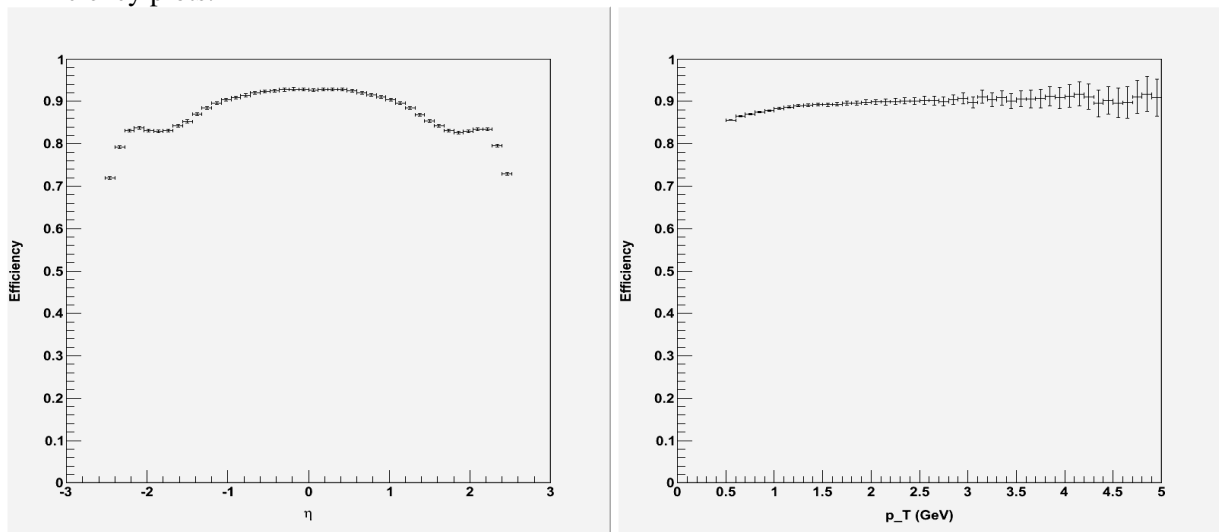
Rel 17. mc11 minimum bias dataset

mc11_7TeV.108316.Pythia8_minbias_ND.merge.AOD.e825_s1272_s1274_r2727_r2780/

```
//selection cuts
if (500 < Pt) continue; //pt cut
if (mcEta < -2.5 || mcEta > 2.5) continue; //etacut
if (mcBarcode == 0) continue;
if (mcBarcode > 200000) continue; //remove secondaries
if (mcStatus != 1) continue; //remove intermediate particles
int stable = 0;
if (mcId == -11 || mcId == 11) stable = 1; //electron
if (mcId == -13 || mcId == 13) stable = 1; //muon
if (mcId == -211 || mcId == 211) stable = 1; //pion
if (mcId == -321 || mcId == 321) stable = 1; //Kaon
if (mcId == -2212 || mcId == 2212) stable = 1; //proton
if (stable == 0) continue; //remove unstable particles
if (mcPileUpType
```

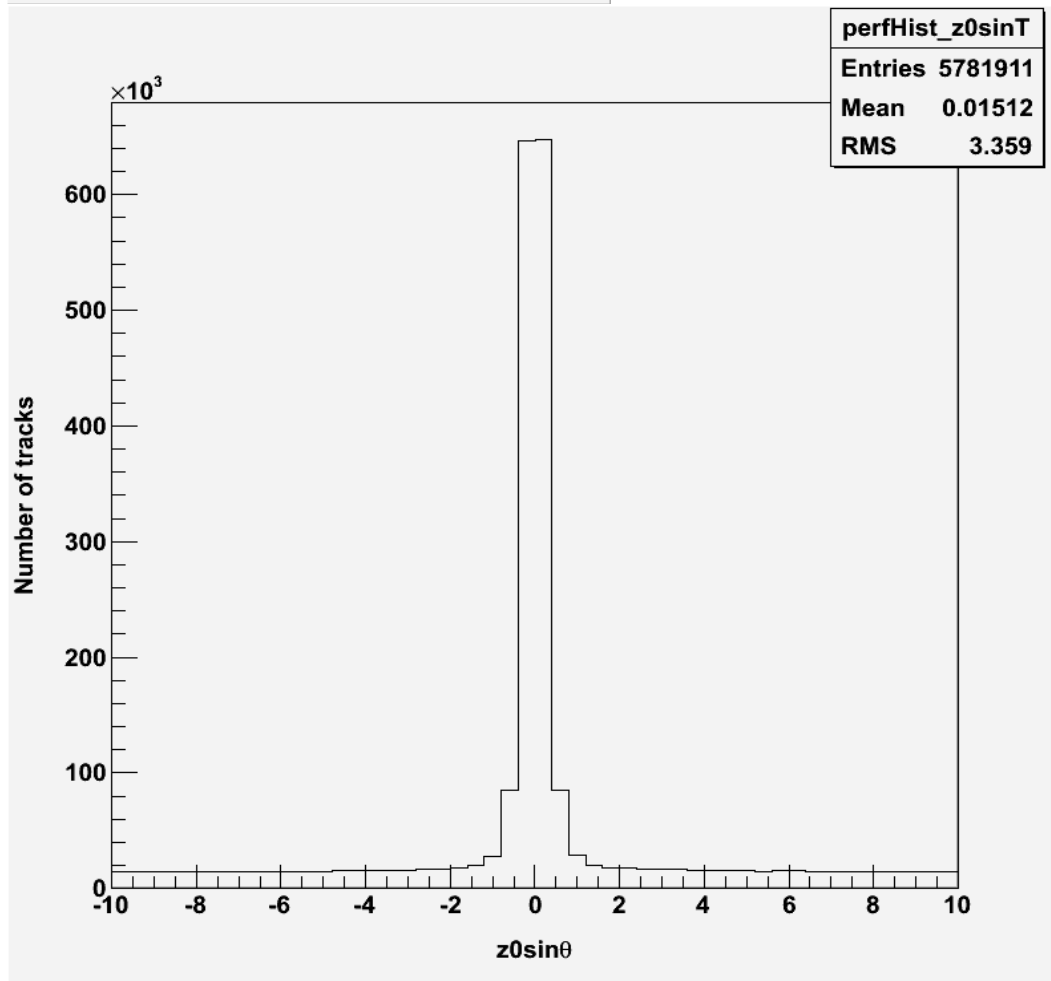
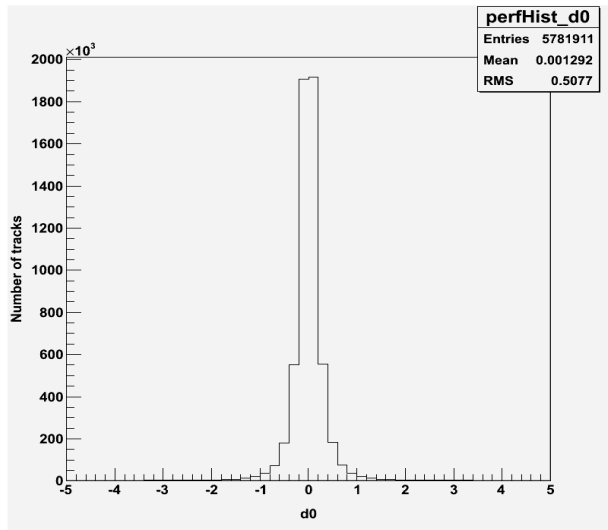
Efficiency = (Number of mc particles with a matching reco track)/(Number of mc particles)
Matching was done by barcode.

*Efficiency plots:

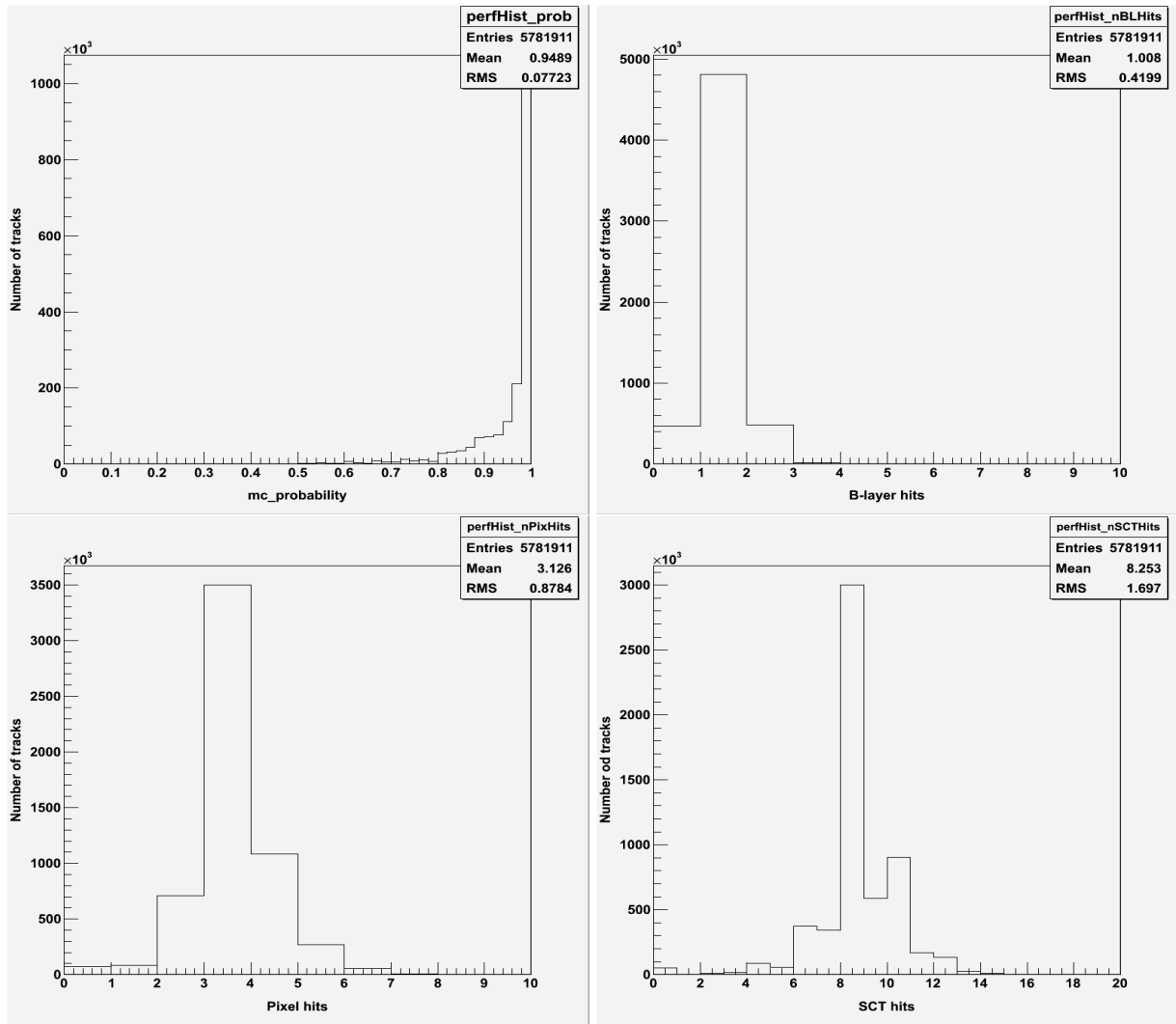


Following plots are for tracks which has matching mc particles.
Do we cut on these? such as

```
d0 < 1.5 mm
z0 sinTheta < 1.5mm (this cut may be problematic)
prob > 0.55
nBLHits >= 1
nPixHits >= 1
nSCTHits >= 6
```



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